Islands of Success or Seas of Change?

Exploring agricultural innovation for local economic development and regional food security

Wageningen UR, Centre for Development Innovation

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1 Introduction

The World Development Report said it in 2008: agriculture and food systems were back on the international agenda. There is a growing sense of urgency that major food crises are imminent if rapid improvements are not made in global food production and distribution. Yet food systems are increasingly threatened by global processes of climate change, natural resource degradation and biodiversity loss. Improving agriculture is also being recognised as a highly effective way to create new opportunities for the world's poor bottom billion, most of them living in rural, agriculture dominated regions.

At the same time, traditional approaches to trying to create pro-poor development is being fundamentally questioned. Declining rather increasing per capita food production in Africa, growing rather than declining numbers of those who go hungry every day demonstrate that new ways of working need to be found.

One innovation is to think in a more entrepreneurial way. Entrepreneurship implies continuously seeking strategic new opportunities within the complexity of poor agriculture-based livelihoods. Ways must also be found to turn such islands of success into seas of change, to improve the hundreds of millions of lives that deserve to improve structurally in the coming decades.

This paper is an initial exploration how to catalyse rural entrepreneurial activity and an entrepreneurial way of thinking, focusing on Africa. It draws on a number of case studies written up by Wageningen UR, Centre for Development Innovation (CDI). In broad strokes it sketches key aspects of the context within which agricultural development must now take place. It then considers which strategic interventions are generally targeted and what important impacts seem to be missing.

Based on the case studies, some ideas are put forward for ways in which robust networks of local agribusiness entrepreneurs – local agribusiness clusters – could be catalysed. More general thoughts about the shift that is needed in development approaches are put forward. Finally, the paper concludes with questions that still need to explored.

2 Agriculture for food and for growth

After decades of receiving little attention given its importance in everyday life, there is a rapid widespread recognition that agriculture must be given much greater priority. This is because a strong agricultural sector is necessary to ensure two global priorities: food security for all and improving the livelihoods of a large proportion of the world's poor.

2.1 Food security as global priority

In the year 2000 the world set a new benchmark for global food security. Millennium Development Goal 1 states that world wants to eradicate extreme poverty and hunger by 2015. The proportion of people suffering from extreme hunger and those living from less than $1.25 a day should be halved, relative to 1990 levels. For Sub-Saharan Africa that means reducing the proportion of the population that is undernourished from 1/3 in 1990 to 1/6 in 2015 while coping with an almost doubling of the population: from just over 500 million to almost 1 billion people.

2.2 Improving the livelihoods of the world's poor

The World Development Report 2008 was dedicated to agriculture for the first time in 25 years. The reason: the world's poor are largely rural and agricultural. "In agriculture-based countries, agriculture accounts for about a third of overall economic growth and most poor people live in rural areas. More than half a billion people live in these countries, 49 percent of

them on less than US$1 a day. Sub-Saharan African countries account for 89 percent of the rural population in agriculture-based countries.

Agriculture can be the engine of overall growth in these countries. […] Except for the most recent period, agricultural growth in Sub-Saharan Africa has exceeded growth in non-agricultural sectors. Rural poverty has also started to decline in 10 of 13 countries analyzed over the period from 1990 to 2005. Agricultural growth is also critical to household food security, mainly because it increases the incomes of the poor so that they can acquire food but also because it increases local food production in remote areas with poorly developed infrastructure and markets."

2.3 Challenges facing global food systems

The two goals of food security and improving rural livelihoods must be achieved in the face of significant detracting processes and conditions, in Africa as elsewhere in the world. Some of the major ones are:

2.3.1 Climate change

Copenhagen did not generate a globally binding agreement on how governments and business will tackle climate change. It did, however, reinforce global recognition that climate change is happening and will continue to get worse, leading to higher temperatures and lower overall rainfall falling in more extreme and unpredictable patterns. Sub-Saharan Africa is 96% rainfed and thus highly vulnerable to weather shocks. Creating resilient production systems must take place in the next 20 years to keep up with the pace of climate change.

2.3.2 Conflict

More than half the world's conflicts took place in Sub-Saharan Africa in the past decades. According to Paul Collier, poor countries suffering from armed conflict are very likely to re-experience conflict within 6 years of the ending of the last conflict. In 2005 he guesstimated the cost of an average poor country civil war to be some $54 billion, with GDP declining by 2.2% per annum[1].

2.3.3 Population growth

Global population is expected to rise from currently almost 7 billion to over 9 billion by 2050, with the population of Africa growing from 1 billion now to almost 2 billion[2]. While population growth can lead to greater economic activity, it certainly puts a greater imperative on a rapid improvement in African agricultural yields. With the changing urban-rural divide, rural food surplus production zones need to supply major deficit urban consumption centres as their natural markets. Facilitating of these food staple markets will be critical for efforts aimed at stimulating agricultural production, broad-based income growth and poverty reduction, and for ensuring food security of vulnerable populations in deficit zones.

2.3.4 Deteriorating natural resource base

In 2008 the FAO reported that land degradation globally was on the rise. A study based on 20 years of data indicated "more than 20 percent of all cultivated areas, 30 percent of forests and 10 percent of grasslands is undergoing degradation"[3]. Agriculture accounts for 75% of global freshwater use while rainfall patterns are disrupted and water scarcity increases. Loss of agrobiodiversity is another major concern, for example seed genetic diversity. Coping with climate change relies on healthy soils and new plant varieties, among others.

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[1] http://users.ox.ac.uk/~econpco/research/conflict.htm, figures from 2005

[2] http://esa.un.org/unpp based on "World Population Prospects: The 200 Revision"

[3] http://www.fao.org/newsroom/en/news/2008/1000874/index.html

2.3.5 Food quality and safety

As global markets become more anonymous and concentrated (see below), the risks of large-scale mishaps due to poor food storage, deliberate adulteration, carelessness, etc. also grow. The melamine in baby food scandal in China is but one example of how rapidly and how widespread such faults in the system have consequences for millions of consumers. In other cases, like BSE, the consequences are born by millions of animals which must be preventively slaughtered. Apart from the health risk this places great financial burden on the global food systems. Food quality and safety is therefore an increasingly important consideration for modern food markets.

2.4 Strategies to increase food production

Faced with the need to double the world's food supply in the coming two generations while using far less resources and on the same land area, the following complementary strategies are being pursued.

1. Improve yields. This approach has been the focus of agricultural research for over a century, with the Green Revolution often referred to as a success story lasting several decades. The negative impacts of the Green Revolution leading to global deterioration in natural resource base has sharpened the focus on low-impact new production systems[4]. GMOs[5], precision agriculture, new varieties, improved extension, the range of global activities in this field is endless.
2. Make value chains more efficient. Modern agricultural systems may seem highly efficient, the truth is they generate an enormous amount of waste produce that does not meet market criteria. Ineffective government storage systems, poor distribution systems, etc. could greatly increase the effective use of agricultural products that are grown.
3. Change consumer preferences. Global increase in wealth has also greatly increased the demand for animal proteins: dairy and meat. Since the conversion of vegetable protein into animal protein is a factor 5 – 10 this leads to vastly greater demand for plant-based raw materials. Educating and influencing consumers to reduce the demand for animal proteins reduces the need to increase global production.

3 Changing world food systems: global to local

The African agricultural sector not only needs to deal with the factors mentioned above, it must also deal with very rapidly changing national and global food systems. In rich Northern economies, food systems changed over a period of 50 years from local, small-scale traditional markets to what are now referred to as modern markets[6]. In Africa, this process is taking place within several decades. Significant differences between the modern and traditional markets have major implications for where and how to potentially intervene to support rural entrepreneurship.

3.1 Modern agricultural markets

Modern markets are associated with the large-scale supermarket operations that are increasingly dominating international and major urban areas in all parts of the world. Modern markets service offer a complete range of food products through large-scale retail outlets to diffuse, anonymous consumer groups. Products are sourced from an equally anonymous, diffuse group of producers. Centralised procurement systems ensure that the three key

[4] IAASTD, 2008.

[5] genetically modified organisms

[6] Vermeulen, S. *et al* (2008).

demands of modern markets are met, namely sufficient **Q**uantity of the right **Q**uality and at the right **T**ime (QQT).

The results are highly-sophisticated, vertically integrated procurement systems or value chains. Through their complexity there is also an rapid increase in the concentration of purchasers. For example, the LEI calculated that just over 100 buyers dominate the entire European food market. A handful of purchase nodes therefore determine the quality demands and purchase conditions that must be met by millions of suppliers, from individuals to large corporations.

Modern markets will inevitably grow rapidly as global population continues to expand and urbanise. This, combined with rapidly increasing urbanisation[7] in Africa will lead to an ever growing demand for food products through retail operations geared to large population concentrations. Urban food deficit regions will rely on rural regional foodsheds[8]. For rural producers, modern markets will largely consist of rich northern economies and emerging national middle classes.

3.2 Traditional agricultural markets

At the same time, in Africa a large rural population exists (currently over 500 million) and will persist (over 700 million in 2030). Rural producers are not only the supply source for modern markets, they are often still largely geared to traditional markets. Such markets are focused on staple crops, source locally and geared to a local consumer base. The supply for traditional markets often comes from surpluses in subsistence production. Consumers are local landless or landowners faced with a temporary shortage. These markets are of critical importance to the rural poor, who must turn to buying food when faced with a shortage. As the MDG 2009 progress report indicates, rising food prices is one of the main reasons that Sub-Saharan malnutrition rates are on the rise again since 2005, after 15 years of steady decline.

3.3 By-passing local business

In many cases the vertically integrated value chains of modern markets reach all the way down to a local or regional producer base. While this may have logistical and financial advantages for the external market driving the chain, it often leads to extractive behaviour. Products are purchased at the lowest possible price with minimal investment in local capacities, infrastructure, equipment or organisation. As soon as there is a slight advantage to source products from a producer base in a different region or country, the vertically integrated chain packs up its operations and moves on. Even a relatively capital-intensive sector such as greenhouse horticulture has shifted rapidly around Africa in the past decades to areas with ever cheaper land and labour. How much easier for sectors with less fixed assets?

4 Livelihoods as a key concept

4.1 The livelihood framework

On-going work in at CDI[9] highlights the value of working with the concept of the Sustainable Livelihoods Framework approach (SLA) to understand how market-based interventions can offer real opportunities for the rural poor. SLA looks at the five assets that a producer (potentially) has and can draw on to make a living. These assets are: physical, human, financial, natural resources, social. A range of assets is necessary to create each household's

[7] The UN "World Urbanization Prospects: The 2005 Revision" estimates that by 2030 Africa's estimated urban population (742 million) will exceed its rural population (710 million)

[8] see Appendix 2

[9] for example CDI work on Local Economic Development and Regoverning Markets

way of making a living. Any category of assets can be used to compensate the absence or lack of others, up to a certain point.

Through SLA it is possible to more precisely understand which assets are weakly developed and therefore threaten the livelihoods of rural poor. Interventions can target them directly or consider more effective entry points in developing other, compensatory assets.

4.2 Differentiating 'the poor'

Another key value of working with SLA is that it identifies more precisely which groups of rural poor are at threat and which can be effectively supported to get out of poverty traps. While all kinds of categorisations are possible, one based on understanding assets identifies four different wealth categories within communities among those who have access to land:

1. The wealthiest, with a strong asset base for building expanding livelihoods. These benefit most from market opportunities and need least assistance.
2. Those who are slowly but structurally building their asset base and moving out of poverty. Investments in this group usually leads to structural improvements in livelihoods.
3. Those whose asset base is variable: sometimes expanding, sometimes contracting. Targeted support could help safeguard asset growth and safeguard livelihoods. This group can also be typified as essentially subsistence farmers who occasionally produce tradable surplus.
4. The poorest of the poor, with a declining asset base. These are subsistence farmers producing a marginal livelihood, any disruption in the production situation leads to production levels below basic needs.

Interventions based on building entrepreneurship and utilising market opportunities can be realistically expected to be beneficial for groups 1 through 3. Focusing on group 3, also known as transitory poor, could help this group move to a reliable asset base.

For group 4, it is critical to ensure that social safety nets are in place to prevent recurring, chronic hunger and repeated submerging in crisis situations. Short-term structural improvement in livelihoods is unlikely.

5 Intervention strategies

Efforts to ensure national food security, to link farmers to markets as well as to improve livelihoods of the rural poor has led actors to make different strategic choices where to support interventions in the agricultural sector. Interventions tend to target one of the three levels: shaping policy and business strategies, focusing on market and business performance, and working with primary producers.

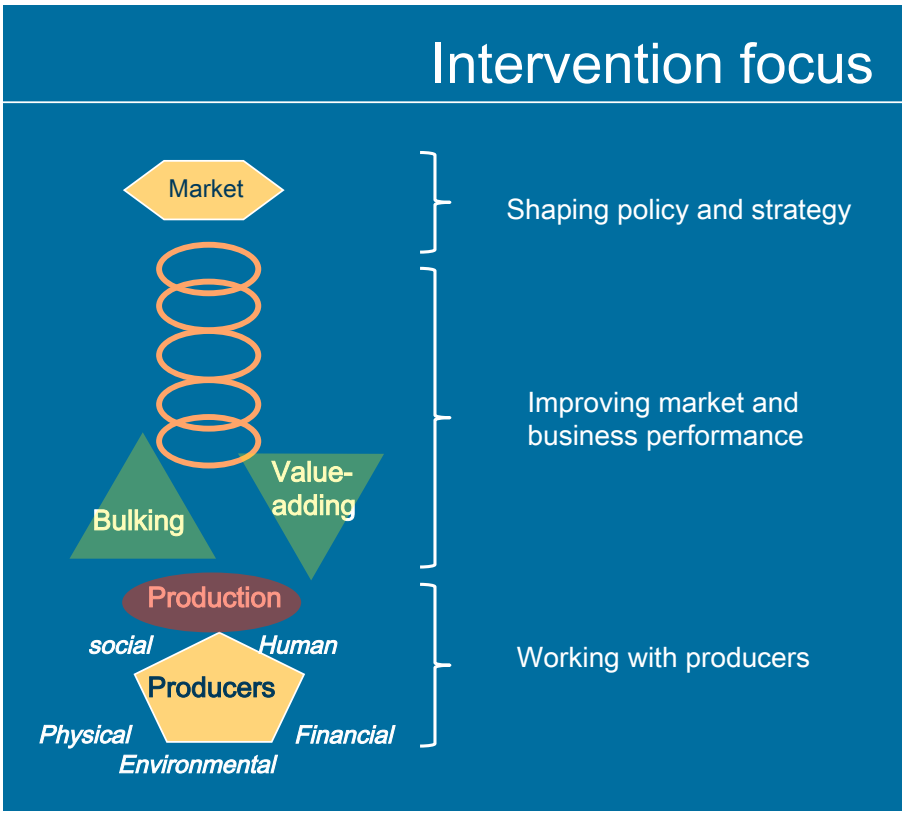


Figure 1: Focus areas for intervention strategies

Over the past decade there has also been a strong turn to market-driven initiatives. Business can generate massive change in a short period of time, driven by a straightforward profit incentive. Take mobile phones: from minimal coverage in Africa just five years ago, now four out of ten Africans own one.[10] Examples in agriculture include the creation of whole new high-tech greenhouse sectors in various countries in a matter of years, driven by high potential profits in Western markets. . Regrettably, it is hard to think of such seas of change in sustainable agriculture practice, especially in rural areas. In search of that holy grail, many development agencies and donors have tried to harness and direct the private sector for pro-poor development.

5.1 Shaping policy and strategy

A range of strategies have been adopted to shape the way business works. One popular, effective approach is to **influence consumer demand** through public awareness campaigns highlighting inequalities in and unwanted impacts of the existing agri-food system. As consumers have been made more aware of such issues, consumer demand has changed significantly to start to expect business to include norms for social and environmental sustainability.

