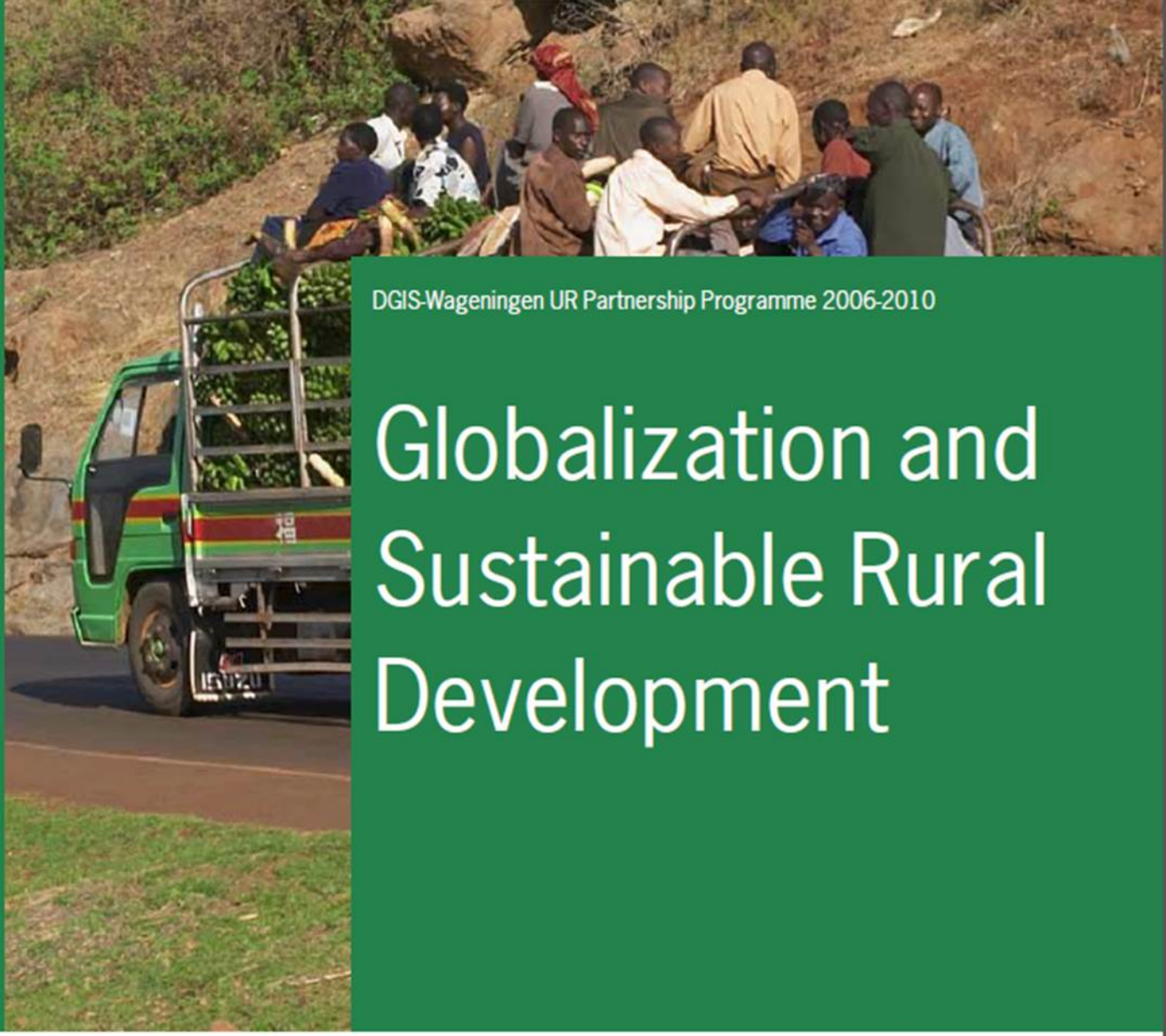

DGIS-Wageningen UR Partnership Programme 2006-2010

Globalization and Sustainable Rural Development

WAGENINGEN UR
For quality of life

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WAGENINGEN UR
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Foreword

I am pleased to present to you this publication of the Partnership Programme 'Globalization and Sustainable Rural Development'.

When, in 2006, the Netherlands' Ministry of Foreign Affairs (Directorate-General for International Cooperation/DGIS) and Wageningen UR (University & Research centre) started this Partnership Programme, the intention was to bring science and policy closer together with the ambitious aim of 'developing practical recommendations for policy development and new models for natural resource management'.

During the past five years the context in which the partnership operated changed. Action research on three themes 'Competing claims on natural resources', Sustainable agro-supply chains' and 'Sustainable use of agro-biodiversity' proved to be a right means to react to these changes. The programme was able to come up with innovative solutions to address the new challenges, such as large scale land acquisition that became imminent, resource scarcity or feeding the world in 2050. The results feed into the spearheads of our present development policy: water and food security.

An important result of the Partnership Programme is, that it brought researchers of Wageningen UR, their project partners, stakeholders and policy makers and planners in government institutions together. In fact it meant building new knowledge and learning platforms. By bringing together stakeholders that did not know each other before, but that had similar interests, new partnerships among the public, private and civil society sectors were created. These partnerships are the ones that design solutions to mitigate competing resource claims and address issues of pro poor value chain development.

The lessons learnt, practices, and cases presented in this publication provide inspiration for those of us working on water and food security. I should like to refer to some of these lessons specifically: The pilots in Ethiopia, Uganda, Mozambique and Rwanda within the sub-programme 'Value Chains for Pro-Poor Development' have strengthened the present food security work on local and regional value chains by farmers, farmer organizations and private enterprises. Next, the modeling of cross-boundary water use options in Mozambique, Swaziland and South Africa is of great value to integrated watershed management, one of the pillars in our new water policy. Lastly, the work on timber in Ghana is supporting the process of legal timber trade worldwide.

I hope that this publication will serve its purpose as foreseen when the Partnership Programme started: 'Scientific support to public and non-governmental research and development organizations, as well to the private sector both in the South and in the North.'

Kitty van der Heijden

Director Climate, Energy, Environment and Water Department
Ministry of Foreign Affairs/DGIS

Foreword

After a number of decades of relative neglect, agriculture is now fully back on the international development agenda. At the turn of the century the United Nations formulated eight Millennium Development Goals, which included ambitious targets to eradicate hunger in the world, and to alleviate poverty. Largely, these targets were to be pursued through increased investments in agriculture and in agricultural research and education. Strong impetus to such investments was brought about by the authoritative World Development Report 2008 'Agriculture for Development'.

In the Netherlands, also in 2008, this renewed focus on the role of agriculture as a driver of economic development was formulated in the governmental policy document 'Agriculture, rural economic development and food security'. More recently the Netherlands Government has put further focus on agriculture through its policy programme 'Food and nutrition security'. This programme targets the development of entrepreneurship in the (African) agricultural sector as a priority issue. This is to be achieved through new implementation mechanisms that include strong engagement of the Netherlands' private sector and knowledge organizations, Wageningen UR (University & Research centre) in particular.

In this perspective, the emergence of the Partnership Programme 'Globalization and Sustainable Rural Development' was timely and even, if I may say so, well-foresighted: Already in 2006, the programme focused – in a research-cum-development mode – on issues and bottlenecks in the agricultural sector of Africa: Competing Claims on Natural Resources, Sustainable Agro-supply Chains, Sustainable Use of Agro-biodiversity and Institutional Development and Capacity Strengthening.

This publication, the fifth in a series published by Wageningen International that covers topical development-related subjects, reports on the contents and outputs of the Partnership Programme and on the lessons learnt.

Among these lessons is one that relates to the different languages spoken by partners in research-policy interactions. Scientists by their very nature are precise in their researches and , hence, in their formulations. As a result, scientific reports and peer-reviewed papers tend to make tedious reading for non-peers, policy makers in particular. The latter have to operate in quickly-changing political environments and realities and often they face problems to filter out what is essential to read in voluminous scientific documentation.

I hope that, with this popular edition of the programme's final report, the end results are now available in a readily-digestible format.

Wim Andriesse

Programme Manager
Wageningen UR, Wageningen International

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1 Globalization and Sustainable Rural Development

1.1 Introduction

Wim Andriesse, Wageningen International and
Bram Huijsman, Social Sciences Group

In her key-note address on the occasion of the opening of the Academic Year of Wageningen University in September 2005, the then Minister of Development Cooperation, Mrs. Agnes van Ardenne, announced that she planned to strengthen her Ministry's links and interaction with the Netherlands' knowledge centres, Wageningen UR (University and Research centre) in particular. Among the policy-research interaction initiatives that were subsequently developed, were a number of so-called IS-Academies for International Cooperation, in which ministerial staff, together with researchers at the Netherlands' universities, implement exchange programmes on development-related issues such as 'Civil Society and Development' (led by CIDIN, Centre for International Development Issues of the Radboud University Nijmegen), 'Human security, poverty, war and hunger' (led by the Chair Group Disaster Studies of Wageningen University), 'Migration and development' (Maastricht University) and 'Land governance, land tenure and land reform' (IDS, the Centre for International Development Studies of Utrecht University). Most of these IS-Academies are still up-and-running. Other policy-research interaction instruments include DGIS's (Netherlands Directorate-General for International Cooperation) subsidy to NWO-WOTRO (the Netherlands Organisation for Scientific Research - Science for Global Development) and, specifically for southern Africa, SANPAD (South African Netherlands Partnership on Alternatives in Development).

As for Wageningen UR, the collaboration with DGIS took shape in the Partnership Programme 'Globalization and Sustainable Rural Development' which was implemented from June 2006 through December 2010. The present booklet reports on the outcomes of this programme.

The Ministers' choice for Wageningen UR – and therefore for agriculture – did not come entirely as a surprise: At the time, agriculture and rural development were gradually finding their way back into the development strategies of most donor organizations the world over. After years of relative neglect for the role of agriculture as an engine of economic development, this change was initiated mainly by the formulation of the eight Millennium Development Goals (MDG's) under the auspices of the United Nations, at the turn of the century. The first of these Millennium Development Goals deals with eradicating hunger and poverty and aims to half the hunger globally by 2015[1]. In 2005, an 'MDG 1 Task Force' published the report 'Halving Hunger: It can be done' which called on African leaders to invest at least 10 per cent of their national GDP's (Gross Domestic Product) in agriculture, in addition to investments in rural infrastructure and energy, health, education and conservation. Also, the Halving Hunger Report recommended that by 2010 African countries should invest at least 2 per cent of their agricultural GDP in national agricultural research. The Halving Hunger Report reasoned that agriculture contributes to achieving MDG 1 in two ways: By stimulating food production and by kick-starting economic development.

1 The other Millennium Development Goals are MDG 2: Achieving universal primary education, MDG 3: Promoting gender equality and empowering women, MDG 4: Reducing child mortality, MDG 5: Improving maternal health, MDG 6: Combating HIV/Aids, malaria and other diseases, MDG 7: Ensuring environmental sustainability, and MDG 8: Developing global partnerships for development.

1.2 International policy context

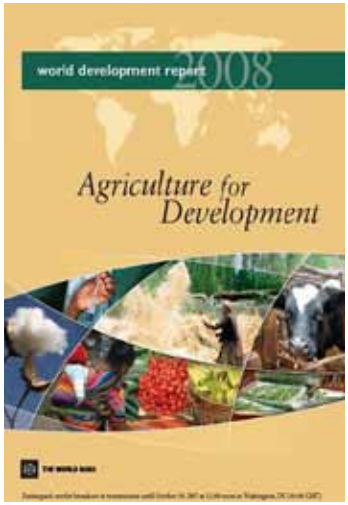
Prior to the Halving Hunger Report, NEPAD (New Partnership for Africa's Development) of the African Union had already launched its Comprehensive Africa Agriculture Development Plan (CAADP; ref: NEPAD, 2002). CAADP identified four strategic pillars for priority investment in the agricultural sector in Africa:

1 Agricultural land and water management;
2 Rural infrastructure and trade capacities;
3 Food supply and hunger reduction, and
4 Agricultural research, technology dissemination and adoption.

Worldwide, the major boost to renewed attention for the pivotal role of agriculture in (rural) development came from the World Development Report 2008 'Agriculture for Development'. In fact, this World Bank report was the last and most authoritative in a series of reports by international donors and development organizations including DFID (the UK Department for International Development), FAO (Food and Agriculture Organization), OECD (Organisation for Economic Development and Co-operation) and others, all calling for new increased investments in the agricultural sector in developing countries (World Bank, 2007; Andriesse *et al.*, 2007).

The World Development Report stated that agriculture can work to produce faster economic growth, reduce poverty and sustain the environment as it contributes to development as an economic activity, as a livelihood, and as a provider of environmental services. This applies in particular in agriculture-based countries like most of the countries in Africa. In its conclusions, the World Bank report emphasised the need to:

- Improve price incentives and increase the quality and quantity of public investments in agriculture;
- Make product markets work better;
- Improve access to financial services and reduce farmers' exposure to risks;
- Enhance performance of producer organizations;
- Promote innovation through science and technology, and
- Make agriculture more sustainable and a provider of environmental services.

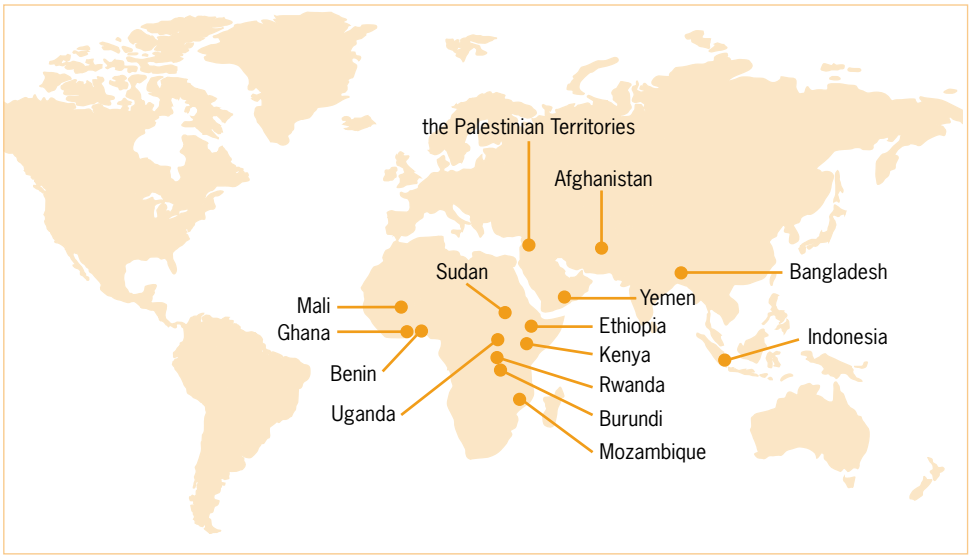


1.3 Netherlands' policy context

In the Netherlands, new attention on agriculture was formulated, in 2008, in the joint Policy Document of the Ministry of Foreign Affairs – Development Cooperation and the then Ministry of Agriculture, Nature and Food Quality entitled 'Agriculture, rural economic development and food security' (see Section 1.6 'References'). This policy document identified four tracks for priority actions:

1 Research and innovation to increase productivity in the context of climate change;
2 Public service provision and institutions;
3 Sustainable value chain development, and
4 Improving market access.

Next, in February 2010, the Netherlands' Scientific Council for Government Policy (WRR) published a critical assessment of the organization, implementation and effectiveness of the Netherlands' development cooperation policy and programmes (WRR, 2010). In its conclusions the WRR report, entitled 'Less pretension, more ambition', tellingly calls, among other things, for more emphasis on stimulating self-reliance in the agricultural sector of developing countries through the facilitation of market-oriented rural entrepreneurship. Also, the WRR report calls for (increased) investments in knowledge, both with respect to international development processes and policy formulation



The 15 Netherlands' partner countries now are: Afghanistan, Bangladesh, Benin, Burundi, Ethiopia, Ghana, Indonesia, Kenya, Mali, Mozambique, the Palestinian Territories, Rwanda, Sudan, Uganda and Yemen. Out of these, Ethiopia, Ghana, Kenya, Mali, Mozambique and Rwanda have been accorded further priority status with respect to the thematic area 'Food and nutrition security'.

and implementation, as well as with respect to strengthening capacities and institutions in partner countries in the South. Finally, since mid-2010, a new Netherlands' government coalition has been formulating an adjusted policy on international cooperation. In this new policy, the thematic priorities are on:

1 Food and nutrition security;
2 Water;
3 Safety and good governance, and
4 Sexual and reproductive health and justice.

New implementation mechanisms include a focus on a reduced number of the Netherlands' partner countries in the South, a strong focus on engaging the Netherlands' private sector in development initiatives, and further engagement of the Netherlands' knowledge institutions.

1.4 The DGIS-Wageningen UR Partnership Programme

The aim of the Partnership Programme 'Globalization and Sustainable Rural Development' was to contribute to poverty alleviation, food security and livelihood improvement for the world's (rural) poor by means of targeted research, institutional development and capacity strengthening (Wageningen International, 2006). Through the programme, DGIS and Wageningen UR aimed to make contributions to the achievement of the Millennium Development Goals, MDG 1 (Eradicating extreme poverty and hunger), 7 (Ensuring environmental sustainability) and 8 (Developing global partnerships for development) in particular.

The Partnership Programme's thematic focus was on four interlinked areas that cover critical aspects of globalization processes:

1 Sustainable Agro-Supply Chains;
2 Competing Claims on Natural Resources;
3 Sustainable Use of Agro-biodiversity, and
4 Institutional Development and Capacity Strengthening.

Theme 4 on Institutional Development and Capacity Strengthening formed an important cross-cutting theme of the programme.

The Partnership Programme targeted practical recommendations for policy formulation and new models for livelihood improvement, rural entrepreneurship and sustainable management of natural resources including biodiversity. Through these recommendations the programme aimed to provide science-based support to public

and non-governmental research and development organizations, as well as to the private sector, both in the South and in the North. The geographic focus of the Partnership Programme largely followed the priority regions and countries of DGIS in sub-Sahara Africa, but not exclusively.

The programme was funded through financial contributions from DGIS-DME (Directorate Environment, Water, Climate and Energy) and DGIS-DDE (Directorate Sustainable Economic Development) that were matched by in-kind contributions from Wageningen UR and its partners. The Partnership Programme was designed as a 4-year endeavour (July 2006 - July 2010) but, by the end of 2009, the partners agreed on a budget-neutral extension of the programme until the end of 2010.

The total DGIS contribution for the 4½-year programme (2006-2010) was € 3.57 million. Matching contributions by Wageningen UR and its partners amounted to € 1.44 million, or about 30 % of the total budget spent. Coordination at programme level was shared between DGIS-DME and Wageningen International, the international front office of Wageningen UR. Overall management and financial administration were carried out by Wageningen International.

Projects under the programme were selected for implementation through the mechanism of Calls for Proposals within each of the three thematic areas. For the themes 'Sustainable Agro-supply Chains' and 'Competing Claims on Natural Resources' these calls were launched in the early years of the programme's lifetime (2006-2007) and the projects that were selected were implemented as from 2007. For the theme 'Sustainable Use of Agro-biodiversity' the call was launched in 2009 only, and the four projects approved could start implementation by July of that year. The selection of projects was done through evaluation committees consisting of external and international experts.

As stated above, 'Institutional Development and Capacity Strengthening' formed a cross-cutting theme throughout all themes and projects of the programme. Early in 2010, an exploratory evaluation of the lessons learnt with respect to capacity development was conducted.

This booklet summarizes the various activities that were implemented in the framework of the Partnership Programme, and the outcomes thereof. More detailed reports per sub activity are available with the Programme Manager and with the various Project Coordinators. General information on the Partnership Programme, its activities, outputs (reports, policy briefs, etc.) and annual reports are also available through the programme website: www.dgis.wur.nl.

1.5 Programme linkages

The DGIS-Wageningen UR Partnership Programme connected interactively with a number of other development-related activities and projects in which Wageningen UR was involved. Most notably, these included projects of the BOCI and KB programmes both of which are funded by the Netherlands' Ministry of Economic Affairs, Agriculture and Innovation.

BOCI is the Policy Support Domain 'International Cooperation' of the Netherlands' Ministry of Economic Affairs, Agriculture and Innovation, which is being implemented by Wageningen UR, mainly through short-term research activities (See: www.boci.wur.nl). Relevant themes under BOCI were:

- Markets and trade;
- Biodiversity;
- Water for food and ecosystems, and
- Competing claims and climate change.

KB is the 'Knowledge Base' Research programme of Wageningen UR, which aims at long-term strategic expertise development. Like BOCI, the KB programme is being financed by the Netherlands' Ministry of Economic Affairs, Agriculture and Innovation.
Within the KB programme the most relevant themes were:

- Planning and use of the green and blue environment;
- Sustainable agriculture, and
- Transition processes, institutions, governance and policy.

All three KB themes have important international sub-components. In addition, researchers involved in activities of the Partnership Programme have contributed to the formulation of a cross-cutting international KB research activity 'Survival and innovation in smallholder agriculture', which aims to improve risk- and opportunity management in smallholder agricultural production and market systems in sub-Sahara Africa.

In addition, activities under the Partnership Programme were complementary to some of the sub-programmes that are being implemented in the framework of the INREF Programme (Interdisciplinary Research and Education Fund) of Wageningen University (see: INREF, 2010 and www.inref.wur.nl). INREF is a PhD-based research programme, mainly for students from developing countries. The relevant INREF sub-programmes include:

- Competing Claims on Natural Resources: Overcoming mismatches in resource use through a multi-scale perspective, that is being implemented with partners in Zimbabwe, South Africa and Mozambique, and
- Co-innovation for quality in agri-food chains in Benin, Ethiopia and South Africa.

Also, most of the pilot action research activities under the theme 'Sustainable Agro-supply Chains' of the Partnership Programme linked with, and built on, activities and projects with respect to value chain development and the facilitation of entrepreneurship among smallholder producers of the networks of Agri-Profocus, Agriterra and SNV (Netherlands Development Organization). Also, the experiences obtained in the sub-programme 'Value Chains for Pro-poor Development (VC4PD)' were shared with our partners in the Partnership Resource Centre (PRC) and the Initiative for Sustainable Trade (IDH) both of which are DGIS-supported activities. Results from the VC4PD sub-programme also fed

the knowledge development agenda of the DGIS-supported Development Policy and Review Network (DPRN).

Throughout the programme's lifetime, researchers of Wageningen UR and their project partners engaged in debate with colleagues and stakeholders in their respective activities as well as with policy makers and planners in governmental institutions. This was done in the countries and regions in which the various projects were implemented, in the Netherlands and, in the case of the Ghana VGA/FLEGT (Forest Law Enforcement Governance and Trade) project, at the level of the European Commission. These debates took place in workshops and seminars organized by the various partnership projects themselves as well as in external international conferences.

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2 Sustainable Agro-supply Chains

2.1 Rationale

Sietze Vellema, LEI and
Wim Andriesse, Wageningen International

Food security and the provision of food have become important issues on the international development agenda and, accordingly, agri-food chains are a concept central to development policy, practice and research. Theme 1 'Sustainable Agro-supply Chains' of the DGIS-Wageningen UR Partnership Programme focused on on-going and experimental processes that aim to make inclusion in agri-food chains, mainly serving domestic markets in the South, instrumental for pro-poor development. It complements endeavours in the context of international trade, which is increasingly subject to public legislation and private-sector grades and standards. A common feature of both, international trade and domestic markets is the growing concentration in agro-food systems, and the transition from supply-driven to demand-driven supply chains. This development has caused significant institutional and organizational challenges that affect the economic position and bargaining power of smallholder producers, particularly in developing countries.

In the perspective of the developments, needs and challenges sketched above, the sub-programme 'Sustainable Agro-supply Chains' aimed to:

- Strengthen supply chain capacity and entrepreneurial skills among smallholder producers in developing countries;
- Analyse pilot supply chains and formulate recommendations on how integrated supply chains can facilitate market access and sustained economic growth in developing countries, and
- Evaluate the appropriateness of market-driven economic developments and their mechanisms in contributing to income generation and to improvement of rural livelihoods.

Output of the programme targeted actual implementation at the level of smallholder farmers and their organizations, as well as local, national and international policy levels. More specifically, the projects under this theme included two sets of coherent sub-activities, namely:

1 Value Chains for Pro-Poor Development (VC4PD), and
2 Facilitating Rural Entrepreneurship.

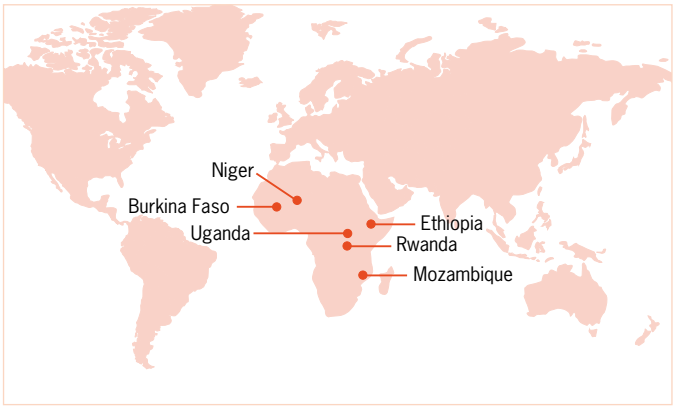
In a series of multi-stakeholder meetings, six cases of value-chain based change processes were selected in which the bulking of agricultural commodities was linked to the organization of farmers and institutional interventions in order to understand the mechanisms that are favourable to development in existing agri-food chains. The process of pilot implementation was organized in an action research-cum-development mode in which the projects addressed specific issues in chain development as perceived by the partners and stakeholders. The selection and implementation took place in close collaboration with Agri-ProFocus and Agriterra of the Netherlands, and with many partners (knowledge institutes, producer organizations, NGO's and private-sector organizations and enterprises: Traders, processors, retailers, etc.) in the countries concerned: Burkina Faso, Ethiopia, Mozambique, Niger, Rwanda, Uganda and Zambia. Their transparent cooperation formed a delicate process of research-agenda setting, problem analysis, co-innovation, policy development and implementation while ensuring sustainable institutional arrangements between the parties. The pilots were also used to build capacities and expertise at all levels of the supply chain, with particular emphasis on farmer organizations. Summary reports of these activities are provided in the sections below.

Research teams from the Netherlands and partner countries collaborated closely with farmers' organizations, companies and development organizations in the framing and testing of the selected intervention strategies. This collaborative research resulted in a more-specific view on the change processes induced, it helped to identify the theory of change for evaluation, and it capacitated the partners in enhancing their skills and knowledge for managing the change processes. The partners involved did not take for granted that inclusion of smallholder farmers into value chains would automatically lead to desired development outcomes. This depended on institutional arrangements at different levels in the chain, on the dynamics of partnerships surrounding the operational processes functional to trading and marketing and on the organizational capacities and strategic choices of farmers' organizations. The VC4PD research confirmed the importance of organizing agricultural producers, smallholders in particular, in order to steer agri-food chains in a pro-poor development direction.

At farmers' level, the Sustainable Agro-supply Chains sub-programme aligned with the Agri-Profocus initiative 'Facilitating Rural Entrepreneurship' and addressed management capacities and entrepreneurial skills of associated farmers engaged in bulking and trading. At the meso-level the tandem of research and process facilitation shifted attention to the conditions for active involvement of farmers' organizations in decision-making processes leading to investments in technology and equipment and to the added value of farmers' organizations teaming up with companies and public agencies in setting a commodity-specific policy agenda. These conditions make it more plausible that participation of smallholder farmers in value chains and market-oriented development interventions results in strengthened rural livelihoods and reduced vulnerability.

2.2 Value Chains for Pro-Poor Development (VC4PD)

Sietze Vellema, with contributions by Gerdien Meijerink, Jennie van der Mheen-Sluijer, Marieke de Ruijter de Wildt and Giel Ton, LEI, part of Wageningen UR and Ted Schrader and Simone van Vugt, Wageningen UR Centre for Development Innovation



Programmatic orientation

Enhancing domestic, regional and international value chains is widely recognized as a valuable development trajectory, in particular where value chains link and integrate smallholder agricultural producers to markets. Currently, many donors and development organizations, national governments, NGO's, private enterprises and knowledge institutes are engaged in such initiatives. In the framework of the DGIS-Wageningen UR Partnership Programme, the objective of the (sub)programme 'Value Chains for Pro-Poor Development' (VC4PD) was to work with practitioners and policy makers in order to validate intervention strategies and support practices in agro-based value chains. The actions of the VC4PD programme were grounded in selected on-going change processes initiated by partners in the networks of Agri-ProFocus, Agriterra, SNV and the Netherlands' Embassies in the African countries in which we worked. This chapter reports on the processes involved in embedding our action research, that was tasked to collect information, to open terrain for discussion and to organize strategic dialogue and priority setting, in such change processes.

In development policy and practice, a variety of approaches are labelled as 'pro-poor' market development, or 'pro-poor' value chain development. The VC4PD programme started in 2007 with a desk-based survey of donor-driven value chain projects that had such a pro-poor perspective. The survey showed that the vast majority of these projects (i.e. 99 out of 107) worked mainly on basic economic performance issues that related to anticipated market demands, compliance with quality standards, clustering of activities for enhanced competitiveness, or value adding. This outcome confirmed that development interventions that have 'pro-poor' development as a label, largely build on the assumed principle that economic growth, diligence and development of entrepreneurship have trickle-down effects that benefit the poor. That assumption, however, foregoes thorough strategizing and theorization about the precise processes that bring about the changes that are anticipated. In turn, this makes it difficult to identify what may be replicated in other situations, or what the target of up-scaling and out-scaling efforts should be.

An important and contrasting principle adopted by the VC4PD programme was that pro-poor development is *not* an automatic outcome, neither of integration into value chains, nor of providing access to markets. Our idea was that, in order to create the right conditions for pro-poor development, deliberate and more-

targeted institutional interventions are needed that address both the governance and the institutional arrangements in value chains, as well as the livelihood strategies prevailing in rural areas (Barnett, 2004).

A second principle of the VC4PD programme was that it was *not* the task of research to initiate and control the interventions or change processes. As a consequence, the programme searched for interesting change processes within *existing* agro-food chains. The subsequent implementation thereof in pilot studies involved fine-tuning with southern partners that were central in the respective change processes. This collaboration formed a delicate process of co-innovation, problem analysis, policy development and implementation.

The VC4PD programme worked in 6 pilot studies:

- Oilseeds (sunflower) in Uganda;
- Sesame in Ethiopia;
- Cassava and other staples in Rwanda;
- Rice in Mozambique;
- Karité (or: *shea nut*) in Burkina Faso, and
- Onions in Niger.