Business has started to respond through the introduction of Corporate Social Responsibility (CSR), such as sustainable sourcing models. This is largely motivated by a need to avoid massive negative publicity that civil society actors are able to generate. In limited cases it has become part of companies' core long-term strategy. Widespread cutbacks in CSR-driven improvements in business practice as a result of the global recession reflects limited deep commitment.

In the past five years there has been a tendency for civil society and business to collaborate in re-shaping business practice. NGO participation in **new global governance** schemes is no

[10] http://www.guardian.co.uk/media/pda/2009/dec/17/digital-media-mobilephone-usage-africa-leapfroging-ushahidi-swift-river

longer a rarity. However, according to recent Ford Foundation research there is still a long way to go before democratic global governance in commonplace[11]. CDI's experience with such multi-stakeholder processes reveals that there are many obstacles to effective collaboration. This is one of the factors behind CDI's efforts in creating The Change Alliance[12].

Direct lobby to and collaboration with government for creating the right kinds of policy incentives and disincentives has long been a focus. At times this results in new **legislation**. At others, it has led to voluntary **standards and certification schemes** being developed, such as fair trade and environmental certification schemes.

5.2 Improving market and business performance

A second major area of intervention focus are the (inter)national agri-food chains themselves. Business itself, from small processors and exporters to large multinationals, invest highly in management, logistics and communication of these systems. Small improvements can lead to large profits given the scale of operations. Interventions focusing on MDG1 and 8 work at general market performance in relation to smallholder farmers (SHF). The chasm between modern agri-food chains and rural SHF is enormous at all levels and much effort goes into bridging this gap. Such efforts to **link SHF to markets** poses a whole range of questions that many organisations are looking to find answers to.

African farmers, who are mainly small producers, are exposed to high risks and have no access to **market-based risk management tools**. They find risks at every stage of their value chain – from buying inputs to post-harvest storage, processing and marketing. Small farmers face significant market access difficulties and volatile prices. Uncertainty about the marketing of surpluses discourages farmers from investing in higher return options such as inputs and labour, even if land is available. These risks, combined with limited household resources and a lack of access to rural finance mechanisms, severely constrain them in investing in enhanced productivity. Poor physical infrastructure, weak market-supporting institutions, disabling policies and often inefficient government interventions (e.g. price setting, import/export bans, warehousing), and poor public services delivery systems, add to the overall risk perception. Aside from the chain and market-related risks, farmers also face additional pre-harvest risks in their predominantly rain-fed production areas: droughts, floods, windstorms and hailstones are common. There is real emerging evidence that climate change increases the probability and the impact of such yield-reducing risks on production.

As a result, the overall perception that the African farm sector is highly risky makes it unattractive to financial institutions, reducing the private investment flows in the sector. Livelihoods of rural economies can be jeopardised as a consequence of these risks. Smallholder farmers in Africa have limited options in managing risks as a result of an underdeveloped market for commodity risk management tools and declining public support programs. Yet to improve rural livelihoods and enhance food security, farm productivity by medium and smallholder farmers must be raised. Emphasize must be given to improved access to market-led pre and post-harvest risk management tools such as crop and livestock insurance, warehouse receipt systems, procurement by government and aid agencies, and by forward contracting and contract farming arrangements involving farmer groups.

Finally, in response to changes in consumer demand, a range of interventions focus on implementing **responsible trade practices** throughout the chain. International agri-food companies have been making significant inroads into improving sustainable agricultural practices as part of its drive for sustainable sourcing.

However, it is becoming clear that attention for sustainability issues can only be secured and enhanced by improved local economic and social structures. This ambition for sustainability –

[11] Jordan, L. 2009.

[12] www.changealliance.org

people planet and profit – is highly dependent on local entrepreneurship and business innovation. Consequently the key question posed by these companies is can enhancing local social-economic and entrepreneurial development secure innovative and sustainable sourcing. Some of the key questions that are important for agri-food companies include:

- What roles could local entrepreneurs play in supporting sustainable sourcing?
- How can local entrepreneurs and business service providers better support producers and processors to meet quality standards (traceability, communication)?
- What other issues hamper local entrepreneurs to be included in international sustainable sourcing initiatives?
- What local institutions are needed to support this?
- How can local governments contribute to enhance such sustainable sourcing?
- Are there roles for other key (local) private sector partners, or for local NGOs?
- How can international donors and NGOs contribute?

Already significant developments are occurring in this regard through the work of companies. However, this is often not well documented and there is not a sufficiently clear agenda of how work in the area could be enhanced to help realize the industry's overall objectives. Existing case studies and experiences need to be further explored, providing lessons learned and a future agenda on the key issue that support local innovation and entrepreneurship. This would result in a strategic perspective and operational insights on how to overcome bottlenecks in implementation of market driven innovation for local entrepreneurship.

5.3 Working with producers

The almost classic image of much development work is the work done directly with producers themselves. As demand for surplus agricultural produce continues to rise with growing, increasingly urban populations the need to **increase and stabilise production** and making production more reliable remains paramount for decades to come. Poor agricultural support systems in many parts of Africa justify for many continued direct support to producers. As the power of modern agri-food markets to set terms and conditions of trade have grown, another major area of intervention support is related to **producer organisation**. Collective action is felt necessary to empower producers in the bargaining that takes place in these modern markets. **Enabling possible market linkages** is a third area of intervention at producer level. Helping producers understand the QQT criteria of external markets and enabling them to meet them makes it possible to tap into the income generating opportunities of external markets.

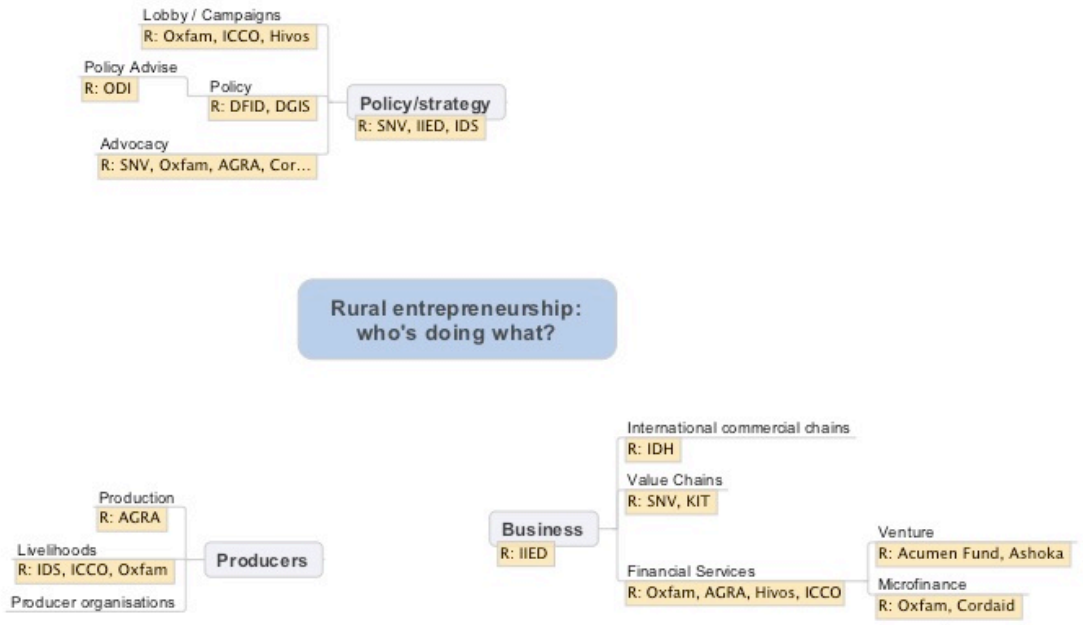
5.4 Combining it all in public private partnerships

As different parties working at different intervention levels have recognised that they do not work in isolation but overlap and influence each, in the past decade more thought has been put into combining the best of all worlds. Private-public partnerships were considered to offer the best of all worlds. Private capital and business drive could combine with government enabling policy and incentive setting capabilities and possibilities to invest in the start-up of new initiatives. Civil society could help keep the poverty and/or environmental focus and generate consumer support with public campaigns. In practice, PPPs often do not bring the benefits promised. Each group has its own culture, language, timeframes and decision-making processes and they diverge greatly. With everyone responsible for collective processes, it often ends up that no one takes responsibility. According to CDI, such PPPs or multistakeholder processes can live up to their promises provided the process is well thought out and properly guided. This has become an expertise area of CDI[13].

[13] CDI has built a dedicated MSP webportal: http://portals.wi.wur.nl/msp/

5.5 Who's doing what?

A quick scan of the main work of a number of development organisations reveals who is focusing on which areas. Each chooses a different strategy based on their theory of change. This picture can be expanded significantly with a much greater range of organisations and refinement of activities. The approach is used to map where complementary work is done and to start understanding different choices made by organisations for their approach. This can help to understand how a certain way of working may be more effective in a given context.



5.5.1 Shaping policy and strategy

All development organizations consider policy to be crucial for in impeding or enhancing livelihood improvements and rural entrepreneurship. For some, like ODI and IIED, informing policy and supporting effective policy making processes for enhancing sustainable livelihoods is a key objectives. Direct lobby of national and international governance and government policy is always done hand in hand with public campaigns. Oxfam/Novib has developed the strategy of working within an international coalition Oxfam International to be able to influence major global governance structures and multinational corporations that do not let themselves be held accountable by national or local structures. Dutch organizations collaborate in a PPP platform – MVO Nederland - to stimulate more CSR in company strategies.

Both the Dutch DGIS and UK DFID international cooperation government bodies obviously focus on policy. DGIS considers IDH to be one of its most important instruments for catalysing sustainable development. Other (co-)investment possibilities exist for infrastructure and equipment. Much policy influencing work is done through multilateral governance bodies, such as those set up by the World Bank, United Nations Organisation, IBRD, etc. Both government bodies invest in measures to reduce the risk of companies to invest in Africa, thus hoping to jumpstart new business. For DFID good governance is a key objective that is monitored by country and used to decide on how to spend UK aid.

5.5.2 Improving market and business performance

The Institute of Sustainable Trade (IDH) is a new initiative that reflects changes in government thinking on how to tackle development. Set up in 2008 with a significant budget, it specifically seeks to leverage structural change in the value chains of big business. Activities aim to support the formation of coalitions, accelerate activity through co-

investment and understand ways of scaling up initiatives. Both the KIT and SNV have a long tradition of working in developing countries supporting sustainable supply chain establishment. Each in their own way focuses on playing the role of matchmaker and trusted third party to speed up the creation of local coalitions for sustainable entrepreneurship. SNV's core business is providing advisory services.

The absence of appropriate and accessible financial services is widely seen as a bottleneck for potential entrepreneurs. A range of different micro-financing services are offered by many agencies, often targeting different sectors, disadvantaged groups and with different criteria for securities etc. A new branch of financial support is provided by companies investing in social entrepreneurship. [14] A business-like approach is followed to achieve social objectives, creating new enterprises that can profitably offer services and goods for those with limited assets. The Ashoka Foundation supports people who have demonstrated a commitment to social objectives and the ability to build a business around that. Acumen Fund works with what it calls patient capital: venture capital approaches of investment and mentoring, adapting them to the risks and timeframes of those offering affordable services to people earning less than $4 a day.

5.5.3 Working with producers

Among those scanned there seems to be a difference between those with a strong focus on the improving production and those who take a broader livelihoods approach. AGRA has been set up to help create a new African Green Revolution, while wanting to protect biodiversity, promote sustainability and equity. Activities are geared to improving crop varieties and ensuring that the required inputs are readily available and properly applied.

Among those organisations with a livelihood approach, IDS is strongly engaged with understanding the context of the rural poor and what effective intervention points and enabling environments are. This is couples with knowledge transfer and services. ICCO, Hivos and others support projects and programs at primary producer level with a focus on ensuring these are designed with an understanding of the livelihood context.

6 Islands of success instead of seas of change

Generally analysis of the results of a decade of market-driven development initiatives in Africa reveals that the outcomes are not what is hoped for. Per capita production has dropped in the past decade, hunger is on the rise and employment and income is dropping. What, then, is missing?

All too often successes – as measured by producers making effective use of external market opportunities to improve livelihoods – are limited in the numbers involved. There are few instances where producers involved grow much beyond thousands or tens of thousands households whose livelihoods have become more stable, more wealthy or had structurally greater opportunities. While recognising the value of such 'islands of success' for those involved, these numbers pale in comparison with the hundreds of millions whose livelihoods are at threat.

The following are some key points that seem to be hampering the development of rural entrepreneurship and economic growth and concomitant pro-poor agricultural development.

6.1 Modern markets not generating local agri-business infrastructures

There is often no immediate incentive for vertically integrated agri-food chains to work through local agri-business infrastructures to get their products. As the case studies and seminars revealed, many foreign and national food companies, including modern retail, find it a burden to work with local suppliers and local service providers. They are less experienced

[14] Elkington and Hartington, 2009

with rapidly changing modern market demands, less well-equipped, location bound and need organizing to offer economies of scale. Research shows that the sourcing of local modern supermarkets hardly includes networks of smallholder farmers when compared to commercial and specialized farmers. Consumer demand for fresh fruits and vegetables through modern retail outlets is simply too low. Large national and international companies meanwhile value the ability to pack up and leave whenever it suits them: often they hunt around for the product they want at the best terms. Local SME are by definition bound to a location and have opposite considerations: they seek to find new markets for those products that are best suited to local conditions. Therefore, while external buyers can provide a valuable impulse to local agri-business infrastructures in terms of permitting investment, financial stability and capacity building even if for a limited period, it regularly does not happen. More often than not limited improvement in such infrastructures is left behind, and chances to create and exploit new opportunities for a sustainable rural economy are missed.

6.2 Local staple food markets ignored

Much effort in creating and utilizing market opportunities is geared to linking to global food systems. This usually means much effort is put into developing high-value products for export markets. Often there is limited demand for those products at national or local level. In the process, the large-scale markets for staple food crops is not seen or not considered to be of great value. This despite the fact that in the Southern and East African market staple food markets represent 75% of the total agrifood market value. In 2003 this share was worth $50 billion and it is expected to be double by 2015. Apart from the financial value of such markets, ensuring staple food crop security is critical to deal with inter-seasonal fluctuations in yield and disasters. Expanding local and regional trade in staple crops can encourage farmers to produce surpluses, if they feel there is a reliable and profitable market that will reward their efforts. Further development and accessibility of market-based risk management tools are required for this to be improved.

6.3 Opportunities do not address livelihood possibilities and needs

Analysing the livelihoods of many poor rural agricultural producers reveals that farmers operate in highly complex and volatile situations without a full range of reliable assets. Often initiatives focus on developing one kind of asset, in particular natural or physical assets, without bearing in mind the other assets that are present or need to be developed. Financial assets may be far more critical, such as savings and insurance options or accessible and affordable loans. Business has limited experience and expertise in building social assets and therefore often ignores what can be a lengthy process. Regrettably: as the certification case study indicates certification requires strong social assets which leads to spin-off advantages such as getting better prices for conventional, bulked produce. On the other hand, NGOs can tend to overemphasise the social asset building without linking that to real business opportunities that will generate financial assets. Producers themselves have much better understanding of their full asset portfolio and will not respond to new opportunities if they put other assets at risk.

7 Exploring how to catalyse rural entrepreneurship

Given the importance of having a ‘layer’ of local SME working together as a vibrant cluster, CDI started to explore ways in which such local entrepreneurship is being or can be stimulated. A range of case studies were researched and briefly written up[15]. Starting from specific business initiatives, the case studies explore the following questions:

- What is the impact of the specific initiative or intervention on the development of local agribusiness entrepreneurship and innovation?

[15] see appendices for the initial case studies

- How is the local agribusiness infrastructure supporting pro-poor development?
- How is the agribusiness initiative being hampered or supported by (local) government, business and civil society?
- What are possible leverage points, enabling environments, and necessary capacities and innovations for pro-poor agribusiness infrastructure development?

During an international seminar the case studies were discussed with over 60 participants: international (professional) students that participated in the Market Access for Sustainable Development course, national and international development organisations and university personnel. This helped generate a list of emerging issues as well as ideas for taking positive action.