In the selection and implementation of these pilots, we aligned closely with the Agri-ProFocus country focus initiative 'Facilitating Rural Entrepreneurship'. All pilot studies, except for the karité pilot in Burkina Faso, took place in the framework of the so-called 'Agri-hubs' of Agri-ProFocus. In the countries concerned, this collaboration with SNV, Agriterra and other Agri-ProFocus partners, all working in the same field, was crucial for allowing knowledge to flow. By 2009, upon approval of the pilots in Niger and Burkina Faso, a total of six pilot studies were up-and-running.
In selecting our pilots, we looked particularly for interventions in value chains where producer organizations played active roles. This was motivated by our interest in the interface between horizontal social organization and vertical chain coordination. Here, the underlying assumption was that important leverage points for development were to be found in that horizontal-vertical interface. More-specifically, we studied options for producer organizations to:

- Cope with market risks;
- Reduce the vulnerability of agricultural producers to exogenous shocks, and
- Enhance their capacity to coordinate with other elements in the chain (Ton et al., 2007).

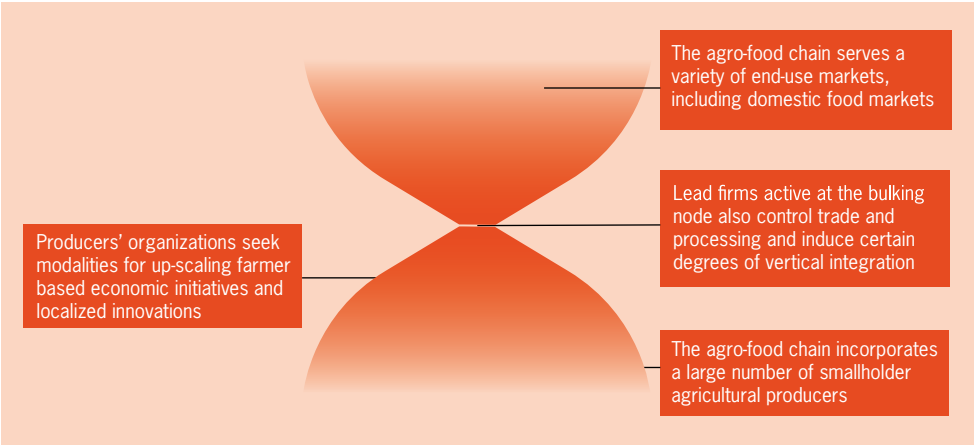
The orientation of the programme embedded this horizontal-vertical interface in an institutional environment that included aspects such as legislation, levelling the playing field, specific policy measures for sector competitiveness, and institutional arrangements that link value chains to wider innovation networks (Bijman et al., 2007).

The approach we took moved beyond interventions and strategies that primarily aim to link smallholders to markets, or to integrate them into value chain configurations. In fact, the VC4PD programme posed the question: "How do existing producer-market linkages impact on poverty alleviation?". In particular, this question related to the possible integration of smallholder producers in value chains. Also, we searched for intervention strategies that would effectively support the realization of ambitious pro-poor development goals under privatized, deregulated and globalized market conditions. The pilot studies which we implemented were all guided by the desire to address complex problems such as variability of income or employment, instability and vulnerability of value chains and markets, bottom-up influences over chain strategy and economic policy, geographic isolation and social exclusion.

The focus: Value chains of non-perishables for domestic markets

In the beginning, the empirical grounding of the VC4PD approach was undefined and, also, it was open whether the pilot studies would focus on export-oriented value chains or on value chains for domestic markets. To make a start anyway, a pragmatic selection was made of one pilot each, in Uganda and Ethiopia. This was based on the strong momentum prevailing in the respective partner networks. Next, a Strategic Conference was organized in the Netherlands in 2008, with development practitioners, policy makers and researchers to discuss and advise on seven options for new pilot studies. A set of concept notes presented incipient versions of the respective impact logics of the proposed pilots, being the programmatic translations of dialogues held by the VC4PD programme managers with African and Dutch partners (Vellema and de Jager, 2008). The Strategic Conference resulted in a further focus on agro-food chains of non-perishable products that were sold largely in domestic markets. Consequently, the programme adopted a strong interest in value chains related to local food provision and, therefore, food security.

The typical diabolo-shaped configuration of the value chains selected by the programme is shown below. These value chains were largely embedded in markets for undifferentiated products. In some cases however (i.e. sesame in Ethiopia and shea nut in Burkina Faso) a gradual shift toward quality-driven export markets



The typical diabolo shape of agro-food chains of non-perishable products (adapted from Vorley, 2003 and Grievink, 2003).

took place. In such value chains, the aggregation of volumes is an important feature. In all pilot studies, a lead agent or lead firm controlled and coordinated the hub between productive activities and market transactions (Vellema, 2010). These lead agents were processing or trading companies, trading houses or cooperatives active at the bulking node. The agents acted as central units in trading and processing and had a strong interest in achieving economies of scale. This implied a certain degree of vertical integration which, in turn, complied with the analytical insight from value-chain literature that regulation, coordination and governance of multiple tasks in value chains is strongly influenced by the strategic direction of these firms and cooperatives. Such firms and cooperatives also have the capacity to set barriers to entry into the respective value chain.

The pilots: Action research in open-ended change processes

The VC4PD programme implemented 6 pilot studies in partnership with stakeholders in the countries concerned, including smallholder farmers and their organizations, agro-processors and traders, development organizations and knowledge institutes.

In the actual practice of value chain development, donor agencies, governmental and non-governmental organizations, private companies and producer organizations are often 'learning by doing'. Rarely however, has this learning been documented and analysed. We saw this as one of the tasks of our action research and, in this perspective, a central research question was "How do interventions work in the specific contexts of the pilots, and for whom?". This reflective task, in combination with the collection and analysis of empirical data relevant to the change processes (i.e. data on volumes handled, data on different bulking arrangements, etc.), connected the action research to strategy development and capacity strengthening in our networks of businesses, producer organizations and donor agencies.

The engagement of the VC4PD action research in open-ended change processes necessitated us to work on a new approach to explicate and validate the intervention theories (i.e. our 'treatments' central to the pilot studies). Action research engages in a change process wherein an innovative intervention strategy is being tested, and it is grounded in experiential learning (Lundy et al., 2005). In doing so, and in order to make them 'researchable' the selected change processes were labelled as natural experiments (Diamond, 1986). We considered our action research as a way to find out whether the partners involved were turning the right buttons, and to investigate what the causal properties of these buttons were. We approached our pilot studies as experimental versions of an operation, or an institutional practice. This provided a model for future development.

In the pilot studies we tried to create workable tandems between, on the one hand, addressing localized problems and, on the other hand, answering 'high level' questions of strategic importance beyond the specific case of the pilot concerned. By explicating theories of change in each individual pilot, we tried to connect comparative learning with a focus on context-specific leverage points for pro-poor development in agro-food chains. Opening the black box of pro-poor interventions within a creative process of identifying workable mechanisms was further informed by the use of the five interactive core-dimensions of poverty as identified by the OECD: economic, protective, political, socio-cultural and human capabilities, respectively.

The use of 'evolving logic models' in the pilot studies helped us to detect underlying processes and to inform local understanding of 'the buttons to be pressed' or 'the keys to be turned'. What proved to be more difficult was to arrive at generalizations from our empirical investigations and from the strong engagement with dynamic and open-ended change processes in which our partners were involved. By focusing on comparable cross-cutting issues,

Methodological contribution

The main methodological contribution of the VC4PD programme has been to re-emphasize the importance of developing a theory and to detect competing theories before starting a change process. There is danger in hopping from one fashionable best practice to the next, without considering what the real processes are that either generate, or obstruct, development outcomes.

The actual activities of the programme (e.g. collecting information, discussing preliminary analyses with partners, informing dialogue and debate) were embedded in change processes that were initiated and directed by the partners themselves. These change processes were dynamic in nature, and their effects uncertain and unpredictable. Partly, too, they were beyond the span of influence of the action researchers. Moreover, the partners engaged in these change processes without precisely knowing the underlying mechanisms. As a result, the outputs generated by the research teams were two-fold:

- Research-based contributions to the change processes, not always available in the public domain, and
- Further conceptualization of the change processes that were set in motion by the partners.

the programme wanted to use the different pilots for cross-site learning as a kind of sample in which similar interventions could be tried out. The latter is a problem, not only for research but also for policy and practice.

At a practical level, this translated into continuous discussions with the key players in our stakeholder platforms about what the actual function of the platform was and how this function connected to the functions of other platforms. By taking the position of critical but impartial outsiders, the research teams contributed to more-precise formulations of the intervention strategies, and they alerted the partners for being responsible for outcomes that were not clearly related to the actual action, or that were contingent on dynamics in the wider context. Examples of the latter include governmental interventions or scarcities in commodity markets.

The sections below report on the outcomes of the open-ended change processes in the respective pilot studies. Also, they identify the roles that action research played in these change processes. In addition, the VC4PD research team produced a series of research papers and briefs. These documents are available in the public domain at our website: www.dgis.wur.nl/UK/VC4PD/Publications.

In the assessment of the roles of research it is important to realize that many of the effects are not directly attributable to reports and to data collection per sé. Such written outputs merely fill the pool of knowledge and information. Rather, the anchoring of research in groups of local actors that make the actual change, appears to have been an important ingredient of the programme. This was achieved, for example, through the action research process itself, through agenda-setting activities and through a series of presentations, dialogues and work sessions that were held with the task forces.

Karité (shea nut) in Burkina Faso: Representing women and building strategic networks

In 2009, the recently-established women's network REKAF (Réseau Karité des Femmes) and its 40 member organizations started a strategizing process in the shea nut sector in Burkina Faso. Karité or shea trees (*Vitellaria paradoxa*) are indigenous to Africa and they grow wild throughout the West African savannah zone. Karité nuts are processed into a vegetable oil for human consumption. For most rural women in West Africa it is an important source of income. In monetary value karite (or: shea) is the third export product of Burkina Faso. Currently, about half of the nuts are exported to just a handful of multi-national companies that use shea as a vegetable oil. The other half is crushed by rural women into

a thick yellow cream called 'shea butter'. A tiny part of this butter (less than 5 %) is exported to cosmetic industries in Europe and the USA. This niche market is receiving lots of attention in development interventions. The bulk of the shea butter, however, is used for home consumption, mainly as cooking oil and cream, and to make soap and cosmetic products for domestic and regional markets.

The VC4PD programme aligned with REKAF whose women-leaders observed that men were increasingly occupying political positions in national conventions and making strategic decisions in the shea sector. Also, the men were encroaching on the more remunerative positions in the shea value chain, where the picking of the nuts, their processing into butter, soaps and creams and the sales of these products were always seen a typical female activity. In order to increase its presence and effectiveness in national and international shea networks and institutions, REKAF decided to set-up a 'women-only' platform to speak with one strong voice in shea panels across the country. REKAF is convinced that internal consultation and alignment are strong instruments to solve common problems, to achieve the members' aspirations and to develop their own businesses in the shea sector of Burkina Faso.

For REKAF to look for ways to represent its members' interests appeared to be far from easy, in particular as women have different tasks and positions in the shea sector. Moreover, it implied navigating in the pallet of development projects and trying to define a strategy for themselves. Together with SNV-Burkina Faso, the Université de Ouagadougou and the France-based NGO Inter-réseaux, the VC4PD programme assisted REKAF in systematically exploring the roles that shea producer organizations can perform. These roles may range from the training of women in up-to-standard, high-quality production techniques to marketing, and from the provision of price information to lobbying. The programme facilitated visits of the REKAF women to various organizations that perform such roles, where the women asked questions about the pre-conditions for success, the capacities needed, the potential risks, and so on.

One of the options explored was an offer made by a large development project to invest in, and manage, a shea butter processing factory. The programme facilitated discussions with important buyers of shea who explained the type and quality of products they were after, and for what prices. The buyers shared their concerns about working with women groups like REKAF that were primarily socially motivated, if not politically. For reasons of food safety and efficiency, these companies preferred to process the nuts themselves. This position contrasts clearly with prevailing development trajectories which promote women to sell butter rather than nuts, as the former adds value to the product.

In our research, we supported the REKAF women in the identification of their own strategic approach, particularly by making comparisons between groups of women selling shea

nuts or shea butter on the local market, and groups selling certified butter to the export market and with women that sell soap and cosmetic products. Some of the latter women had already noticed that cosmetic export markets did not absorb all the butter produced and that some groups were left with high quality, certified organic or fair-trade butter in stock. In the end, the REKAF women summarized that, although it had been a difficult learning journey, the action research programme taught them a lot: "Before, we didn't know a thing and, as we thought the projects knew what was best for us, we were just doing what they told us to do and we were given money for it". By analysing their own situation and by weighing alternatives, the ambitions of the REKAF members are now closer to the ground and this has strengthened their positions in partnerships and in policy debates. VC4PD's empowerment and capacity strengthening efforts formed only a start of a longer process of institutional change that will enable REKAF to take part effectively in decision making on development interventions and strategies.

Sesame in Ethiopia: Making transaction risks manageable

Oilseeds are the second Ethiopian export product with sesame taking the largest share. Where the potential of the Ethiopian sesame sector is huge, it faces several problems including inefficient marketing, improper cleaning and poor contract discipline. In addition to prevailing low productivity levels of sesame, high transaction costs throughout the chain keep farm incomes low and curtail competitiveness of the sector. Over the past five years, the sesame sector has undergone a transformation that was spurred by several initiatives: The Ethiopian Commodity Exchange (ECX) was established in 2006 and opened-up for sesame in 2009 while, at the same time, a Public-Private Partnership on Oilseeds (PPPO) was established between parties in Ethiopia and the Netherlands. Partners include the Ethiopian Ministry of Agriculture and Rural Development (MoARD, now MoA), the Ethiopian Pulses, Oilseeds and Spice Processors Exporters Association (EPOSPEA), the Netherlands Embassy and the Netherlands' Product Board for Margarine, Fats and Oils (MVO).

The VC4PD pilot in Ethiopia, on transaction risks in sesame value chains and markets, was embedded in on-going activities of the Netherlands' supported PPPO and EPOSPEA. Both organizations played pivotal roles in strategic dialogues on the institutional set-up of the trade in sesame and other oilseeds. Our pilot study investigated and discussed with the partners involved in PPPO and EPOSPEA, the pro's and con's of existing institutional arrangements in the sesame chains in Ethiopia, including various contract models and the commodity exchange. Unpacking these arrangements was motivated by the idea that managing transaction risks and, possibly, reducing them, might have a pro-poor effect.

If a sector undergoes a transformation, as befell the Ethiopian sesame sector in 2008, there is a clear need for information of different sorts. In that dynamic context, our team, consisting of researchers from the Ethiopian Institute of Agricultural Research (EIAR) and from Wageningen UR as well as development practitioners from SNV-Ethiopia and Ffarm (Facilitating Farmers' Access to Remunerative Markets; a private service provider) started its action-research track. The team linked-up with EPOSPEA and affiliated sesame exporters and producers, the ECX, the Ministry of Agriculture and the Netherlands Embassy who were all playing major roles in transforming the sector. SNV organized linkages with the associated farmers to assess their information needs. Next, the team conducted research to get a better understanding of transaction risks in the sesame chain, the role of the ECX and the functionality of contract farming in addressing these risks. The results of this research were shared, not only with the direct stakeholders but also with a wider group of researchers, development practitioners and policy makers. Still, long after the project closed (by the end of 2010),

the wider impact of the action research on the sesame chain is being felt: Research results have been taken-up, discussed and disseminated by various parties. In addition, the research also led to the establishment of new networks, links and relationships that, to date, continue effectively.

Rice in Mozambique: Grounding cooperative models in unpredictable local realities

In 2009, the buying of rice from resource-poor and vulnerable farmers in Zambezia Province of Mozambique was given a new incentive by the introduction of a model based on first- and second-tier cooperatives. In Zambezia, four first-tier cooperatives, two of them with a relatively long history, were responsible for the bulking of rice from smallholder producers. A second-tier cooperative 'Empreza Orizicola de Zambezia' (EOZ) was tasked to buy paddy, sometimes also directly from farmers, to process the rice in its factory and to find national market outlets for the processed rice. In doing so, EOZ was competing with rice imported from a number of Asian countries. EOZ was also instrumental in accessing credit from commercial banks, which was essential for arranging the work capital required to purchase the rice. The implementation of this cooperative model was facilitated by an NGO, 'Associação de Promoção de Agricultura Comercial' (APAC). The process receives financial support from the Netherlands' Embassy in Maputo, Oxfam Novib and the European Union.

The VC4PD research team investigated the implementation process of this two-tier cooperative model in the context of a local history of violent conflicts, struggles over land, unpredictable markets, neglected irrigation schemes and large numbers of farmers producing under rain-fed conditions. Our research focused on information flows related to the practice of rice buying, the sourcing strategies of local traders, farmers' perceptions of the buying modalities and the farmers' use of tractors. Our team experimented with a model designed to make the costs of different activities across the rice chain transparent. Jointly with the management of the second-tier cooperative, the team explored how the provision of information would encourage farmers and members at the first-tier cooperative level to trust the buying procedures and marketing strategies at the second-tier. The ensuing discussions revealed that the buying of rice could be arranged differently, with a positive effect on longer-term commitment. In interviews, the farmers expressed that a reliable and trustful buyer that returns annually, was perhaps more important than the higher prices offered by others that come for a one-time transaction. Hence, buying practices affect the capacities of first-tier cooperatives to purchase rice from farmers. This is fundamental to the success of an intervention strategy.

Our research showed that the viability of the two-tier model depends not only on the internal set-up of buying, but also on its articulation with organizational and managerial capabilities at the level of the farmer groups and communities involved. The research team was also tasked to disentangle how the local farmers' organizations built on the organizational and managerial skills generated during their struggles with respect to land tenure, as well as on their skills in the collective management of an (expanding) irrigation scheme. Moreover, we investigated how first-tier cooperatives, that source directly from the farmers, relate to these capabilities. Our research described how, over a period of almost 10 years, groups of farmers that were cultivating plots occurring over a wide area, managed the use of tractors for ploughing. Here too, it became apparent that linkages to smaller groups of farmers was a vital element in the cooperative model. However, finding ways to functionally link the cooperative structure for trading and marketing to the plethora of organizational forms and practices prevailing in the rural areas of Mozambique remains a challenge.

The insights gained in our action research, and in the many discussions we had with the management and supporters of the two-tier cooperative model, formed the input for a 'Strategic Stakeholder Dialogue' that was held in the beginning of 2011. In Zambezia, the design and implementation of the two-tier model closely followed the 'Rhineland-model' which emphasizes on building a member-based organization and on the introduction of an internal accountability mechanism. With APAC we discussed how such a generic model lands in the specific situation of Mozambique, and in Zambezia in particular. The strategic dialogue elaborated on the (assumed) mechanisms in this intervention model. This opened possibilities to discover new combinations of development pathways, or to tailor the generic model to the particular context of Zambezia. The dialogue and its potential follow-up have benefited greatly from the commitment of Rabobank, Rabo International Advisory Services and Rabobank's local branch Banco Terra, Oxfam Novib, AUSTRALCOWI and the Netherlands' Embassy.

Onions in Niger: Making trade-hubs work for smallholder producers

With an annual production of some 500.000 tons per year, Niger is the biggest onion-exporting country in West Africa. In this poor, land-locked and drought-prone country onions are an important source of income for more than 100.000 farmers and other chain actors, including intermediaries, transporters and traders. In particular Niger's central-eastern Tahoua Region, the home of the onion variety 'Violet de Galmi', is an important centre of onion production, processing and marketing. The purple-coloured Violets de Galmi are highly appreciated in local and regional markets and they are being consumed throughout West Africa. Smallholder producers, however, are confronted with several challenges including access to quality seeds, markets and credit, good storage and conservation facilities, as well as poor transparency and organization of markets and trade centres.

In Niger, the VC4PD programme worked with three farmer-based organizations specialized in onions: ANFO, the Association National des Professionnels de la Filière Oignon, FCMN, the Fédération des Coopératives des Producteurs Maraîchers du Niger and the Galmi Onion Producers Union, UPDG, and with SNV-Niger. Both, ANFO and FCMN are members of the national farmers' organization of Niger PFPN. In our research we aimed to 'peel the onion' and to identify levers for the development of more-competitive, more-inclusive and more-sustainable onion value chains. The integration of on-going initiatives of the farmers' organizations, as well our participatory approach enabled us to jointly analyse the onion value chain. In this analysis we unravelled the most-pressing challenges and opportunities for smallholders as well as for the other chain actors. Our focus was on collective actions to improve financial transparency, farmers' empowerment, and stakeholder collaboration and coordination.

In a stakeholder dialogue that was organized jointly by Agri-Profocus, SNV-Niger and Wageningen UR Centre for Development Innovation, in November 2010 in Birni N'Konni (Niger), our collaborative work resulted in the formulation of a set of resolutions for joint action. Some hundred stakeholders participated in this interactive workshop: Farmers, traders, transporters, representatives of women groups, local government officials, businessmen, credit unions, research organizations, local and national authorities and supporting NGO's. In a series of discussion rounds and feed-back sessions twenty-five resolutions were formulated that proposed actions relating to seeds, onion bags, differentiated sales, the level of organization of farmers and traders, trade systems and improved negotiation between traders and farmers: 'Les vingt-cinq resolutions de Konni'.

Among the action domains that emerged was the method of packaging the onions, for which a number of specific actions was prioritized. These included a ban, through the Ministry of Commerce, on the use of onion bags of more than one hundred kg (the so-called 'Boliguis'), and instead, at least for the time being, only use smaller bags that are locally produced by women. Next, a start was to be made with the production of new and uniform onion bags of twenty-five and fifty kg each. The use of such bags is expected to ensure the safety of carriers and transporters, decrease the in-transparency of onion bagging and increase the competitivity of the Nigerien onion. A last priority identified was to improve information provision and to raise awareness on the need to modernize the packaging of onions and to use standard weighing balances.

However simple they may look, such agreed joint actions form the outcome of a process of institutional change that did not happen overnight. The stakeholder dialogue and the agreed actions connect to the establishment of trade hubs that bring suppliers, traders and supporters closer together and that, possibly, alter the terms of trade to the benefit of smallholder onion producers. These trade hubs were initiated by associated onion producers and traders in collaboration with local governments. Farmer organizations seek to increase the incomes of their members by selling bulk-purchased inputs (e.g. seeds and fertilizers) at lower prices to their members, by providing storage space and trading places, and by increasing farmers' negotiation power in the regional market. Resolving a seemingly trivial but highly practical issue such as onion bags is part and parcel of a delicate process of institutional change.

The VC4PD action research programme formed only a small element of a much larger puzzle. A process to really 'peel the onion' and improve all institutional arrangements will take much longer than the one year we actually worked on it. It is encouraging, however, to observe how local stakeholders got to discuss and disseminate the results of our research and how they continue their efforts to improve the livelihoods of the hundred

thousand onion producers in Niger. The collaboration with ANFO, FCMN, UPOG was essential for grounding our collaborative research and dialogue in longer-term processes of change in the onion sector of Niger.

Cassava in Rwanda: Connecting capacities in farmer-led agribusiness clusters

In Rwanda, in 2009, a whole new dynamic developed when value-chain partners involved in various commodities and living in different parts of the country came together to explore and shape the idea of farmer-led agribusiness clusters. A critical element of this cluster concept is that farmer organizations play an important role in shaping the right conditions for a process of specialization of farmers that are balancing between production of food for self-sufficiency or for commerce. In territory-based clusters, farmers and their organizations, small and medium private enterprises, and local governments work closely together

to capture the advantages of commercial specialisations. These may be based on, for example, the agro-ecological conditions and the organizational capacities prevailing in a certain area. The cassava pilot study in which the VC4PD programme engaged, was embedded in the work of the INGABO Farmers Trade Union, one of the leading organizations in this field, in Muhanga District of Rwanda. Here, farmers and small-scale processors cooperate to create a viable sector accessible and beneficial to resource-poor farmers while offering (temporary) employment. After the dip in cassava production between 2002 and 2007 that was caused by the cassava mosaic virus, this crop now occupies again some ten per cent of the cultivated land in Rwanda. Higher productivity of new cassava varieties has boosted national production from one million to two million

Research supports Farmers Trade Union

Selected research results and the data sets collected by the VC4PD project informed on-going discussions and strategizing of the organizations involved in the cassava sector in Rwanda:

"For us as a farmers' union, it is essential to have the capacity to collect and analyse empirical data in order to underpin our proposals to the government and to other stakeholders", says François-Xavier Mbabazi, coordinator of the INGABO Farmers Trade Union in Rwanda. "Working with research institutes like ISAE and Wageningen UR increases the credibility of our proposals", he adds.

The collaboration with Wageningen UR also introduced ISAE staff and students to the combination of research and practical work as it was implemented in the Cassava pilot action research in Rwanda: Jean-Claude Izamuhaye, who supervised the 19 young ISAE students that worked on the pilot, observes: "The debriefing of our research results to 44 cooperatives was the first of its kind, for both ISAE staff and students and for the cooperatives. And we now think it is an obligation of researchers to give research outcomes back to the actors in the field".

tons of tubers, annually. It is in this context that INGABO with its fifteen thousand members, seeked to improve processing and marketing of this important food crop.

In the Rwanda pilot, the VC4PD programme collaborated with INGABO and the Rwandan Institut Supérieur d'Agriculture et d'Elevage (ISAE) and with several local professionals in action-oriented research to find levers that make cassava value chains more-competitive and more-inclusive. Our action research activities included the compilation of farm-life histories of some one hundred eighty cassava farmers, the self-assessment of thirty-six cassava cooperatives, the exploration of options to improve cassava processing, storage and marketing, the possible introduction of a warehouse receipt system for dried cassava and cassava flour, and the assessment of possibilities to improve linkages among different stakeholders. Also, on the basis of national statistical data, a decision model was developed with the aim to attract more investments to the cassava sub-sector.

One of the outcomes of our participatory action research in Rwanda is that strategic choices have become visible at the policy level: The Rwanda Agricultural Development Agency (RADA) and the Netherlands' Embassy in Kigali have shown keen interest in exploiting the results obtained in the cassava pilot for the further innovation and development of cassava value chains. Also, encouraged by the Netherlands' NGO ICCO, the strategy based on cluster formation will be incorporated in new research activities by the Partnerships Resource Centre (PRC), of which Wageningen UR is a founding member. Key issues to be addressed will include:

- Access to production factors;
- Strategies to improve the performance and resilience of emerging cassava cooperatives, and
- Public-private investments in local cassava processing units such as renting or leasing publicly-owned and supervised infrastructure.

Oilseeds in Uganda: Defining priorities and building collective capacity in a sub-sector platform

The Uganda Oilseed Sub-sector Platform (OSSUP) is in the process of inventing a novel form of collective action in the changeful reality of the Ugandan sub-sector of oilseeds and edible oils. The sub-sector involves hundreds of thousands of smallholder farmers that operate in risky agricultural systems and face instability in the market place: In a competitive setting, partly invoked by increasing imports of palm oil, and a market that faces unstable prices and fluctuations in supply, oilseed producers in Uganda find it difficult to survive by merely selling what they produce. Therefore, they need to engage with intermediaries and food industries in the

planning and management of production and trade at a level beyond the individual farm (Devaux et al., 2007). The specific nature of the oilseed sub-sector in Uganda, where locally-sourced oils can be substituted by imported palm oil, strongly conditions the perspectives for collective action. At the same time it makes the sector dependent on price fluctuations in the international market.

One of the major players that generated the dynamics of the OSSUP platform has been UOSPA, the Uganda Oilseed Producers and Processors Association. UOSPA has labelled the sub-sector platform as an 'institutional and political experiment', the outcome of which was not predetermined. The platform approach has received strong commitment from Dutch development organizations, including Agri-ProFocus and its members Agriterra and SNV-Uganda. In 2006, Agri-ProFocus supported a sub-sector scoping mission (Bindraban et al., 2006). OSSUP, working at national level, linked to two regional platforms that were supported and facilitated by UOSPA. In this way, the platform provided space for a producer-based organization to develop a new strategy and to connect to other chain and non-chain actors. Most specifically, the platform provided linkages between (the operations of) lead firms and sub-sector policies and support schemes for collective marketing endeavours by farmer organizations and cooperatives. In turn, this allowed for economies of scale, and it enhanced the farmers' bargaining power in the management of common pool resources (Devaux et al., 2009; Shepherd, 2007).

At a more general level OSSUP adopted a strategic focus on enabling policy and regulation. This entailed:

- Advocacy for coherent sector-specific policy and legislation;
- Stimulating the development of stronger linkages with decision-making levels at decentralized governmental units, and
- A more-functional division of responsibilities between stakeholders in public-private partnerships.

The VC4PD team, composed of staff and students of Wageningen UR, Van Hall Larenstein University of Applied Sciences, part of Wageningen UR, and Makerere University, contributed to the formation of the platform and the implementation of its activities. Initially, platform members had to find their ways to cooperate and a develop a 'common language' to interact. Along the way, however, the platform was able to prioritise its strategic focus. Concurrently, our research provided empirical evidence for dialogues on market coordination, innovation and technological upgrading, and on the functioning of the commodity platform itself. Among the important actions that came about was a joint letter to the Variety Release Committee of the Ministry of Agriculture of Uganda, asking for the immediate release of improved planting materials. A less-conspicuous effect emerged from interviews held with key players in the platform, namely that the 'new language' equipped them better to address composite problems and to avoid unnecessary polarisation.

Following a three-year period of internal dialogue and priority setting, OSSUP organized a Strategic Dialogue in 2009 in Kampala. Central to this dialogue, which was supported by SNV-Uganda and by the VC4PD research team, was OSSUP's claim that a competitive and pro-poor oilseed sub-sector would require targeted policy support and coordinated action. OSSUP went on to define three priority areas for policy advocacy and implementation:

- Market coordination;
- Access to quality seeds and planting material, and
- Innovative capacity.

In support of this agenda-setting discussion the VC4PD team prepared policy briefs and research papers. Also, our team assisted OSSUP in the process of making the dialogue effective.

The coordinated effort and the shared priorities of OSSUP were highly appreciated by the Government of Uganda and by IFAD, the International Fund for Agricultural Development, who are jointly designing the second phase of a public support programme for the oilseed sub-sector of Uganda. Their commitment to use the OSSUP agenda as a guideline for that programme is promising as it also implies a defined role for the platform itself. The on-going dialogue and information exchange spurred by the platform, and the improved coordination and mutuality that resulted from it, have attracted other players such as banks and local government officials to play constructive roles in solving problems around finances and the access to quality planting materials. A less conspicuous effect of the process was the growing appreciation for the role of lead firms, and of associated farmers, in overall sector performance.

In 2010, OSSUP organized a 'Research and Development Market Place' which connected developers and users of technology packages in the sub-sector with research institutes and universities. This market place is yet another example of the functionality of the platform in terms of enhancing connectivity. Where this may stimulate problem-solving and joint actions by chain actors at local level, the actual activities of the platform itself are still somewhat remote from such concrete practices.

From pilots to strategies

In the sections above we described how the six VC4PD pilot studies, rooted as they were in local change processes, supported groups of actors in collecting and analysing information and in organizing dialogues. This was the prime task of the VC4PD programme. A second task was to address 'high level' questions of strategic importance beyond the specific case at hand. This task was strongly embedded in on-going strategic debate on development practice and policy. Our programmatic focus, i.e. institutional change in value chains of non-perishable products for domestic and regional markets, has been instrumental in finding linkages to processes with a strategic orientation. As these chains involved large numbers of smallholder farmers across a large geographic area, this also necessitated a discussion on scales and leverage. Both, scale and leverage issues encouraged us to find new types of intervention logics and practices and to explore the implications of change processes and interventions at levels quite remote from the direct beneficiaries.

The practices and nodes of bulking in the value chains on which we worked in the VC4PD programme, turned out to be cross-case elements. Likewise, scaling of interventions and pilots was another common element. A third common element, but with a methodological dimension, linked to impact evaluation: How to detect processes that generate development outcomes in time and place, and that are replicable?

Bulking nodes as entry points for development interventions

Bulking, the activity of assembling volumes of agricultural products, emerged as a functional activity both for the actual development of value chains as well as for their performance. Bulking brings people, organizations, skills and materials together. In the VC4PD pilots concerned, farmers that were linked to the respective value chains, negotiated their terms of inclusion with the other chain actors. At the bulking nodes the interest of all chain stakeholders to ensure reliable and consistent flows of volumes of their products became evident. Also, the advantage of working with associated farmers, capable of delivering volumes and arranging relations with individual producers, was clear at these nodes.

In our pilots we explored different types of 'buttons' that could be pressed at the bulking nodes. In doing so, we targeted different forms of collective action, joint problem-solving, the

management of inter-dependencies, and the terms of trade among chain actors. The bulking focus was also important in terms of achieving connectivity with endeavours at other levels. The latter included, in particular, the implementation of commodity-specific policy, arrangements by commercial banks to finance agricultural production initiatives, and linkages with research and development efforts at universities and research organizations.

An insight resulting from the above is that a focus on functional elements of value chains, such as bulking, may be important to realize constructive arrangements between different chain actors and to direct development interventions to upstream farmer organizations. This is an on-going process that may be affected by unexpected problems in production or by external pressures from markets or from policy. Hence, the inclusion of farmers in value chains can best be considered as a continuous process rather than a desired end-result of development policy and practice. The focus on bulking, as adopted in the VC4PD programme, reveals the variable nature of inclusion. In addition, development outcomes seem to be contingent on capacity to manage internal tensions and to respond to external pressures. This was clearly visible in the actual practices at the bulking node. Our suggestion for development policy and practice is to continue working with the type of interventions tailored to the processes at bulking nodes as they were investigated in the pilot studies.

Scaling, coordination and partnerships

In an attempt to scale-up and include larger numbers of smallholder farmers in development endeavours, the VC4PD programme aligned with many other projects and programmes. As development interventions that work with clearly-defined target groups tend to allocate their resources to activities with a relatively small outreach (i.e. the micro-level), alignment of interventions and policies at meso-level is of particular importance for leveraging pro-poor strategies. Making groups of farmers ready to supply organic-certified markets, or empowering groups of women in karité chains, are important steps in linking markets and value chains to pro-poor development endeavours. However, we also found it is essential to link such local processes to interventions and change processes at higher scale-levels or with different orientations. Central to the pilot studies and the strategic debate was our focus on levers that modify behavioural patterns or institutional arrangements and that stimulate different forms of collective action.

Towards the end of the programme, we shared our insights and interests in scaling with those of other organizations working on value chains[1] in a multi-stakeholder workshop entitled 'Scalability of sustainability: How to make dependencies and risks in value chains manageable?' This workshop, in November 2010 in Nairobi, Kenya[2], provided a starting point for a discussion on scalability related to institutional crafting of, and directing behavioural patterns in, the nodes configuring (associated) smallholder farmers with actors in value chains and market systems at levels that are spatially and institutionally remote. In terms of developing a knowledge agenda, the directions suggested in the Nairobi workshop are complementary to the agenda on knowledge development that was discussed in the context of the Netherlands'

1 These 'other organizations' included: HIVOS, of the Netherlands, which works with coffee cooperatives and risk-based management, Lipton Tea-Kenya and the Kenya Tea Development Authority who work with farmer field schools, a large chillies-pepper production scheme in Kenya supported by the BOCI Programme of the Netherlands Ministry of Economic Affairs, Agriculture and Innovation, the Eastern Produce Kenya Ltd. Tea Out-growers, which is involved in the development of organizational novelties, and IFDC, which showed interest to link our evolving research agenda to its own experiences in working with large-scale market development endeavours.

2 The Dutch Partnerships Resource Centre (PRC), a DGIS-financed activity coordinated by the Rotterdam School of Management, supported this dialogue and it takes the direction of workshop discussions on board in its related activities. In addition, the Initiative for Sustainable Trade (IDH) and the Tropical Commodity Coalition (TCC) share our strategic interest in scaling.

Development Policy Research Network, DPRN[3] (Helmsing and Vellema, 2011).The Nairobi workshop also explored ways to test risk-management tools that are able to overcome biases in thinking and problem solving at different levels in the value chain, and to enhance connectivity of risk management strategies. The workshop concluded with the important observation that skills necessary for such endeavours are generally absent from university curricula, whereas sustainable development is increasingly dependent on scaling pilots and intervention strategies that are capable of detecting levers.

Understanding how different chain actors coordinate to realize volumes of produce, manage storage in assembly markets, or arrange the necessary capital requirements, provides a robust starting point for tailoring pro-poor development initiatives to the day-to-day reality of transactions and interrelations in value chains. The VC4PD programme shifted attention towards collective action and partnerships as being essential capacities in commodity trade and value chains. This provides ingredients for business models and development strategies that include local skills and local organizational models. Such a perspective contrasts with the wide-spread practice of parachuting organizational models that follow from the logic of strategies hitherto conceptualized in the top of the value chain.

The strategic outcome of our programme in terms of a focus on bulking and scaling, fits with the orientation of analysis, debate and policy that prevails in multi-lateral organizations. Through invited participation in expert meetings and seminars, the VC4PD programme was able to connect its hands-on experience in pilot studies to policy debate in multi-lateral organizations. This applies in particular to the interest of UNDP in mechanisms that make business models work for development, to the interest of UNCTAD and UNIDO in systemic change and industrial policy, to the interest of UNRISD in social justice, and to FAO's interest in various forms of commodity-based associations. In addition, the results of the programme informed the on-going discussion among peer researchers and the dialogues with private-sector organizations, NGO's and governments in the context of the project 'Value chains, social inclusion and local economic development' of the Netherlands' Development Policy Research Network. Furthermore, our action research served as an input to dialogues and workshops organized under the auspices of the Research Programme Cluster International (BOCI) of the Netherlands' Ministry of Economic Affairs, Agriculture and Innovation.

Methodological considerations in impact evaluation

Finally, our involvement in local pilot studies encouraged us to develop a more-systematic approach to explicate the impact models underlying the change processes concerned. As we found it necessary to begin exploring the methodological implications for impact evaluation of action-oriented research, we presented papers on this issue at the 9th Wageningen International Conference on Chain and Network Management (WICaNeM), in May 2010. At this conference the VC4PD programme organized a special track of four sessions on development impacts of value chains. Some of these conference papers have been published in scientific journals since (e.g. Ton *et al*, 2011).

Also, the VC4PD programme spurred thinking about ways to monitor and evaluate activities in such diverse pilots as those in which we engaged, with their strongly divergent contexts, interventions and expected outcomes. We managed to develop a monitoring instrument that responds to the challenges of

3 DPRN (2003-2010) was a DGIS-supported network of researchers, policymakers and development practitioners that aimed to improve the quality of the development debate and to close the gap between science, policy and development practice. DPRN was hosted by the Netherlands Research School for Resource Studies for Development (CERES).

diversity and dynamic changes. The pilot coordinators made their intervention theories explicit in a format that distinguished between the activities, the outputs for different stakeholder groups, and the anticipated immediate outcomes thereof. In this format, the attribution of results to the VC4PD programme is fairly direct. It also shows the intermediate and ultimate outcomes that are linked to the wider process of value chain upgrading, in which our programme was one of the few contributing factors only, amidst a wide range of other actors, factors and conditions that co-determine results.

Through its methodological endeavour, the VC4PD programme linked to one of the initiatives of the Donor Committee for Enterprise Development (DCED, 2010; Tanburn, 2008) that aims to generate credible and comparable information on donor-funded value chain interventions. The suggestion from this initiative, and from our own work, is that impact evaluations need to find combinations of measuring lean sets of minimum standards to report on private-sector development outcomes, with theory-laden inquiries on the generative mechanisms in specific contexts. Such combinations would result in a body of evidence on plausible regularities emanating from value chain support that would lend itself for comparative analysis and bench marking. The discussion on scaling and replicating pilot interventions may benefit from rigorous methodologies for impact evaluation. In a follow-up to this aspect of the VC4PD programme, Wageningen UR now links-up with the current discussions within DCED, Dutch NGO's (including Oxfam Novib, ICCO, HIVOS and Cordaid), the Partnerships Resource Centre, the Netherlands' Initiative for Sustainable Trade, and the Dutch and international research community. In addition, Wageningen UR is involved in the discussion on methodological directions for impact evaluation framed by IOB, the Policy and Operations Evaluation Department of the Netherlands' Ministry of Foreign Affairs.

Implementing an action-oriented research programme helped us to discover the key assumptions in the logics of multi-stakeholder processes in value chains. To this end, additional information was collected through action-research, that fed strategic discussions in the different value chain partnerships. A continued discussion on the underlying processes central to the logic models served as a monitoring instrument for the VC4PD programme coordinator. This monitoring created room for adaptation to changed circumstances while helping to check consistency with, or deviation from, the original rationale behind the pilots as reflected in the inception documents.

Outlook

In the framework of the DGIS-Wageningen UR Partnership Programme, the action research programme 'Value Chains for Pro-poor Development' adopted a focus on value chains that are linked to domestic provision of food. The programme selected value chains of locally-sourced and undifferentiated products in which the bulking of volumes was an important link between farmers and other chain actors. From a pro-poor perspective, such value chains have the capacity to involve large numbers of small agricultural producers. Therefore, these value chains fit well with the livelihood strategies of the farmers concerned, in particular where they operate in risky contexts. Making interdependencies manageable seems to be an important condition to reduce the vulnerability of these producers. This, in turn, shifts attention to the institutional set-up of existing value chains. Inclusion into value chains does not automatically result in expected development outcomes for smallholder farmers: The nature of the institutional arrangements, the ways in which associated farmers are incorporated, and the joint capacities to influence policy and support measures for tailor-made interventions, appear to be crucial elements for an effective pro-poor value chain approach. A continued focus on the various forms of farmer organizations is essential to make value chains work in favour

of the poor. This requires purposeful interventions in the logics of current value chains, as well as collective endeavours to adjust practices and strategies of all chain actors: Farmer and private-sector organizations, lead firms, NGO's, governmental agencies, and others.

Our pilot studies focused strongly on different intervention strategies that aimed to make the bulking node work for the development of poor farmers. Linking research to practice and policy helped to get a more precise understanding of the underlying processes set in motion by specific interventions. Consequently, the alignment of research with development practice made it possible to sharpen and focus interventions. By focusing on the logics in the interventions, and not only on possible effects, our research contributed to an open discussion on the different roles of partners and chain actors in an overall development endeavour.

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Selected pilot studies in the action research programme Value Chains for Pro-poor Development (adapted from Vellema, 2010)

Country	Burkina Faso	Ethiopia	Mozambique	Niger	Rwanda	Uganda
Commodity	Shea nut (karité)	Sesame	Rice	Onion	Cassava, other staples	Edible oils
Scope	Networking, strategizing and repres n the shea nut sector	Institutional measures reducing transaction risks in the sesame trade	Cooperation in the buying of rice from farmers acting in vulnerable conditions	Joint actions and farmer-initiated trade hubs in the Tahoua onion belt	Farmer-led cluster development for socially embedded domestic food chains	Platforms achieving stability and competitiveness in the oilseed sub-sector
Objective of action research	Conceptualize workable modalities to empower women in the various economic realms of shea nut and in policy Support to networks of the sub-sector	Test institutional arrangements to modify the interface between the vertical column and farmers Support coordination and mutuality in a commodity-based platform	Encourage strategic dialogue among actors involved in making a 2-tier cooperative model work in the Zambézia region Contribute to reliable and remunerative market access for rice farmers	Stimulate formulation of, and agreement on, joint actions to support establishment of transparent pricesetting mechanisms and region-based growth models.	Build strategic connectivity and informing foresight capacity in farmers' led and sociallyjust agribusiness clusters in Rwanda's agro-food filières	Provide evidence for strategizing and policy advocacy by the Uganda Oilseed Subsector Platform Identify workable models to reduce uncertainty and instability faced by producers.
Focus pilot for pro-poor value chain development	Encourage a women's network with improved negotiation, representation and agenda-setting skills in decision-making on strategic support in different value chains (domestic food chains, specialized cosmetic chains and bulking chains for food industries)	Reduce transaction risks in the Ethiopian sesame chain with incentives to alter behavioural patterns and enabling conditions for remunerative and committed participation of smallholder producers based on transparent relationships.	Embed generic models for cooperative structures for the purchase of rice in volatile market contexts and develop rigorous ways of connecting transparent governance of rice buying to existing social and economic arrangements in different rice producing areas.	Install trade-hubs that reduce vulnerabilities in onion trade as part of collective marketing efforts initiated by specialized farmers and embed these in pro-active networks of an onion cluster with traders, processors and enabling institutes.	Build strategic management capacity in producer organizations to combine pro-poor interventions in farmers-led agribusiness clusters with robust economic partnerships and flexible connectivity to innovation networks.	Support collective, meso-level strategies of a sub-sector platform that assembles private and public actors and up-scaling and multiplying chain-based development interventions in market coordination and technological innovation.

Value Chains for Pro-Poor Development (VC4PD)
Fact sheet/Highlights

Aim/objectives
Working with practitioners and policy makers to validate intervention strategies and support practices in agro-based value chains.

Project location
Rwanda, Ethiopia, Uganda, Burkina Faso, Mozambique and Niger.

Project partners

In the Netherlands
- LEI, part of Wageningen UR
- Wageningen UR Centre for Development Innovation
- Agri-ProFocus
- Agriterra
- Partnerships Resources Centre (PRC)
- The Netherlands' Initiative for Sustainable Trade (IDH)

In Uganda
- Oilseed Sub-Sector Uganda Platform (OSSUP)
- Uganda Oilseed Producers and Processors Association (UOSPA)
- SNV-Uganda
- Makerere University, Kampala

In Ethiopia
- Ethiopian Pulse, Oilseed and Spice Processing Exporters Association (EPOSPEA)
- Ambo Farmers Cooperative Union
- Ethiopian Institute of Agricultural Research (EIAR).
- SNV-Ethiopia
- Facilitating Farmers' Access to Remunerative Markets (Ffarm)
- Kaleb and AgroProm: Ethiopian export companies

In Rwanda
- Rwandan Union of Agriculturists and Animal Breeders (INGABO)
- SNV-Rwanda
- International Centre for Soil Fertility and Agricultural Development (IFDC)
- Institut Supérieur d'Agriculture et d'Elevage (ISAE)
- Initiative pour la Promotion de l'Entrepreneuriat Rural (IPER)

In Mozambique
- Associação de Promoção de Agricultura Comercial (APAC)
- EOZ: 2nd-tier cooperatives and aligned 1st-tier cooperatives
- Resilience Consultants Ltd
- Banco Terra da Moçambique (affiliated with the Rabobank of the Netherlands).

In Burkina Faso
- Réseau Karité des Femmes du Burkina (REKAF)
- Centre d'Études, de Documentation et de Recherches Économique et Sociale (CEDRES)
- Centre de Recherche et d'Intervention en Genre et Développement (CRIGED)
- Centre d'Analyse Politique Économique et Sociale (CAPES)
- Université de Ouagadougou.
- SNV-Burkina Faso.

In Niger
- Association National des Professionnels de la Filière Oignon (ANFO)
- Fédération des Coopératives des Producteurs Maraîchers du Niger (FCMN)
- Galmi Onion Producers Union (UPOG)
- MOORIBEN-FUGN, Onion Producers Association
- Comité d'Orientation et de Régulation de la Filière Oignon (CORFO)
- Observatoire Régionale d'Oignon (ORO/AOC)
- SNV-Niger
- Oxfam Novib-Niger
- Réseau des Organisations Paysannes et de Producteurs de l'Afrique de l'Ouest (ROPPA)

Website
www.dgis.wur.nl/UK/VC4PD

Project coordinator
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2.3 Facilitating Rural Entrepreneurship

Ted Schrader with contributions by Simone van Vugt, Hans Nijhoff and Karèn Verhoosel, Wageningen UR Centre for Development Innovation

Introduction

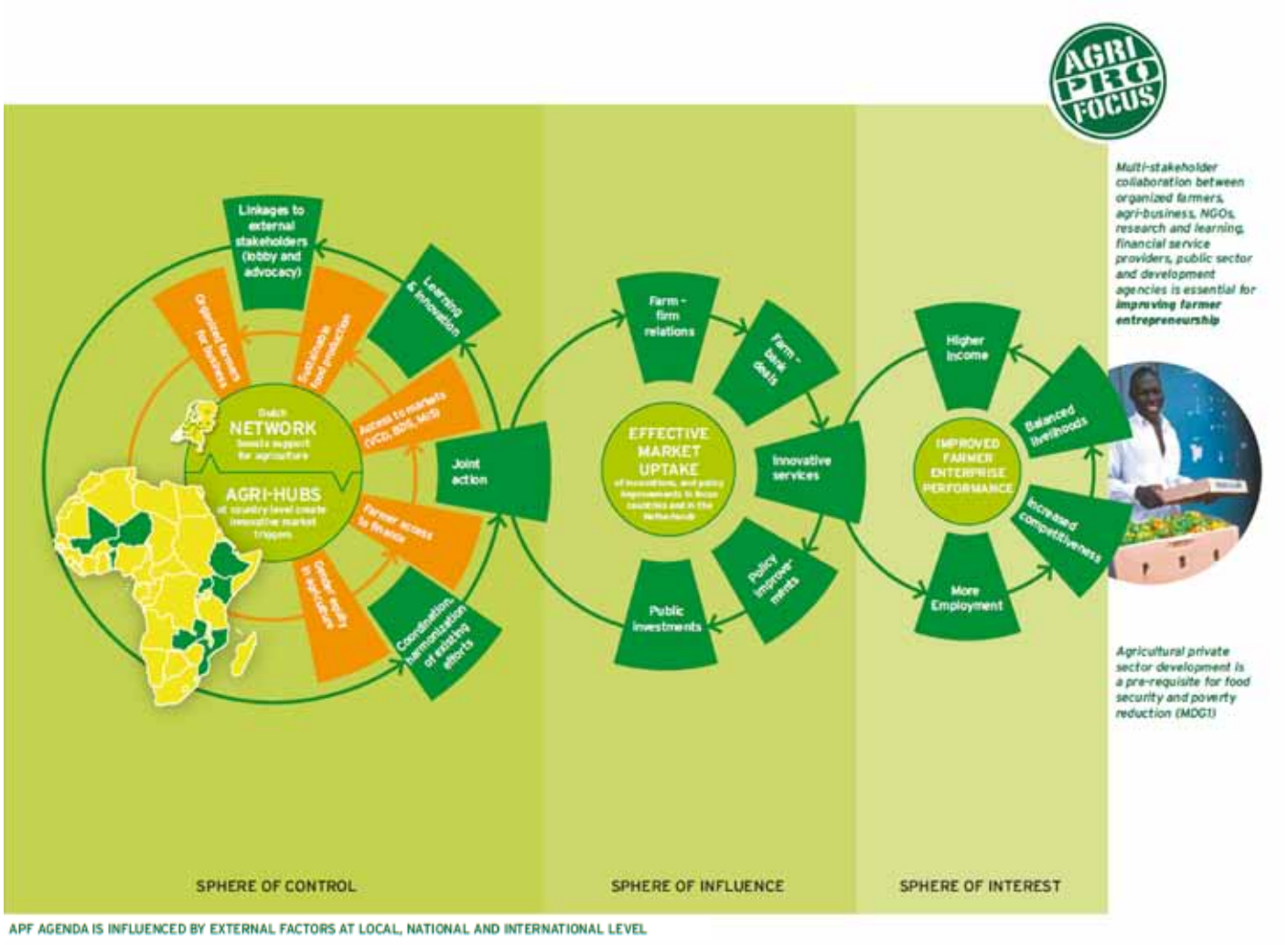
As the second component of Theme 1 'Sustainable Agro-Supply Chains' of the DGIS-Wageningen UR Partnership Programme, 'Facilitating Rural Entrepreneurship' supported the Agri-ProFocus initiative 'Promotion of Farmer Entrepreneurship' in which learning and innovation trajectories were developed to catalyse agricultural entrepreneurship in Africa. This initiative involves consortia of stakeholders that are working on themes, sub-sectors, value chains and agribusiness clusters in nine so-called 'Agri-hubs' in countries selected by Agri-Profocus (see textbox). Each of these Agri-hubs groups some fifty to one hundred local stakeholders who are being facilitated in the implementation of specific activities under the initiative. In addition, in each Agri-hub various Agri-Profocus member organizations are actively engaged in the respective initiatives. This opens perspectives to make a difference in exploring innovative collaboration arrangements, for example by improving coordination, by harmonization of efforts, or by creating complementarities. This is done in a policy-to-practice interface.

Thematic priorities of the Agri-hubs relate to the general challenge to make value chains more competitive, more sustainable and more inclusive. Access questions (i.e. availability of inputs, financial services and agri-advisory services), gender and social inclusion, capacity development and empowerment of producers are high on the action agenda. In all countries involved, the establishment of learning and innovation networks at different levels typifies the Agri-hubs initiative. These are being implemented within the matrix framework 'Theory of Change' as shown on page 42.

Objectives of the Agri-hub approach

- Establishing solid, transparent and action-oriented support programmes with local partners and other development actors to promote rural entrepreneurship and to increase performance in commodity chains;
- Enhancing cross-cutting collaboration and learning among Agri-hub partners, both local and international;
- Supporting local partners in establishing platforms for joint generation and circulation of knowledge, and
- Supporting local partners and governing structures to establish sustainable modalities to promote rural entrepreneurship.

The Agri-ProFocus Theory of Change



Agri-ProFocus

Agri-ProFocus is a partnership of Dutch organizations and African NGO's that promotes farmer entrepreneurship in developing countries. Agri-Profocus members have extensive networks in developing countries and Agri-ProFocus is the sum of all of these networks. By coordinating activities, exchanging information and undertaking joint actions Agri-ProFocus aspires to improve performance of farmer entrepreneurs in Africa.

Agri-ProFocus members include producer organizations, knowledge institutes, ngo's, private enterprises and governmental organizations. Wageningen UR, DGIS and Agriterra (the Netherlands Farmer Organization for Development) are founding members of Agri-ProFocus. Concrete activities range from stakeholder facilitation and coordination in the nine Agri-hubs, providing policy recommendations on agriculture, food security and other development-related issues (e.g. climate change) to the Netherlands government, and organizing public debate on topical issues. (www.agri-profocus.nl)

In the framework of the Partnership Programme, Wageningen UR Centre for Development Innovation facilitated entrepreneurship development processes in the Agri-hubs in Rwanda, Niger, Uganda and Zambia. In Niger, Rwanda and Uganda these activities were complementary to the pilot action researches implemented by the VC4PD programme, that are described in the previous section of this booklet. In Kenya, Ethiopia and Mozambique, the Royal Institute for the Tropics (KIT, the Netherlands) was the process facilitator. As from 2011, new Agri-hubs are being established in Benin and Mali. In all Agri-hubs web-based portals ('nings') are used for information-sharing and on-line discussion between the various partners. General coordination of the Agri-hub initiative is with Agri-Profocus in the Netherlands. At country level, the Agri-hubs are being coordinated by lead member institutes of Agri-Profocus: ICCO for Rwanda and Ethiopia, Oxfam Novib in tandem with SNV for Niger, SNV for Kenya and Uganda, Cordaid for Zambia and KIT (temporarily) for Mozambique. SNV and ICCO will coordinate the new Agri-hubs in Benin and Mali respectively. In the sections below, the Agri-hub activities in Rwanda, Niger, Uganda and Zambia are being highlighted.

Rwanda

Agri-hub activities in Rwanda originated from existing value-chain related initiatives of the Agri-ProFocus members ICCO, Agriterra, Terrafina, SNV-Rwanda, Wageningen UR, Oxfam Novib and KIT. These members joined forces with local NGO's, farmer organizations, micro-finance institutions, ISAE (Institut Supérieur d'Agriculture et d'Élevage), IFDC-Rwanda and ILO-COOPAfrica (the ILO Cooperative Facility for Africa, a technical collaboration programme that aims to promote development of cooperatives). These partners collaborated in the 'Initiative pour la Promotion de l'Entrepreneuriat Rural' (IPER), with the aim of supporting agribusiness initiatives of local chain actors. The IPER initiative oscillates around the dynamics of fifteen practical agribusiness clusters, each working on different value chains (rice, maize, potatoes, wheat, cassava and honey) in different parts of the country.

Among the main outputs of IPER are:

- An inception report 'Promoting farmer entrepreneurship through capacity strengthening, agribusiness cluster formation and value chain development in Rwanda';
- Various workshops and workshop reports including 'Atelier IPER: Démarrage des pôles d'entreprises agricoles' which resulted in the mapping of the value chains in which the stakeholders' main interests lay, and their configurations;
- Reports on cooperative entrepreneurship in cassava and in rice, and on warehouse-voucher receipt systems in rice;
- Thirteen trained local process facilitators-cum-agribusiness-coaches;
- A Cassava Action Research Plan;
- A conference on value chain financing, jointly with Terrafina, and
- Exchange visits with other Agri-hubs (e.g. Uganda).

The IPER coalition has succeeded in raising interest among many international, governmental and non-governmental organizations including USAID, Aquadev (a Belgium-based NGO), ISAR (Institut des Sciences Agronomique du Rwanda), UNR (Université Nationale de Rwanda), IPAR (Institute for Policy Analysis and Research), RCA (Rwanda Cooperative Agency), RADA (Rwanda Agricultural Development Authority), RDB (Rwanda Development Board), BRD (Banque Rwandaise de Développement) and the Banque Populaire of Rwanda. The growing interest of different governmental organizations is crucially important in the context of the country's agricultural development and enables the IPER initiative to be brought to a higher strategic level.

Detailed information on the Rwanda Agri-hub initiative, and its achievements, is available at http://apf-rwanda.ning.com. By the end of 2011, this ning engaged some one hundred and fifty professionals and practitioners in Rwanda's smallholder agriculture sector.

Niger

In Niger, Oxfam Novib, Agriterra, ILEA, SNV-Niger and Wageningen UR and their local partners, UPA-DI (Union des Producteurs Agricoles-Développement Internationale, a Canadian not-for-profit corporation), INRAN (Institut National de la Recherche Agronomique du Niger), the Université de Niamey, OSC (Organisation de la Societé Civile) and Mooriben (OSC and Mooriben are farmer organizations), IFDC-Niger and CROP (a local consultancy firm) cooperated in developing initiatives related to agricultural entrepreneurship and value chains. These initiatives addressed issues such as (the importance of) enabling environments and institutions, and questions like 'How does farmer entrepreneurship lead to increased food security?', or 'How will increased lobbying power of farmers contribute to their better alignment in value chains and to greater impact?'. Follow-up was given during partner meetings and workshops that focused on a scoping study on farmer entrepreneurship and food security. Also, the workshops resulted in action plans for selected value chains: onions, livestock and dairy. Overarching topics identified were land tenure and land use planning, as well as the need to strengthen advocacy for the smallholder agriculture sector in Niger. The outcomes of the process were confirmed in a stakeholder workshop organized by the Agri-Profocus member institutes, including OSC and CROP from Niger, jointly with the national 'Plate Forme Paysanne du Niger' (PFPN). In its implementation, the Nigerien action research plan links with the National Farmers' Days Initiative of Niger, an entry point for innovation and change.

As a 'spin-out' of the Niger Agri-hub, Oxfam Novib is now providing substantial financial support (€ 400,000 for four years) to the programme 'Supporting the promotion of farmer entrepreneurship' (APEA) in Niger. This programme was drawn-up by a consortium of Nigerien Agri-ProFocus partners headed by Mooriben. In the APEA programme specific actors deal with thematic issues such as quality seed development and seed supply systems, the marketing of onions, cattle and dairy, and land use planning.

As highlighted in the previous chapter toward the end of 2010, SNV-Niger and Wageningen UR Centre for Development Innovation jointly organized the workshop 'Eplucher l'oignon' (Peeling the onion) in Birni N'Konni, Niger, as a wrap-up of the VC4PD pilot action research on onions. The goal of that research was to identify possibilities for collective action in the onion value chain. The research focused on leverage points that induce changes that make the onion sub-sector more competitive, more inclusive and more sustainable. The results were shared with some hundred stakeholders and stimulated dialogue that resulted in 'Les vingt-cinq résolutions de Konni'.

Further information on outputs, planning and discussions in the framework of the Niger Agri-hub are being shared at http://apf-niger.ning.com. By the end of 2011, the Niger ning engaged some eighty-five practitioners and professionals working on value chains and smallholder agriculture.

Zambia

In Zambia, the Agri-hub initiative was implemented jointly by Cordaid, SNV-Zambia, IICD (International Institute for Communication and Development), Woord & Daad, Humana, Heifer International, Hivos, Agriterra and Wageningen UR. In the early stages of the initiative a multi-stakeholder inception workshop was organized in Zambia with participation of representatives of the Golden Valley Agricultural Research Trust (GART, a para-statal agency active in the interface between applied research and extension), the Zambia Dairy Processors Association, the Cotton Development Trust, the Zambia Honey Council and other sector organizations as well as agencies. The participants (over seventy in total) mapped-out a joint agenda on the needs and opportunities to promote farmer entrepreneurship, joint actions in specific value chains (rice, cotton, bio-fuels, honey and dairy were selected) and follow-up actions, as well as roles and responsibilities in the various processes. In addition, three cross-cutting issues were identified for joint action:

- Access to finance;
- Access to market information, and
- Capacity strengthening in producer organizations.

The Agri-hub team working on rice achieved an impressive success as, through their intervention, the Zambian Rice Association was founded. The absence of such an association had been listed as a hot issue during the inception workshop. Likewise, the cotton group, headed by the Cotton Association of Zambia, booked progress and had 'Best Practice Manuals' prepared and disseminated. In addition, the group is working on alternatives for cotton farmers away from the contract-farming arrangements hitherto prevailing. As for bio-fuels, the focus was on policy influence. In order to demonstrate practical benefits of Jatropha, attention was put on the crop's multiple-use character, including its potential for the production of soap, as an additional means of income for farmers. With regard to the cross-cutting topic 'Access to finance', Agri-Profocus members Cordaid, Woord & Daad and KIT, jointly with the local partner ZATAC (Zambia Agribusiness Technical Assistance Centre) organized a workshop that built on the recent KIT/IIRR Publication 'Value Chain Finance' (KIT and IIRR, 2010).