7.1 The (potential) roles of local agribusiness clusters

Rather than by-passing a local layer of entrepreneurs, external modern markets can also choose to actively work through local agribusiness clusters (ABCs). In this context, local ABCs are defined as organized clusters of entrepreneurial activities that are part of the overall agribusiness infrastructure. ABCs can play three critical roles for various markets:

- connecting external markets and the local producer base,
- providing support for the local producer base, and
- creating and responding to new opportunities

In turn, the external, local and future markets provide the necessary diversity in demand for services that allows a local ABC to become and remain vibrant.

7.1.1 Connecting external markets and the producer base

Local ABCs can make the link between the diffuse producer base, with a wide range of products, and the external market with very specific demands. An informal network of SME can bulk produce to quantities required and select and process initial produce to meet necessary quality criteria. Local financial services, insurance agents, warehouses, laboratories, etc. can provide all the necessary facilitating services.

The very fact that such a network is locally based means it has more in-depth knowledge of local possibilities and hampering factors. Where a relationship of trust has been built up between SME and local producers this allows easier and more rapid response to new market opportunities.

Once in place, such a network is often more flexible to respond to the ever-changing demands of the external market. It can also be cost-effective for vertical chains to operate through such a network. Investment is less tied down and trials with a rapidly formed consortium of SME can test the viability of new products or processes before making the choice to invest in scaling up.

7.1.2 Supporting the local producer base

Local producers benefit greatly from a healthy local ABC. The closer it is possible to acquire the many inputs, information and supporting services needed for improving yields and selling produce, the better. Local sourcing means critical inputs are available and often cheaper and better suited to local conditions than those bought from further away.

Being closer to local buyers and processors gives local producers better market information, greater transparency regarding pricing, healthy competition, etc. For both the producers base and the local ABC being near each other makes it possible to respond to new market demands more rapidly and precisely.

7.1.3 Creating robust, local economic spin-offs

The third area in which a healthy local ABC plays a role is the creation of new economic initiatives. A critical mass of sufficiently diverse local businesses can combine in many ways

to respond to new market demands that emerge and to create new products that can be marketed locally or externally.

This is essential for the on-going economic health of an area. External markets are often highly volatile, suddenly disappearing to a different source that has some advantage over the old. There is never any more certainty about market demand than the current contract. Any area that is overly dependent on only a few external markets is both susceptible to sudden downturns in local economic activity and in a poor position to bargain with external markets. A vibrant local ABC can create and respond to a diversity of opportunities, building on and strengthening local resources and production.

7.2 Catalysing rural entrepreneurship

During the seminar case studies were initially analysed individually and subsequently collectively. Five recommendations emerged how to effectively support the emergence of rural entrepreneurship.

7.2.1 Make sure there's a business driver

It seems like stating the obvious: initiatives must start with the private sector and involve them. All too often, though, government and civil society actors try to influence business to change by taking on the role of business itself. Lack of business experience and lack of urgency on the part of government and civil society actors to ensure viability regularly leads to initiatives which mainly run on subsidy.

When business initiates activities and requests support, there is a much higher likelihood that interventions will continue to expand after initial government or donor support has ended. Governments, donors and civil society do have critical roles to play. By creating conducive policy environments and investing in what is often an unprofitable start-up period, they can leverage business to become involved when there is a reasonable prospect of creating a viable business activity. Non-business actors are also needed for their watchdog function to ensure that business keeps a focus on pro-poor aspects of new ventures.

Case: Ithuba Farmers Training Project

Like every agribusiness company, Tongaat Hulett Starch needs to ensure three things for long-term viability: 1) a reliable supply of necessary crops; 2) sufficient quantity and 3) the right quality. Like many African nations, the government of South Africa wants to offer livelihood opportunities to less privileged persons and create a more reliable agricultural base.

A match was found in these public and private needs. THS saw the potential of ensuring reliable long-term supplies by supporting training for and a purchase guarantee to starting farmers. A training academy, Buhle Farmers' Academy, builds human assets by providing effective training adapted to the situation of students. Government guarantees that land will be given to those completing training. General government policy also requires companies like THC to find ways of targeting underprivileged blacks. Students who initially have no assets or farming experience are assured skills, key production assets and a reliable market if they complete the necessary training.

This case illustrates the different actors providing different assets to underprivileged starters, thus giving them a mutually reinforcing package of assets that allows viable livelihoods to be built.

7.2.2 Invest in hardware for transparency and reliability

Many people associate infrastructure investments with roads, buildings and bridges. A different angle on investing in hardware is to focus on that which enhances transparency in trading situations and supports the building of trust-based collaboration. Transparency has a great deal to do with ensuring widespread access to timely, relevant information about all aspects of value chains: what's being asked for, who's asking, what's available now and next harvest, current prices in accessible markets. etc. Communication opportunities of mobile phone platforms and ensuring access to information networks must be built up.

Investment is also required in reliable systems of buying, handling and processing agricultural products. Producers must have the confidence to entrust their products to such systems, processors and buyers must trust that such systems will deliver the products needed and promised. Another aspect of reliability is robustness: the ability to cope with change. Good design leads to systems that can be used in many ways. This allows a diversity in activities to build on original investments which contributes to its robustness.

Investment in 'regular' infrastructure also remains acutely necessary in many foodsheds in Africa. As the World Development Report 2008 highlighted, there has been massive underfunding of the agricultural sector in Africa for the past 25 years. The report makes the case for major investments in infrastructure: "Nearly 40 percent of Africa's population lives in landlocked countries which face transport costs that, on average, are 50 percent higher than in the typical coastal country." The 2009 progress report on MDG1 refers to a structural low level of productivity in Sub-Saharan countries due to non-productive equipment. This create a weak basis for generating much needed economic growth.

Case: Certified warehouses

The Zambian government, with external support, is investing in a system of dispersed, certified bonded warehouses. The warehouses offer producers a more reliable, steady market for their produce than passing local traders, whose prices tend to drop dramatically when harvests are coming in and farmers are most pressed to sell. Such reliable infrastructure will hopefully stimulate many more farmers to generate a surplus for national urban and other food-deficit regions. For buyers, the warehouses offer a bulking facility as well as initial product differentiation, thus meeting some Q&Q requirements. The bonds issued by the warehouses can be used to release a range of financial services, thus giving producers self-investment opportunities. An accreditation system is being built to ensure that the warehouses really do deliver the services that are promised.

The World Food Program in Zambia now requires that all purchases take place through a transparent commodity exchange that is linked to these certified warehouses. WFP procurement thus becomes a publicly transparent process that requires commercial suppliers to work along transparent processes. While WFP only represent up to 10% of the total turnover, their 'vote of confidence' in the warehouse system contributes to building a critical good reputation. It also makes commercial parties familiar with this system and leverages more widespread use of the system for other trading activities.

7.2.3 Understand the context

Each case study highlights that every context is highly specific. Blueprints nor models are easily drawn from a particular case nor can they be transferred in a straightforward manner from one location to another. It is therefore very important to invest sufficient time and effort in understanding critical factors in the context, including:

- what are market opportunities with short and long-term possible viability
- what are critical hampering factors for market initiatives
- what are the asset bases of the local 'poor' and how will initiatives contribute to building key assets
- what services and capacities are present locally
- how effectively and rapidly can a local ABC respond to opportunities

Case: MIS for small-holder producers in Ethiopia

In India the private-sector initiated management information system (MIS) "E-Choupal" reached 1 million farmers within 5 years and has grown to 4 million users. Its success is largely due to providing critical information needs of farmers and building on accepted (information) technology and local capacity. When the idea of implementing this model in Ethiopia was properly analysed, this revealed key differences in critical factors: insufficient capacity at

government level; absence of a private company with a wide basis of trust among farmers; a mis-match between information needs in Ethiopia and information provided by the MIS; low technological levels in rural areas.

Simply transferring a successful model would have ignored the critical factors that determined the success of the model in its original context. Adapting aspects of a model to a different context is essential if it is to be of value.

The India situation also demonstrates the value of investing in infrastructure and capacity that are potentially multi-dimensional. Initially providing useful farmgate prices, the MIS infrastructure proved to be adaptable to provide a range of other information needs. This allowed many initiatives to spin off of the initial investment.

7.2.4 Learn fast and adapt

Related to the above point is the need to build effective learning processes that are able to work within private sector dynamics. Existing monitoring and evaluation systems often work in cycles of a year or multiple years. Businesses take months to identify opportunities, try something out and decide to continue or not. Local ABC must also be able to respond to rapidly changing modern market demands, requiring rapid, recurrent analysis. New kinds of monitoring systems

While models cannot be transferred, much entrepreneurship is based on adapting what has been tried elsewhere to local conditions. Making business approaches in one situation widely available through modern communication media can generate ideas and give elements for new approaches in different contexts. This process of adapting what has been tried elsewhere can be institutionalised.

Case: Cassava cuttings

Some 10 years ago Rwandan farmers were faced with the first signs of spreading mosaic virus in cassava. INGABO, a local farmers' organisation with a strong focus on providing practical support to its members, learnt of the ravages of the virus in Uganda and started work on preventing similar disasters. It cooperated with a local branch of the National Agricultural Research Institute (ISAR) to identify resistant planting material. On-farm trials revealed 4 promising varieties which were propagated on exponentially expanding land of INGABO members. The successful adoption of these new varieties not only prevented a mosaic virus problem, it led to a structural surplus production. INGABO has continued its learning process to identify local market opportunities and set up new commercial activities that make use of this surplus. Among other things, this case illustrates the effectiveness of continuously adapting external ideas to the local context to generate activities that are appropriate to that context.

7.2.5 Invest in capacities and trust

All of the cases emphasised the necessity to invest in capacity building at all levels, from producers to all kinds of local enterprises. Again few generalisations are possible, training needs are determined by the local context. For rural poor, building human assets in the form of skills, experience and education can be an effective strategy to compensate for the absence of financial, physical or natural assets.

Creating partnerships mechanisms that build trust must be an important focus of training programs. Local ABCs are highly dynamic networks with many different actors playing many different roles. Temporary coalitions need to be established rapidly in response to emerging market opportunities. People must have ways of quickly building such coalitions without having to reinvent the wheel each time. Investing in partnerships also means investing in capacity building.

Case: Greenhouse production

A study of greenhouse production in 3 countries: South Africa, Kenya and Ethiopia, reveals how rapidly such a new sector can develop and generate a whole field of economic activity. In Kenya

alone, within 20 years of the first greenhouse being built some 50-60.000 people find direct employment in production units with 10 times as many working in spin-off sectors. The three cases also illustrate how rapidly investing in the capacity building of national staff can lead to locally independent entrepreneurship developing. In RSA, the widespread boycott during a number of decades in the last century forced the nascent greenhouse sector to source all inputs, R&D, infrastructure, etc. nationally. A sufficiently large internal market supported the growth of the national sector and today the South African greenhouse sector is virtually independent and largely producing for a domestic market.

The Kenyan greenhouse sector did start with foreign capital investing in production facilities and the larger companies are still European owned. However, within two decades even the higher-level management is increasingly nationally recruited as joint ventures and in-house training programs have generated a skilled workforce. The Ethiopian sector is still the youngest, less than a decade old. Dutch subsidies, which require that Dutch companies set up joint ventures, lead to a structural increase in national capacity. This is currently leading to a whole new IPM sector. Greenhouse IPM has taken over 35 years to develop in the Netherlands, in Kenya it is fairly independent after just 10 years.

8 And now for something completely different…

Stimulating rural entrepreneurship so as to generate self-reinforcing local agribusiness infrastructures and clusters is just one of the areas which the CDI thinks need to be explored. A shift in focus is also needed for various other ways of doing 'development' business. Each topic is a dimension in itself. A few are briefly mentioned here as an expanding agenda for innovations that will help realise MDG1 and other objectives of rural, agricultural development.

8.1 From focusing on global markets to engaging with national and local market opportunities

Global markets offer potential valuable impulses to local production and processing bases, but are much more demanding, smaller in total value and less critical to local livelihoods than local staple food markets. Only a very small proportion of the African rural agricultural population understands the complex demands and procedures of modern, global markets and has the means to set up the production base required. Nonetheless, the focus on market-driven development has focused on modern markets probably because these are most familiar to donors.

Case: Certification leads to limited local spin-off

Certification schemes are examples of sustainable sourcing: consumer demand 'forces' retailers to incorporate additional social, environmental or legal criteria that go beyond food at an acceptable price. Certification guarantees that the claimed criteria really are met.

Certification can be beneficial for primary producers, in terms of supporting healthier production practices, fairer pricing, etc. However, the case study revealed that certification schemes seem to lead to minimal spin-off in terms of local job creation and business opportunities. National/local inspection and certification companies do start up but inevitably remain small. The presence of a local certifier also does not lead to new market opportunities: national markets for certified produce are usually very small and access to international markets is not affected by a local certifier.

The case study suggests that initiatives are more likely to lead to wider spin-offs if there is a clearer prospect of a local market for the skills that are developed in response to external interventions. Skills and services that are only relevant to external markets will not be able to generate local initiatives that lead to expanding local businesses.

8.2 From intervention-driven to context-driven

All parties engaged with rural development are aware of the scale of the problem of rural poverty. Finding solutions that can be implemented at a large scale has often lead to the search for blueprints, models, lists of best practices, etc. with the hope that these can be rolled out in a multitude of situations. The reality that is being increasingly recognised is that such one-size fits all solutions simply do not exist: each context is too unique.

Case: building the local cassava commodity market

Cassave is generally considered to be a staple crop important in subsistence farming. Subsistence is for home consumption, generating a tradable surplus is not a high priority. The Rwandan case study reveals the potential of focusing on building a strong production base of a local, subsistence crop. The result: from a basic production level potentially threatened by the mosaic virus INGABO has helped secure local food security and create a number of economic activities. Local production of cassava has jumped to create a structural surplus, for which there appears to be a ready national market. Farmers are diversifying their income by producing virus-resistant propagation material for a much wider region and in doing so, are helping to ensure the food security situation in those regions. Spin-off activities are being explored that rely on a reliable surplus supply of cassava. If successful they will generate new economic activities in rural regions based on that region's context. The value of this market, both in terms of traded cassava as well as in terms of reducing risk of food shortage and offering raw material for new local agribusinesses have yet to be researched. They are likely to compete favourably with export oriented production of high-value products as well be far more stable, since the local demand for cassava will remain for a long time to come.

The search is on to understand which critical factors must be understood in a particular context to determine what kind of entrepreneurial development is possible in there. A process of adaptation of successful approaches elsewhere can be institutionalised through exposure to many different examples, clear analysis of basic concepts in the approach, identificaition of critical factors for success, understanding where one's own situation differs and overlaps in terms of needs and critical factors, and creative sessions on possible ways of adapting and adopting.

8.3 From extractive modern markets to supporting local ABCs

External markets that engage with local supply bases must be supported or required to buy much more from local service providers. Single external market impulses will then contribute to the establishment and viability of local ABC. When volatile external market demand moves elsewhere then at least some local infrastructure will have been built up. Building on that investment, local ABC can use the income generated to invest in local or external spin-off activities that will be maintained for a longer time.

Case: THC and creating viable local partners

Tongaat Hulett Corporation, THC, is reliant on its regional supply base to ensure raw materials for its product range. In order to maintain and expand its national and global presence, THC is dependent on a long-term reliable supply base of maize. It is well aware of the risks being posed to its current supply line. Creative thinking at management level sees that it is necessary to start investing now in creating a new supply base that will only mature in 10 years or so. Government policy creates both incentives to invest in local agribusinesses – in the form of land allocation – and disincentives not to – in the form of policies requiring support for disadvantaged blacks. A model for establishing successful new enterprises seems to be in the make and THC will enjoy a new steady supply base.

Incentives for business must be created to take this approach. Modern markets often 'extract' a surplus of produce from a supply region through complicated, vertically integrated

procurements systems. Investments at the local region are often considered cost-raising expenditures. In the past few years business is also scratching behind its head at this way of working. At the recent congress organised by IDH[16] many major corporations said they were aware they needed to invest in sustainable supply bases because they were diminishing and deteriorating.