The Agri-hub initiative in Zambia has drawn the interest of a number of international development partners including IFAD, ILO and SIDA, the Swedish Development Agency. In fact, the Swedish Cooperative Centre in Lusaka has expressed its interest to formally join the network.

Further information and discussions relating to the Agri-hub activities in Zambia are being shared at http://apf-zambia.ning.com. The Zambia ning has over one hundred and fifty participants engaging in debate and information exchange (December 2011).

Uganda

Thirteen Agri-Profocus members are actively involved in the Agri-hub process in Uganda, including KIT, SNV-Uganda, the Ugandan Oilseed Sub-Sector Platform (OSSUP), the Uganda Oilseed Producers and Processors Association (UOSPA), Makerere University, and the NGO Participatory Ecological Land Use Management (PELUM-Uganda). The Uganda Agri-hub was launched during a multi-stakeholder meeting in November 2009 in which over seventy representatives of local farmer organizations, development organizations, financial and business service

providers, the public sector and private enterprises participated. The workshop defined and analyzed the critical issues for promoting farmer entrepreneurship in Uganda and identified possibilities for coordinated action in five priority areas:

- Financial services;
- Policy engagement;
- Farmer organizations;
- Market information, and
- Farm services.

In subsequent stakeholder meetings two additional themes were incorporated in the Agri-hub action plan:

- Gender in value chains, and
- Food security.

The policy engagement group is linking its activities with the ESFIM initiative (Empowering Small Farmers in Markets) which, in Uganda, is involved in action research to audit the effectiveness of the National Agricultural ADvisory Services (NAADS). In the farm services group focus is on innovation platforms in rice. The group has established operational links with the National Rice Secretariat of Uganda. The Uganda Agri-hub focus also includes the activities related to the VC4PD pilot action research platform on oilseeds, a joint initiative of OSSUP, SNV-Uganda, Makerere University, Agri-Profocus and Wageningen UR. The OSSUP action research platform is highlighted in the previous chapter of this booklet.

Further information on the activities of the Uganda Agri-hub is available at http://apf-uganda.ning.com. By the end of 2011 over eight hundred (!) professionals and practitioners in the smallholder agricultural sector of Uganda had subscribed to this ning.

ESFIM

ESFIM (Empowering Small Farmers in Markets) is a collaborative initiative between Agrinatura (the European Alliance on Agricultural Knowledge for Development), Agricord (the European Alliance of Agri-agencies), CTA (the EU Technical Centre for Agricultural and Rural Development) and farmer organizations in ten countries, including – in Africa – Benin, Kenya, Madagascar, Malawi, and Uganda. ESFIM implements action research in support of policy activities by farmer organizations to strengthen farmers' capacities in generating cash income from markets.

In many countries, it is not the policy as such, but the budgetary, technical and/or administrative implementation of specific policies that falls short and needs to be adjusted to generate positive impact for smallholder producers. Policy instruments and institutional arrangements have to be designed and build in a technically feasible and effective way for the objective of poverty reduction and food security to be reached. And learning between countries on the pros and cons of these instruments is key in this innovation and policy design process. ESFIM's overall objective is to generate demand-driven action research supportive to the policy activities undertaken by farmers' organizations to strengthen the capacities of smallholder farmers in developing countries. These targeted capacities include the generation of remunerative cash income from markets by creating an enabling policy and regulatory environment as well as effective economic organizations and institutions

ESFIM is financially supported by IFAD (the International Fund for Agricultural Development) and the Netherlands' Ministry of Economic Affairs, Agriculture and Innovation. The Agricultural Economics Research Institute (LEI) of Wageningen UR is the lead partner of ESFIM. (See www.esfim.org for more information).

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Facilitating Rural Entrepreneurship
Fact sheet/Highlights

Aim/Objectives
Dvelop learning and innovation trajectories that catalyse agricultural entrepreneurship in Agri-hubs in selected African countries.

Project location
Rwanda, Niger, Zambia and Uganda

Project partners

In the Netherlands
- LEI, part of Wageningen UR
- Wageningen UR Centre for Development Innovation
- Agri-ProFocus
- Agriterra
- Royal Institute for the Tropics (KIT)

In Rwanda
- ICCO-Rwanda
- Terrafina
- Institut Supérieur d'Agriculture et d'Elevage (ISAE)
- IFDC-Rwanda
- ILO-COOPAfrica
- Rwandan Union of Agriculturists and Animal Breeders (INGABO)
- SNV-Rwanda
- Initiative pour la Promotion de l'Entrepreneuriat Rural (IPER)

In Niger
- Oxfam Novib-Niger
- Ilea
- SNV-Niger
- UPA-DI
- Institut Nationale de la Recherche Agronomique du Niger
- Université de Niamey
- Organsiation de la Societé Civile (OSC)
- Mooriben
- IFDC-Niger
- CROP

In Zambia
- Cordaid-Zambia
- SNV-Zambia
- IICD
- Woord & Daad
- Humana,
- Heifer International
- Hivos-Zambia

In Uganda
- Oilseed Sub-Sector Uganda Platform (OSSUP)
- Uganda Oilseed Producers and Processors Association (UOSPA)
- SNV-Uganda
- Makerere University, Kampala
- Participatory Ecological Land Use Management Network (PELUM-Uganda)

Websites/nings
http://apf-rwanda.ning.com; http://apf-niger.ning.com; http://apf-zambia.ning.com, and http://apf-uganda.ning.com

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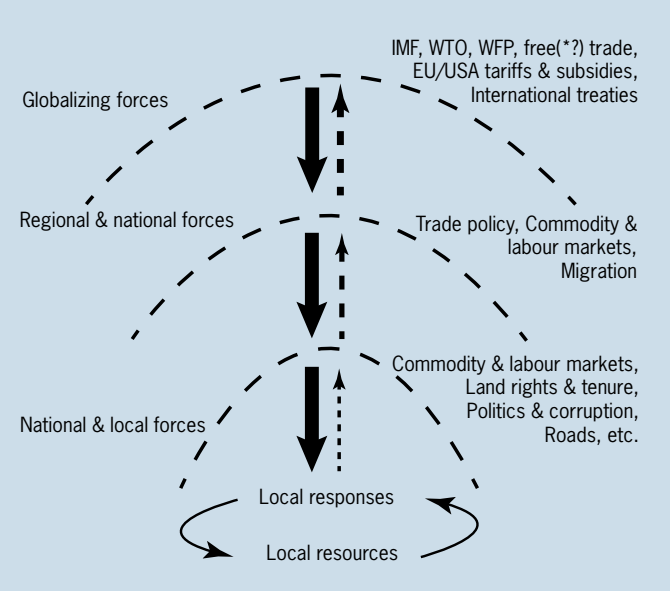
3 Competing Claims on Natural Resources

3.1 Rationale

Ken Giller, Wageningen University, Chair Group Plant Production Systems and
Wim Andriesse, Wageningen International

Completing claims on the natural resources bound to land and water become increasingly acute (Giller et al., 2008) and are leading to conflicts that form obstacles for socio-economic and rural development and improvement of livelihoods. In the face of climate change mankind faces global challenges of food security and energy security for an ever-increasing population. At the same time there is a need to mitigate the effects of man's environmental footprint on the global carbon balance and to protect biodiversity. Understanding the pressures on, and the opportunities for, the use of land- and water-bound resources needs to embrace the conflicting demands on these resources. Going beyond concepts of multi-functionality, which tend to sanitize and mask underlying conflict, an international team of researchers, led by Wageningen UR, has worked together since 2003 to unpack some of the dilemmas and challenges involved. This has been a fluid and diverse group who have continued to struggle to develop a shared understanding. Jointly, we developed and applied, a common framework to confront important societal demands on a wide range of competing claims – from demands on land for wildlife, for food, or for bio-fuel production to demands on water in cross-boundary river basins or commercial use of fish stocks and dangers of loss of marine biodiversity.

Key insights developed include the need to take account of drivers at multiple hierarchical and temporal scales when understanding local responses and searching for options. Global concerns for climate change or for eroding biodiversity lead to negotiated outcomes in the form of international treaties and initiatives declared at global level, such as the UN Framework Convention on Climate Change (FCCC), the Convention on Biological Diversity (CBD), or the IUCN Peace Parks Initiative for wildlife conservation. But the major impacts of these treaties are felt at local scale, due to exclusion of people from areas set aside for conservation, or due to the direct interactions of humans and their livestock with wildlife. In an increasingly globalized world, the international prices of food and other commodities determine local prices and drive the clearance of



Global and national policies structure the space within which local responses can be generated (from Giller et al., 2008).

land by smallholder farmers. Influences at global level play out differentially to determine local responses depending on formal national and local governance and on traditional rules and customs. Having recognized these complexities, and the need for understanding of influences at multiple scales, what role can science play?

Competing Claims on Natural Resources is one of the three thematic areas of the DGIS-Wageningen UR Partnership Programme. Within the context of this programme, the principal goal of the Competing Claims theme was to contribute to sustainable use of natural resources through building capacity in multi- and interdisciplinary approaches to complex land- and water-use systems and the analysis thereof. Poverty alleviation and development of novel, more equitable, local options for management of natural resources were seen as key elements of sustainable natural resource use and the avoidance of conflicts.

Four projects were granted under a competitive round of applications that examined the competing claims on natural resources in different parts of Africa. These projects, which are described in the sections below, report on the role of science concerning:

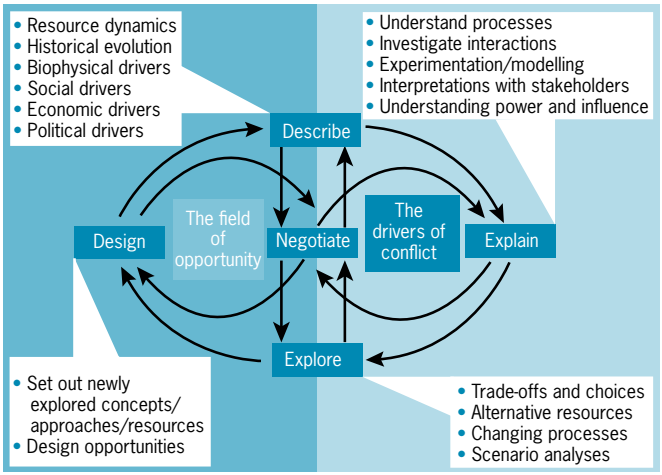
- Competing claims related to investments in bio-fuels in Mozambique;
- Competing claims on water across international borders in the Incomati River Basin that straddles Swaziland, South Africa and Mozambique;
- Competing claims on land and water in the bio-diverse Central Rift Valley of Ethiopia, and
- Competing claims on forest resources in Ghana.

Output from the research activities in this theme includes:

- Better understanding of the drivers and processes underlying competing claims on natural resources;
- Practical options for sustainable resource use at the local level in relation to differing access to resources, rights and power among stakeholders;
- Strengthened local and national capacity to facilitate multi-stakeholder platforms for negotiation and priority setting, and
- Enhanced stakeholders' abilities to innovate and respond to changing pressures.

All four Competing Claims projects took the NE-DEED research framework developed by Giller et al. (2008) as a starting point. A key aim of the analyses was to identify enabling policies that can create a greater space for local innovative responses, and strengthen local communities' influence at higher hierarchical scales. Instead of seeing research as detached from society, we began from a premise that science should serve society and with a commitment to address urgent and pressing problems. Thus, the research aimed to allow the voice of the poor to be heard, and to influence policy concerning such complex issues.

The figure below represents the NE-DEED framework that conceptualises the phases of investigation and understanding in situations of (emerging) conflict on the use of natural resources. The iterative cycle of investigation starts from description and cycles through explanatory, exploratory and design phases, respectively. Each of these activities feeds iteratively into the negotiation between stakeholders. Thus in the describe phase, understanding the current causes of competing claims requires us to delve into recent and deeper history to elucidate the dynamics of resources and land use, the social and political influences, and demography, for example. As insights are being gained from different disciplines these are discussed with stakeholders at various levels, from local to global. Gradually new insights emerge as a form of negotiated knowledge, a fusion that is richer for the insights gained from different perspectives. Unpacking and explaining the processes underlying resource use



The NE-DEED framework used in the analyses of competing claims: The reflective cycle starts from understanding the past dynamics that have led to a current situation. It ends with choices being made for the future. Negotiation with key stakeholders iterates through all phases of the cycle. (see text for further explanation).

in the explain phase depends on employing the tools of systems analysis. Here, simulation models and discussion support tools help to unravel important interactions. Understanding of access to resources, and how access is determined by power relations of stakeholders, is key.

Having grounded our understanding in both local knowledge and more abstract scientific analyses, our aim was not to *predict* outcomes, but to *explore* possible future scenarios. We focused on the trade-offs and choices that need to be made. Scenarios were developed and discussed, laying out new concepts and seeking alternative options. The most promising aspects of these scenarios supported a design phase, which was essentially about negotiating and making choices together with stakeholders.

One of the main early insights was that win-win outcomes are elusive and win-lose outcomes the norm. Making these choices explicit opens the door to (compromise and) compensation for the losers in the negotiation and decision-making processes, and to negotiations on the degree of compensation. Stakeholders differ enormously in knowledge, in power and in the degree that they influence processes and outcomes. By engaging progressively with different stakeholder groups, the chasm that divides rural communities from seats of power can be overcome before they are brought into direct contact.

Our initial engagement with the ideas and approaches of the NE-DEED framework focused on human-wildlife conflicts in southern Africa (see textbox). The approach has also been applied in the Netherlands through the 'Room for the River' programme where farms been given back to nature as part of adaptive measures to reduce future impacts of flooding (Box 2). There are marked similarities with examples come across in southern Africa. In both cases, those living and deriving their livelihoods locally bear the brunt of the costs (in the short term) of decisions made for choices which are arguably for the common good in the long term. But who should pay?

From the early discussions on Competing Claims on Natural Resources, these ideas have become embedded in thinking on the role of the Netherlands in complex issues of people and natural resource management. 'Competing Claims' now has become common parlance in the corridors of power in The Hague of the Ministries of Foreign Affairs/DGIS and of Economic Affairs, Agriculture and Innovation (EL&I). Both ministries have funded programmes of research in this area. Outcomes of the DGIS-Wageningen UR Partnership Programme are described in this volume. EL&I is funding projects related to Competing Claims in the framework of its BOCI Programme. Additionally, NWO-WOTRO too has funded a programme, together with DGIS, on 'Conflict

Competing Claims in the Peace Parks' Elephant Corridor

"Africa is it's animals… and that's the beauty of Africa – that's what makes it different from the rest of the world and to lose those animals would be catastrophic, so the wonderful thing about Peace Parks is trying to increase the amount of land for the animals, and by increasing the amount of land for the animals that will help human beings".
Sir Richard Branson, Ambassador for Peace Parks' Elephant Corridor.

The above quote from Sir Richard Branson typifies popular ideas of wilderness and wildlife conservation in Africa. As ambassador for the elephant corridor proposed to join Kruger Park in South Africa with Gonarezhou National Park in Zimbabwe he fails to consider the many people who currently live on this land. The Peace Parks Foundation (www.peaceparks.org) suggests that one of the main aims behind the original idea of Dr Anton Rupert -whose vision led to their initiation- was that the "the parks could make a fundamental difference to Africa, using eco-tourism as a vehicle, by addressing one of its most pressing problems: abject poverty".

When the Greater Limpopo Transfrontier Park (GLTP) was declared in 2002, some 27,000 people found themselves living in the Limpopo National Park, Mozambique. The majority of these people live close to the Limpopo River, and will be allowed to remain living in what has been designated the 'support zone'. But some 7,000 people live along the Shingwedzi River, a seasonally dry river that cuts through the centre of the area designated as the Limpopo National Park. Unfortunately for the local inhabitants, this area also has the greatest potential for development of tourism due to its scenic beauty and the vegetation along the river that provides an ideal habitat for wildlife. Although the plans were that these people would be resettled, after 10 years only eighteen families have been moved to areas outside the park. In Zimbabwe many villages are located within the area for the proposed Sengwe-Tchipise wildlife corridor, that will connect Ghonarhezou National Park in Zimbabwe directly to South Africa's Kruger National Park. This elephant corridor – that Richard Branson speaks of with such pride - may cause people in Sengwe to be displaced and/or their fields in the fertile lands along the Limpopo River to be fenced.

Despite the promise that eco-tourism would bring local employment to help solve the endemic poverty in these marginal areas, to date there is little evidence that many jobs will be created. The lucky few who gain employment tend to be those who are well educated and fluent in English – and many of these come from outside the area rather than being recruited locally. So the dream of the peace parks is yet to be fulfilled for local people.

and Cooperation over Natural Resources in Developing Countries' (CoCoon) that drew on this thinking. Thus, whilst modesty precludes claims that we have had significant impact in changing lives of the poor for the better, an outcome of our work has been a change in the thinking and approach in the Netherlands on Competing Claims on Natural Resources.

As ever, the greater insights derived from research on the four case studies described in this chapter also led to a plethora of new questions:

Policy relevance and policy support

Although the outcomes of the different projects have clear implications for Dutch international and development policy, how can these results best be communicated? Policy makers in ministries set aside little time to read and learn from research outputs – when seminars are arranged attendance by policy makers is generally poor. The modalities of science-policy interaction are problematic – policy makers face a tsunami of literature and advice from research and have problems in filtering out what is essential to read. Moreover, policy makers often have to operate in quickly-changing political environments

and realities. And, beyond national policy, how should links be made to multinational institutions such as the World Bank, the European Union Commission, or the New Partnership for Africa's Development (NEPAD) of the African Union and its Comprehensive Africa Agricultural Development Programme (CAADP). Moreover, how best should results that have policy relevance be presented?

Governance

What lessons can the projects draw as to governance in the (development) settings in which they were operating? Through working across different countries in a comparative analysis (e.g. the Incomati Project described in this chapter) lessons could be drawn on the conducive aspects or the bottlenecks in each of the three countries involved. Next, between the four Competing Claims projects, governance-related issues and the process of (support to) policy development can be compared, for example in the contexts of economic development, market liberalization, decentralization, institutions and land use planning.

Up- and out-scaling

Can the results obtained in the Competing Claims projects be generalized and applied elsewhere and, if so, how? Whereas in out-scaling we hope that methods and approaches will be applicable elsewhere (through horizontal spread and replication), we repeatedly learn that findings are context specific. According to our NE-DEED approach, context-specificity is built into the cycle through reflexivity and re-'negotiating' every phase with stakeholders. *Up-scaling* is another issue: it refers to connecting local-level processes and outcomes to national or international policy and implementation levels. This proves to be difficult in an operational sense, and implies that a broad range of skills and knowledge is available –or can be built- within each partnership team.

Globalization

Given the title we chose for the Partnership Programme, on 'Globalization and Sustainable Rural Development', how, in hindsight, do the Competing Claims projects fit in the context of societal globalization. For example, bio-energy and bio-fuel production are typically issues that emerged from, and are driven by, a globalizing world. Given the blending obligations in European countries, developing countries that have less-pregnant energy problems, suddenly become attractive targets for the cultivation of bio-energy crops, and are drawn into the international debate on sustainability criteria. A direct result of our programme is that Mozambique is the first country in Africa to have government-approved sustainability principles and criteria for biofuels.

These, and other questions were addressed in a synthesising workshop on the Competing Claims theme of the Partnership Programme, in December 2010, at DGIS in The Hague, the Netherlands. Here, the Competing Claims project coordinators and their counterparts presented their projects and shared their experiences and main results.

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Competing Claims in the Netherlands

Competing claims on natural resources are acute, also in the Netherlands. Here, due to high population density and related urbanisation, industrial expansion and the growing need for 'leisure space', pressure on land and water are high. In 1995, after two almost catastrophic high river water events, the Netherlands' Government initiated a Spatial Planning Procedure entitled 'Room for the River'. The aim was to explore and implement security measures to accommodate future high water discharges in our main rivers. At the same time the plan was to increase the quality of the Dutch riverine landscape, nature and culture. The most substantial Room for the River project, was the de-poldering of De Noordwaard, an agricultural area of some 2000 ha in the Rhine river delta in the south-western part of the Netherlands. De-poldering can be described as returning a piece of reclaimed land (a 'polder') to a river, or to the sea. The Noordwaard polder accommodates some 75 households, of which 26 are farms.

Our NE-DEED research framework proved to be useful in this case as well. In the negotiation process about the necessity to de-polder the Noordwaard, different governmental and non-governmental stakeholder groups strategically and selectively mobilized research and other resources as 'strategic weapons' to manipulate the course and outcome of the planning process. In doing so, the government's discharge peaks and flood scenarios that were used to select and justify Room for the River measures, turned out to be scientifically unrealistic, as river banks upstream in Germany would have flooded long before the high water would have reached the Netherlands. Despite such insights and mobilizing alternative scenarios, farmer and civilian protest groups were unable to influence the political decision-making process effectively.

Our study showed that solution space is often narrowed down in the early phases of negotiation processes. By the time a spatial planning procedure enters the legal public participation phase, both the preferred solutions, as well as procedures for evaluating alternatives by the general public have been elaborated already. This makes it difficult for weaker stakeholder groups to present successful alternatives. In such competing claims contexts, researchers have to think carefully about, on the one hand, who our clients are and which stakeholders need our support and, on the other hand, how to remain credible to the other stakeholders in the process.

(Source: Schut et al., 2010)

3.2 Competing Claims-Competing Models: Bio-fuel based development models and their impact on resource use and rural livelihoods

Maja Slingerland, Wageningen University, Chair Group Plant Production Systems

Bio-fuel policy in Mozambique

Over the past 10 years the Government of Mozambique has been promoting the production of bio-fuel crops in order to foster rural employment and development, as well as to address local and national energy needs. Policy on the export of biomass for the generation of energy, however, was not yet in place and neither was there a comprehensive policy position on the relationship between bio-fuels and (mitigation of) global warming. By 2005, the country's bio-energy policy was only in its early stages of formulation. In this respect, the 'Competing Claims-Competing Models' project, with its focus on bio-fuel based developments, came in timely to contribute to this policy development as it aimed at understanding the impacts of bio-fuel based interventions.

More specifically, the Competing Claims-Competing Models project analysed the impact of different bio-fuel production models on rural livelihoods and on resource competition in areas of production expansion. The project built on cases in Mozambique where, coinciding with the start of the project in 2007, various bio-fuel initiatives were being developed and promoted, by national and international development agencies and by the private sector. These initiatives, however, were implemented in the absence of detailed assessments of their possible impact – either beneficial or detrimental – on rural livelihoods and on the environment. In Mozambique, as in many other countries, bio-fuels enter the arena of competing claims on natural resources and these manifest themselves at various scales. Moreover, the growing global demand for bio-fuels is adding further pressure and complexity to economic planning and to land use allocation as it leads to additional claims on land and water resources by (multi-)national companies. In this perspective, the overriding research question underlying the Competing Claims-Competing Models project was:

"Which local, national, regional and international bio-fuel production initiatives favour the inclusion of local stakeholders in the development process and under which conditions are these initiatives most likely to benefit the livelihoods of the local rural population?"

Bio-fuel policy in the Netherlands

In the Netherlands, government policy revolves around the potential benefits of bio-energy in terms of mitigation of climate change. Dutch policy also aims to stimulate the import of biomass for bio-energy conversion in the Netherlands and certification

schemes need to ensure environmental-friendly production of the feed stock. Many Dutch ministries, including those of Infrastructure and the Environment, Economic Affairs, Agriculture and Innovation, and Foreign Affairs/Development Cooperation, are involved in policy formulation and, partly as a result, the relationships between the expansion of bio-fuel production in developing countries and the related opportunities and threats for sustainable development are poorly addressed, still.

Competing Claims-Competing Models: Seven sub-themes

The Competing Claims-Competing Models project addressed seven themes that have a bearing on bio-fuel related competing claims in Mozambique:

- Hierarchical scales;
- Farmer organizations and contracts;
- Economy;
- Jatropha agronomy;
- Role of knowledge;
- Bio-fuel trade, WTO and certification schemes, and
- Food security.

Hierarchical scales

Different *Hierarchical scale-levels* of cassava processing for food, feed and energy were analysed on their energy- and nutrient-efficiencies and on potentially-beneficial by-products. The results of these analyses have been reported in a scientific article (see list of publications). The assumptions about the production potential of cassava in farmers' fields were verified by sampling of fields for yields and soils in Alto Moloco, the area where a cassava ethanol factory was being planned. Research on the difference between small-scale Jatropha production by the FACT Foundation (Fuels from Agriculture in Communal Technology; a Netherlands-based NGO) and large-scale Jatropha plantations is reported in the paragraph *Food security*, below, where scale is analysed with respect to food security issues.

Farmer organizations and contracts

As to *Farmer organizations and contracts*, existing models of contract farming in Mozambique were reviewed, including cotton, tobacco and cashew chains. The review showed that product characteristics (i.e. perishable or non-perishable, bulkiness, quality grades and market specificity), transaction characteristics (frequency, uncertainty, quality measurement and delivery schemes), infrastructure (roads, telecommunication, markets) and institutional conditions (farmers' skill-levels and literacy rates, property rights, access to credit and technologies) are important factors that co-determine chain governance and contract forms. Results of this study were used to develop a framework for

the investigation of contract models for bio-energy crops such as Jatropha on smallholders farms in Cabo Delgado, and sugarcane in out-grower schemes in Maputo province.

Our investigations clearly showed that effective farmers' organizations do not emerge by themselves but that they need substantial investments from NGO's, especially in overcoming illiteracy and in building management and negotiation skills: Smallholder sugarcane farmers, even if organized in associations, had no insight whatsoever in the figures underlying their payments and they were certainly not in a position to negotiate payments with buyers. Likewise, in large-scale plantations it was clear that labourers had no negotiation power regarding their salaries: All settled for the minimum salaries proposed by the companies. Neither did farmers have negotiation power about contracts covering the lease of their land to investment companies. The Mozambican law provides in a framework for the negotiation process, for instance by explicitly mentioning different age and gender groups that need to be consulted. This law however, does not impose assistance to farmers in their negotiation processes, nor does it provide model contracts on land lease from which the farmers could choose. Such inputs are urgently needed to improve the bargaining power of farmers that engage with the bio-fuel industry. In this respect, farmer organizations and NGO's have crucial roles to play in the successful connection of farmers to bio-fuel chains.

Economy

Under the theme *Economy*, we investigated whether job provision by Jatropha plantations generates sufficient income to compensate for any loss of labour on the family farm. Potentially, the latter may lead to lower on-farm food production and increased food purchases. Also, we investigated whether, in smallholder farms, labour peaks in the cultivation of food crops coincided with those in Jatropha. As land acquisition by large-scale plantations

inevitably implies that some farmers have to give up their land, we also examined whether compensation, either in cash, in kind or in land elsewhere, had an effect on the welfare of the farmers involved and on local food security. It followed that male household members preferred to be employed by plantations over migrating (to South Africa) and that women preferred to have paid jobs over subsistence farming only, even when their workloads increased.

Regarding labour peaks it was recommended that women, in particular those involved in growing food crops, prefer to be hired on basis of 'task accomplished' rather than on 'hours present' at the plantation. As an alternative, working time on the plantations could be limited until 14.00 hours. As the plantations concerned suffer from high rates of absenteeism and sick leave, and both are clearly related to the cropping calendar, they have great interest in finding compromises.

A second important finding was that the current Mozambican labour law directs the speed with which plantations are being established. This law makes it extremely difficult -and costly- to licence people that are initially employed. Hence, quick establishment of the plantations -requiring many workers but that will be laid-off in the production phase- allows for a quick entry into the crop production phase, but at high labour costs. On the other hand, slow establishment requires fewer workers that can all be kept in the production phase, but it delays the production phase. It saves, however, on the costs related to the laying off of labourers.

Jatropha agronomy

Jatropha agronomy was explored in Maputo and Manica Provinces where our studies showed that cultivation practices for Jatropha are insufficiently known to dare putting smallholder farmers at risk of growing it. The crop's vulnerability to pests and diseases, production variability and volatile (world) market prices, all render Jatropha-growing a risky business. Our calculations showed that groundnuts are more profitable to farmers, and with little or no dependency on a volatile energy market.

We compared energy yields of Jatropha-based bio-diesel per unit area of land with those of fuel wood and charcoal. It showed that sustained harvests of natural vegetation could be as energy-efficient as Jatropha bio-diesel. In addition, natural vegetation has a higher biodiversity value and additional benefits in terms of fruits and natural medicines, habitat for wild animals and birds, grazing land for domestic animals, etc. Growth performance of Jatropha was measured in existing plant stands and showed that, within individual fields, plant stands were highly heterogeneous and they were higher still between the fields. Also, the growth of Jatropha was inhibited by low contents of phosphorus in the soil and, contrary to popular belief, water availability is important in Jatropha growth.

Role of knowledge

The *Role of knowledge* was assessed in a PhD study that looked at the various ways in which different actors (Mozambican and foreign investors, national and international research institutes, NGO's, development partners and others) think and speak about sustainability and sustainability criteria: Which definitions did they use or prefer? How do they make these definitions operational? How do they absorb and use scientific knowledge about these criteria?

The knowledge we generated within the scope of the Competing Claims-Competing Models project has contributed largely to the formulation of the National Bio-fuel Policy and Strategy of Mozambique, which was approved by the Government in 2009. Our work also supported the drafting and approval of the 'Bio-fuel Sustainability Framework' of Mozambique and, jointly with the German Technical Cooperation (GTZ, now: GIZ), we supported the stakeholder consultation process leading to this Sustainability Framework. The PhD thesis concerned is up for defence in April 2012.

Bio-fuel trade, WTO and certification schemes

Our study on *Bio-fuel trade, WTO and certification schemes* showed that, in Mozambique in 2008, the production of bio-fuels was growing, as it did globally. Also, both the public and private actors involved were seeking ways to ensure positive environmental, social and economic effects of Jatropha production and trade. As it appeared, this was more likely to be achieved on the environmental impacts than on the social effects, while economic results continued to be influenced strongly by protective measures: Globally, annual bio-fuel subsidies ranged between some eleven to thirteen billion US dollars (Von Braun, 2008) and up to one dollar per litre of diesel (FAO, 2008). A particular concern in the debate on bio-fuel trade refers to its impact on world food prices. World-market prices for food rose dramatically from January 2002 to June 2008, which was caused by a confluence of factors. Some argued that, in this respect, the production of bio-fuels was most important (Mitchell, 2008). Over the years 2000-2007 increased demand for bio-fuel was estimated to have contributed to an increase of average cereal prices of about thirty per cent (Von Braun, 2008). World production of cereals in 2008-2009 has been forecasted to be up five point three per cent from the previous season and above the ten-year trend for the second consecutive season (Cotula et al., 2008). This expansion is driven primarily by the high food prices in 2007 and the growth in industrial use (up 11.8 %), including prices for biofuels, mostly in the US. This increased production has meant, however, that as from mid-2008, food prices have been falling sharply. Overall, FAO expected world grain prices to be very volatile in the coming years because of the reaction of farmers to the volatile prices for their products as well as for their inputs (notably oil), and because of the global financial and economic crisis since the middle of 2008. The current high food and oil prices confirm these expectations. We reported on these issues in a Policy Brief and in two scientific articles (see list of www.competingclaims.nl).