8.4 From linear log-frames to unpredictable complexity

Over the past few decades the development sector has been held increasingly accountable for the outcomes and impacts of the public funds that are being spent there. A common response has been to try to plan precise outcomes in ever-more complex project planning processes. At the heart of much of this work is the often hidden assumption that project activities and outcomes can be planned in a linear, mechanistic manner. Activity A will take place and lead to output B which, with support from Activity C, will lead to outcome D and thus to impact E. The ubiquitous requirement to use log-frames in project design is one manifestation this linear thinking.

The reality, of course, is that the world of agricultural development is complex. Not complicated, but complex[17]. Complex means there are system within which actors are slightly constrained. Actors and systems interact and irreversibly change the way the system operates. Therefore complex systems are unpredictable and cannot be controlled in a linear management way. Instead, they require intelligent managing of the system boundaries (such as government policy or regulations), carrying out lots of trials that can be allowed to fail safely and generate rapid learning (safe-fail probes) and rapid follow-up to amplify or dampen outcomes as desired.

CDI recently organised an international seminar on "Being strategic in the face of complexity" to address the question of how to recognise yet operate in this reality. The implications for the way development interventions are designed and held accountable are fundamental: no more rigid, long-term linear planning with must-achieve outputs and outcomes but investing in safe-fail exploratory tryouts that are rapidly monitored and adapted.

Case: bonded warehouses in Zambia

The situation in Zambia offers a unique context for building a system of bonded warehouses. As the head of WFP Zambia expressed it, there is a combination of businesses, government, donor and international organisations who know each other well and who all want to make such a system work. WFP shapes the boundaries of this complex environment by requiring open bid, public procurement of its food aid from the bonded warehouse system. In doing so it avoids a linear approach which could be something like investing in its own warehouses. Rather, the system it helps shape can, and must, be used by others in order to grow to a minimum critical turnover and evolve to meet customer needs.

8.5 From single value chain focus to seeking spin-offs

Modern agricultural value chains are often built around single or a limited number of primary crops from a particular procurement region. These are then linked to just one or two exporters. The inclination in supporting agribusiness initiatives that wish to link to such external market opportunities is to work within the limited range of products and buyers.

[16] "Accelerating Sustainable Trade", Nov. 2 2009 with over 600 participants, many from business

[17] CDI has a web portal dedicated to the ideas of complexity and how they relate to development: http://portals.wi.wur.nl/navigatingcomplexity/. David Snowden from Cognitive Edge has laid the foundation of thinking around complexity that CDI works with.

Investments in knowledge, equipment, etc. may seem more effective. The down side is that it also creates strong dependency on the continued presence of a specific product demand.

Case: multifunctional MIS

The e-Choupal system in India was built around simple computer nodes in thousands of villages, each operated and maintained on behalf of the village. Initially these computers were connected to price information systems provided by the initiating company. The technology itself, though, had all the diverse possibilities of straightforward computer systems. Once villagers were familiar with the technology and learned to value the output, the technology was put to many different uses. These spin-offs were possible because the computer systems were open-ended and not rigidly tied into one product, a singly value chain or single use. Currently Africa is a breeding ground for new mobile phone applications because of the high dispersion of phones and very low internet coverage. Mobile phones could be used to build a multifunctional platform for a MIS that imitates aspects of the e-Choupal system.

An external market demand for a single product is, of course, a good opportunity to support ABC development that can rapidly generate turnover. Taking care to ensure that multifunctional investments are made creates the possibility for wider spin-offs for local agribusiness. More generic technology or capacity development, which initially may be applied to a specific market potential, should be given priority rather than single- or narrow-use technologies. Government policy and knowledge support systems can build in that focus on diversity in potential uses from the start.

Case: applying greenhouse ABCs for other purposes

In developing a greenhouse floriculture sector in Ethiopia a cluster of service and knowledge providers has been established that are specifically targeted to the greenhouse sector. If these only focus on the floriculture sector then they remain dependent on an external market which has proven to be quite mobile in response to lower land and labour costs. That emerging ABC can also expand their focus to other sectors, such as greenhouse horticulture or horticulture for local markets. The services from this ABC thus becomes available for more national and local needs, including perhaps pro-poor development, as well as reducing the risks for the businesses involved.

Appendix 1: Sources

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Appendix 2: Improving regional food security through rural entrepreneurship:
Supporting the agricultural commodity exchange and warehouse receipt system mechanisms

by: Hans Nijhoff

1. Entrepreneurship and trade to enhance food security

Food and agricultural markets in Eastern and Southern Africa are fragmented along sub-region, national and even sub-national levels. This results in segmented markets that do not ensure profitability of sizeable private investment in the different stages of the commodity chain. Segmented gaps between regional/national domestic production and regional demand are increasing being filled by imports of non-African origin. (FAO, 2008). Due to its weak market infrastructure, regional markets in Africa are often localized, with weak transmission of prices between the markets and hence sharp fluctuations in those prices. There are acute food shortages in one sub-region while there is surplus elsewhere, within the same country or region.

The regional average of food production per person in Africa been declining rather than increasing over the last 40 years. At the same time, agriculture continues to dominate the economies of most African countries and is an important vehicle for economic growth. In the COMESA region, the sector continues to produce the bulk of food consumed in Africa. It accounts for about 80% of employment in the region, 90% of the rural population are dependent on the farm sector for their livelihoods, and it contributes 32% of GDP. In the COMESA region two-thirds of manufacturing value-added is based on agricultural raw materials (ALL ACP Agricultural Commodities, 2009). To achieve economies of scale and integration, emphasis should be placed at the regional/sub-regional level around a limited number of Strategic Commodities. For these commodities, a Common African Market that transcends national and sub-regional borders would offer an appropriate economic space to foster private investments (FAO, 2008).

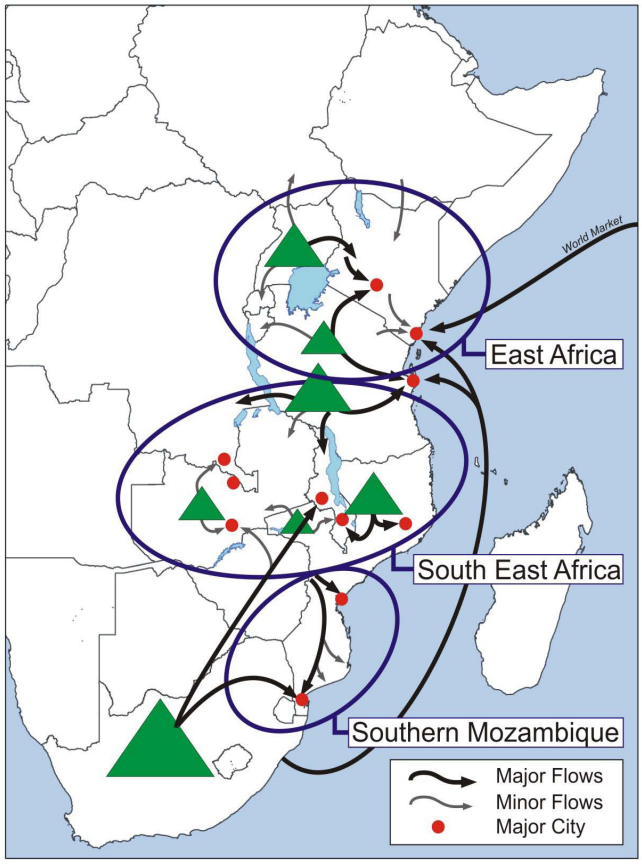
Trade in food commodities not only brings about agricultural growth, it is also a powerful instrument in stabilizing food supply and food prices in the region. Inter-seasonal fluctuations of maize production in southern Africa are substantial, ranging from -65% in 1992/93 to +15% in 2005/06 relative to the 1990-2005 mean production (Jayne and Tschirley, forthcoming). These production fluctuations cause substantial price volatility, especially in countries that are distant from import and export markets. Managing national food surpluses and deficits requires a well functioning regional trading sector, operating within a trade-friendly policy environment. However, in many parts of the COMESA region trade in food commodities is far from free, notwithstanding the COMESA Free Trade Area. Food security concerns often prompt national governments to control imports and exports, often becoming market actors, thus creating an unpredictable and often a commercially unviable trading environment. Thus, the task at hand is to explore how regional trade in food commodities could be facilitated while addressing national food security concerns. (Nijhoff J.J., 2009)

In this report key drivers and principles in the area of commodity markets and risk management instruments are more clearly identified and explained. The aim of this report is to support Dutch policy makers, donors and private companies in integrating this understanding into their decision making. There is a need for more empirical work to show how agro-food chains may work more efficiently. This report provides insights to learn more about institutional issues hampering or improving efficient market functioning in food staples and non-staples. With this in mind, this report aims to contribute to further planning of programs to support the DGIS/LNV policy note 'Agriculture, rural entrepreneurship and food security' and, more specifically, relates to all five tracks of this note: Productivity increase, Enabling environment, Sustainable chain development, Improved market access, and Food security and transfer mechanisms.

2. Africa's market demand for food staples doubles in 2015

Production of food staples, for growing urban markets and for food-deficit rural areas, represents the largest growth opportunity available to African farmers. In 2003 the market value of Africa's food commodities amounted to $50 billion per year, or nearly three-fourths of the value of all agricultural production. This figure is estimated to almost double by 2015 (Diao and Hazel, 2004). This implies that Africa's market demand for food staples will grow dramatically in coming decades. Facilitating expansion of these food staple markets will therefore be critical for efforts aimed at stimulating agricultural production, broad-based income growth and poverty reduction and for ensuring food security of vulnerable populations in deficit zones.

Figure 1: Trade flows within foodsheds in east and southern Africa



Source: Haggblade

Throughout the region, rural food surplus production zones supply major deficit urban consumption centres as their natural markets. These spatially linked clusters of production and consumption zones are referred to as *foodsheds*. When mapping food production and population clusters in southern Africa, it becomes clear that large breadbaskets exist that have the potential to supply deficit urban and rural areas, even in years of drought in some parts of the region (Haggblade, forthcoming). Regional trade has the potential to not only reduce price volatility and food insecurity (Haggblade, 2008); it also has the potential to stimulate agricultural growth in these production zones. Yet market inefficiencies of various kinds currently create an unfavourable investment climate for farmers and agribusinesses. Effective and transparent market mechanisms, as well as predictable trade policies that can ensure cross-border market access, are required to stimulate agricultural growth (Nijhoff J.J., 2009).

This report analyzes two key agricultural market-supporting institutions that, especially when working parallel to each other, add to improving the functioning of agricultural markets and contribute to designing commodity risk management mechanisms. Commodity Exchanges (CE) and Warehouse Receipt Systems (WRS) have proven to be effective mechanisms to enhance prices information, market transparency, and regional trade. They can raise farm output and rural incomes while at the same time enhance food security.

Implementation of CE and WRS initiatives have been hampered by institutional weaknesses, capacity constraints, inadequate physical infrastructure, and uncertainty in the legal regulatory framework (which made it difficult to create confidence in the systems by financial institutions). Also disabling policies adopted by governments in the region, not in line with free trade agreements under NEPAD, hamper implementation.

Through combined efforts by private sector practitioners, governments (national, donors) and the development partners, these constraints can be addressed, thereby significantly improving prospects for successful development of these systems. Recommendations on how Dutch donors and development partners can contribute to this are summarized in chapter 5.

3. Innovation and entrepreneurship-driven mechanisms: Commodity Exchanges

Development and use of agricultural commodity exchanges has been pioneered in the southern and eastern African sub-regions, with a focus on maize and export crops. CEs and WRS are highly interdependent. Warehouse receipts provide a mechanism for the delivery of agricultural produce against an exchange contract. The CE provides a means of *valuing* the warehouse receipt and liquidating the underlying commodity. Introduction of the WRS has often gone hand in hand with the development of CEs. Continued and reinforced development of different commodity exchanges will enhance benefits, such as: the provision of financial services to the supply chain stakeholders; the wide development of warehouse receipt systems; price discovery, price transparency, wider

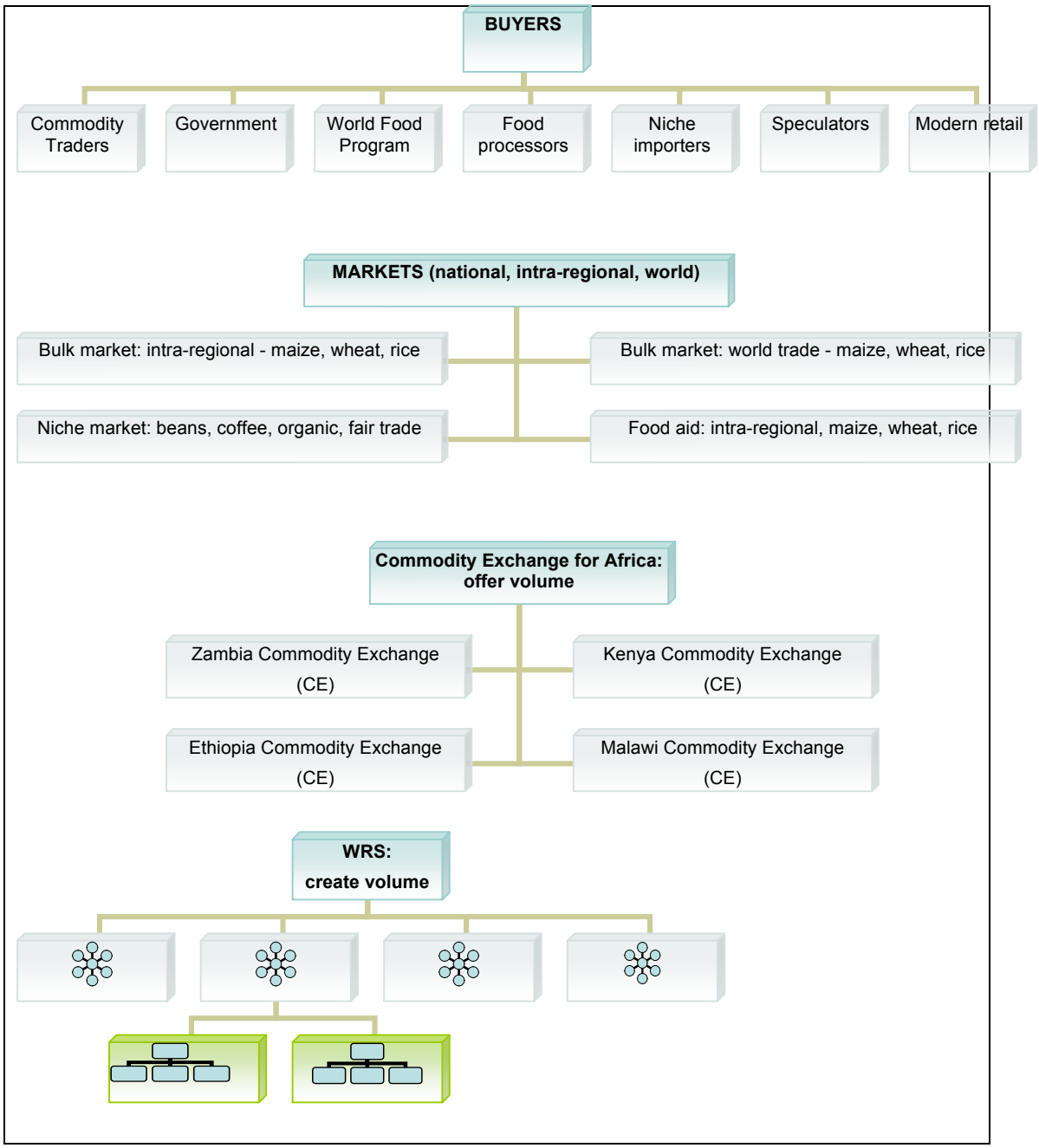
Box 1: Commodity Exchange initiatives in the region

- Malawi: Agricultural Commodity Exchange for Africa (ACE): operational, regional listings & auctions, little to no trade
- Malawi: Malawi Agricultural Commodity Exchange (MACE), operational yet main focus on information dissemination
- Zambia: Zambia Agricultural Commodity Exchange (ZAMACE), operational, towards linking to WRS which is currently supported by the WFP sourcing program
- Kenya: Kenya Agricultural Commodity Exchange (KACE), operational, yet main focus on information dissemination
- Kenya: Africanlion.com, planned internet trading platform, never became operational
- Ethiopia: Ethiopia Commodity Exchange (ECX): spot and forwards, obligatory for certain commodities
- Uganda: Uganda Commodity Exchange (UCE): operational, mostly information dissemination, towards linking with WRS

market information and marketing choices; grades use and grading development; premiums for quality production; quality assurance/ upgrade; as well as transaction risk management development and regional integration (ACE, 2005).