Food Security

With regard to *Food Security* we investigated the potential of sweet sorghum to provide both, food and bio-fuel, from the grains and stalks respectively. In this concept the growing of ordinary sorghum would be replaced by sweet sorghum. This is highly unlikely as, among other things, sweet sorghum scores very badly in terms of its taste and the grains are not marketable. Also, current varieties of sweet sorghum suffer severely from bird attacks. Cassava could possibly provide an alternative but, given its current role as a 'reserve' crop in hunger crises, it could only be effective if cassava yields were increased. In that way, the surplus produced over direct food needs could be used to produce bio-ethanol. In doing so, cassava sales will generate income, increase access to food and, hence, increase food security.

Yet another way is to grow Jatropha in larger-scale plantations that provide employment for local communities. Again, income generation increases food security. However, the incurred double burden on women may decrease local food production. In such plantation models extra gains can be made by processing the Jatropha locally and produce energy, either for local use or for export. Adapting the labour calendar in Jatropha cultivation is an option to deal with the labour burden.

Another model is the planting of Jatropha in hedges. This leads to low seed yields and to small amounts of oil that can either be sold or used locally. In doing so, this model provides energy in the countryside while adding income for the purchase of food. We investigated this option jointly with the FACT Foundation. All these models and their impact on food security are being described in journal articles (see list of references). An additional study investigated what bio-fuel producers do to deal with the food security question of their workers. Apparently many models exist, from providing credits or inputs to farmers, to assisting them in

food production on plantation territory. In out-grower schemes bio-fuel feedstock buyers also apply models from mere input provision to extension services and, even, demonstration plots.

Partnerships and (policy) linkages

The Competing Claims-Competing Models project was closely connected to CEPAGRI, the Centro de Promoção na Agricultura, which is the Mozambican national institute responsible for the assessment of investment plans in the agricultural sector. This contact was imperative for the conversion of the outcomes of our research into specific criteria for investment approval ensuring both, benefits to the rural population as well as to sustainable resource use.

In order to facilitate knowledge generation and circulation, we linked with the Eduardo Mondlane University (UEM) of Mozambique where future 'bio-energy policy makers' are being trained as well as future 'bio-energy farm-managers' and 'bio-energy traders'. Currently, many UEM MSc graduates are being recruited for jobs in the bio-energy sector, public as well as private. The training modules developed and applied in the framework of our project helped preparing them for such jobs, providing skills, knowledge and competencies to deal with the (competing claims) issues at stake. Also, the individual research assignments of the students aimed to directly contribute to solving competing claims issues.

The Competing Claims-Competing Models project worked closely with the International Institute of Tropical Agriculture (IITA-Mozambique) and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT-Mozambique) assisting them in generating knowledge on the performance of their mandate crops – (cassava and (sweet) sorghum, respectively – in terms of bio-energy. This collaboration focused on crop performance in relation to plant nutrients and water, as well as on farming systems sensu largo. The latter included issues such as (competition for) labour, land and cash at the farm household level, the need for inputs, and market opportunities.

The project worked with SETSAN, the Technical Secretariat for Food Security and Nutrition in Mozambique as, above all, the population of Mozambique must be fed. Food security can be achieved directly through food production at the farm household level but this may be jeopardized if bio-energy crops take the best of the land. Alternatively, households may purchase food if they avail of income that is generated elsewhere, for example by working at bio-energy plantations. Our research contributed to understanding such interactions and it supported SETSAN in developing an evidence-based position on food security issues.

We also cooperated with a number of industrial partners, including ENERGEM (on Jatropha), SEKAB (sweet sorghum) and Tongaat Hulett Sugar Ltd (sugar cane) as well as with NGO's such as World Vision (cassava), the FACT Foundation and ADPP, on farmers' roles and empowerment.

For the broader policy connections in the southern African region, the Competing Claims-Competing Models project worked with FANRPAN, the Food, Agriculture and Natural Resources Policy Advisory Network, a pan-African policy-support think tank and network based in South Africa.

Outlook

Towards the end of the Competing Claims-Competing Models project (2009-2010) we noticed that a number the bio-fuel plantations in Mozambique were running into cash-flow problems and that therefore, their continuation cannot be taken for granted. As a consequence, some of the anticipated social impacts of our project may be less than expected. Nevertheless, the results obtained do have general applicability. The closure of these

plantations has revealed that so far nobody has thought of exit strategies and questions now arise such as:

- Can farmers or farm workers harvest the Jatropha that was already planted, for their own benefit?;
- To whom do the Jatropha trees belong and can farmers uproot them and revert the land into food production?;
- To whom does the land belong if companies go, and
- How do farm workers get their outstanding salaries and who pays the penalties for laying them off?

Dynamics in the Mozambican economy are high and people switch jobs frequently within and between organizations. This implies a need for projects like ours to regularly renew contacts with and within partner institutions. In this respect, the Competing Claims-Competing Models project has been fortunate to have one PhD student in the field for a relatively long period. This allowed the student to become well-embedded in the local network and keep channels for information exchange open.

In our project's lifetime (2007-2010) the 'National Bio-fuel Policy and Strategy' was drafted and approved by the Government of Mozambique. We also supported the development of the 'Bio-fuel Sustainability Framework' regarding sustainability principles and criteria for bio-fuel production. The latter was achieved through a multi-stakeholder consultation process both in Maputo and in a number of Mozambican provinces. There is urgent need now for a follow up in support of the drafting of sustainability indicators in particular where these need to be measurable and embedded in national legislation for 'licenses to produce'. Moreover they need to be sufficiently connected to international regulatory frameworks allowing the export of bio-energy feed stocks, i.e. 'licenses to sell'.

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Competing Claims-Competing Models
Bio-fuel based development models and their impact on resource use and rural livelihoods
Fact sheet/Highlights

Aim/objectives
Understanding the impact of bio-fuel based development interventions and analysing the impact of different bio-fuel production models on rural livelihoods and resource competition in areas of production expansion. Support the formulation of policy and strategy on bio-fuel production by the Government of Mozambique.

Project location
Mozambique: Maputo, Cabo Delgado and Manica Provinces and beyond.

Project partners

In the Netherlands
- Wageningen University, Chair Group Plant Production Systems
- Wageningen University, Chair Groups Communication and Innovation Studies, Environmental Policy, Management Studies, Development Economics, Agrarian Law, and Technology and Agrarian Development
- Wageningen University, Chair Group Irrigation and Water Engineering
- Wageningen UR Food and Biobased Research and Wageningen University, Chair Group Valorization of Plant Production Chains
- FACT Foundation: Fuels from Agriculture in Communal Technology

In Mozambique
- Centre for Agricultural Promotion (CEPAGRI)
- Universitas Eduardo Mondlane (UEM)
- Technical Secretariat for Food Security and Nutrition (SETSAN)
- IITA-Mozambique (International Institute of Tropical Agriculture)
- ICRISAT-Mozambique (International Crops Research Institute for the Semi-Arid Tropics)
- ADPP-Mozambique (Development Aid from People to People)
- SEKAB-Mozambique Biofuel Industries Limitada
- ENERGEM Renewable Energy Mocambique Limitada

In South Africa
- Food, Agriculture and Natural Resources Policy Advisory Network (FANRPAN)

Target groups:
- (Mozambican) policy makers and governmental investment and planning agencies
- Private sector investors and bio-fuel production plantations
- Smallholder farmers and farmer organizations in Maputo, Manica and Cabo Delgado Provinces

Project output
- Policy briefs and background papers published (see website)
- Conferences and seminars organized and co-organized (see website)
- MSc- and PhD-theses (co-)supervised
- Scientific publications including:
  - Mol, A.P.J., 2010. Environmental authorities and bio-fuel controversies *Environmental Politics* 19(1): 61-79.
  - Oosterveer, P. and A. P.J. Mol, 2010. Biofuels, trade and sustainability: A review. *Biofuels, Bioproducts and Bio-refining* 4(1): 66-76.
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Websites
www.competingclaims.nl/ and www.dgis.wur.nl/UK/competing+claims

Project coordinator
Dr Maja Slingerland, Wageningen University, Chair Group Plant Production Systems: maja.slingerland@wur.nl

3.3 Coping with competing claims on water in the Incomati Basin of southern Africa through interactive science (WIBIS)

Petra Hellegers, LEI, part of Wageningen UR

Introduction

Land and water resources in many of the world's river basins are under unprecedented pressure resulting from population increase, socio-economic growth and developments (e.g. global liberalization of food trade), changing socio-cultural behaviour (lifestyles, diets, etc.) and climate change.

Such developments lead to changing claims on land and water resources for different uses and stakeholders. To deal effectively with these competing claims, good communication between stakeholders, based on science-based information, is a must, in particular where river basins stretch across countries as is the case with the Incomati River Basin which is shared by South Africa, Swaziland and Mozambique.

As development policies and priorities generally differ among cross-boundary river basins land and water management strategies need to target multiple and variable policy objectives. Tangible land and water indicators can assist stakeholders in assessing current situations and in identifying development scenarios.

The Incomati River Basin

The Incomati River Basin covers approximately 47.000 km^2 of land in the southeast of the African continent. The basin stretches across South Africa, which occupies some 63% of the total basin area, Mozambique (31%) and Swaziland (6%). In the mountains of Swaziland and South Africa – to the west of the basin- it rises up to some 2,000 m above sea level whereas, east of the Lebombo mountains, it drops to elevations below 100 m in the coastal plains of Mozambique. The basin has six main tributaries: the Komati, Crocodile, Sabie, Massintonto, Uanetze and Mazimchopes Rivers (see map on page 66).

Average total annual discharge of the Incomati Basin is about 3,590 Mm^3 whereas the estimated total consumptive water use is about 1,880 Mm^3 per year (2002). This is more than half of the amount of water generated. Given the high variability of flow, both within and between years, this level of commitment is high and leads to frequent water shortages.

The climate in the Incomati Basin varies from warm to hot and humid in the Mozambican coastal plains and the Lowveld, to cooler and drier in the South African Highveld. Mean annual precipitation is about 740 mm and throughout the basin the rains occur in summer (October-March). Mean annual potential evaporation for the basin is 1,900 mm. This rainfall deficit calls for irrigation for optimal crop production, especially in the eastern part of the basin.

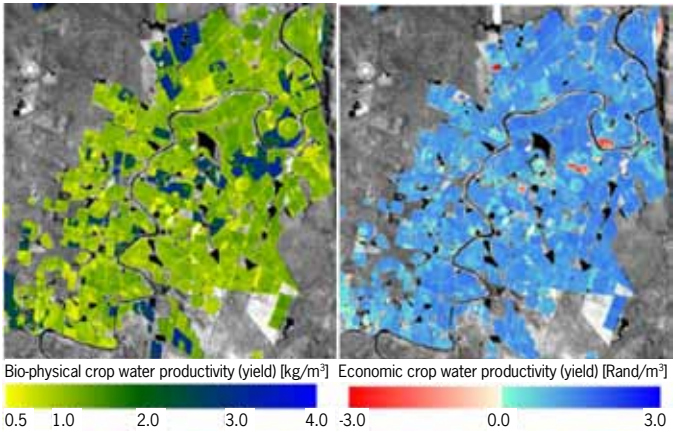
WIBIS policy objectives and performance indicators

Policy objective	Performance indicator	Description
Food security	Crop water productivity	Beneficial biomass per unit of water consumed
Income security	Economic water productivity	Net private benefits per unit of water consumed
Social security	Job water productivity	Employment per unit of water consumed
Equitable water allocation	Water availability for downstream uses	Volume of water for downstream uses

Discussion support tool

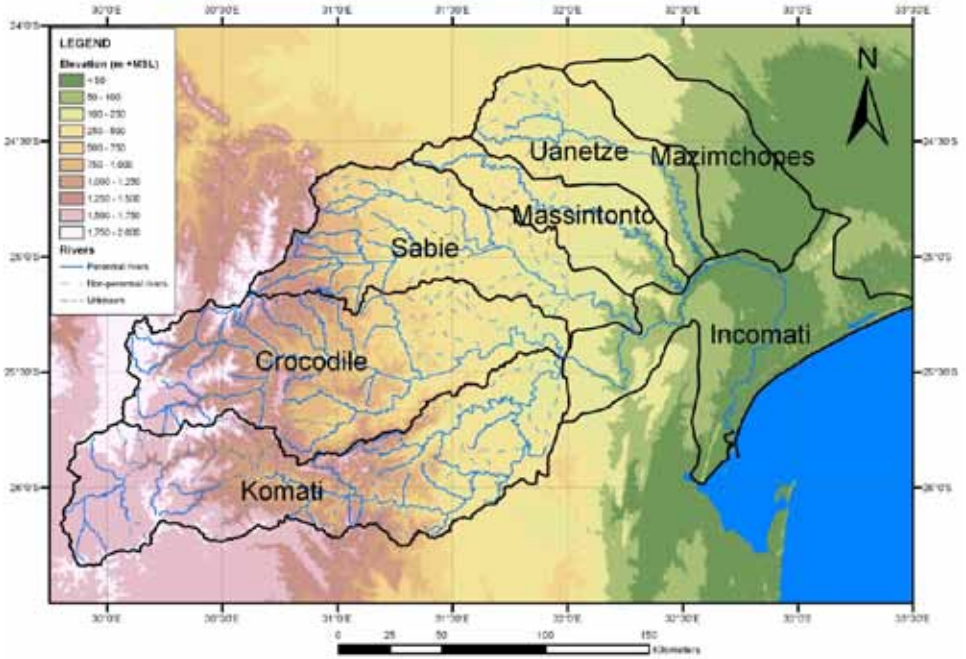
The WIBIS project developed an interactive web-based discussion support tool that generates key water-related indicators to support stakeholders in their cross-basin land-use planning and water allocation processes. The tool combines spatial remote sensing data with hydrological and socio-economic parameters and it can instantaneously generate geographic and quantitative insights on the impact of land-use changes on water consumption, water availability and productivity, the value of water and employment. Applying the tool in multi-stakeholder meetings has contributed to confidence building thus strengthening the process of conscientious land-use planning. It enables assessment of four indicators, each addressing a specific policy objective. The interactive WIBIS tool was made operational in 2009 and is accessible to any authorized user. Others can freely browse through the data available within the tool. Demo's are also available on DVD.

The WIBIS project supported regional initiatives and activities, such as the LOGO-South twinning project and the PRIMA project (Progressive Realization of the IncoMaputo Agreement). The tool was used in a number of stakeholder meetings between representatives of these institutions. It was also applied in capacity building in interactive science and evaluation at the local level as well as at higher decision-making levels, including staff of water boards in Mozambique (ARA-Sul), South-Africa (ICMA) and Swaziland (CMA). One of the options that was evaluated is the existing plan to convert twenty-five thousand hectares of bush land in Mozambique into sugarcane for bio-fuel production. Another case study was on prioritization of areas for zero replant of forest plantations upstream in the basin, based on cost effectiveness of stream-flow enhancement. (See figure below)
One of the specific issues in the Incomati Basin is the implementation of the basin-wide Interim IncoMaputo Agreement (IIMA), that was signed in 2002. This agreement recognizes the right of the riparian states to specific volumes of Incomati water. The agreement involves the National Directorate of Water (DNA) in Mozambique, the Department of Water and Environmental Affairs (DWEA) in South-Africa and the Department of Water Affairs (DWA) in Swaziland. Institutional collaboration was also established with the Water Research Council and the Tshwane University of Technology in South Africa and with the Universitas Eduardo Mondlane (UEM) in Mozambique.



In the current version of WIBIS, fifteen land use types are distinguished, including nine productive uses (crop cultivation and forest plantations) and six other uses (natural vegetation, built-up area, etc.). The Incomati Basin is subdivided into 24 regions. The user can compare the values of different land and water indicators in wet, dry and average years. For each of the 15 land use types regional differences in water consumption, biomass production and water productivity can be extracted. Rainfall, evapotranspiration, rainfall surplus and existing monitoring data can be displayed for each region. The WIBIS tool can assist in prioritizing land uses and can also be used in a trans-boundary context.

The Incomati River Basin with its six sub-catchments



Entering the WIBIS discussion support tool

In 2009 the WIBIS discussion support tool was made operational. It is an open-source web application with which users can evaluate the implications of different land use scenarios.

To open WIBIS, start in any browser (e.g. Firefox) and go to http://portal.fieldfact.com/wibisclient. Log in under username: 'guest', password: 'incomati'.

The interactive tool is accessible to any authorized user, whereas others can freely browse through the data presented in the tool. WIBIS generates, on-line, an extensive set of maps with land and water indicators, that are being updated continuously as the user is working.

Coping with competing claims on water in the Incomati Basin
Fact sheet/Highlights

Aim/objective
Support inter-sector and inter-state policy development for sustainable water use in the Incomati River Basin by building capacity with respect to water valuation and innovative water monitoring.

Project location
Incomati River Basin: South Africa, Swaziland and Mozambique

Project partners

In the Netherlands
- LEI, part of Wageningen UR
- Alterra, part of Wageningen UR
- WaterWatch B.V., Scientific Advisory Consultants, Wageningen, the Netherlands
- Waterboards of Groot Salland and Velt & Vecht

In Mozambique
- WE Consult Ltd, Mozambique
- Universitas Eduardo Mondlane (UEM)
- Administração Regional do Áquas do Sul (ARA-Sul)

In South Africa
- Water Research Council (WRC)
- Tshwane University of Technology (TUT)
- Incomati Catchment Management Authority (ICMA)

In Swaziland
- Catchment Management Authority (CMA)

Target groups
- National Directorate of Water (DNA), Mozambique
- Department of Water and Environmental Affairs (DWEA), South-Africa
- Department of Water Affairs (DWA), Swaziland
- Task Team of the Tripartite Permanent Technical Committee (TPTC) of PRIMA: Progressive Realization of the IncoMaputo Agreement

Project output
- WIBIS: an open source, web-based interactive discussion support tool for land and water use allocation
- WIBIS Tool Manual (see WIBIS website)
- Water scenario maps (see WIBIS website)
- Trained staff of water boards in Mozambique (ARA-Sul), South-Africa (ICMA) and Swaziland (CMA)
- Seminars and workshops (co-)organized
- MSc and PhD students supervised
- Scientific papers:
  - Hellegers, P.J.G.J., H.C. Jansen and W.G.M. Bastiaanssen, 2011. An interactive water indicator assessment tool to support land-use planning. *Irrigation and Drainage* (DOI: 10.1002/ird.641).
  - Jansen, H.C. and P.J.G.J. Hellegers, 2011. Managing water by managing land: Interactive land use planning using water productivity indicators. In: EL&I Knowledge Compendium.

Websites
http://portal.fieldfact.com/wibisclient and www.wur.dgis.nl/uk

Project coordinator
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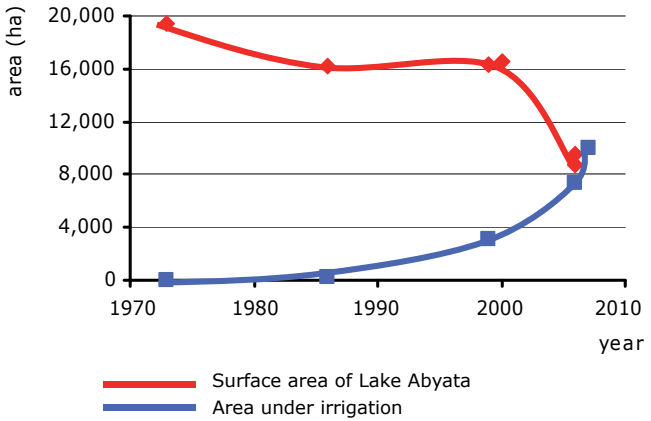
petra.hellegers@wur.nl.

3.4 Improving livelihoods and resource management in the Central Rift Valley of Ethiopia (ILCE)

Huib Hengsdijk, Plant Research International

Over the past decade, economic liberalization and the globalization of food and non-food systems have fostered large-scale investments in irrigated horticulture and floriculture in Ethiopia's Central Rift Valley. Commercialization of smallholder production systems, crop diversification and irrigation were actively supported by the Ethiopian Government and international donors. Their policies, which included favourable tax holidays and financing schemes as well as technical support, have resulted in a strong increase of the land area under irrigation. The Central Rift Valley, a river basin of some 1 million ha with a population of about 1.5 million, comprises agricultural land as well as the extensive wetlands of the Abyata-Shala Lakes

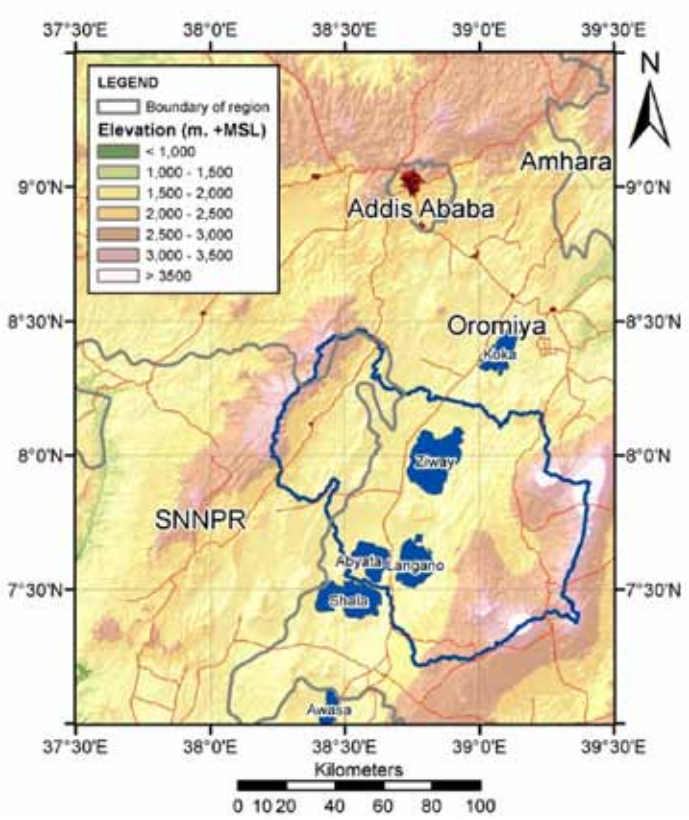


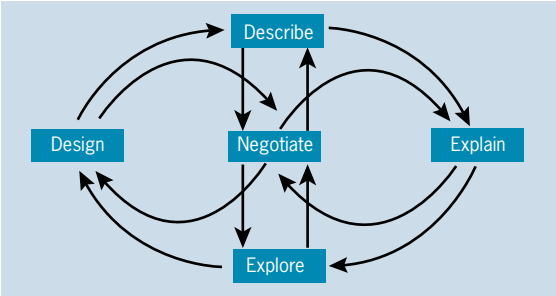
Increasing competition for water: While irrigation expands, Lake Abyata is drying up.

National Park. The park, which is very rich in biodiversity, has great potential for eco-tourism. The ILCE project addressed the competing claims that have arisen from the diverse interests of different users in terms of their quest for scarce natural resources (land *and* water) in this area.

As the Central Rift Valley is a land-locked basin -there is no surface inflow and outflow of water- interventions such as irrigation have far-reaching impacts on ecosystem goods and services. Ever since irrigation expanded, the water levels in most of the lakes in the Rift Valley have dropped and most dramatically so in Lake Abyata: In ten years' time the lake has shrunk to about half its original size. Other forms of environmental degradation that result from resource competition include the erosion of wood stocks, over-grazing of communal pasture lands and decreasing productivity levels due to expansion into marginal lands.

The main aim of the ILCE project was to strengthen the capacity of local authorities, development organizations and the private sector in natural resource management and land use planning in order to mitigate competition for natural resources while improving livelihoods of the population in the Central Rift Valley. This was done by applying the NE-DEED Framework (Giller et al., 2008; see section 3.1 of this booklet), which hinges on four analytical and interactive steps that feed into different phases of stakeholder negotiation processes: Describing, Explaining, Exploring and Designing (see figure the right). The Framework was used to support a policy dialogue among stakeholders grouped in the Central Rift Valley Working Group, with science-based information. The Working Group comprised professionals from the public sector (federal, regional and local government authorities), the private sector (tourism enterprises, horticultural producers), civil society organizations and academia.





The NE-DEED Framework as used to support stakeholder negotiation processes (modified from Giller et al., 2008)

Results

In its Descriptive phase the ILCE project disentangled the various driving forces impacting at different scales. In this phase too, the project unravelled how the chain of drivers resulted not only in decreased availability of water but also, how it contributed to increased claims on land and biomass. As an example, when the Ethiopian federal government forced local and regional administrations to make land available for agricultural investors, this often resulted in the conversion of communal grazing land into irrigated land as, for communal land, financial compensation of individual farmers is not legally required. The resulting land conversion implied that less land, biomass and water became available to local herdsmen and for pastoralists from other regions.

The Explanatory phase focused on the quantification of resource uses and claims, in particular water use (efficiency) by consumers as different as greenhouse floriculture, the soda-ash industry, smallholder horticulture and domestic users. The studies showed that, by far, smallholder horticulture is the biggest absolute consumer of fresh water: it involves the largest acreage of land and water-use efficiency is relatively low. Also, it was shown that economic and environmental performance of this sector can be improved considerably. Moreover, the potential negative impact of the agro-chemicals used in horticulture and floriculture threatens the quality of surface water. Alternative livelihood strategies need to be identified and implemented to put less pressure on fresh water resources. These may include tourism, rain fed agriculture and fisheries.

As some of these conclusions conflicted with government policies, with on-going activities of civil society organizations and with common beliefs and opinions, policy makers as well as other stakeholders had difficulty in accepting them. The fact that, for example, irrigated horticulture was the largest fresh water consumer was an eye opener for all stakeholders alike though for each from their own perspective. Irrigated horticulture is a smallholder sector mainly and it receives substantial financial and technical support from government and civil society organizations. The negative impact of agro-chemicals was a more-easily accepted conclusion. This specific study also revealed that, in Ethiopia, public institutions responsible for monitoring of water quality are lacking.

The ILCE project gradually moved from a focus on policy dialogue to local action. In doing so, full account was taken of the capabilities and mandates of local stakeholders. Mutual trust and bridges were built in stakeholder workshops and this allowed the identification of action-oriented research and development activities: Training of horticultural extension staff, water quality monitoring, building buffer zones along water bodies and developing promotion materials to stimulate (eco-)tourism in the Central Rift Valley. All actions made extensive use of the knowledge base developed by the project and they are being implemented in new public, private and civil society partnerships. Moreover, three Ethiopian students have embarked on PhD-level researches that investigate options to improve rain fed agricultural production systems in the area.

Conclusions and lessons learnt

The ILCE project has contributed to a better understanding of the resource claims and the underlying driving forces in the Central Rift Valley. By sharing this improved insight the project was able to build trust with and, even more-importantly, among local stakeholders. This enabled them to develop – in a participatory mode – initiatives to respond to the different resource claims. The multi-stakeholder Central Rift Valley Working Group was instrumental in bringing the different stakeholders together and engaging them in a policy dialogue.

A lesson learnt is that policy dialogue takes place at different governance levels. In a country like Ethiopia, having a strong central government and restricted transparency in policy formulation and implementation, it is difficult to trace and access such governance levels. Moreover, discourses at different scales need to be fed with evidence-based information that is relevant at the specific scale.

Neglect of environmental issues at policy level is partly caused by a lack of information on the impacts associated with intensified agricultural production systems. Also, the project faced the high ambitions of the Ethiopian Government to stimulate economic growth and to reduce chronic and wide-spread poverty and food insecurity: The political stakes to achieve these goals are extremely high and new environmental concerns associated with agricultural intensification are not readily appreciated. The ILCE project generated insight that, if not properly planned and managed, agricultural intensification contributes to increased resource claims. The project has clearly played the role of ‘early warning’, but whether policy is an ‘early listener’ remains to be seen.

Obviously, it is important to involve those stakeholders that drive and face developments in designing solutions to mitigate competing resource claims. In this respect the project brought stakeholders together that did not know each other before but that had similar interests. This resulted in new partnerships among the public, private and civil society sectors and in the participatory design of action-oriented research and development activities.

Improving livelihoods and resource management in the Central Rift Valley
Fact sheet/Highlights

Aim/objective
Mitigating competition for natural resources while improving rural livelihoods in the Central Rift Valley of Ethiopia.

Project location
Central Rift Valley, Ethiopia

Project partners

In the Netherlands
- Plant Research International
- Alterra, part of Wageningen UR
- Wageningen University, Chair Group Plant Production Systems
- Wageningen University, Chair Group Land Degradation and Development
- LEI, part of Wageningen UR
- Wageningen UR Livestock Research
- Government Service for Land and Water Management (DLG)

In Ethiopia
- Addis Ababa University (AAU), Faculty of Science
- Haramaya University (HU), College of Agriculture and Environmental Sciences
- Amhara Regional Agricultural Research Institute (ARARI)
- Ethiopian Institute of Agricultural Research (EIAR)
- Horn of Africa-Regional Environment Centre and Network (HoA-REC)
- Selam Environmental Development
- Ethiopian Rainwater Harvesting Association

Target groups
- Central Rift Valley Working Group: a multi-stakeholder platform of the public sector, private enterprises, NGO's and farmer organizations
- Ministry of Agriculture and Rural Development (now: Ministry of Agriculture), Ethiopia
- Ministry of Water Resources, Ethiopia
- Ethiopian Investment Agency
- Local and regional governmental authorities and institutions
- Royal Netherlands Embassy, Addis Ababa, Ethiopia.

Project output
- Project website containing full project information, publications and reports: www.crv.wur.nl
- Land use plan and map of the western part of Lake Ziway, Central Rift Valley, Ethiopia.
- Trained staff at Ethiopian collaborating institutions (extension officers, researchers, staff of NGO's and farmer organizations), some 85 in total
- MSc and PhD students supervised: at Haramaya University: 2; at Wageningen University: 5
- Selected scientific publications:
  - Halsema, G.E. van, Beshir Keddi Lencha, Mengistu Assefa, Hengsdijk, H. and Wesseler, J., 2011. Performance assessment of smallholder irrigation in the Central Rift Valley of Ethiopia (In press: *Irrigation & Drainage*).
  - Hengsdijk, H., Groot, A., Driel, J. van, Kidanemariam Jembere, Uum, J. van, Boone, P., 2009. Towards a sustainable future of the western shoreline of Lake Ziway. Participatory land use development workshop, Ziway. December 1-4, 2008. PRI Report 234. Wageningen UR/PSG/PRI.
  - Moges, G., Hengsdijk, H. and Jansen, H., 2011. Review and quantitative assessment of ex-situ household rainwater harvesting systems in Ethiopia. (Submitted: *Agricultural Water Management*)
  - Hengsdijk, H., Driel, J. van, Haile, A., Argaw, M., 2011. Competing claims for water resources in the Central Rift Valley: From global drivers to local opportunities (Submitted: *Water International*)

Website
www.dgis.wur.nl/UK and www.crv.wur.nl

Project coordinator
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3.5 Illegal or Incompatible? Managing the consequences of timber legality standards on local livelihoods in Ghana

Nico Rozemeijer, Wageningen UR Centre for Development Innovation and
Bas Arts, Wageningen University, Chair Group Forest and Nature Conservation Policy

FLEGT: Forest Law Enforcement, Governance and Trade

In 2003, the European Commission launched the Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan, to combat illegal logging and related timber trade. Under the FLEGT Action Plan, so-called Voluntary Partnership Agreements (VPAs) were developed with important EU partner countries in timber trade including Ghana, Indonesia, Liberia and Cameroon. Central to the VPA process in these partner countries is the enforcement of Timber Legality Standards (TLS's). These standards include a package of checks and balances to guarantee that the timber to be exported, to the EU in this case, is legally produced. In Ghana, as from 2012, these legality assurance mechanisms also apply to supplying the domestic market. The 'Illegal or Incompatible?' project assessed the consequences of the application of these standards on local livelihoods: Is legally-produced timber – contrary to the current illegal timber practices- 'good' or 'bad' for local livelihoods? Under what conditions? What is the expected impact on both people and forests? And also, if current activities of forest users are not conform the law, are they then just illegal or should we talk about incompatibility between a legitimate local demand for access to resources and current forest legislation and policies that are denying forest-dependent communities their fair share?

The 'Illegal or Incompatible?' project aimed to strengthen livelihood considerations in the development of forest policy in order to enhance its effective implementation in Ghana. More specifically, the objective was to develop broadly-supported governance mechanisms that manage the consequences of Timber Legality Standards on local livelihoods. The underlying thinking was that success of VPAs requires the implementation process to include wider social issues around forestry. In addition, the project helped to strengthen the capacity of local stakeholders to (re-)negotiate institutional arrangements for sustainable resource use.

Implementation of the project was negatively affected by the late signing of the VPA between Ghana and de EU – the ratification was only in 2009 – and, as a consequence, its delayed start, not before 2012. This necessitated the project partners to think

in terms of scenarios rather than in actual impacts. The project delivered along four broad lines:

- Interactive and trans-disciplinary research on the FLEGT/VPA process in relation to actual timber utilisation practices, forest governance and livelihood strategies in Ghana. Programme results include academic papers and MSc theses;
- Capacity building of forestry-related government staff and researchers (mainly in Ghana). This project component include students from Ghana, Indonesia and Kenya doing their MSc research. In addition, with support from the project, two researchers from Ghana embarked on PhD research trajectories. Moreover, staff of the Forestry Research Institute of Ghana were trained to facilitate multiple stakeholder dialogue on forest policy reform. This was done in conjunction with the EU-funded project on chainsaw milling;
- Networking between a range of research institutes and NGOs on the theme 'VPAs and livelihoods'. The project website: http: www.vpa-livelihoods.org is an important deliverable of the project;
- Facilitating policy dialogues between research and the Government of Ghana, the Netherlands' Ministry of Foreign Affairs/Development Cooperation, the Ministry of Economic Affairs, Agriculture and Innovation, and the European Commission, DG Research and DG Development through the publication of Policy Briefs and in a series of workshops and seminars in 2009, 2010 and early 2011.

Competing claims on forest resources in Ghana

In Ghana, forests are declining rapidly. Each year, the 'Annual Allowable Cut' is being exceeded by about hundred per cent. Roughly half of the AAC is timber that is cut 'illegally', mainly by small-scale chainsaw millers that supply the domestic timber market. The formal timber sector supplies wood that is produced 'legally' to international markets, including Europe.

Growth of both markets results in depleting forest resources. The current response from Ghana and the EU as formulated in the VPA is to use the trade in legal timber as a trigger for the forestry sector in Ghana to improve its governance and sustainability. This is being done by putting a series of law enforcement measures in place. Strict law enforcement, however, threatens the timber supply to the local market and, hence, much of the forest-related livelihood opportunities in rural Ghana. Directly, this involves some hundred thousand people and another two hundred thousand indirectly. In this scenario legal timber exported to the EU competes for forest resources directly with the domestic market supplied by illegal small-scale operators. As the enforcement of legislation will have a negative impact on local livelihood opportunities, the question emerges whether a legally operating timber sector offers sufficient alternatives to these small producers, even if there is enough timber? On the other hand, the VPAs are expected to have positive effects on livelihoods as well, including improved forest conditions and environmental services -that may increase natural assets-, greater legal involvement of the small-scale timber sector, and continued multi-stakeholder dialogues towards improved forest governance in Ghana.

Competing approaches to link timber legality and forest governance

The 'Illegal or Incompatible?' project has been instrumental in bringing research and policy makers together to interpret the VPA, in particular in terms of its intended livelihood outcomes. The ensuing dialogue revealed two different policy interpretations and approaches to the VPA implementation as emerging in Ghana. On the one hand there is the narrow and rather technical law enforcement approach aiming to ensure adherence to technical norms on commercial timber production and payments of timber exploitation and trade-related duties. With current forest laws and policies in Ghana being predominantly anti-poor, enforcement of the legislation will have a similar same effect. This approach is expected to have negative livelihood implications, especially in the short term.

On the other hand there is the broader approach that perceives enforcement as part of improved forest governance that relates to socially-equitable use of forest resources and to social safeguards that mitigate negative implications for local livelihoods. This approach perceives the VPA as a first step toward a major reform of forest laws and policy in Ghana.

By bringing out the differences between these approaches and their anticipated impact on livelihoods, the project has informed on-going decision making in Ghana, in the EU and in the Netherlands on the competing claims on Ghana's forestry resources, and its beneficiaries.

The EU-Tropenbos International Chainsaw Lumbering Project

The 'Illegal or Incompatible?' project worked closely together with the EU-financed project 'Developing alternatives to illegal chainsaw lumbering through multi-stakeholder dialogue in Ghana and Guyana'. In Ghana, the Chainsaw project was implemented by Tropenbos International in collaboration with the Forestry Research Institute (FORIG) and the Forestry Commission (FC), which were also partners in the 'Illegal or Incompatible?' project. The overall objectives of the chainsaw project were to reduce poverty and promote viable livelihoods in forest-dependent communities, to reduce illegal logging, and to promote the conservation and sustainable management of tropical forests.

More-specifically, the Chainsaw project aimed to develop sustainable solutions for problems related to the production of lumber for local timber markets. This was done by involving all stakeholders in dialogues and information gathering in support of the development of alternatives to unsustainable chainsaw practices.

The project investigated the driving factors and impacts of chainsaw lumbering and the legal, social, political and economic conditions that foster it. Stakeholders engaged in developing mutually-acceptable solutions to the problems associated with chainsaw lumbering. A multi-stakeholder dialogue, powered by sound, science-based information from research, was initiated to reduce conflict and develop national consensus to address problems related to chainsaw lumbering. Outcomes from this multi-stakeholder process were piloted in eight communities in Ghana.

The multi-stakeholder dialogue process was the counterpart activity for the 'Illegal or Incompatible?' project. In Ghana this dialogue was organised at national level and supported by district-level meetings. At the national level the project hired and trained a national coordinator and a facilitator to guide the dialogue process. At the district level eight facilitators/community forestry workers were recruited and trained to facilitate the process. The facilitation team was also trained to monitor and evaluate the process.

In September and December 2009 two national multi-stakeholder dialogue meetings were held, followed by various district-level meetings. Capacity building of the various stakeholder groups is an on-going effort of the project. A specific communication strategy targeting the participants in the stakeholder dialogue was prepared and implemented. Also, in the framework of the projects the National Forest Forum (NFF) of Ghana was re-established and the project's management is now seeking to integrate the multi-stakeholder dialogue into the NFF.

For more information: www.chainsawmilling.org

Illegal or Incompatible?
Managing the consequences of timber legality standards on local livelihoods
Fact sheet/Highlights

Aims/objectives
Support good governance to manage the consequences of VPA legal timber legality standards on local livelihoods. Strengthening the capacity of actors to (re-)negotiate institutional arrangements for sustainable resource use in Ghana.

Project location
Ghana

Project partners

In the Netherlands
- Alterra, part of Wageningen UR
- Tropenbos International Foundation
- Wageningen UR Centre for Development Innovation
- Wageningen University, Chair Groups Forest and Nature Conservation Policy, Forest Ecology and Forest Management, Environmental Systems Analysis, Rural Development Sociology, and Communication Sciences

In Ghana
- Forestry Commission of Ghana
- Forestry Research Institute of Ghana (FORIG)
- Tropenbos Ghana Office, Ghana

Target groups
- The forestry sector in Ghana and, more specifically, the Forestry Commission of Ghana
- Civil society organizations representing forest community interests in Ghana
- Other countries in West Africa that are in the process of negotiating a VPA with the EU
- The European Commission: DG Environment and DG Development

Project output
- Policy dialogues in Wageningen, The Hague, Accra and Elmina (Ghana) and Brussels resulting in a series of policy briefs and seminar reports, including:
  - Seminar on the FLEGT/VPA process in Ghana 'Legality and Livelihoods'. June 8, 2009. Summary of Proceedings and Key Messages. Wageningen University, the Netherlands.
  - Seminar 'Managing the consequences of timber legality standards on local livelihoods', Accra, October 8-9, 2009.
- Policy briefs, including:
  - Implementing FLEGT: Impacts on local people. Policy Brief (F.K. Wiersum and D. van Oijen, 2010). Wageningen UR, Wageningen, the Netherlands. 20 pp.
  - Social Safeguards in the Ghana-EU Voluntary Partnership Agreement (VPA): Triggering improved forest governance or an afterthought? Policy Brief (Project Team, 2010). Wageningen UR, Wageningen, the Netherlands. 10 pp.
- Trained staff at partner institutions in Ghana
- MSc and PhD students supervised and research material made available in policy dialogues
- Scientific papers, including:
  - Arts, B. and S. Beeko,2010. The EU-Ghana VPA Agreement. A Comprehensive Policy Analysis of its Design. *International Forestry Review* Volume 13 (3), 2010, 10 pp.
  - Wiersum, F.K., 2010. Scenario's for developing timber legality regimes. *ETFRN Newsletter* 52(2011) 8 pp.
  - Special issue of *Journal of Forest Policy & Economics*: 'International forest governance regimes: balancing requirements concerning timber legality and forest-based livelihoods'. (In preparation; expected second half 2012).
- Project website containing research and policy information: www.vpa-livelihoods.org

Websites
www.vpa-livelihoods.org and www.dgis.wur.nl/uk

Project coordinators
Drs Nico Rozemeijer, Wageningen UR Centre for Development Innovation and Prof Dr Bas Arts, Wageningen University, Chair Group Forest and Nature Conservation Policy.
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4 Sustainable Use of Agro-biodiversity

4.1 Rationale

Bert Visser, Wageningen UR Centre for Genetic Resources the Netherlands and
Wim Andriesse, Wageningen International

Agro-biodiversity encompasses all components of biological diversity in agro-ecosystems that are of relevance to food, agriculture and fisheries. This includes the variety of plants, animals, fish and micro-organisms at the genetic, species and ecosystem levels -our genetic resources- which are necessary to sustain key functions of life and, in particular, our food production systems.

As with all biodiversity, agro-biodiversity is being threatened: erosion of the global natural resource base and of the world's agricultural production systems has been recognized for many decades. Where this erosion did proceed unabatedly, it eventually resulted in complete loss of agro-biodiversity, whether it concerned natural habitats or animal breeds and crop types. Already since the nineteen-seventies substantial efforts have been undertaken to discuss and agree on the impact of this erosion and loss, and on policies and practical measures to curb the process. Erosion and loss, however, still continue due to the powerful driving forces that have caused them in the first place, including human population growth, expanding agricultural production area, migration, environmental pollution and globalization. Climate change may further add to these threats. (Brussaard et al., 2007)

As from mid-2009, the Partnership Programme was expanded to address the theme 'Sustainable Use of Agro-biodiversity' and, through a competitive call for proposals, four projects were selected for implementation. These projects focused on:

- Community empowerment for in situ conservation of plant genetic resources (the 'Community Biodiversity Management and Empowerment Project');
- Local management of plant genetic resources under conditions of climate change ('Community Climate Change Response');
- The inclusion of agro-biodiversity conservation into value chains and markets ('Value-adding by addressing market chains'), and
- Valorisation of sorghum cultivars yielding a natural dye ('Dye sorghums in Benin').

Summary descriptions of these projects are given in the Sections 4.2 through 4.5 below. The results obtained offer a fine indication how action-oriented research can contribute to farmers' livelihoods through the better use of agro-biodiversity. The results also provide an inventory of options for follow-up activities. In fact, new projects have been formulated already, building on the early results obtained in the framework of the Partnership Programme.

Attempts to conserve agro-biodiversity, and research supporting more-effective conservation, do not just serve collectors' aspirations. Rather, they do result in saving our common bio-cultural heritage and, most of all, they serve our future options for food security and the sustainable production of food. Agro-biodiversity is a major asset and forms one of our Global Public Goods.

The function of conservation and management of agro-biodiversity lies in its continued availability for production purposes, now and in the future. Two distinct types of agricultural production systems can be distinguished, namely:

- High-external-input production systems (or: 'modern' systems) that rely strongly on external inputs and that exhibit chains and control of the agro-environment to the extent possible, and

- Low-external-input production systems (or: 'local' systems) that are characterized by high levels of diversity, low external inputs, local marketing and adaptation of agricultural practices to the local environments.

In actual practice, most production systems include features of both types to varying degrees. High-external-input systems, according to some, should be regarded as the inevitable successors of local systems. Others hold that the wide variety of agro-ecological environments and production systems, the lack of capacity of the formal breeding system, and the inadequacy of extension services to support these systems, implies a continued reliance of many poor people on local production systems. Under the current trend of globalization and the growing importance of national and export markets, poor people increasingly sell the surplus of their agricultural produce.

Typically, more genetic resources are maintained in local production systems than in high-external–input systems. Local systems also depend to higher degrees on the support functions offered by local agro-ecosystems. At the same time, the survival of genetic resources and other elements of agro-biodiversity is threatened in both, modern and local production systems. As a consequence, both systems need support to increase the use and maintenance of agro-biodiversity, and to render agricultural production more sustainable. Whereas modern production systems are served by public and private research and breeding, this is much less the case for the highly diverse local systems. This was one of the reasons for the Partnership Programme to select projects that focused on local production systems: The maintenance and strengthening of these systems contributes most to the conservation of diversity.

Local production systems can be supported through the development and implementation of participatory approaches that make optimal use of the farmers' knowledge of their own environments and local biodiversity and their capacities to learn how to better manage and develop their production systems. In order to be effective, these participatory approaches need to bring-in professional knowledge, techniques and materials from the public and private sector. If successful, such approaches contribute to a re-distribution of goods, expertise and power.

4.2 Community biodiversity management and empowerment

Marja Thijssen and Karèn Verhoosel, Wageningen UR Centre for Development Innovation

Community Biodiversity Management (CBM) has been designed as an approach that recognizes and supports communities and their local organizations as legitimate and crucial actors in the management of (plant) genetic resources, as well as in the wider context of biodiversity conservation and of development at large. In this approach communities are empowered to exercise their rights to, and secure access and control over, their genetic resources. This is being pursued by strengthening community-based organizations, local decision-making processes and local governance in the conservation and utilization of agricultural biodiversity.

With its particular focus on empowerment the 'Community Biodiversity Management and Empowerment' study (CBME) contributed to the wider framework of poverty alleviation, food security and environmental sustainability as targeted in the Millennium Development Goals, MDG 1 and 7 in particular.

MDG 1 deals with eradicating hunger and poverty and aims to half the hunger globally by 2015. MDG 7 deals with ensuring environmental sustainability.

The specific objectives of the CBME project were to:

- Define a conceptual framework of empowerment in the context of *in situ* conservation of plant genetic resources;
- Assess the effectiveness of the CBM process as a means to empower farmer communities regarding the *in situ* conservation of plant genetic resources;
- Develop individual steps and a set of practices of CBM as a means to empower farmers and farmer communities;
- Exchange experiences and enable shared learning on CBM and empowerment at a global level, and
- Develop a set of best practices to make CBM operational as a method to achieve *in situ* conservation of plant genetic resources for food and agriculture.

Study sites

The CBME project worked in a total of fourteen study sites in four countries where partner organizations were already active in community biodiversity management: Five sites were in Brazil and three each in Ethiopia, India and Nepal. Naturally, these sites differed greatly in terms of their ecological, socio-economic and cultural settings, as well as in the history and approaches to (community) biodiversity management. Besides applying different sets of practices, the sites and the respective partner organizations also differed in aspects such as the time period over which CBM approaches and practices had already been applied, the capacity of local community institutions to

implement CBM activities autonomously, and the efforts towards creating economic incentives for local diversity conservation through initiatives leading to value addition. For all 14 study sites base line studies were compiled that include information on the general conditions of the sites and on detailed aspects related to CBM and empowerment. The base line studies can be accessed through the project's website: www.cdi.wur.nl/UK/programmes/Projects/globalCBM.

A framework to study empowerment within the *in situ* conservation context

In our CBME study, empowerment is understood as 'farmers taking control of their own agenda, setting their own objectives, managing their own activities and assessing their own performances in agro-biodiversity management'. We considered the concepts of agency and structure, i.e. communities having the capacity to make meaningful choices, and the context of the formal and informal institutions in which they operate. Also, our framework encompassed the concepts of means, processes and ends, in other words: 'Do the choices and actions also lead to the outcomes desired?'.

We used a participatory approach to develop a framework to study empowerment in the social, economic and legal domains and for each domain topics, questions and indicators for empowerment were defined. Topics studied in the social domain included: Awareness, organization, participation, local-level decision-making, collaboration and influence. In the economic domain material assets, household income, finance and credit, and access to markets were addressed. The legal domain focussed on farmers' rights, customary and custodian rights, access to genetic resources, access- and benefit-sharing and legal entities for biodiversity management. Next, the framework was transformed into a tool for data collection, comprising sets of interview questions for community households and other stakeholders, participatory tools for community workshops, and guidelines for group discussions with community leaders. For each indicator we developed scales to score empowerment. The scoring was done at national-level workshops and allowed the comparison of data between the sites within a country. At the concluding project workshop the scores were compared at an international level.

The CBM process, CBM practices and empowerment

The extensive data set that was compiled was analysed and we related the specific topics described above, to the (sub-)sets of indicators for empowerment relevant to the various study sites, as follows:

Social empowerment

An example of a topic that needs further elaboration is the interaction between individual farmers and collectiveness: Between the different sites we observed clear differences in prevailing mechanisms for social organization and the drivers of collectiveness. And these were directly related to the indicators for social empowerment (stronger community participation associated with higher scores for social empowerment). For a topic such as 'awareness', CBM practices like biodiversity fairs, local food festivals, farmer exchange visits and community seed

banks appeared very effective in increasing the communities' awareness on the value of their local genetic resources and associated traditional knowledge. This resulted in increased community ownership over their genetic resources, and their increased use (higher awareness associated with higher scores for social empowerment).

Economic empowerment

At specific sites farmers were organized into local businesses, working on value addition of traditional crops like taro, sticky rice and medicinal plants. The presence of different community-based value-addition practices was reflected in higher scores for specific indicators of economic empowerment, as well as higher scores for some indicators of social empowerment. Increased access to markets resulted in increased household incomes at community level, and higher scores for economic empowerment. A practice such a community-managed biodiversity fund further sustained the conservation-oriented local businesses with more empowered communities.

Legal empowerment

The saving, exchange, variety registration and commercialization of seeds or other propagation materials by the farmers are directly related to plant genetic resources and seed policies and laws like Farmers Rights, Access and Benefit Sharing mechanisms and other domestic seed laws. We found that various CBM practices, including community seed banks, participatory plant breeding (PPB), community-based seed production, and community biodiversity registers (CBR), are effective local mechanisms through which farming communities tailor their customary practices to exercising their own rights (higher scores for legal empowerment). However, there is a need to recognize such successful practices as mechanisms to implement the national plant genetic resources and seed policies and laws.

From local initiatives to shared learning at a global level

The CBME study allowed us to go from local initiatives in community-level management of biodiversity in Brazil, Ethiopia, India and Nepal to a global comparison. As for the latter, a series of national workshops – combined with training sessions-, international project meetings and an internal project website supported the exchange of experiences and shared learning. An additional tool for shared learning was our CBME 'Study Exchange Programme', in which staff from the partner organization in one country hosted their counterparts from the other countries to visit the various study sites. This was done in three-week

exchange visits to jointly characterize and document these sites as part of the CBM process. In addition, the teams looked at topics such as drivers of CBM and empowerment, inclusion, equity and gender, competing claims and genetic resources policies. The exchange studies allowed the host teams to have a critical reflection on CBM and empowerment as addressed in their projects. Reports are available at our website.

The main achievement of the CBME study is that it allowed us to develop a strong global network of key players in CBM, with a unique structure that includes farmer organizations, leading development organizations that are closely aligned to national PGR policy bodies, and universities that are hosting post graduate programmes in PGR management. This network aims to promote CBM as an approach to achieve *in situ* conservation and to realise Farmers Rights, while contributing to the empowerment of farmers to manage agro-biodiversity in a collective, and therefore more sustainable, manner. A number of new initiatives have resulted from the CBME study:

Global Project on Community based Biodiversity Management for Climate Change Resilience

With support from the Benefit-sharing Fund of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) CBME project partners are now implementing a project on CBM and resilience (2012-2013). This project uses a participatory learning and action approach to develop strategic action plans that support the integration of CBM as a strategy for on-farm management of plant genetic resources for food and agriculture, and that enhance community resilience to ensure sustainable food security. The project covers eleven countries in Africa, Central and Latin America and South Asia. Twenty-four farmers organizations, sixteen leading development organizations, twelve universities, eleven national PGR bodies and three international organizations participate in this initiative.

Symposium during the EcoSummit 2012 'Community resilience: Strategies for empowerment in agro-biodiversity management and adaptation'

EcoSummit 2012 is an international conference that brings together the world's most respected minds in ecological science to discuss restoring the planet's ecosystems. At this conference CBME project partners will organize a symposium to share their experiences on the contribution of community biodiversity management to empowerment of farming communities to collectively and intentionally manage their agro-biodiversity. Seven key papers will discuss multiple solutions to enhance resilience in a context of ecological sustainability, and we will share the preliminary results obtained and efforts used in the project funded by the FAO Benefit-sharing Fund as described in the section above. For more information:
www.ecosummit2012.org/symposia-deboef.html

A book on 'Community Biodiversity Management: promoting resilience and the conservation of plant genetic resources'

Building on the experiences of the partners in the CBME project countries, as well as on insights gained during our study, a book is being compiled for publication in 2012 by Earthscan Publishers. This book shares successful case studies from around the globe. The book aims to support practitioners, scientists, students and governmental and non-governmental workers on agro-biodiversity management and the general public in *in situ* conservation methodology. It further addresses the development of strategies that support farming communities to respond to socio-environmental change, while using diversity and engaging in learning processes. It links these grassroots efforts to debates in the policy arena as a means to respond to the unpredictable changes we face in sustaining our livelihoods.

Community biodiversity management and empowerment
Global study on community empowerment for *in situ* conservation of plant genetic resources for food and agriculture
Fact sheet/Highlights

Aims/objectives
Define and apply a conceptual framework for empowering farmer communities on *in situ* conservation of plant genetic resources, and assess the effectiveness thereof, exchange experiences and enable shared learning on community biodiversity management and empowerment at a global level, and develop to make community biodiversity management operational.

Project location
Ethiopia, India, Nepal and Brazil

Project partners

In the Netherlands
Wageningen UR Centre for Development Innovation
Wageningen UR Centre for Genetic Resources the Netherlands

In Ethiopia
Ethiopia Organic Seed Action (EOSA).
Ethiopian Institute for Agricultural Research (EIAR): Holetta Agricultural Research Centre.
Haramaya University.

In India
M.S. Swaminathan Research Foundation (MSSRF).
Bioversity International-India.

In Nepal
Local Initiatives for Biodiversity Research and Development (LI-BIRD, an NGO).

In Brazil
Brazilian Agricultural Research Corporation (EMBRAPA).
Federal University of Santa Catharina (UFSC).

Target groups
- Farmers communities and NGO's in the partner countries.
- Staff of partner organizations
- Global biodiversity for a and institutions

Project output
- Conceptual framework for empowerment in the context of sustainable ago-biodiversity maangemnt
- Baseline studies for the project study sites in Ethiopia, India, Nepal and Brazil
- Trained students and staff of partner organizations
- Book 'Community Biodiversity Management: Promoting resilience and the conservation of plant genetic resources'. Earthscan Publishers, Oxford, UK. (Due June 2012)
- Project website containing baseline information, training manuals, workshop reports, etc. (see below).

Websites
www.cdi.wur.nl/UK/programmes/Projects/globalCBM and
www.dgis.wur.nl/uk

Project coordinators
Dr Marja Thijssen and Ir Karèn Verhoosel, Wageningen UR Centre for Development Innovation. Contact person: marja.thijssen@wur.nl.

4.3 Community climate change response: Local management of crop diversity under conditions of climate change

Bert Visser, Wageningen UR Centre for Genetic Resources the Netherlands

In Ethiopia and Zimbabwe the project 'Community Climate Change Response' addressed the question how strategies to conserve and develop plant genetic resources on the farm can be designed in order to improve farmers' livelihoods and to contribute to food security under conditions of climate change. The activities in the project were structured along three central research questions:

- What are farmers' perceptions of changes in weather and climate and how do these perceptions compare with hard meteorological data?
- What are farmers' responses to perceived climatic changes so far? Are they experimenting with other varieties, new crops, adapted agronomic practices?
- How can outsiders (community workers, extension officers, breeders, gene banks and social scientists) support farmers in strengthening their response to cope with climate change? How can outsiders help farmers to stay ahead of the adaptation curve and to not only react to changes that have already taken place?

Perceptions of change

In six project sites in Ethiopia and Zimbabwe, all exhibiting different climatic and ecological conditions, group meetings and individual interviews were held with the local farmers to register their perceptions on climate change. Whereas circumstances and experiences varied from site to site, some of the farmers' observations were consistent. For example, the percentage of farmers noting a reduced total rainfall amount varied between sites, both in Zimbabwe and Ethiopia. Farmers regarded these developments as most critical to their livelihoods as they impact directly on crop production and food security: A late start of the rainfall season implied that farmers could only plant at a late date and, hence, they had to resort to other crops and to crop varieties with earlier maturity than before. Also, in the farmers' perception, irregularity of rainfall patterns often came along with mid-term droughts.

Our own comparison with meteorological data did not reveal any consistent reduction of total rainfall. However, later onsets of the rainy season, erratic mid-season droughts and reduced lengths of the rainy season could be deduced from the data of some of the stations close to the project sites. The farmers' mistaken perception of decreasing total rainfall may be caused by an actual decrease in water availability that results from higher run-off associated with erratic rainfall patterns.
Farmers also noted that it was difficult to only blame climatic

changes as the factor contributing to reduced availability of water: They mentioned that other factors, including increased population growth, clearing of forests to establish crop fields, stream bank cultivation and siltation, may also contribute to decreasing water availability from fresh-water sources, such as springs, rivers and lakes.

Coping strategies

Farmers in Zimbabwe and Ethiopia had developed similar on-farm coping strategies including adoption of short-season drought-tolerant varieties, and diversification of crops. In the Zimbabwean sites for example, some farmers had shifted from cultivating maize to growing sorghum, pearl millet and finger millet. Also, cultivation of cowpea and Bambara nut gained importance over groundnut. To this end, farmers had autonomously recovered varieties grown traditionally in the communities. Off-farm alternatives mentioned by the farmers included migration, selling of livestock in drought periods and alternative income generation at the local level.
An essential observation was that farmers did not only perceive changes in the weather patterns but that, apparently, these changes were so profound that farmers began to respond to them. In this context, it must be noted that the concept of climate change as a globally-acting external force affecting local farming systems is a foreign idea to farmers. Instead, in their perception, the farmers simply reacted to persistent, locally experienced changes without reference to a global context.

Support through participatory approaches

Farmer field schools were introduced as a way to bring out and evaluate new planting material that is better adapted, potentially, to changing weather patterns. The new germ plasm was variously obtained from gene banks, national and international breeding institutes, stocks of local partner organizations and distant local markets. For most crops, recently-improved and

Overview of new germ plasm introduced at the project sites.

Project site	Ethiopia			Zimbabwe
	Olenkomi, West Showa,	Gonde Finchema, Arsi	Jara Galelcha, Hawassa	Total of 3 sites
Maize	14	8	26	13
Sorghum	66	20	20	6
Durum wheat	40	40	30	
Bread wheat	24			
Barley	20			
Teff	6		6	
Pulses	25	12	8	
Pearl millet				4
Groundnut				4
Bambara nut				3
Cowpea				4
Forages			10	

older varieties as well as farmers' varieties were used. In the case of maize, varieties included modern hybrid varieties, open pollinating varieties and farmers' varieties. As part of their introduction and cultivation, the seeds of the varieties which we evaluated were included in local seed banks to secure their continued accessibility. Promising materials were then multiplied to serve more farmers, in the field schools as well as in adjacent communities. Often, farmers took these varieties home, to grow and evaluate them themselves, in so-called 'micro farmer field school trials'. Researchers advised farmers on the evaluation of these varieties and in some cases the materials were multiplied for off-season seed production using irrigation facilities. In turn this taught us which crop features were important to the farmers.

Whereas the activities described above, only represent the initial results of our participatory approaches and the eventual adoption rates are to be awaited, they do show the opportunities which participatory approaches hold in helping farmers to deal with the weather and climate changes experienced so far and those that may be expected to occur in the future.

The table below lists the crops and varieties that were (re-)introduced in the various project sites. The differences in numbers between the sites in Ethiopia and Zimbabwe reflect the higher intrinsic diversity of Ethiopian ecosystems and germ plasm. Obviously, testing all these varieties was only possible because of the great interest, commitment and help of the farmers with whom we searched for alternative and better-adapted crops and crop varieties.

Summary of the main results

The 'Community Climate Change Response' project has shown that:

- Farmers do perceive the effects of climate change or persistent weather changes;
- In response, they develop their own coping strategies;
- These coping strategies are hampered by restricted access to better-adapted crops and crop varieties;
- Additional genetic diversity needs to be introduced to increase food security and enhance livelihoods;
- Farmers eagerly engage in participatory varietal selection of new crops and crop varieties, and
- Appropriate new crops and varieties are likely to be adopted.