The Agricultural Commodity Exchange for Africa (ACE) initiative was launched in 2006 by COMESA. The purpose was to link national marketing institutions to create free information flows and facilitate regional trade growth. It aims at providing price information and real time information for producers, traders and processors in order for them to sell and/or buy their commodities at a more regional level. Trading with ACE is simply carried out by placing commodity offers and bids on the ACE website. Members can make sales and purchases on behalf of their clients if they follow the rules and procedures set by ACE.

Figure 2: Upgrading the agricultural commodity market systems



Source: Nijhoff, Goggin

Figure 2 provides a schematic overview of how tradable volumes can be generated. CEs are linked, using the WRS mechanism, to a network of warehouses and satellite storage facilities (see next chapter). This results in higher volumes of (graded) quality produce per warehouse and, through the WRS, in one joint trading platform for Africa. This provides the potential for exchanges to jointly enter new markets at national, intra-regional and world level. New bulk markets, niche markets (high values, organic, fair trade, non-GM), as well as intra-regional food aid markets. Buyers linked to this intra-regional platform may range from COMESA member governments, the UN World Food Program (WFP) and modern retail in major African cities, to international commodity traders, major (inter)national food processors, international niche importers, and speculators.

At present, the majority of wholesale prices in selected countries in east Africa are supplied by the Regional Agricultural Trade Intelligence Network (RATIN). Part of ACE's activities is to compile this data into price reports. For example, prices indicated in table 1 below were valid on 25th November, 2009. Changes shown are calculated on the basis of that day's prices against those previously recorded. Price reports available at the same trading platform that also provides national or intra-regional commodity offers (Table 2 below) provide a modern and transparent means of buying and selling. Commodity information includes data on volume, offering price, and location.

Table 1: Wholesale prices in selected countries in East Africa, RATIN, 25th Nov., 2009

Market	Maize US$/tonne		Beans US$/tonne		Rice US$/tonne	
Dar es Salaam	+26	402	+9	949	+32	949
Kampala	-37	312	-5	747	-5	924
Kigali	+4	393	+6	536	+11	1089
Nairobi	+11	396	+19	730	--	--
Mombasa	--	350	--	700	--	--

Source: ACE trade report

Table 2: Excerpts from the MACE price report, Malawi, 23rd November, 2009

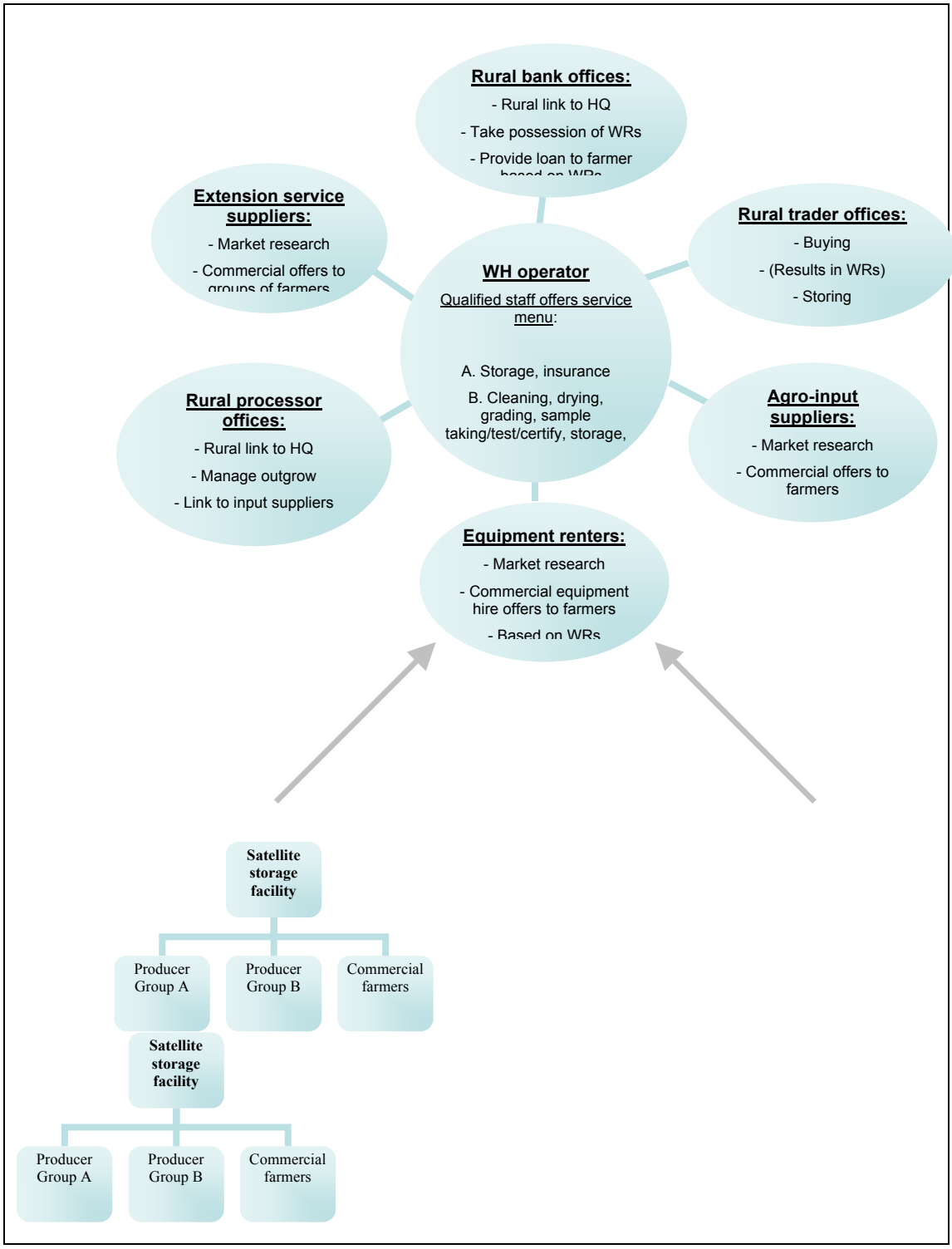
COMMODITY	Volume MT	BID US$	*OFFER US$*	DEALS US$	LOCATION
Groundnuts CG7	10	-----	*714*	-----	Mitundu, MW
Groundnuts Chalimbana	20	-----	*786*	-----	Mitundu, MW
GMO Free Soya Beans (FAQ)	2.2	-----	*642*	-----	Lilongwe, MW
GMO Free Soya Beans (FAQ)	12	-----	*607*	-----	Madisi Market, MW
GMO Free Soya Beans (FAQ)	10	-----	*607*	-----	Mitundu, MW
Maize GMO free (FAQ)	5	-----	*285*	-----	Madisi Market, MW
Malawi Wheat	5	-----	*725*	-----	Mchinji, MW
Red Kidney Beans	60	-----	*1071*	-----	Lilongwe, MW
Soya Beans	3.9	-----	*495*	-----	Lilongwe, MW
Soya Bean Meal	900	-----	*420*	-----	Harare, ZM
Sugar Beans Brown Speckled	30	-----	*1214*	-----	Lilongwe, MW
Sugar Beans Red Speckled	10	-----	*1214*	-----	Lilongwe, MW
Wheat FAQ	10	-----	*725*		Mchinji, MW
White Maize (AB Grade)	500	-----	*358*	-----	Mzuzu, MW

Source: ACE trade report

4. Innovation and entrepreneurship-driven mechanisms: the Warehouse Receipt System

To address problems related to storage and financing, warehouse receipts systems (WRS) are on the increase in most parts of Africa. These systems are designed to increase liquidity in commodity markets, allowing producers as well as traders to consolidate marketable and exportable commodity volumes. Under collateralized WRSs, producers and traders can convert inventories of their agricultural products into readily tradable products. The warehouse receipts are negotiable instruments that can be traded sold, swapped, and used as collateral to support borrowing. Often, the issuing of tradable warehouse receipts is linked to inventory financing. Such schemes have been undertaken elsewhere in Africa, notably South Africa, Zimbabwe, Tanzania, Zambia, and Ethiopia.

Figure 3: Warehouse Receipt Systems: innovation and entrepreneurship



Source: Nijhoff, Goggin

The Warehouse Receipt System provides a platform for introducing institutional innovations and rural entrepreneurship. Key to the sustainability of the WRS are the qualities of a certified warehouse operator (see figure 3 above). Aside from the commercial services provided by the operator, an professional warehouse operator is key to assuring compliance to quality criteria (certification, licensing etc.), both at the level of warehouse infrastructure and capabilities of

warehouse staff. The operator acts as a crucial administrator of the warehouse receipts to sellers, buyers and other actors in the WRS chain, and is from this position responsible for final discharge of stored produce linked to a specific warehouse receipt.

An operator builds up networks of satellite storage facilities in remote production areas within reach of the warehouse facility. The satellite storage managers are trained on quality and quality aspects by the operator, and their emphasis is on collection, grading, temporary storage, and loading of produce, distribution of agro-inputs to remote farmers, and ensuring up-to-date availability of data concerning available quality and quantity of produce to the operator. Testing, certification and long-term storage is the task of the operator at the certified warehouse.

The operator is an entrepreneur. Typically, an operator offers clients (commercial farmers, groups of smallholders, traders etc.) services from a transparent 'services menu' that indicates specific costs per warehousing activity. The more produce a client brings, the lower the overall charges will be. The operator, by offering office space and networks, will promote its warehouse to other agribusiness companies as well, offering office space and rural linkages. This provides opportunities to commercial banks, especially banks that intent to implement the WRS as a collateral mechanism in rural areas. Or to traders and processors buying produce from the vicinity of the warehouse location. And to dealers: input suppliers, farm equipment hire and operator services, or business and extension service providers.

Warehouse operators have the potential of becoming drivers for commercially sustainable rural development. The provision of transparent market mechanisms will increase competition among the hub's (service) suppliers, improve cost-efficiency (better access to markets and inputs, at better prices) and, as a result of increased confidence in rural market systems, promote investments in producing high-quality staple food products.

Linkages and potential synergy between the CEs and WRS mechanisms needs to be recognized and actively implemented. WRS initiatives should be enhanced through the development of CEs. And CE trading systems can help develop credible WRS, as these systems will assure the delivery of traded commodities as well as ease of liquidity for collateralized stocks. This will encourage (the financing of) trading. Market information systems at all levels, from satellite storage facility to warehouse operator to CE platform, need to strengthen the provision of timely price information and regular updated crop budgets (supply and demand) and forecasts.

5. Conclusions and recommendations

Based on the findings of this survey and report, we conclude that there are seven strategic areas that require support for further research and implementation. As mentioned earlier in this report, the Commodity Exchanges (CE) and Warehouse Receipt Systems (WRS) have proven to improve prices information, market transparency, and regional trade. Dutch donors and development partners can support further development and implementation of these commodity risk management mechanisms. Recommendations on this are provided below.

1. Supporting pilot projects

Dutch donors and development partners could assist:

1. By supporting (technical, financial) CE and WRS initiatives that have good prospects of success. These should be selected in consultation with overarching stakeholders such as ACE. Support should allow for sustainability
2. By supporting effective dialogue with public partners in developing CEs and WRS, synthesis and dissemination of evidence-based material needed
3. By supporting Governments and UN organizations to utilize the CE and WRS in public sector procurement. The case of the World Food Program (WFP) in Zambia, should be closely monitored to learn lessons and best practices in order to guide public procurement for strategic food reserves
4. By supporting potential warehouse operators that may lack storage capacity (particularly in surplus-producing areas). Upgrading existing state-owned facilities or constructing new facilities to be leased to licensed/certified operators is required.

2. Building confidence

Dutch donors and development partners could assist:

1. By supporting clear certification or licensing criteria for warehouses, operators and their personnel, and trade-friendly commodity standards (grades) are required
2. By supporting the development of such standard models of legal frameworks and regulations for CEs and WRS, based on a regular review of existing frameworks
3. By supporting regulatory oversight of the CE and issuing of tradable warehouse receipts should be exercised by relevant Capital Market Authorities or similar agency
4. By supporting self-regulated CEs and other entities authorized to control the issuing of tradable receipts to be responsible for effective enforcement of regulations and standards
5. By supporting that warehouse legislation can address rights of third-party holders, and the powers of the regulator (CE, government). Model warehouse legislation can be made available to guide WRS promoters.

3. Ensuring commercial sustainability

Dutch donors and development partners could assist:

1. By supporting promoters of the CE and WRS to strategically target depositors (producers) who are able to deliver economic volumes. This may imply, especially at the start-up phase, targeting relatively large-scale farmers, traders and processors as depositors
2. By supporting to ensure that smallholder farmers are not excluded from utilizing the receipt system, by promoting collective marketing by well-organized, primary-level farmer organizations
3. By supporting links between WRS initiatives and MFI-supported inventory credit schemes. Yet subsidies may be required over a period in developing a WRS which is widely-accessible

4. Training of a new generation of entrepreneurs

Dutch donors and development partners could assist:

1. By supporting training of professional warehouse keepers and other entrepreneurial stakeholders. This is critical to ensure compliance, by depositors and buyers, as well as by financiers
2. By supporting warehouse keepers to be trained in the areas of warehouse operation, commodity handling and grading, collateral management and warehouse receipting, warehouse regulation, and commodity trading floors, and clearing and settlement.
3. By supporting training on three levels: development of training materials and curricula, training and certification of trainers, and grants for organizations to hire trainers

5. Facilitating cross-border stakeholder processes

Dutch donors and development partners could assist:

1. By supporting viable CE and WRS programs in the region. An NGO cross-border stakeholder organization should play a lead role in this, and should receive support on key issues such as:

- Harmonize standards for collateral management
- Promote best practice for regulators in the region
- Rules and standards for warehousing and insurance or use of receipts
- Mobilize stakeholders in collaborative policy and regulatory reform
- Provide input in training programs
- Ensure the emergence of competent professional cadre of warehouse operators

6. Link to other risk management instruments

Dutch donors and development partners could assist:

1. By supporting initiatives that have programs dealing with other risk management tools and instruments in the region (weather and price indices) based on successful models and country experiences

7. Enhancing national policy & regulatory reforms

Dutch donors and development partners could assist:

1. By supporting international and regional organizations to advocate policy and regulatory reforms at national and regional levels
2. By supporting the expansion of warehouse and exchange infrastructure

6. Case study: WFP support to CE and WRS initiatives, Zambia

Introduction

During field research in Zambia, this survey identified the World Food Program (WFP) as a key supporting donor/development organization to the CE and WRS mechanisms in that country. Based on the seven strategic areas for further support (see above), the WFP-Zambia case was used to test the definition of the strategic areas as well as to provide a more practical example of how donors and development partners can support the further development and implementation of the commodity risk management mechanisms.