Community Climate Change Response
Local management of crop diversity under conditions of climate change
Fact sheet/Highlights

Aims/objectives
Increase awareness and capacity amongst farmer communities to cope with climatic changes, to increase awareness amongst policy makers about the relevance of local resource management systems with regard to food security and climate change, and to increase collaboration between farmer communities and the public research sector in the areas of crop adaptation and conservation of plant genetic resources.

Project locations
Ethiopia and Zimbabwe

Project partners

In the Netherlands
- Plant Research International
- Wageningen UR Centre for Genetic Resources the Netherlands
- Wageningen University, Chair Group Technology and Agrarian Development
- Oxfam Novib The Hague, the Netherlands.

*In Ethiopia**
- Ethiopia Organic Seed Action (EOSA)

*In Zimbabwe**
- Community Technology Development Trust (CTDT).

Target groups
- Farmer communities, community workers, extension officers and breeders
- Researchers in agro-biodiversity
- National governmental institutions

Project output
- *Reports*
  - EOSA and CGN, 2009. Strengthening livelihoods and local management of plant genetic resources under conditions of climate change. Report of the Projects' Inception Meeting, August 31-September 1, 2009. Ethiopia Organic Seed Action, Addis Ababa, Ethiopia. 20 pp.
  - CTDT,2009. Observed climate trends and farmers' perspectives of climate change for Chiredzi, Murehwa and Uzumba-Maramba-Pfungwe Districts of Zimbabwe. Community Technology Development Trust, Harare, Zimbabwe. 80pp.

Project coordinator
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* Other partners in Ethiopia and Zimbabwe are subcontracted through EOSA and CTDT.

4.4 Value-adding by addressing market chains: Local biodiversity initiatives and value chains: are they commensurable?

Sietze Vellema, Wageningen University, Chair Group Technology and Agrarian Development

Biodiversity conservation is often grounded in the dynamics of specific landscapes and in diverse collective endeavours and actions. The aim of the project 'Value-adding by addressing market chains' was to explore whether different standard systems, such as 'organic' and 'fair trade' or 'sustainability certificates', are commensurable with these dynamics. Where the various standards address biodiversity as part of their objectives and indicators, our project approached the actual conservation of biodiversity from the perspective of combined dynamics.

To do so, six examples of locally-driven conservation initiatives were selected, each of them being a mixture of standards and certification schemes (see table below). Practitioners and researchers in these locations documented their experiences with market-based forms of regulation. This taught our partners that in-depth documentation and conceptualisation of their practices adds value to their involvement in immediate problem solving.

The Value-adding project employed graduate students, both of Wageningen University and of partner institutions, to conduct field research in the interfaces between local strategies for biodiversity conservation and the dynamics of markets and chains. In addition, an e-conference and website at the Eldis Community on research methodology was organized to support a thorough preparation of the project's own research method. The project was active in South Africa, Ghana, Columbia, Thailand and Namibia and involved over twenty organizations with track records in the study, development or promotion of standards and certification schemes. Early in 2011, the Value-adding project brought these research partners together in a workshop to make a comparative analysis of the case studies. Also, the lessons learnt were presented to policy makers and practitioners.

In our project we linked two distinct features of an integrated strategy to conserve agro-biodiversity. On the one hand, we built on locally-embedded business models either under industrial or sector coordination, rural livelihood strategies and productive practices that sustain diversity of the natural resource base in specific territorial domains. On the other hand, we recognized that the viability of such endeavours depends on their linkages with market developments and chain integration, in particular through standard-setting and certification. Our research exposed different configurations of these two dimensions in the six case studies. Also, it confirmed that agro-biodiversity conservation, as an intended outcome of the project, partly depends on how these two dimensions interact.

Overview of the standards and certification schemes in the selected case studies.

Country, commodity and focus					
South Africa	**South Africa**	**Ghana**	**Colombia**	**Thailand**	**Namibia**
Rooibos	Rooibos/ Wild rooibos	Oil palm	Bamboo (Guadua)	Glutinous rice	Marula (Devil's claw)
Landscape and industry focus	Community focus	Crop product focus	Forest system focus	Farming system focus	Crop and community focus
• Industry-based guidelines for sustainable farming practices • UTZ Certified Good Inside • Rainforest Alliance • GreenChoice Alliance's Right Rooibos Standard • GreenChoice Living Farms Reference • Geographical indicators	• Fair Trade Labelling • Sustainable Harvest Guidelines	• Food safety standards • Roundtable Sustainable Palm Oil (RSPO) • EU Organic Regulations • US National Organic Program • IMO's "Fair for Life" (Institute for Market Ecology)	• Forest Stewardship Council (FSC) • Forest Law Enforcement Governance and Trade (FLEGT) • Technical industrial standards in construction • Public regulation in timber	• North Organic Agriculture Standards (NOAS) • Organic Agriculture Certification Thailand (OACT) • International Foundation for Organic Agriculture (IFOAM)	• Organic standards • Body Shop – community trade • Fair trade • Geographical indicators • Intellectual property rights sharing with buyer

Case studies

The Value-adding project worked on six case studies of five different commodities, in South Africa (2), Ghana, Colombia, Thailand and Namibia respectively. The main focus of our activities in these case studies, and the outcomes thereof are summarized in the sections below.

South Africa

In South Africa, the project included two initiatives on rooibos in the South African Fynbos biodiversity hot spot. The latter is resource-constrained and allows for a few production systems only. The GreenChoice Alliance is a conservation sector initiative between various NGOs and industries that is being coordinated

jointly by the World Wildlife Fund-South Africa and Conservation South Africa,. The Alliance worked with medium and large scale rooibos farmers and with the South African Rooibos Council on an industry-wide 'Right Rooibos Standard'. The Alliance also started to align this standard with international standards such as those of ISEAL, UTZ Certified, the Rainforest Alliance and the GreenChoice Living Farms Reference. The issue is how the potential strength of harvesting practices that were agreed upon and monitored by local players can become part and parcel of the monitoring and auditing practices in international certification schemes.

In a second rooibos initiative in South Africa, the Heiveld Cooperative, the Environmental Monitoring Group and the Indigo Development and Change Initiative have been pioneers in getting biodiversity conservation in rooibos on the map and into the market. The consortium worked with rural communities in the Suid Bokkeveld area which are harvesting rooibos on sustainable harvesting principles while applying fair trade schemes and related management of processing capacity. Our partners engaged rooibos plantations and wild-harvesting communities in finding new models to make biodiversity conservation work, and to link this to international tea packers that implement sustainability certification. Also in this case, the users of the biodiversity-rich area agreed upon practices to conserve natural resources and, at the same time, faced the realities of international trade in terms of scale of operations and price-setting.

Ghana

In Ghana, our research focused on an observed market potential for 'red palm oil'. Red palm oil is a niche product made from the fruits of an oil palm variety that is being pushed to the margin. Small associations only, mainly of women in rural areas, are engaged in processing and trading red palm oil in local and international markets. Although this offers viable economic prospects to the women concerned, the palm variety used is being

discriminated in policy and research because of its low productivity relative to plantation hybrids. A Ghanaian network of public research institutes explored options to use the specific traits of red palm oil to provide incentives for conserving this native variety in the farms. Although -also in the diaspora- the oil with its specific taste is in high demand for special soups, the creation of linkages across different layers in the value chain proved to be far from easy. Production, processing and trade of 'ordinary' palm oil all have their specific dynamics and these are geared toward mixtures of oil palm fruits. This hampers a niche proposition that is based on the traceable use of a single variety. Also, the Roundtable for Sustainable Palm Oil appears to place conservation of agro-biodiversity outside the physical production areas.

Colombia

Colombia's rich biodiversity includes a bamboo species (Guadua), that makes excellent construction material in earthquake-prone areas. Guadua is usually planted with other crops and the stakes are harvested by skilled workers. The environmental regulations that are being implemented by district-level authorities in Colombia, combine market-led certification schemes such as Forest Stewardship Council (FSC) with technical standards applied in construction and with public regulation on timber, in particular that of FLEGT (Forest Law Enforcement Governance and Trade). The link between this mixture of regulations and biodiversity-conserving harvesting practices is formed by the groups of specialized harvesters, that emerged after the earthquake of 1999. However, due to inconsistent demand

for guadua-based building materials, it proved to be difficult to ensure the economic viability of this link.

Thailand

In Thailand, community groups, agribusinesses and retail companies collaborate with an alternative agriculture network based in a civic food and green tourism movement to promote different varieties of glutinous rice. Researchers at Chiang Mai University were central players in this network that linked the conservation of agro-biodiversity in small-scale rice farming with consumer markets. They worked with farmers and farmer organizations, consumers, traders, retailers and government agencies to raise awareness and to formulate appropriate standards and protocols for the production, trade and consumer-labelling of local rice varieties in diversified markets. A key element in this endeavour appeared to be a trading company offering contractual arrangements to farmers for marketing organic glutinous rice. In its turn, this trading company was linked to different public-private certification schemes for organic products.

Namibia

The Eudafano Women's Cooperative (EWC) in Namibia promotes the development of sustainable natural resource enterprises among women in rural northern Namibia. With the support of PhytoTrade Africa (the Southern African Natural Products Trade Association) EWC has made significant progress in developing systems and facilities for the harvesting, processing and marketing of indigenous products. Our case concentrated on the oil produced from the fruits of wild Marula trees. Through a specialized processing company, that also shared intellectual property rights, the women's cooperative had an exclusive arrangement with the Body Shop. EWC and its supporting organizations 'experimented' with a variety of standards and certification schemes in order to determine the fit of their strategic orientation with, for example, organic certification, fair trade schemes or geographical indicators. The high costs involved in the certification of multiple standards, paired with the niche character of the products, appeared to limit the fair distribution of benefits across the chain or among different producers at a larger scale. To address these issues, options of more-unified sets of standards or certificates were explored. Also, linkages to public regulations were investigated in order to tackle the problem of unsustainable harvesting practices at different scale-levels.

Lessons learnt

The main insight gained from these case studies is that standards and certificates by themselves are not able to achieve biodiversity

conservation. A possible practical implication of this may be that the focus of interventions shifts from ensuring compliance and implementation of standards and certification per sé, to enhancing the fit of the standards with the dynamics grounded in the local ecosystem and social organization. Moreover, our case studies have revealed that, locally, often combinations of different market-led regulatory forms and public regulations set the conditions for agro-biodiversity conservation.

This insight feeds into a second lesson, namely that, rather than focusing exclusively on compliance with predefined indicators and standardized practices, more attention is needed for the design of standard systems and certification schemes that are lean and appropriate to the local context. Our case studies have shown the importance of recognizing local initiatives, and the processes underlying them, in addressing territory-specific dynamics in bio-diverse systems or landscapes. International certification schemes and standard systems tend to focus strongly on the content and to neglect the participatory processes required to formulate them. In the domain of agro-biodiversity conservation, product-based certification with a bias towards individual farm units may even not recognize the benefits of complementary measures at levels where biodiversity is to be conserved.

A final lesson concerns the relevance of linking various forms of coordination at different levels in the value chain. All our case studies highlighted local forms of coordination that were grounded in specific features of both social organization and business association and of the prevailing agro-ecological system. Local coordination was not just concentrated around product traits, but also on the uses of agro-biodiversity, on the ways of sustainable harvesting and on community dynamics. In that sense, it revealed a stronger process orientation. What happens when more-generic, vertically 'imposed' standards and certification schemes meet with these specific local forms of coordination is quite unpredictable. Nevertheless, a more explicit focus on this interaction and the combinations of private and public forms of regulation appears to be timely for achieving development outcomes, such a conservation and use of biodiversity, that become manifest beyond individual farms or plantations.

Value-adding by addressing market chains: Local biodiversity initiatives and value chains, are they commensurable? Fact sheet/Highlights

Aims/objectives
Contribute to the development of strategies and institutional arrangements that enable communities, entrepreneurs and organizations in countries in the south to overcome obstacles and exploit opportunities in market-led development when building integrated strategies for the conservation and sustainable use of biological resources.

Project locations
Ethiopia and Zimbabwe

Project partners

In the Netherlands
- Wageningen University, Chair Group Technology and Agrarian Development
- Van Hall Larenstein University of Applied Sciences, part of Wageningen UR.
- HIVOS and Oxfam Novib: Biodiversity Fund.

In Colombia
- Universidad Tecnologica de Pereira and local stakeholders of the bamboo chain.

In Europe
- International Social and Environmental Accreditation and Labelling Alliance (ISEAL), London, UK.
- SupAgro, Institut des Régions Chaudes, Montpellier, France

In Ghana
- Ghana Ministry of Agriculture.
- Organic Palm Oil Project, Asuoum.
- University of Cape Coast.
- University of Ghana.

In Namibia
- Eudafano Women's Cooperative (EWC).
- Centre for Research, Information and Action in Africa (CRIAA)
- Southern African Development and Consulting (SA-DC)
- PhytoTrade Africa: Southern African Natural Products Trade Association

In South Africa
- GreenChoice Alliance,
- Conservation International, Southern Africa,
- World Wildlife Fund.
- Rooibos Biodiversity Initiative.
- Cape Town University.

In Thailand
- Chiang Mai University, Department of Agricultural Extension.
- Multiple Cropping Centre, working with local communities on agro-biodiversity and crop varieties.

Target groups
- Partner organisations, NGO's and private enterprises working on certification
- Researchers in agro-biodiversity
- National governmental institutions
- Farmer communities and governmental and non-governmental extension service providers

Website
www.dgis.wur.nl/UK/Agro-biodiversity

Project coordinator
Dr. S. Vellema, Wageningen University, Chair Group Technology and Agrarian Development: sietze.vellema@wur.nl

4.5 Promoting the use of dye sorghums in Benin

Leo Oyen and Chris Bosch, Plant Resources of Tropical Africa

Livelihoods in rural Benin largely depend on the production of food crops and of a few cash crops, mainly cotton and cashew nuts. As this livelihood basis is rather narrow, the Government of Benin aims to improve rural livelihoods among other things by reducing the dependency on cotton through the diversification of agricultural production systems and better market orientation. Dye sorghums (*Sorghum bicolor)* can play a role in achieving this aim. In Benin and neighbouring countries, a group of traditional sorghum landraces is specifically grown for the pigments contained in the leaf sheaths.

The pigments, mainly consisting of the anthocyanin *'apigeninidin'*, are used locally to dye textiles and as a colorant in traditional West African foods like cheese and porridge. In addition, the intensely red-coloured extract of the leaf sheaths is an important medicine against anaemia and malaria. While local and regional demand for the dye is high, there is also a growing interest for the product with the international food and cosmetics industry.

Local producers and processors are interested in increasing the productivity of this sorghum by improving its dye content and the colour stability of the dye. By improving the marketing of the dye they hope to increase the viability of their enterprises. In order to facilitate such improvements, the Dye sorghum project investigated the state-of-the-art of dye production and marketing. In addition, we made an assessment of possibilities to upgrade productivity, quality and profitability of the sorghum pigments.

Leaf material was analysed for genetic variation using molecular markers. Samples originating from 120 farms were sown in a trial to assess and compare characteristics in a homogeneous environment. The results show substantial genetic diversity occurs within farms but also that less landraces than expected occur between farms.

What makes the dye in the sorghum?

A selection of the seed samples collected for the characterization of genetic diversity was analysed for the presence of fungi. Twenty-one fungi species were identified in total, 15 of which were seed-borne. *Bipolaris* and three other fungi species found in the dye-sorghum seed are thought to trigger the production of anthocyanin that gives dye sorghum its special character.

Increasing crop productivity

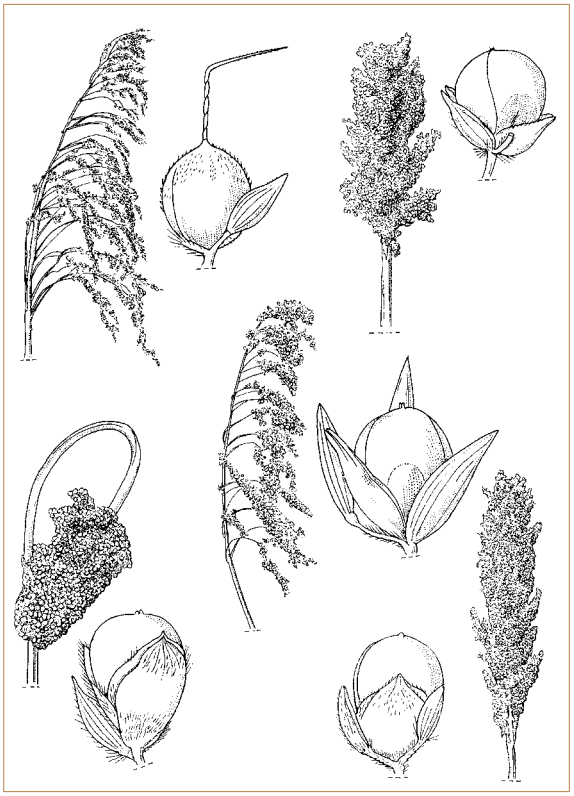
The (possible) interaction between sorghum plants and fungi may affect the plant's response to environmental conditions and agronomic practices, such as the use of chemical fertilizers. In a basic fertilizer trial in Ina, northern Benin, the response of dye sorghums to nitrogen, phosphorus and potassium

was investigated. It showed that fertilizer treatments strongly influenced crop and pigment productivity: The combined effect of higher yields in terms of leaf sheaths and an increased content of pigment, resulted roughly in a doubling of the pigment yield in comparison to non-treated plants.

Dye sorghums in Benin: An inception meeting

Observations and conclusions from a Dye sorghum Inception Meeting held with local stakeholders in Dassa-Zoumé, northern Benin (May 2009) included that:

- In Benin, dye sorghum is grown in borders mainly, as fences around fields. Only exceptionally is dye sorghum grown as a 'normal' field crop;
- Most growers of dye sorghum are (elderly) women and rarely is hired labour being used in the cultivation of the crop, or in its processing;
- Most producers sell their leaf sheaths on the local market;
- Buyers include local traders and middlemen from elsewhere in Benin and from Nigeria;
- Dye sorghum is a dual-purpose crop as, next to extracting the dye from the leaf sheaths, the grain is used for human consumption, and
- Dye sorghum varieties differ substantially in grain and glume colour, panicle shape and dye properties.



Promoting the use of dye-sorghums in Benin
Valorisation of sorghum cultivars yielding a natural dye
Fact sheet/Highlights

Aim/objectives
Develop dye-sorghum into an improved cash crop in order to increase incomes and improve livelihoods of smallholder farmers in rural Benin, mostly rural women, by strengthening the sustainable and gender-sensitive production of dye-sorghum and of sorghum dye, while safeguarding sorghum biodiversity.

Project location
Benin

Project partners

In the Netherlands
- Wageningen UR, PROTA Network Office Europe.
- Wageningen University, Chair Group Sociology of Consumers and Households, Chair Group Biosystematics.
- Wageningen UR Food and Biobased Research.

In Benin
- Université d'Abomey-Calavi: Department of Food Microbiology.
- Université d'Abomey-Calavi: Department of Plant Production.
- Université d'Abomey-Calavi: Department of Agricultural Economics.
- Université de Parakou.
- Institut Nationale de Recherches Agronomique du Benin (INRAB): Centre de Recherche Agricole Nord (CRA Nord), Ina.
- Institut Nationale de Recherches Agronomique du Benin (INRAB): Centre de Recherche Agricole Coton et Fibres (CRA CF), Savè.

Target groups
- Farmers and groups growing, processing and trading Dye Sorghum in Benin/West Africa (women mainly).
- Staff and students at partner knowledge institutions and NGO's
- Government of Benin

Project output
- Workshop reports and student theses:
  - Dye-sorghums in Benin: Report on consultancy with stakeholders. Dassa-Zounmè, Benin. May 23, 2009.
  - Desiré Agossou, 2009. Étude socio-économique sur le sorgho colorant (Sorghum bicolor) au Bénin. Thèse, Université d'Abomey-Calavi, Bénin.
  - Alban M'Po M'Bima, 2009. Effets de la fumure minérale sur les paramètres agronomiques du sorgho colorant (Sorghum bicolor) sur sols ferrugineux tropicaux du Bénin. Thèse, Université de Parakou, Bénin.
- Staff and students trained in sorghum agronomy, botany and in food microbiology

Project coordinators:
Dr Leo Oyen, Wageningen UR Plant Sciences Group: PROTA Network Office Europe, and Dr Polycarpe Kayodé, Université d'Abomey-Calavi: Department of Food Microbiology, Bénin.
Contact person: leo.oyen@wur.nl

5 Institutional Development and Capacity Strengthening

5.1 The Partnership Programme in the context of capacity development

Seerp Wigboldus, Wageningen UR Centre for Development Innovation and
Wim Andriesse, Wageningen International

Introduction

Over the past five years or so, probably more guidelines, manuals, papers and policy briefs have been written on capacity development than in the preceding two decades (see section 5.4) . Partly, this relates to a change in paradigm where terms like 'technical cooperation' and 'technical assistance' were being replaced by 'capacity development'. Capacity development is now characterized by its emphasis on processes of participation, continuous learning and adaptation, systemic thinking and the quest for being strategic in the face of complexity. However, in the wake of the many reports that have been published, each of them having their particular approach and focus, the label of capacity development has come to be of little meaning unless the core concepts are being unpacked or, rather, re-packaged.

Capacity development: Some definitions

Capacity should be understood as the ability of people, organizations and society as a whole to manage their affairs successfully.

Capacity development is, therefore, understood as the process whereby people, organizations and society as a whole unleash, strengthen, create, adapt and maintain capacity over time.

Support to capacity development refers to what outside partners – domestic or foreign- can do to support, facilitate or catalyse capacity development and related change processes.

Source: OECD/DAC, 2006

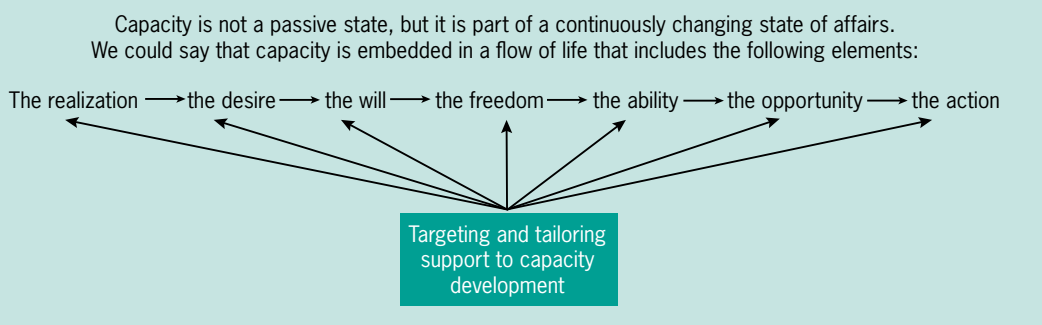


Figure 1 Capacity as a dynamic flow.

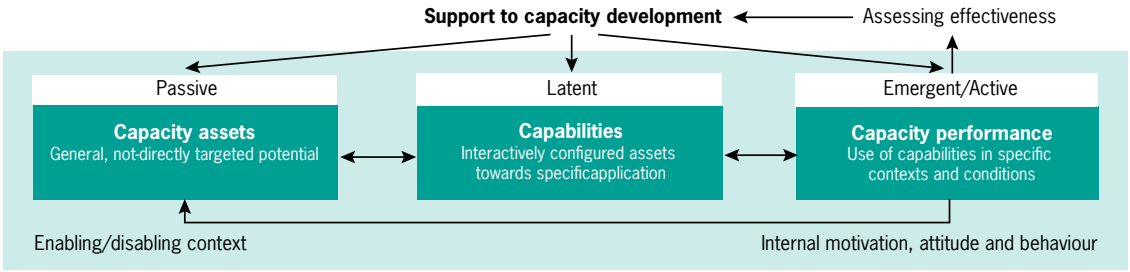


Figure 2 Stages and dimensions of capacity development.

Capacity: What are we talking about?

Capacity is a dynamic flow

Capacity is a dynamic flow of individual elements rather than a status. Figure 1 shows this flow of elements: The capacity to *realize*, capacity to *desire*, capacity to *will*, and so on. In the end however, all individual elements are geared towards a certain aspired *action*. The relevance of this distinction is that, in strategically positioning support to capacity development, it is important to understand what the appropriate entry point is. Without *awareness* (i.e. the 'realization' in figure 1) for example, it may not be opportune to support capacity development in the field of *abilities*.

Another way to re-pack the concept of capacity is to distinguish between the visible and the invisible, the tangible and the intangible: investing only in a capacity that is visible and that shows through action, is a lopsided view. There is a need to invest in both, potential and active performance. For research projects in particular this is an important distinction as they are very much about raising potential and building momentum. This is shown in figure 2 which distinguishes between passive, latent and active capacities. Here, passive capacities refer to knowledge and skills that are acquired during formal and informal education, but that may not-necessarily ever be used. Active capacities, on the other hand, refer to knowledge and skills that are being used.

A next question is how to value changes in potential. To some extent, this can be done by looking at what performance emerges from the potential. Part of it, however, relates to values and principles that will need agreement among key stakeholders as to what is considered to be valuable and plausible as a potential road to performance improvement. This, in turn, needs to be fed by continuous learning about what constitutes good practices and under which conditions. In other words, the issue of what is potential worth investing in, and what is not, is part of a public debate that will have different outcomes in different settings.

Readiness to support capacity development

Appropriate capacity is needed to provide effective support to capacity development. This pre-requisite is often forgotten: there is much more involved in providing support to capacity development than just knowing how to do a certain trick and then teaching that trick to others. Too often it is assumed that those who have (access to) funds are naturally in a good position to support capacity development among those who lack such funds (figure 3).

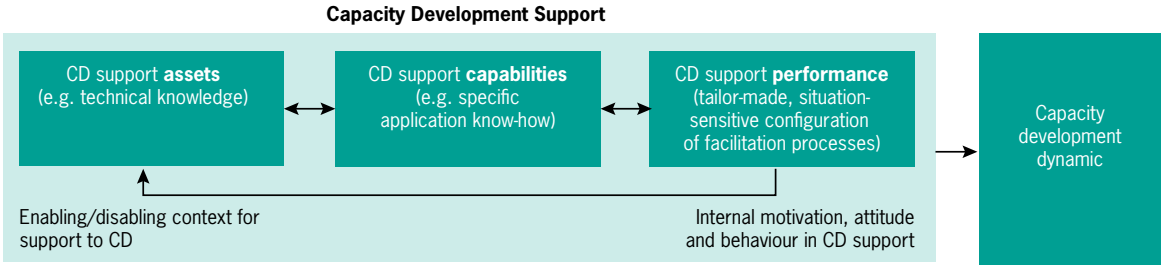


Figure 3 Capacity for support to capacity development.

Strategic choices in the positioning of support to capacity development

Many entry points exist for the provision of support to capacity development and the choices made have implications for the scope of what can be achieved. Generally speaking, merely providing resources to primary stakeholders has a more-limited scope than influencing politics and power differentials. It can be postulated that the scope for impact is bigger if the focus is on support to institutional change process (see figure 4). However, the specificity of a situation paired with the specificity of the capacity of a partnership to support capacity development jointly determine the appropriate entry points. For projects such as those under the Partnership Programme this implies that they need to strategically position their capacity development activities in view of the ambition of the project, the degree of complexity, its mandate/sphere of influence and the level of local ownership.

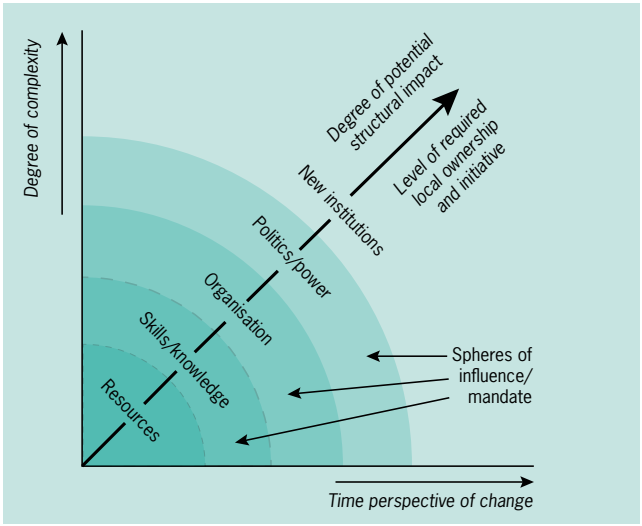


Figure 4 Type of interventions determining the scope of the actual contribution (Source: Brinkerhof, 2007).

Figure 5 further illustrates the need for strategic positioning of interventions in support of capacity development. This positioning is different from what is commonly applied in regular research projects and it poses new challenges on researchers who may not be experienced yet in multi-stakeholder processes and in partnership and network development initiatives.

Towards good practices in support to capacity development

Even though the last word has not been said about understanding capacity development, neither conceptually nor practically, there is emerging agreement on the principles of good practices. Over the past few years such principles have been discussed extensively in strategic workshops, in particular those of OECD and DAC (OECD, DAC, 2006; OEC/DAC and BMZ, 2008). If translated into the context of the DGIS-Wageningen UR Partnership Programme, it follows:

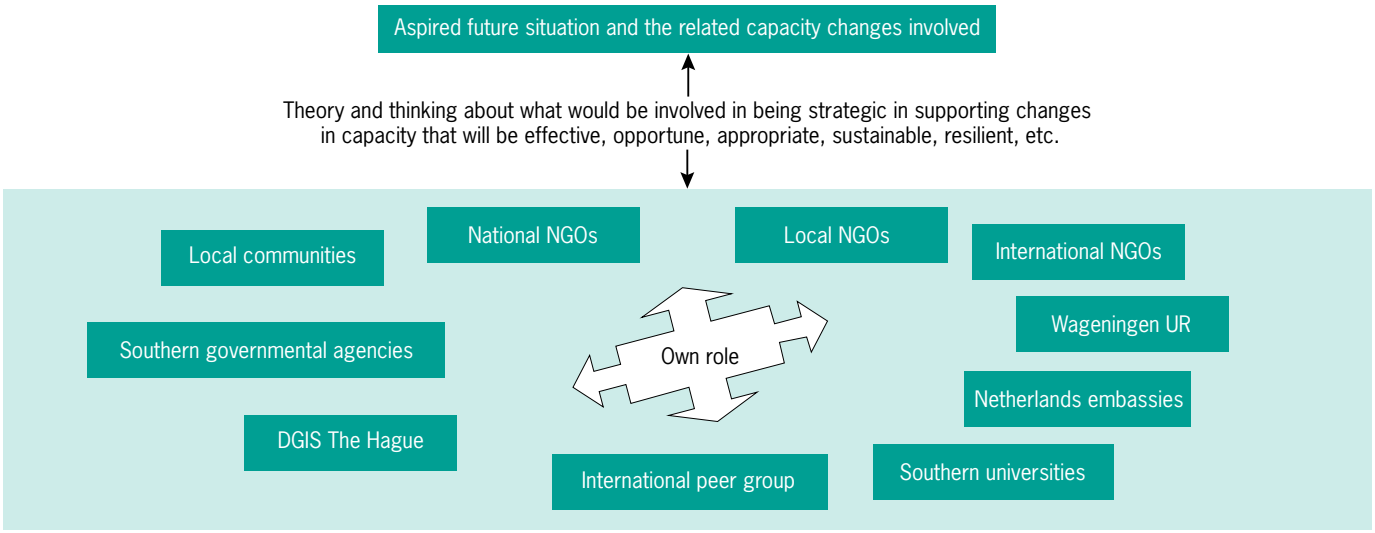


Figure 5 Thinking strategically about support to capacity development.

- Capacity development needs to recognize, safeguard and build on existing capacities and work with the assets available in the countries concerned. It needs to ensure ownership by the local key actors, be accountable to the constituencies and give preference to country-level initiatives: *Local embedding, ownership and the role of research are imperative*;
- Multi-partner arrangements that focus on capacity development need to be harmonized and aligned at country level and require c*onnectedness and partnership*;
- Providing support to capacity development requires *strategic preparation/positioning and appropriate internal capacities of the service provider;*
- Capacity development approaches need to match the specific development context and its dynamics: *Navigating implementation amidst complexity is imperative.*

5.2 Applying the reference framework

The sections above form the broader reference framework for the exploration of capacity development activities as implemented in the projects of the Partnership Programme. Below, an overview is provided of how the various projects have performed in these areas, as well as in terms of the achievements vis-à-vis programme purposes.

Local embedding, ownership and the role of research

How were the projects positioned in endogenous capacity development processes and based on local ownership for the intervention process?

The projects approached local embedding and (building) local ownership differently, depending on the prevailing location-specific conditions. Some projects could build on readily-articulated questions originating from their local or national settings but others could not. Generally speaking, Wageningen UR worked as a catalyst for processes that subsequently have been taken over by the local partners. This is best illustrated in the Community Empowerment Project where project partnership and establishment of local ownership took shape gradually. The project coordinators took the initiative, but this landed so well that one could speak of latent local ownership that actually already existed.

Ownership does not show from paper, but shows from engagement in action. This may be illustrated from the VPA Ghana project which, in the course of implementation, expanded its network towards development actors that were not targeted yet at the time of writing the proposal: Ownership developed over time.

As to the role of research, the projects made different choices as well. Some projects focused on roles of catalysts and facilitators (i.e. the Community Empowerment and the Community Climate Response project). Others took more of an expert role (i.e. the Incomati and Dye sorghum projects), or the role of an on-the-job trainer cum researcher, as in most of the pilots in the Value Chains project.

Different projects did put different emphasis on the various elements of action research (see figure 6). This resulted in different research processes.

A peculiar constraint in capacity development

A constraining situation, but one that does not specifically relate to the DGIS-Wageningen UR Partnership Programme, is that of 'abounding development funds'. Readily-available donor funds make it attractive for local actors and partners to engage in capacity building with the support of one agency, after which they can easily turn to another, leaving behind what was built-up and looking ahead for new opportunities for (financial) support. In particular in so-called 'donor-darling countries' it is sometimes just too easy to access new funds for yet another capacity development effort. All this underscores the importance of harmonization of donor investments. In the context of the Partnership Programme, the Bio-fuels project in Mozambique and, to a lesser extent, the Central Rift Valley project in Ethiopia struggled with this phenomenon.

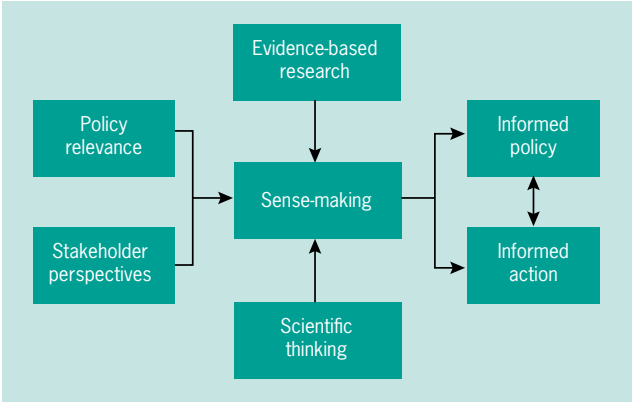


Figure 6 Elements of action-oriented research.

Some projects emphasized the need to influence policy and decision making. This was the case, for example, in the Value Chains project which worked on reconfiguring value chains towards smallholder inclusion. The Incomati project, on the other hand, took a different position: It focused on developing a straightforward, but complex, decision support tool: a simulation model. The tool may be seen as the product of evidence-based research with the potential to inform policy and action. The Dye Sorghum project was a different case altogether, focusing as it did on research per sé rather than on action-oriented research.

Figure 7 shows the core idea of the role of action-oriented research in support of local capacity development processes. The figure illustrates the case of the Value Chains Project and how it contributed towards an envisaged momentum for endogenous action. Similar diagrams, but with a different subject focus, apply to most of the other projects of the Partnership Programme.

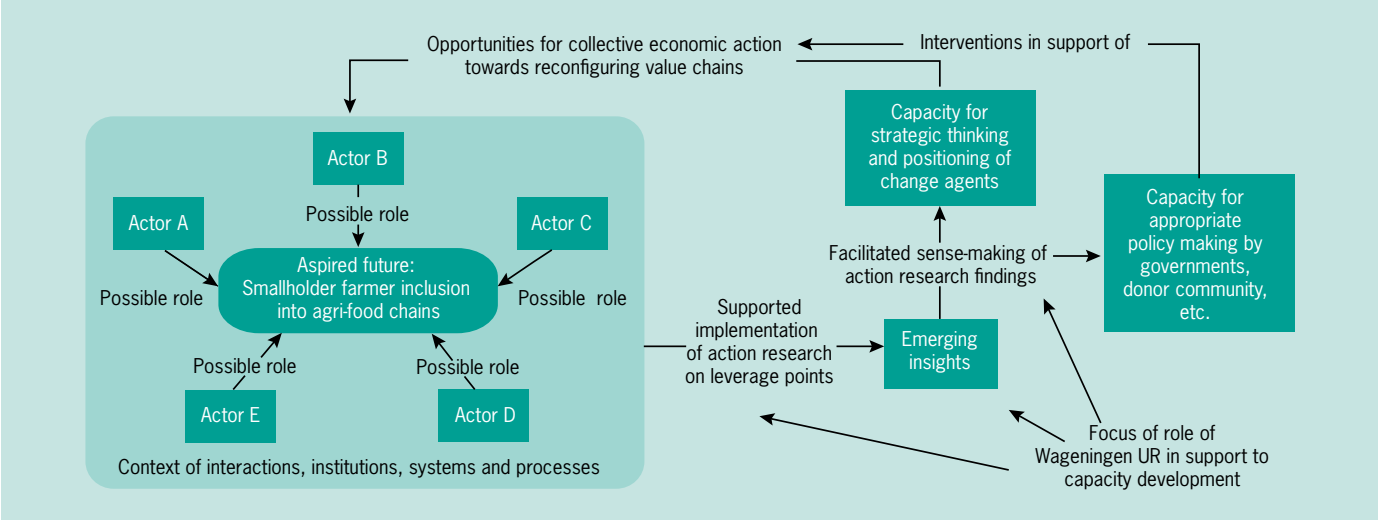


Figure 7 Action research and support to capacity development in the Value Chains Project.

Connectedness and partnership

How was the project positioned in relation to other efforts in support of capacity development and how did partnerships play a role?

As was the case for *Local embedding and ownership,* discussed above, the projects made different choices with respect to the performance area *Connectedness and partnership*. Some projects put 'their eggs in a few baskets' (the Dye-Sorghum project being a typical example) whereas others put 'many eggs in many baskets' (e.g. the Community Empowerment Project) (figure 8). This had implications in terms of sustainability and contributions towards self-propelling action within the partner organizations.

By design, the projects of the Partnership Programme were not dependent on DGIS funds only and they availed of matching funds from other projects and activities. This enhanced connectedness of the projects to wider efforts in the same area of work. Once on steam, all projects explored connections with other partners and created networks and partnerships unforeseen at the beginning of the project. Clear examples are the Central Rift Valley and the VPA Ghana projects: Initially, the former project lacked the major actors in its multi-stakeholder platform; the latter project had to accept the delay of the ratification of the VPA itself, the core focus of the project.

The different ways in which partnerships at project level were forged and projects connected to other initiatives seems to have to do with their differing foci. The more the focus was on inspiring action, the more the projects were widely connected to other initiatives and other partners. As expected, an action focus often went hand in hand with engagement in multi-stakeholder processes (figure 9).

A similar picture emerges if 'providing services' would be replaced by 'passive ownership', and 'multi-stakeholder partnership' by 'self-

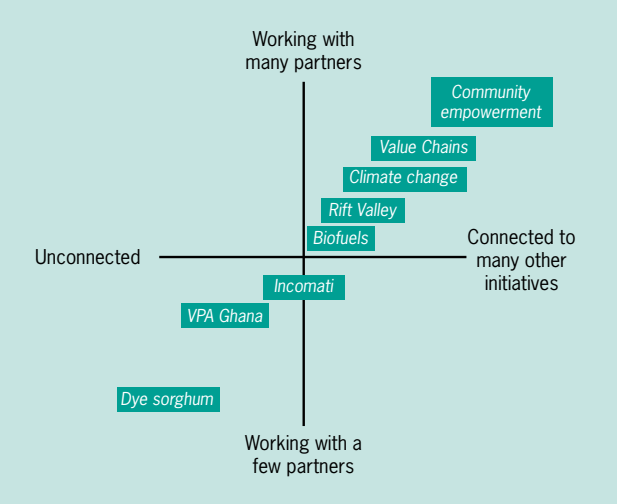


Figure 8 Connectedness and partnership.

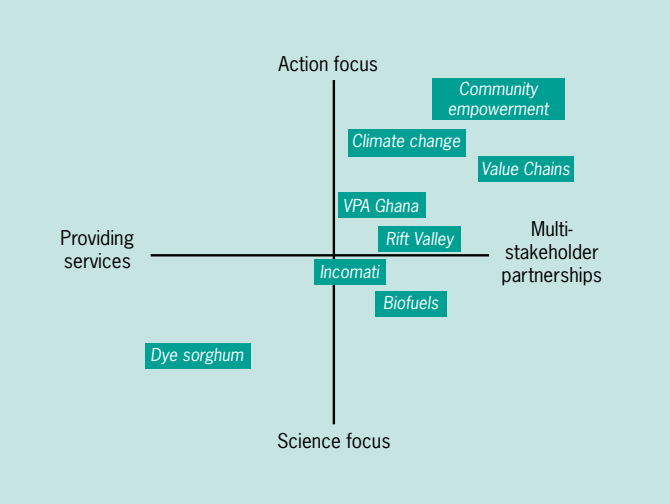


Figure 9 Focus of the projects.

mobilizing ownership'. In most of the action researches, the action focus required self-mobilizing ownership as the project teams were not in a position -nor did they want to be- to try to initiate action. Rather, they sought to inform endogenous action.

The role of students

The role of PhD students and MSc students was assessed differently by individual project leaders. In most of the science-oriented projects, there were clear roles for PhD students. Others projects, however, did not consider PhD students and their researches to be strategic investments. In particular, this applied where 'inspiring action' was a project objective. In general, MSc-students were being viewed as very useful contributors to the projects. This was mainly because of the flexible way in which the students were able to contribute to targeted research: MSc research trajectories are short-term as against the 4-year programmes of PhD researches.

Strategic preparation/positioning and appropriate internal capacities

How did the project prepare for and engage its own internal capacities strategically towards support to capacity development?

The early stages of the Partnership Programme encountered a number of delays that did not put projects in the best of positions to develop a suitable process for support to capacity development. Some projects, for example the Value Chain Project, required active configuration of internal capacities within Wageningen UR.

Some of the project leaders have suggested that engaging in research projects that seek to actively influence decision making and policy development is something that not every researcher is ready for: In addition to good scientific qualifications, other qualities are required such as ability to think and act strategically, competence in adaptive management, skills to facilitate multi-stakeholder change processes and networking qualities are needed. However, in terms of capacity to support capacity development, we need to take a broader perspective. The success of support to capacity development has to do with context conditions and roles to play. This is reflected in figure 10, below.

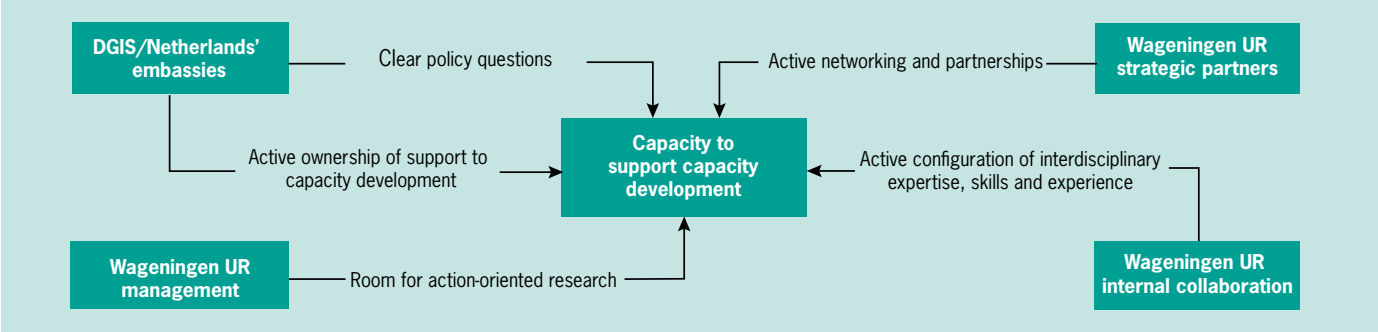


Figure 10 Partnership capacity to support capacity development.

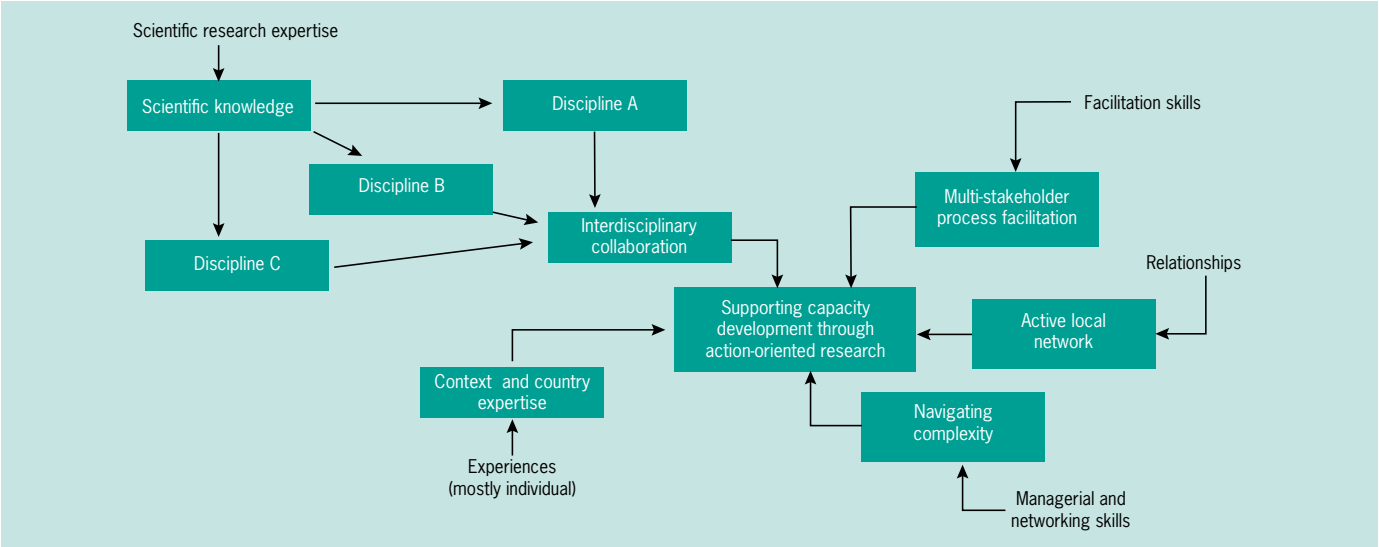


Figure 11 Configuring support to capacity development through action-oriented research.

Finally, the internal collaboration in Wageningen UR in terms of configuring strategic project teams, is an area in which there is more potential for action-oriented research than what is being used currently. Figure 11 zooms in on opportunities for configuring Wageningen UR capacity in support of capacity development. As it will be difficult to find all the necessary expertise, skills and experiences in just one or two individuals, there is a need to work in cross-disciplinary teams.

The Partnership Programme has been fortunate to work with staff that put both their hearts and their heads into the various projects. This enabled them to strategically guide the projects and, even with the restricted time frames and under complex conditions, achieve significant results. This had a lot to do with the kind of persons providing that guidance. This underscores the importance of not only looking at project proposals at face value, but also looking at who will be involved in their implementation.

Navigating implementation amidst complexity

How has the project been navigating the complexities and dynamics of capacity development processes?

Support to capacity development, particularly in complex and dynamic situations, is not a matter of engineering and applying linear, blueprint interventions. It takes time to strategically manoeuvre such support and, where necessary, to re-focus. Therefore, human and financial resources need to be in line with the ambition to make a difference in such dynamic, complex and often volatile conditions.

Most of the partnership projects dealt with complex change processes. This required adaptive management and re-orientation away from original project formulations in terms of how, what and whose capacity development to support. In this respect, it was

noted that the opportunities provided for flexibility within the Partnership Programme were appreciated as a critical success factor by most of the project leaders
Strategic guidance was provided through informal monitoring mechanisms rather than through formal systems. This informal set-up implied that the quality of strategic guidance also depended very much on the project management's ability to detect signals with respect to the process and to adaptively seek ways forward when the original plans appeared to work out different from what was anticipated.

Given their relatively short lifespan, for most of the partnership projects elaborate monitoring and evaluation systems would not have been efficient investments of time and other resources. Hence the need to work with researchers who were ready to engage with the complexities, dynamics and uncertainties involved in multi-stakeholder capacity development processes.

Not everything though, could be navigated: in some cases, conditions beyond the control of the project management limited the potential impact of the projects. Examples include the delayed ratification of the Voluntary Partnership Agreement (VPA) in Ghana, the decreasing investments in bio-fuel production in Mozambique and the limited political 'room to manoeuvre' in Ethiopia.

Even though the role and feasibility of formal monitoring and evaluation systems is questionable in the kind of projects under the partnership, they would make management performance more transparent if critical milestones, partnership issues and other context factors were made explicit at an early stage. This would then allow better tracking and understanding of the complexities amidst which to navigate through adaptive management.

When comparing the projects, differences were noted as regards the need for adaptive management. This is illustrated in figure 12.

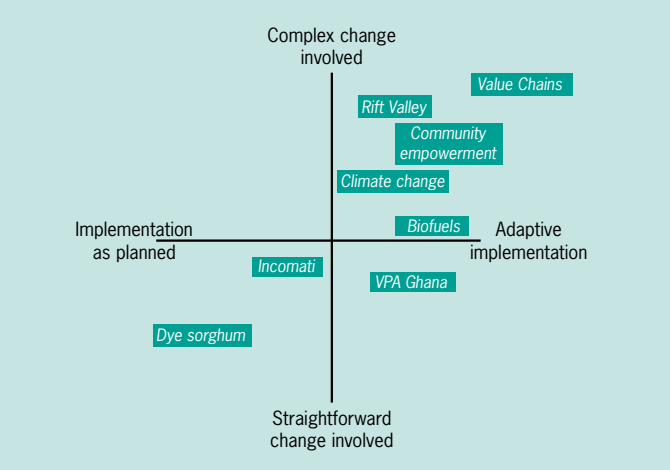


Figure 12 Complexity and adaptive implementation in support of capacity development.

There appears to be a correlation between projects having a focus on self-mobilizing ownership (see section 5.1, above) and the extent to which they have been adaptively implemented.

Achievements vis-à-vis programme purposes

How did the projects contribute towards overall purposes of the Partnership Programme?

In essence, the purpose of the Partnership Programme was to generate options for the sustainable use of natural resources, pro-poor agro-supply chains and agro-biodiversity. The ultimate aim was then that these options would result in poverty alleviation, improved rural livelihoods and economic development in the south. This relates to the eventual impact of the programme. It is without question that such impact cannot be assessed at this stage. However, it is safe to say that all projects were about increasing

potential and building-up momentum in their contexts and beyond, as all projects have been relating to many more dynamics of actors and factors than what they were supporting themselves. Already, some of the projects show that partners in the south are 'cashing in' on the momentum built. In particular, this applies to Community Empowerment and Community Climate Response projects and to the pilots in the Value Chains sub-programme. Based, in particular, on the outcomes of the latter, it can be concluded that action research can play a strategic role in better positioning development initiatives in complex and dynamic situations. In itself, however, the process of action research needs to be carefully and strategically designed and positioned in order to be able to play that role.

Investments in MSc and PhD students can be seen as support to capacity development. However, any proposal on support to capacity development will need to clearly indicate why such investment would be a strategic way to support capacity development in view of the action orientation, the aspired capacity future and the specific context in which capacity development takes place. A strategic assessment of how investments in MSc and PhD students are expected to support wider capacity development processes would help to create clearer reference frames for ex-post evaluations. At the same time, if we limit ourselves to just looking at what has happened in the course of project implementation, we observe that many 'seeds of support' were sown in the field of capacity development and that a 'harvest may be expected'.

It is beyond the scope of this chapter to provide a comprehensive overview of results in terms of capacity development and institutional change emerging from the projects. They have been listed in the report underlying the present text (Wigboldus, 2010). However, the various contributions in relation to policy capacity, research capacity and empowerment may be summarized as shown in figure 13.

Support to capacity development is not necessarily the same as institutional development. Institutional development is something that needs to emerge from within institutions. The short lifespan of the partnership projects has limited the scope and breadth of what could have emerged from their implementation. Some projects, however, have shown clear evidence of institutional development through contributions of the projects, particularly where partners took a strong role in spin-off activities and projects. Moreover, by design, project funds were strategically linked to those of other activities and this too fostered spin-off activities. Mostly this involves new projects that build on the work done under the Partnership Programme, including single follow-up research projects as well as large-scale networks and partnerships such as in the case of Value Chains pilots, the Entrepreneurship platforms, the Bio-fuels project, and the Community Empowerment project.

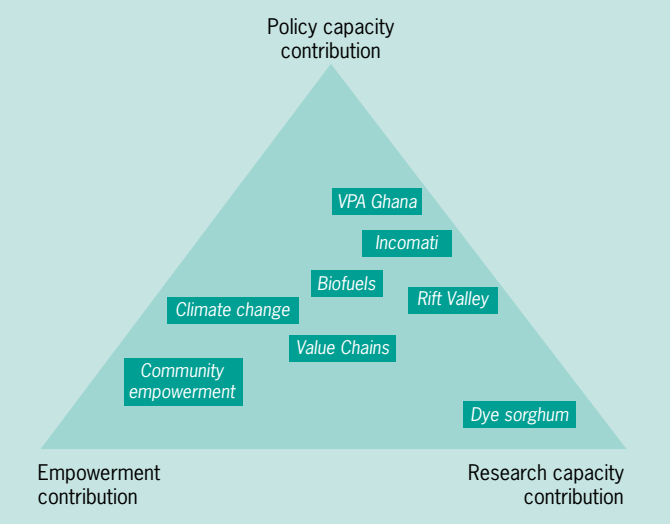


Figure 13 Types and mixes of contributions by projects.

5.3 Policy recommendations

The policy recommendations provided below reflect on:

- Success factors as distilled from the projects: Issues to be consolidated in a possible future programme;
- Apparent opportunities for bringing-out more of the implicit potential of the Partnership Programme and its projects, and
- Emerging suggestions for strengthening capacity at both DGIS and Wageningen UR to collaboratively and strategically support capacity development processes.

Recommendations pertaining to the programme design phase

- Wageningen UR should continue the strengthening of the capacity of its researchers to engage in action research in the context of multi-stakeholder processes;
- DGIS should actively use the results of the DGIS-Wageningen UR Partnership Programme to provide insights related to policy development on investments in capacity development, and
- DGIS should consider soliciting larger and longer-term programme proposals for capacity development that build on targeted action research.

Recommendations pertaining to the project selection phase

- Project proposals need to be based on the articulation of problem-owners in the south and, wherever possible, they are to be linked to on-going other efforts in capacity development;
- Project proposals need to provide 'theory' on how capacity is expected to change, and
- Select projects that, on the one hand, contribute to DGIS's policy questions and that, on the other hand, link with DGIS's on-going development projects.

Recommendations pertaining to the project implementation phase

- Allow for in-project experimentation and for optimal flexibility in the use of funds to support strategic manoeuvring vis-à-vis the policy questions to be addressed;
- Plan for 'putting several eggs in several baskets' in terms of partnerships, so as to increase opportunities for spin-offs in institutional development;
- Wageningen UR should actively coordinate the establishment of project teams capable of providing support to capacity development tailored to the specifics of a project setting. Such teams should include appropriate mixes of disciplinary and interdisciplinary scientific expertise, country acquaintance and skills in facilitating multi-stakeholder processes and in adaptive management;
- At programme management level better opportunities should be provided to link project leaders to DGIS-staff as well as for interlinking projects under the programme, and
- For possible future programmes, a phased set-up is recommended. The first phase is to comprise the programme's and project's core efforts. A second phase would then entail the emerging need for anchoring and grounding these efforts through support to local institutionalization processes. As the latter's context will only become clear in the course of implementing Phase 1, Phase 2 cannot be properly designed at the onset of the project.

Recommendations pertaining to the programme and project monitoring and sense-making phase

- Assessing the effect of investments in support to capacity development requires an understanding about capacity development processes that acknowledges dynamic issues. There is no 'one-size-fits-all' assessment methodology, and
- The extent to which projects generate effective spin-off activities and projects initiated and managed by partners in the South, is a key measure of success.

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6 Financial report

The DGIS-Wageningen UR Partnership Programme was funded through financial contributions from DGIS/DME (Directorate Environment, Water, Climate and Energy) and DGIS/DDE (Directorate Sustainable Economic Development) that were matched by in-kind contributions from Wageningen UR and its partners. The Partnership Programme was designed, originally, as a 4-year endeavour (July 2006-July 2010) but, by the end of 2009, the partners agreed on a budget-neutral extension of the programme until the end of 2010. The total DGIS contribution for the 4½-year programme (2006-2010) was € 3.57 million. Matching contributions by Wageningen UR and its partners amounted to € 1.44 million, or about 30 % of the total budget spent.

The table below provides the overview of the annual budgets and expenditures of the various components of the programme over its 4½ years of implementation. The figures show that the programme had a slow start: Actual expenditures for two of the programme's main themes only became substantial as from 2008, while implementation of projects under Theme 3 'Sustainable Use of Agro-biodiversity' started late altogether: August 2009.

The main cause of these delays was the lack of adequate administrative procedures at the onset of the programme. Therefore, much time was spent in our first operational year on the elaboration of financial arrangements and procedures as well as on the identification, selection and evaluation procedures ('Calls for Proposals') for projects that were to be implemented under the Partnership Programme.

	Year				
	2006-2007	**2008**	**2009**	**2010**	**Total**
Expenditures					
General Management	€ 110,746	€ 74,815	€ 57,825	€ 41,223	€ 284,609
Theme 1: Agro-Supply Chains	€ 13,986	€ 426,630	€ 564,912	€ 857,728	€ 1,863,256
Theme 2: Competing Claims	€ 69,406	€ 490,320	€ 655,302	€ 707,358	€ 1,922,386
Theme 3: Agro-biodiversity	€ 0	€ 0	€ 201,682	€ 716,315	€ 917,997
Institutional Development and Capacity Strengthening	€ 0	€ 14,565	€ 0	€ 10,464	€ 25,029
Total	**€ 194,138**	**€ 1,006,330**	**€ 1,479,722**	**€ 2,333,087**	**€ 5,013,287**
Contribution DGIS	€ 131,590	€ 619,699	€ 1,100,399	€ 1,719,778	€ 3,571,466
Matching contribution Wageningen UR	€ 62,548	€ 386,641	€ 379,323	€ 613,309	€ 1,441,821

Colophon

Contributions from
Wim Andriesse, Bas Arts, Chris Bosch, Ken Giller, Petra Hellegers, Huib Hengsdijk, Bram Huijsman, Gerdien Meijerink, Jennie van der Mheen-Sluijer, Hans Nijhoff, Leo Oyen, Nico Rozemeijer, Marieke de Ruijter de Wildt, Ted Schrader, Maja Slingerland, Giel Ton, Marja Thijssen, Sietze Vellema, Karèn Verhoosel, Bert Visser, Simone van Vugt, and Seerp Wigboldus

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The mission of Wageningen UR (University & Research centre) is 'To explore the potential of nature to improve the quality of life'. Within Wageningen UR, nine research institutes – both specialised and applied – have joined forces with Wageningen University and Van Hall Larenstein University of Applied Sciences to help answer the most important questions in the domain of healthy food and living environment. With approximately 40 locations (in the Netherlands, Brazil, Ethiopia and China), 6,500 members of staff and 12,000 students, Wageningen UR is one of the leading organizations in its domain worldwide. The integral approach to problems and the cooperation between the exact sciences and the technological and social disciplines are at the heart of the Wageningen Approach.

Globalization and Sustainable Rural Development
DGIS-Wageningen UR Partnership Programme 2006-2010

In 2006, the Netherlands' Directorate-General for International Cooperation (DGIS) and Wageningen UR (University and Research centre) agreed to engage in a Partnership Programme that aimed to contribute to poverty alleviation, food security and livelihood improvement for the world's (rural) poor by means of targeted action research, institutional development and capacity strengthening. Through this programme, entitled 'Globalization and Sustainable Rural Development' the partners aimed to make contributions to the achievement of the Millennium Development Goals, MDG 1 (Eradicating extreme poverty and hunger), 7 (Ensuring environmental sustainability) and 8 (Developing global partnerships for development) in particular. The geographic focus of the Partnership Programme largely followed the priority regions and countries of DGIS in sub-Sahara Africa. The thematic focus of the programme was on four interlinked areas that cover critical aspects of globalization processes: (i) Sustainable Agro-Supply Chains, (ii) Competing Claims on Natural Resources, (iii) Sustainable Use of Agro-biodiversity, and (iv) Institutional Development and Capacity Strengthening.
This booklet describes the various projects that were implemented in the framework of the Partnership Programme. These projects share an innovative research-cum-development approach that was applied within the complexity of ever-changing drivers of development such as globalizing markets and market-regulatory frameworks, foreign investments in agricultural production in Africa, eroding biodiversity and ecosystem quality, weak institutional environments and governance structures and climate change. This required skilful adaptive management capacity at the level of project coordinators.
The programme has generated practical recommendations for policy formulation as well as new models for livelihood improvement, rural entrepreneurship and sustainable management of natural resources, including biodiversity. Through these recommendations the programme provided science-based support to public and non-governmental research and development organizations, as well as to the private sector, both in the South and in the North.

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