The World Food Program (WFP) in Zambia, through its Gates Foundation funded "Purchase for Progress" (P4P) pilot has taken a market based approach linking small holder farmers to markets as part of WFP's overall strategy of finding sustainable solutions to hunger. WFP will use its procurement footprint to leverage the development of the Commodity Exchange (CE) and warehouse network to enable smallholders to access the market and services hence investing in and developing the rural economy. 70% of Zambia population are smallholder farmers with low productivity levels and 60-70% of these remain unconnected to markets and thus have low incentive to invest in agriculture and high malnutrition rates. WFP traditionally has used a closed tender procedure in procuring its food assistance needs. In general large traders are involved and the purchase price is not revealed to the suppliers therefore there is no feedback to the market.

Support to WRS and CE pilot projects

The P4P program aims to link smallholders to markets. In Zambia WFP took the approach by using the Zambian Agricultural Commodities Exchange (ZAMACE) and a network of certified warehouses. It was clear from stakeholders that WFP should use existing systems that were sustainable. The Exchange has since October 2007 traded almost 88,000 Mt in commodities with a value of USD 31m. Although the P4P project document states that P4P countries will use 10% of their funding on P4P purchases, in Zambia WFP plans to put as much as possible across the Exchange in order to stimulate it. In addition, WFP has brought requirements for different products/commodities to the Exchange and thus expanded the available pool of suppliers. 80% of maize production is smallholder, therefore ZAMACE is developing a network of private sector operated certified warehouses in the Districts that would serve as grading and aggregating points guaranteeing Q&Q and reducing transaction costs. This has the effect of moving the perception of smallholder maize to commercial maize with a corresponding increase in price. In time these certified warehouses would become the foundation of a WRS.

P4P is decentralizing its purchases so that bids are made on the CE for WFP requirements in a particular district. Certified warehouses in the district should have a competitive advantage over the main market or neighbouring districts. In addition, this also generates significant cost savings on transport for WFP thus increasing tonnage for a given donation.

Build confidence in the system (rules, procedures, standards)

Key to building confidence in the system is that a perceived large public sector buyer, the UN, has enough confidence to use the Exchange despite its internal rules and regulations. WFP's engagement in the Exchange catalysed a development of the rules and procedures in order for WFP to be able to use the Exchange. While this would have happened in time this accelerated the process.

Ensure commercial sustainability (include banks in WRS)

WFP is not directly engaged in commercial sustainability, but only as a part of the market. It is not seen as driving the process. This strategy was deliberate for a number of reasons: WFP's funding levels, predictability and timing vis-à-vis harvest thus a moral hazard in WFP

directly purchasing from Farmers. Levels of funding become a critical factor in enabling WFP to support such an approach and continue to play a part in social and private sector development of the economy.

From the ZAMACE perspective, the Exchange must reach the tipping point where it is self-sustaining and for that to occur it requires volumes of trade to keep the platform operating. To achieve this, it is critical that the network of certified warehouses and the associated services such as tillage, inputs, and extension must work well. WFP plays a key role in this through purchasing in the District for the District. The Exchange and certified warehouses are Private Sector operated and thus can only work if the system is economically viable. However for this to really happen, there must be an enabling environment created both in the public and private sectors and ultimately within the legal system.

Train a new generation of agro-entrepreneurs

P4P does not directly conduct trainings, rather it has partnered with other key stakeholders in the sector to address the cycle of confidence (a deliberately informal Alliance of stakeholders). The Alliance seeks to ensure that smallholders have access to agri-inputs, technical knowledge, yield improvement, crop diversification, output marketing and business skills. The business skills training will also be given to the warehouse operators. It is hoped that small and medium traders and SMBE's in the districts will see and take advantage of this opportunity.

Facilitate cross-border stakeholder processes

Another important element is the regional trade networks. Currently the existing exchanges work in isolation from each other. P4P seeks to link the Exchanges in the region by putting simultaneous bids for commodity on the Exchanges. This would bring regional price discovery, transparency and competition. In addition, WFP considers putting large regional tenders through the Exchanges.

Enhance national policy and regulatory reform

The P4P concept was discussed with the Ministry of Agriculture and Cooperatives (MACO) and the Ministry of Finance and National Planning (MFNP) as well as with the Agriculture Cooperating Partners (Ag CP). ZAMACE's increasing visibility and combined stakeholder advocacy has lead to the revival of the Agricultural Credit Act and the Agricultural Marketing Act, both of which have significant implications for the Exchange and WRS in the future. The fact that this has happened is testament to a new willingness by the Government of Zambia to look at new market initiatives such as the Exchange. In addition to this there is also a move to redefine the role of the Food Reserve Agency and the possibility that they may consider using the Exchange to more efficiently turn over their stocks. This is also to a degree being driven by COMESA/ACTESA and the AU CAADP framework with its focus in pillar II on markets, where WFP is strongly engaged, and its implications for GRZ.

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Appendix 3: Developing a market information system for small-holder fruit and vegetable producers in Ethiopia

By: Monika Sopov, CDI

Risk is an important aspect of the farming business. Five general types of risk, production risk, price or market risk, institutional risk, human or personal risk, financial risk can cause wide swings in farm income. One of these risks, market insecurity can be reduced by three factors:

1. Technical innovations to spread production over the year (adapted varieties; storage; processing, etc.)
2. Organizational coordination:
    a. Horizontal organization: farmers forming a block to improve negotiation position in market chain
    b. Vertical organization: agreements between producers and buyers along the market chain to add value to product
3. Market Information Systems (MIS) to provide transparency in markets through improved information circulation

The latter, market information systems (MIS) in Sub-Sahara Africa (SSA) emerged as a result of economic liberalization policies. In addition to give more bargaining power to farmers by creating a more transparent trading environment, one of its main functions has been to provide market information to government officials in order to monitor the economic liberalization process and to be able to intervene when required. Most MIS in Africa limit themselves to market prices information, but a few go beyond that and also offer commodity exchange services, such as Kenya Agricultural Commodity Exchange. One of their major problems around MIS is its sustainability. Most still depend on donors for their financing. Most governments do not see the need to finance them, although they are providing important public goods. They are also a business development service opportunity for the private sector and for public-private sector partnerships.

A study was conducted in 2008 by Wageningen International in cooperation with LEI in Ethiopia on the request of the Common Fund for Commodities (CFC) with the objectives of assessing the current market systems in relation to the market information demanded by small holders in the fruit and vegetable sector (in Ziway and Meki), and making an inventory of the current communication lines regarding accessing market information as a basis for the design of a Market Information System for small holders to enhance pro-poor development.

The study showed that three types of market information systems are available to small vegetable growers for marketing purposes:

1. an official and centralized system managed by government institutions: The availability of information is limited and the quality is not constant as it depends on the capacities, motivation of the district officers collecting the information and the resources they can count on which generally does not include access to ICT.
2. a non-structured, informal system mainly operating among market actors Farmers and traders use mobile phones and personal networks to obtain information on daily market prices and on supply in the regions. The information received through the informal system is easy to access, timely, useful, and trustworthy, but it has small coverage. Collection, recording or analysis of data on marketing, input

supplies and services are lacking. The quality of the information depends on personal network.

3. an information management system used by enterprises for internal decision making.

To find the most appropriate approach for developing an MIS, best practices from different countries were discussed with stakeholders in Ethiopia, and the e-choupal MIS system from India raised a lot of interest.

1. e-Choupal, India (private sector driven MIS)

Because of lack of transparency regarding market information, Indian farmers have only an approximate idea of price trends and have to accept the price offered them at auctions on the day that they bring their produce to the mandi, the purchasing agents for buyers at a local, government-mandated marketplace. As a result, traders are well positioned to exploit both farmers and buyers through practices that sustain system-wide inefficiencies. ITC, one of India's leading private companies, created in 1990 as an agricultural trading company, has initiated an e-Choupal effort that places computers with Internet access in rural farming villages. The e-Choupals serve as both a social gathering place for exchange of information and an e-commerce hub. Initially, ITC planned to develop a new business model for oilseeds only. Today, the company trades in commodities such as feed ingredients, food-grains, coffee, black pepper, edible nuts, marine products, and processed fruits, as a highly profitable distribution and product design channel emerged: an e-commerce platform.

The e-Choupal model has required that ITC make significant investments to create and maintain its own IT network in rural India and to identify and train a local farmer to manage each e-Choupal. The computer, typically housed in the farmer's house, serves an average of 600 farmers in 10 surrounding villages within about a five kilometer radius. Each e-Choupal costs between US$3,000 and US$6,000 to set up and about US$100 per year to maintain. Using the system costs farmers nothing, but the host farmer, called a sanchalak, incurs some operating costs and is obligated by a public oath to serve the entire community. The sanchalak benefits from increased prestige and a commission paid him for all e-Choupal transactions. The farmers can use the computer to access daily closing prices on local mandis, to track global price trends or find information about new farming techniques—either directly or, because many farmers are illiterate, via the sanchalak, and to order seed, fertilizer, and other products such as consumer goods from ITC or its partners, at prices lower than those available from village traders.

At harvest time, ITC offers to buy the crop directly from any farmer at the previous day's closing price. In this way, the e-Choupal system bypasses the government-mandated trading mandis.

Benefits for farmers in case of soy include:

- real-time information and customized knowledge to improve the farmer's decision-making ability, thereby better aligning farm output to market demands; securing better quality, productivity and improved price discovery (about 2.5% higher price than at mandis).
- direct marketing channel, eliminating wasteful intermediation and multiple handling, thus reducing transaction costs and making logistics efficient (faster processing time, more accurate weighing (electronic), prompt payment through auto-generated database).
- the model helps aggregate demand in the nature of a virtual producers' co-operative, in the process facilitating access to higher quality farm inputs at lower costs for the farmer. (demand is aggregated on village level)
- soil testing

- education on ways to improve crop quality, scientific farm practices & risk management
- engaging banks to offer farmers access to credit, insurance, and other services

The e-Choupal system has had a measurable impact on what farmers chose to do: in areas covered by e-Choupals, the percentage of farmers planting e.g. soy has increased dramatically, from 50 to 90% in some regions, while the volume of soy marketed through mandis has dropped as much as half.

Benefits for ITC include:

- about 2.5% lower net procurement costs (it saves the commission fee and part of the transport costs it would otherwise pay to traders who serve as its buying agents at the mandi).
- more direct control over the quality of what ITC buys.
- the system also provides direct access to the farmer and to information about conditions on the ground, improving planning and building relationships that increase its security of supply.
- the network is also a source of innovation for new products. Farmers are beginning to suggest—and in some cases, demand—that ITC supply new products or services or expand into additional crops, such as onions and potatoes. Thus farmers are becoming a source of product innovation for ITC.

Within 5 years of its implementation, e-Choupal services reached more than 1 million farmers in nearly 11,000 villages, and the system is expanding rapidly. Now it has penetrated over 4 million farmers growing a range of crops - soyabean, coffee, wheat, rice, pulses, shrimp - in over 40,000 villages through nearly 6200 kiosks.

2. Development benefits

The e-Choupal system gives farmers more control over their choices, a higher profit margin on their crops, and access to information that improves their productivity. By providing a more transparent process and empowering local people as key nodes in the system, ITC increases trust and fairness. The increased efficiencies and potential for improving crop quality contribute to making Indian agriculture more competitive. Despite difficulties from undependable phone and electric power infrastructure that sometimes limit hours of use, the system also links farmers and their families to the world. Some sanchalaks track futures prices on the Chicago Board of Trade as well as local mandi prices, and village children have used the computers for schoolwork, games, and to obtain and print out their academic test results. The result is a significant step toward rural development.
The e-Choupal model demonstrates that a large corporation can play a major role in recognizing markets and increasing the efficiency of an agricultural system, while doing so in ways that benefit farmers and rural communities as well as shareholders.

Considering the pro-poor development aspect of E-choupal, during the stakeholder workshop in Ethiopia, one of the questions was whether the above described business model could be introduced into the Ethiopian context.

To be able to answer that question, the objectives of the foreseen MIS had to be identified and the context in Ethiopia explored.

3. The objectives of the MIS

There are different forms of price fluctuations each leading to a different set-up and information flow of Market Information System:

8.5.1 1. Daily fluctuations depends on irregular arriving of trucks and thin market (not much transactions)

Daily fluctuations can only be reduced through the availability of timely - within the same day, within in a few hours - , which is in general technically impossible for the "classic" MIS.

Government in Ethiopia has the mandate to provide this type of information, but it is questionable whether they have the capacity to do so. On the other hand, stakeholders noticed that the informal market information system, ran by the market actors themselves, does not include all daily information needed, and its quality is influenced by the traders who provide the information.

8.5.2 2. Price fluctuations caused by seasonality of the product: the supply depends on climate conditions (rainy season)

Price fluctuations caused by seasonality cannot be solved by more transparency in the market through the availability of more information; as more is needed to remove the momentary imbalance between (over)supply and demand. In this case, developing good knowledge and marketing skills for the implementation of longer term marketing strategies are seen as reducing insecurity. Also technology will remove barriers in the market (infrastructure to avoid accumulation of perishable produce in one place) or create less seasonal market opportunities (processing of fresh produce).

During the interviews with stakeholders in Ethiopia it became clear that, though people ask for daily prices, they are, in fact, struggling to find answers to seasonal fluctuations. However, the availability of daily prices from different markets will not solve the problem of seasonal fluctuations. Also market structure and marketing strategies need to be addressed, for which the analysis of historical information is important.

8.5.3 3. Cyclical fluctuations: With good prices, farmers will increase production, leading to lower prices, leading to reduction of acreage etc.

In the case of cyclical fluctuations in prices, a MIS is counterproductive: all actors react to the same market price information / signals. Structuring the market; making it less atomized through interpersonal coordination is seen as a solution. Such as in the case of seasonal fluctuations, this can take place through:

- Horizontal coordination at production level; collective action (marketing)
- Vertical coordination: agreements along the chain

4. The context in Ethiopia

- According to interviewed stakeholders in Ethiopia, capacity of government to set-up and manage an appropriate MIS to target farmers' and traders' needs is weak.
- The limiting factor for NGOs to fulfil this role lies in legalities, as they are not allowed to charge for services rendered, debilitating the sustainability of services. Thus, there is niche for private companies to enter, such as ITC in India.
- However, ITC has been developing a network of suppliers since 1990 as a trading company, and a certain level of trust was developed between ITC and the farmers before introduction of the e-choupal system, so that the new business model could relatively easily take off. There is no company in the studied region in Ethiopia with such history and level of trust.
- Main demand by farmers in Ethiopia is to address the seasonal fluctuation of vegetable commodities. A MIS giving daily prices therefore is not the recommended option; but a MIS addressing the organization of the supply chain is. The interviewed

stakeholders do not yet see the benefit of this kind of organization: " I always want to have the freedom to sell my products to whomever I want to at any given time, so that I can make the most profit"

- More is needed than introduction of MIS to enable smallholder farmers to gain better access to markets in a more sustainable and remunerative manner, such as the use of weights, grades and quality standards and bulking of produce.
- India has been pursuing liberalization policies that have helped the Indian IT industry develop since 1984. The government has been eager to ensure electronic connectivity in the rural, urban and economically backward areas to increase development effectiveness. While the Ethiopian government views information and communication technology (ICT) as a key weapon in the war against poverty, the country is still far behind India when it comes to connectivity.

E-choupal fulfils two functions: give more power to farmers by increasing transparency in the market environment, and serves as commodity exchange resulting in reduction of transaction costs. It is clear that in Ethiopia a model that fulfils both functions could be very beneficial as the operating wholesale markets involve too high transaction costs to be made use of by small holders. In addition, E-choupal meets all three objectives of a MIS to a certain degree as it offers timely, trustworthy daily price information, providing education and several marketing channels to cope with seasonal price fluctuations in a region (ITC and its partners), and made a move towards vertical integration via establishing the e-commerce platform, making it a valuable business model in the Ethiopian context. As government is not capable of providing such services, and NGOs are not allowed to, private sector actors could find a niche to enter. However, the absence of interested private companies or organization with appropriate capacities and skills combined with an IT sector that lags behind make it challenge to develop and implement a MIS similar to E-choupal.

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Appendix 4: From mosaic virus pandemic to farmer entrepreneurship: a cassava cutting edge story from Central Rwanda

by: Ted Schrader, CDI and
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Summary

During the past 10-15 years, INGABO, a medium-sized farmer syndicate, progressively established itself as an autonomous member-based organization that is highly involved in agribusiness cluster formation in Central Rwanda, especially in the cassava sub-sector.

By the end of the last century, INGABO members knew they had to face the cassava mosaic virus pandemic, which might wipe out their varieties and thus threaten cassava production and household food security. Within a few years, INGABO, in collaboration with other stakeholders, managed to produce enough resistant cassava planting material for all its members and – through outgrowing contracts - to supply millions of cassava cuttings to other parts of the country. The new varieties boosted production, which secured food supply and led to a marketable surplus. Intrigued by challenges in the Rwandan cassava sub-sector, the authors analyze direct and indirect impacts and spin-offs of the large-scale production of cassava cuttings and zoom in on multiple innovations that are now challenging the sector and small cassava producers.

The need to fight the cassava mosaic pandemic and the profitable production of cassava cuttings was not only a turning point for the Rwandan cassava sector, but also for INGABO. At hindsight, the threat of the cassava mosaic virus now appears to have been a blessing in disguise. INGABO went through some highly successful and formative years. Proven – and perceived – performance enhanced the credibility of the organization and helped INGABO to position itself as an important player in the local agricultural development arena, both as an economic actor and as a partner in policy development. The outgrowing contracts significantly improved INGABO's financial position, which in turn reduced donor dependence and spiraled organizational autonomy and self-determination.

Knowing that farmers' organizations often collapse under the burden of success and increased financial resources, it is remarkable that INGABO came out stronger. The paper discusses the organizational formation process of INGABO, its member-oriented governance modalities and its institutional and political positioning. What are key elements that make an organization small farmers more professional, effective and entrepreneurial ? What strategic choices does these organizations need to make, both in dealing with its members, leaders and staff, and in dealing with other stakeholders ?

Analysis of the cassava agribusiness case suggests that the existence of member-based farmers' organizations is in itself not enough for establishing robust farmer inclusive agribusiness clusters. Farmers' organizations must earn credibility by showing operational performance. And other stakeholders should be ready to (subsequently) give space and opportunity to organized farmers to operate as development actors. This proved to be possible

in the dynamic agricultural development context in Rwanda where local authorities and national Government observe and reward results and performance. The recognition of INGABO as a development actor and reliable partner in the agricultural sector is also resulting from INGABO's practical approach towards lobby and advocacy – using concrete issues for engaging in operational policy dialogue.

1. Introduction

Cassava and the bulk crop challenge

Rwanda is a small land-locked country in Central Africa. Average population density is close to 400 persons per square kilometer. From the current 10 million people, the Rwandan population is expected to grow to 22 million in 2050. During the same period, the urban population is likely to grow from 20 to 50-60%. By 2050 farming will be a less important economic activity for the Rwandese population. However, the actual number of people that are involved in agricultural production will be at least the same as it is today. Producing 3-4 times more on the same land area is therefore a key challenge for the coming decades.

In Rwanda, the most important staple crops are maize, potatoes, cassava, sorghum and rice. Cassava is most important in the relatively dry and less fertile parts of the country. *Gitarama* and *Bugesera*, respectively to the East and the South of Kigali, are the most important production areas. Cassava, known as a 'poor man's crop' that does not require much external inputs and is easy to cultivate and maintain, is of great importance for food security in cassava growing areas and beyond. It is very important for poor farmer households that have difficulties buy seeds and inputs and to mobilize labor (for instance female-headed and HIV-Aids affected households). Cassava is also important staple food for poor urban dwellers. The capital town of Kigali, whose population doubled in the past decade, is a growing market for domestic fresh and dried cassava. Provincial towns, Eastern Congo and the Rwandese Diaspora also offer interesting market opportunities. During the past two decades, the cassava sub-sector underwent major changes. In the 1990's, after a dramatic decline in 1994-95, production again reached the pre-genocide levels in 1999. Production then rapidly tripled, reaching one million tons in 2002 and 2003. As from 2003, the cassava mosaic virus strongly affected production, which went down with some 25%. As from 2006, farmers massively replaced traditional cassava varieties with resistant varieties. Since then, production is on the rise again. Cassava farmers are now able to satisfy the growing market demand. INGABO, a medium-sized farmers' organization, played a major role in this process.

INGABO: farmers' syndicate taking united action for farmers' business interests

"INGABO", meaning 'buckler' or 'shield' in Kinyarwanda, is a generic farmers' organization that operates in Central Rwanda. The former Province of Gitarama, comprising the current Kamonyi, Muhanga and Ruhango districts is its key intervention area and home to most of its members. INGABO was established in 1992, in the aftermath of the associative liberties created by the democratization and decentralization vogue of the early nineties. In the aftermath of genocide, INGABO had to start all over again. It was during these years (1994-1999) that INGABO established its bottom-up organizational structure. INGABO currently has around 15,000 members.

The members, of which 55% are female, are organized according to *gacacas*, local groups of farmers that know each other well and associate on a voluntary basis. *Gacacas* have an average size of 50 members. Some 10 gacacas make up a zone, which is the intermediate level in the organizational structure. Zones function as important stepping stones for both upward and downward communication. Elections are organized in a bottom-up manner. There are elected bodies at *gacaca*, zonal and central level. The central INGABO Board strategically orients the organization, steers the team of staff members, monitors and

evaluates the implementation of activities and undertakes lobby and advocacy activities. Up till now, constitutional requirements and mandates have been well respected. INGABO disposes of a network of elected farmer advisors. Having the confidence of members, the latter operate as INGABO-trained resource persons who train, coach and give advise to their fellow farmers.

For years, INGABO did not have a formal legal status. After a long period of lobbying, the Ministry of Labour ultimately recognized INGABO as a *syndicat d'agri-éleveurs*: a syndicate (or 'trade union') of farmers that combine crop and livestock production. From a legal point of view, INGABO members are considered as 'self-employed' workers.

The official mission of INGABO is to defend and voice the interests of family farms in its intervention area, which is in line with the lobby and advocacy focus of most syndicates. INGABO has however a specific understanding of its role as a Syndicate : taking united action in the interest of farmers' business and trade. When asked for it, INGABO leaders will eloquently explain that this is what is meant by 'Trade Union'. INGABO is of the opinion that poor Rwandan farmers' will not join organizations that solely concentrate on lobby and advocacy. In this vision, a farmer organization, whatever its legal status, must provide economic services to its farmer-members, who want to see tangible results in the first place. INGABO therefore supports economic endeavors of its members, both in the domain of crop and livestock production and marketing. It is on the basis of real experiences and hands-on knowledge that INGABO seeks dialogue with governmental organizations and other stakeholders.

In the agricultural sector and in the African movement of farmers' organizations, the INGABO 'doing and dialogue' approach is both innovative and exceptional. It stands in contrast to the more common approach of 'voicing and demanding', i.e. formulating problems and making up wish lists of actions that others, generally government and donors, need to undertake. It is remarkable that, in their quest for external support, farmers' organizations often squarely overlook what they can start doing themselves. In actual practice, farmers' organizations are often not the self-help organizations they are meant to be. Donor dependency often undermines the self-help and entrepreneurial spirit in farmers' organizations.

External support and organizational development hick-ups

It is only since some years that INGABO is more or less autonomous in its distinctive 'doing and dialogue' mode of operation. Like so many other farmers' organizations, INGABO has been overwhelmingly dependent on external financial and technical support. Until recent, INGABO's own contribution to the implementation of its activity plans did not exceed 5-10%. It was most busy with implementing different 'projects' and handling different donor contributions. In doing so, it went through some difficult periods.

Several factors 'saved' INGABO from collapsing under the burden of administrative and financial project management. The most important factor is that the communication channels between farmers and leaders remained open. Bottom-up member participation and leaders' accountability to members did not merely exist on paper (like it is the case for so many other farmers' organizations) but worked in practice. Internal communication processes allowed criticism to emerge, which led to an internal debate on the NGO mode of operation. During one of its general assemblies INGABO reached to the conclusion that it did not much differ from an 'ordinary' NGO that implements donor-funded projects. This triggered two important processes: (i) harnessing donor support around its strategic orientations and (ii) searching for income-generating activities.

INGABO has been somehow lucky that its financial and technical partners were mainly small committed donor organizations that understand organizational development hick-ups of farmers' organizations were ready to invest in capacity building for human and financial resource management. These organizations entered into critical dialogue which triggered internal debate within INGABO. As from the 2007-10 strategic plan, the different partners accepted to gather around INGABO's guiding principles (*ligne directrice*). Instead of several specific projects, the different partners jointly funded annual operational plans and asked for one reporting and auditing system.

In addition to these organizational development processes, the cassava mosaic virus, which seriously threatened agricultural production and livelihoods of most INGABO members, proved to be an important driver for organizational change.

2. From coping with the cassava mosaic pandemic to navigating cassava agribusiness

Pioneering the fight against cassava mosaic virus disease

Cassava is an important food crop for Rwandese family farmers. Processing techniques are largely artisanal. Most farmer households soak and dry the tubers themselves. In case of surplus, fresh tubers or dried '*cossettes*' are sold on local markets. Confronted with the first signs of cassava mosaic disease in its intervention area and knowing that the pandemic had ravaged cassava production in neighboring Uganda, INGABO, responding to member concerns, pioneered the fight against the pandemic. It pro-actively took action to get hold of resistant varieties. For that purpose, it contacted local researchers of the National Agricultural Research Institute (ISAR). The latter, based at the Gitarama research station, brought the issue up to ISAR headquarters. ISAR, through regional and international networks, got hold of planting materials from Uganda, which originated from IITA in Nigeria.

These were the first essential steps which, together, led to practical action. Any one of the following 'disconnects' would have inhibited responsive action, e.g. : (i) disconnect between FO leaders and staff on the one hand and ordinary members on the other hand; (ii) disconnect between farmers and researchers and (iii) disconnect between declared commitment and actual follow-up and practical action. The interface between INGABO and ISAR at local level proved to be of crucial importance. Trustful relations and perseverance brought the 'connect' between INGABO (sensitivity to member concerns, sense of urgency and foresight capacity) and ISAR (motivation and perseverance of the young motivated local ISAR researchers who brought the issue further up). This interface was the foundation of a broader 'mosaic coalition' that emerged during the next phase: large scale production of cassava cuttings.

Large scale production of cassava cuttings

The production of resistant cassava varieties started in 2003 with the testing of 4 resistant varieties on a tiny plot of 0,04 ha. The next year, these four varieties were multiplied on 4 ha (2004), 18 ha (2005) and 845 ha (2006). Several factors fuelled the exponential increase of cassava cutting production. Up to 2006, INGABO trained some 450 farmers in up-to-standard production of cassava cuttings. Training and supervision of farmers was done in close cooperation with ISAR (continued provision of foundation seed and involvement in field training and monitoring) and SNS (national seed service controlling the multiplication plots and certifying the cuttings). As a result of intensive communication and training within the INGABO network and the visible ravaging effects of the viral disease, farmers became increasingly eager and capable to replace old with new resistant varieties. The cuttings of

resistant cassava varieties were first distributed to INGABO members. At a later stage other farmers in the Gitarama cassava belt were supplied. It is at this stage that the original objective of 'shielding' members from the devastating mosaic virus was attained.

The successful member-responsive operation and the rapid recuperation of the Gitarama area quickly raised the attention of national government and local authorities of cassava production zones that did not manage to take action. INGABO responded to multiple requests for resistant cassava cuttings. Because of the scale of the pandemic, this soon materialized in contracts for producing millions of cassava cuttings, both with the Ministry of Agriculture and Animal resources (MINAGRI) and donor funded projects. This is how a market for cassava cuttings was created. Especially farmers who could mobilize the needed production factors, often by taking the risk of hiring land and labor, jumped on the occasion.

The cassava cutting production contracts were professionally handled by INGABO staff and its farmer professionals. Delivering cassava cuttings proved to be very profitable for the farmers specializing on the production of planting material. They got up to 10 FRW (2 dollar cents) per cutting. It was also lucrative for INGABO, getting 1 FRW per cutting that was delivered (e.g. 2 USD per 1000 cuttings). This 'reward' was decided upon by the members, who recognized that the contract would not have been awarded – and could not be handled - without the organization. The 1 FRW per cutting reward remained valid throughout the cassava cutting production boom, even when the price per cutting went down later. As a result, the self-funding capacity of INGABO tremendously improved. The organizational income generation reduced donor dependency from over 95% of the annual budget level around 50%.

Further innovations in the cassava sector

The new cassava varieties are now largely introduced in the INGABO intervention area. New cassava varieties are two to three times more productive and produce 15-20 tons per ha, as compared to the 6-7 tons of the traditional varieties. Whereas cassava was largely produced for household consumption, there is now a structural marketable surplus of cassava. 'Gitarama' cassava, appreciated for its taste and quality and not too far from Kigali town, has a relatively good market potential. This motivated INGABO and its farmer-members to invest in product and market development. There are different initiatives for establishing processing units for fermenting cassava and producing dried cassava chips and/or cassava flour, both at local and provincial level.

In different INGABO zones, cassava cutting producer groups are evolving into cassava cooperatives. This is strongly promoted by the new national cooperative policy and law and the active role of local governments who seek to reach set targets for cooperative development. Several of these emerging cassava cooperatives are venturing transform fresh cassava into dried cassava chips. Through different mechanisms (support of international NGOs, government subsidies, bank loans), the young cooperatives search for the necessary capital needed for building the processing units. The money that was earned with cassava cuttings is (partially) invested in the processing units or serves as collateral.

INGABO is accompanying the emerging cassava cooperatives with a strong focus on the cooperatives that emerged from the cassava cutting producer groups and are planning to take up the processing function along the value chain. Ultimately three specialized types of cassava cooperatives may emerge: cassava cutting producers, cassava tuber producers and cassava processors. At this stage, it is mainly the relatively well-to-do farmers that are organizing themselves. These INGABO members (both men and women), are generally involved in the three domains.

Shifting its attention to market-oriented cassava production, INGABO is exploring different options for bottom-up vertical integration. Among others, it is asking the following questions: (i) How best to establish relations with buyers that seek to reliably source fresh tubers or dried cassava chips; (ii) How to enable cassava processing cooperatives to buy tubers with farmers (exploring options for warehouse receipt system); (iii) What are the requirements for professional management of cassava processing units, both technical and financial; (iv) How to arrive at a consistent production of good quality cassava chips? , …

Cassava fields traditionally do not receive farm yard manure or fertilizer. INGABO is exploring different options for crop intensification: cultivation practices (planting and maintenance of cassava), improved matching of cassava varieties to soil and climate conditions, and the use of smart fertilization strategies. INGABO expects that successful cassava processing and marketing will create incentives for raising productivity from the current 15-20 metric tons per hectare to a potential 40-50 tons per ha. This is commensurate with the long term need to triple productivity in order to feed the rapidly growing and increasingly urban population.

INGABO is anticipating upon the arrival of a new disease (cassava brown streak virus) and is already testing resistant varieties, in collaboration with ISAR. Testing of flour color and taste is part of the screening process. This is illustrative for both continued member involved and the increased market-orientation of INGABO and cassava farmers.

3. Direct and indirect impacts and spin-offs

The preceding section has alluded to several direct impacts. Thousands of farmer families have been able to successfully cope with a disease that threatened their livelihoods. Far beyond the Gitarama area, small farmers, even the most marginal ones, have received mosaic resistant planting material from local governments and development projects. Without the INGABO interventions, the production decline would certainly have been more dramatic.

Some 500 cassava cutting producers earned millions of FRW. Quite a few of them invested this income in their farms, typically by buying cows and investing in zero-grazing stables and artificial insemination. And quite a few of them are organizing themselves as professional cassava farmers and exploring upward vertical integration through investment in local processing units that soak and dry cassava.

Thanks to its pro-active fight against the mosaic virus disease and its cassava cutting operation, INGABO has established itself as a professional farmers' organization and a reliable partner. It professionally handled contracts and strongly improved its financial situation. The "one franc per cutting" revenues have been invested in the construction of a farmers' conference centre. A three storey building is close to completion and will have conference facilities and some 50 dormitories. Another investment is a 18 ha demonstration farm. These investments, which were decided upon after member consultation, are likely to procure organizational income. The strengthened asset base of the organization can be used as a collateral for bank loans.

Although the cassava sector has taken much of its attention, INGABO is a generic farmers' organization that is interested in the agricultural activities of its members. In addition to its support to cassava farmers, services to members have been broadened:

INGABO has extended its network of farmer advisor and has diversified and professionalized its technical staff. The professional staff trains and coaches the farmer advisors. As a result, the organization can provide more and better advisory services. It is 'corporate' policy that advisory services are linked to member commitment for concrete action.

INGABO is broadening its services in the livestock sector. Services include advise on animal feeding, health and housing. INGABO acts as an intermediary to organize artificial insemination services. More involvement in this sector is increasing attention for zero grazing, the production of forage and the use of farm yard manure. Increased milk production is leading to a stronger market orientation in this sector as well and attention for milk collection and transport systems.

INGABO is implementating contracts in the context of the national crop intensification program, which for now concentrates on maize and wheat. This implies advise to farmers and the management of a voucher system in collaboration with local banks.

Farmers at *gacaca* level have a long history of organizing saving and credit systems, which are based on trust-based collaboration among peers. INGABO has been instrumental in linking informal saving and credit groups to a formalized credit and saving organizations (CLECAM). In the past years, INGABO has accompanied a merger of the INGABO-initiated CLECAMs with other credit and savings organizations to form a more viable micro-finance institution. This financial service provider, increasingly independent from its 'mother' organization, has been accredited by the National Bank of Rwanda.

With its activities in different sub-sectors and its growing recognition as a professionally managed farmers' organization, INGABO has a strong potential to expand its intervention area. For historical reasons the organization has so far been quite reluctant to this. In a prudent manner, INGABO is however extending its intervention area, especially to other cassava growing areas in Southern Province.

4. Discussion: leverage points, lessons and challenges ahead

What triggered INGABO's positioning and entrepreneurship ?

Member responsiveness

INGABO entrepreneurial activities are embedded in an organization that has a strong member orientation and that knows their concerns. The initiative to get hold of resistant cassava cuttings was essentially a service to members, to shield them from the shock of the mosaic virus. At first, it was certainly not yet perceived at a business opportunity. The mosaic virus case strongly suggests that member-responsive organization development is a necessary precondition for catalyzing entrepreneurship within a farmer organization.

Organizational experience

Issues pertaining to internal governance and management also constitute an important precondition for laying the foundation for an entrepreneurial farmers' organization. An organization has to learn to strategize and plan activities and has to address the challenges related to human and financial resource management. Inevitably, a farmer organizations goes through several 'ups and downs'. It is through a learning by doing process that INGABO gradually build and mastered its bottom-up organizational structure, two-way communication culture and the team play between elected leaders and professional staff.

Nuclei of agribusiness clusters

Making the step from problem identification towards practical action is generally very difficult, even in the face of a serious challenge. In the actual practice of 'rural development', challenges that are identified during workshops are most often not operationally addressed. For addressing the cassava mosaic disease, a small coalition of the willing proved to be of pivotal importance. This coalition, basically some individuals that trusted each other, made the difference in the INGABO-cassava case. Without the first 'connects' between INGABO and young motivated ISAR researchers, all subsequent stages would not even had the chance of getting started.

Over time, the initial INGABO-ISAR interface developed into a web of actors that also include local authorities, national seed service, MFI's, cassava traders and others. The initial small-scale testing and multiplication of new varieties focusing on satisfying the needs of INGABO members then transformed in cassava cutting production as a business opportunity, which further propelled market-orientation in the cassava sector and is now leading to upward chain integration and agricultural intensification.

Nuclei of entrepreneurial farmers

INGABO has a balanced membership base of men and women. Farmer households that are relatively better-off and dispose of a minimum level of natural, physical, financial and human capital, constitute the heart of the membership. These farmers seek to invest money, time and effort in professional farming that is increasingly market-oriented. They are taking up new activities along the cassava value chain and are integrating dairy cows in their farm enterprises. The agribusiness initiatives of INGABO are driven by nuclei of local farmers that have got the taste of entrepreneurial farming, which has rewarded them in the past. The entrepreneurial farmers benefit most from the INGABO advisory services and are also most able to attract external technical and financial support, both from government and donors (cf. cassava processing units, vouchers of crop intensification programs).

Credibility through performance

The Government of Rwanda (GoR) is result and performance oriented. Observing a performing organization, it granted contracts. Good contract handling, good results and performance-based management, both at GoR and INGABO side, further improved credibility. Contract income increased organizational revenues and reduced donor dependence. This seems to suggest that instead of providing general 'institutional support' that is hardly conditioned by performance indicators (as many donors do), it might be more effective to pay for the goods and services the organization provides to society (cf. delivery of cassava flour to prisons, delivery of maize to the World Food Program or explanation of cooperative policies or law to rural communities).

"Doing and dialogue approach" to lobby and advocacy

Considering that INGABO is a syndicate, it may at first sight seem that INGABO has a low lobby & advocacy profile. Indeed, INGABO does not stress the voicing of its members' interests. It seeks first to work on it. However, thanks to its status as a credible provider of economic services, INGABO has had a lot of direct and indirect impact on policy decisions. Building cases up from concrete issues, the organization has subtly and knowledgeably addressed a wide range of issues, ranging from policies and actions related to rural infrastructure, cooperative banking, farmer training, support to agricultural intensification, contents of district development plans and other subjects. The INGABO interpretation of Syndicate / Trade Union (taking united action for farmers' business interests) is original and thought provoking. In the context of the performance-oriented management culture that

characterizes governance in Rwanda, the 'doing and dialogue approach' has proven to be highly effective as well.

Wise strategic planning and financial management

The INGABO case suggests that farmers' organizations that seek to participate in chain development and agribusiness cluster formation have to deal with three major challenges : member-orientation, sound financial management and focus on core business. The risks of financial mismanagement, elite capture and proliferation of functions are just around the corner. For many farmer organizations, the rapid increase of income from cassava cuttings would have caused internal leadership or management problems. INGABO managed to wisely invest in important member-prioritized assets. The visible improvement of the asset base allowed further expansion of its membership base, intervention area and range of services.

5. How to evaluate pro-poor impact ?

INGABO's most influential members constitute an emerging group of entrepreneurial farmers, who definitely do not belong to the poorest sections of Rwandese society. They benefited most from the cassava cutting production and are leading the way towards market-oriented ventures, both along cassava value chains, in relation to other crops as in the livestock sector. Seen from this angle, the catalyzed rural entrepreneurship has mainly benefitted a small group of farmers that are relatively better-off. On the other hand, INGABO availed new resistant cassava varieties to all its members, other farmers in the Gitarama area, and, through government programs, to farmers in most other parts of the country.

The innovative cassava farmers are organizing themselves in cooperatives and are starting up small local processing units. These small units, which would create added value and employment in the cassava production areas, stand in contrast to huge agro-industrial cassava processing units the Government of Rwanda is planning to establish. These units would be handled by (public and private) urban elites and are likely to source fresh tubers with farmers. Current trader practices suggest that there is a likelihood that buyers would just come and collect tubers and transport them to the large processing unit. The entrepreneurial spirit in the Gitarama cassava belt is leading to the exploration of more inclusive options and alternatives. If INGABO manages to subtly advocate the decentralized, labour-intensive cooperative model for cassava processing or would facilitate collective marketing of cassava tubers, the entrepreneurial farmers would have made an important contribution to local economic development, with important direct and indirect poverty reduction effects.

6. Organization development at the crossroads

INGABO's very active involvement in the cassava sector went through different stages, it evolved from seeking resistant planting material for its subsistence-oriented members towards supporting emerging cassava cooperatives, exploring possibilities for local processing and establishing innovative business relations. At this stage of its organizational development, INGABO finds itself at an important junction. An important question, which raises much internal discussion, is how INGABO is going to evolve further.

- Is it going to be a major player in the cassava sector (and in fact becoming a union of cassava cooperatives) ?
- Will INGABO proceed with supporting pre-cooperative groups and coach their entrepreneurial ventures ?

- Will INGABO, in a context of a rapidly increasing number of cooperatives, put more emphasis on lobby and advocacy ?

Whatever the future direction, the economic results of the past years have changed the organizational culture of INGABO. From a donor-oriented project implementing organization, it is evolving towards a agribusiness-oriented entrepreneurial organization. With this change in professional attitude, the leaders and staff of INGABO are more demanding to the support they can get from their traditional partners. Instead of proposing projects to 'development partners', INGABO is nowadays more keen on establishing local multi-stakeholder relations. This is a healthy development towards vital and sustainable local agribusiness clusters that are composed of farmers, traders, input dealers, banks, researchers, local authorities and other stakeholders. For farmers' organizations participating in agribusiness clusters, member-orientation and transparent internal governance remain of crucial importance for keeping focus on their core business, making prudent strategic choices and not to fall in the traps of financial mismanagement, elite capture and alienation from the membership base.

Appendix 5: Certification efforts in the South: driver for local entrepreneurship?

By: Irene Koomen, CDI

1. Introduction

Sustainable procurement can be done with many different objectives in mind. Its aim varies from protecting the environment to increasing the livelihoods of local producers. Independent of its purpose, certification is a crucial element to sustainable procurement. Certification schemes vary from organic, fair trade to food safety issues. While the primary producer, supplier or processor could benefit from participating in a supply chain that is subject to certification, the effect of this on the development of a local support system for certification is not apparent.

This short analysis aims to identify possible activities that could be undertaken by local entrepreneurs in the wake of sustainable procurement by international food companies and if these opportunities actually result in the development of a secondary industry.

2. Activities connected to certification schemes

Some common elements related in a greater or lesser extent to certification schemes are:

- Training, with emphasis on how participants or advisors in the chain can comply to the demands of the certification scheme;
- Advisory / extension, advice and problem solving for all participants in the chain within the boundaries of the certification scheme;
- Inspection, varies from on-premise visits to carrying out quality control to taking samples for laboratory analysis;
- Certification, the activities that are needed to prepare and audit farmers or farmer groups, suppliers, processors;
- Logistics, within this transport, warehouses, tracking and tracing, marketing of produce are all elements that might see increased local activity as a result of certification of agricultural produce;
- Laboratory services, depending on the type of produce analysis aimed at nutrients, pests, product quality or food safety are required;
- Financial services, increased local activities are often dependent on good and sound financial services such as cooperatives banks, micro-credit. For instance the warehouse receipt system only functions if adequate financial services are present;
- Impact monitoring, this is not a pre-requisite for certification but companies that adhere to corporate social responsible values, NGO's or governments might measure the effect of sustainable sourcing on the participants in the value chain.

3. Cases

Several cases regarding sustainable procurement of agricultural produce from African countries were taken from projects where the WUR has an involvement and in one case (mangoes from Mali) from the literature with additional information from the company

carrying out the sustainable procurement. Variables between the cases were the length of the chain, the type of certification and the motive for certification.

Maize & beans for the World Food Programme in the Democratic Republic of Congo

As part of the Purchase for Progress programme the World Food Programme (WFP) sources maize and beans from farmer's cooperatives in North-Kivu, Democratic Republic of Congo (DRC). The Belgian NGO Vredeseilanden (VECO) made the initial contacts and lobbied to obtain the WFP contract. Two farmer's organisation are involved, COOCENKI (Coóperative Centrale du Nord Kivu) and SYDIP (Syndicát de Défense des Intérêts Paysans) jointly responsible for the delivery of xx ton maize and beans. Maize needs to be milled before delivery, this has caused some problems because of limited capacity and technical problems. A warehouse, built with support from the Belgian Government, is present in Butembo.

To be able to sell to the WFP a warehouse receipt system has been put in place. The warehouse receipt system is being controlled by certification for good financial practice and food quality. (information on who certifies the warehouse not yet available)

The supply to the WFP itself offers opportunities to the more then 20.000 farmers that are member of Syndicat & Coocenki by having a secure buyer and a minimum price. The cooperatives are still dependent on outside financial support (Agriterra, VECO). The increased necessity for transport of produce, milling and warehousing will most likely increase local livelihood.

However, since no information could yet be found on how and by whom the certification of the warehouses is carried out no conclusion can be drawn on the effect of this on local entrepreneurship.

Organic cotton from Uganda

In Uganda about 210.000 farmers are certified to market their cotton as organic. In the Lango sub-region about 12.000 farmers are organised through the local NGO Lango Organic Farming Promotion (LOFP). LOFP is responsible for recordkeeping, monitoring of production and collection of the product. Training & extension is also provided by LOFP together with the Uganda movement for organic agriculture (NOGAMU). UgoCert (part of NOGAMU) is the certifying company that issues local organic certification according to the Ugandan standards for organic agriculture. Together with the Swiss based company IMO, UgoCert can issue international organic certificates. However in the Lango area LOFP has their farmers certified by Ecocert, a French based company.

Further down along the chain, the Lango Co-operative union buys and gins the cotton, the Dutch company Bo-Weevil markets the cotton and financing is provided through the Hivos Triodos Fund.

The production of organic cotton provides market access to the European market through Bo-Weevil. The services that LOFP and NOGAMU provide to the farmers are a result of local as well as national initiatives to obtain organic certification for the produce. To obtain international recognised organic certification international companies carry out the certification, the national certification body, UgoCert, cannot issue internationally recognised certificates itself.

GlobalGAP certified mangoes from Mali

The Dutch company Bakker Barendrecht sources, on behalf of Ahold, GlobalGAP certified mangoes from Mali. There are quite a number of partners involved in this chain and apart from GlobalGAP certification the producers and exporters are preparing themselves for a BSCI (Business Social Compliance Initiative) audit. About 75 farmers are involved in this

value chain, but other initiatives for GlobalGAP certification of mango growers are being developed through NGO's. After Mangoes are picked by picking crews, traders buy the mangoes to sell on to export associations. The export associations take care of all the post-harvest processes that are required in a logistic and cooling centre which is run by the government of Mali.

Advisory and training is provided for by Ahold/Bakker, KIT, other NGO's and technical personnel of suppliers. Certification is done by Bio-Scope from Sweden, a local branch of the Belgian firm Bureau Veritas carries out the inspection.

Benefits for farmers and exporters are increased income through selling certified fruit. Additional local activities can be found in the warehouse management, setting up of tracking and tracing systems and extension personnel of suppliers. Interestingly, packing material needed for export is not produced in Mali and sourced from other regional countries.

Sustainable tea from Kenya

Lipton (UK, part of Unilever) has, with support of financial support of DFID set up farmer field schools for the sustainable and profitable production of tea. At the end of the initial phase (2008) 30.000 farmers were working towards Rain Forest Alliance certification. The farmer field schools are organised by the Kenya Tea Development Agency (KTDA). Training and advice is also provided by WUR, the Tea Research Foundation of Kenya (TRFK) and the ETC East Africa office. After harvest, KTDA takes care of all the other activities until the tea is sold to Lipton. The certification is carried out by ??? Additional info will be received from André de Jager.

Benefits for the farmers are increased production and diversification of the farms. Additional staff was taken on by KTDA for extension and ETC East Africa is involved in the extension and training. Effects of certifications itself cannot be clearly identified.

4. Viable opportunities for local entrepreneurs?

From the analysis of the case studies the following trends become visible:

- The activities that are carried out locally in general do not lead to new businesses. It is the trading companies, farmer's cooperatives, the middle men or the processors that take on extra activities if required. Even businesses like UgoCert need to work with international companies to be able to certify for the international market.
- In some cases international companies have local branches. For instance certification companies.
- The activities in itself do lead to few new jobs within existing companies.
- International companies carry out the majority of more 'high tech' processes like laboratory analysis for residues, certification and related audits.
- Not all opportunities are immediately taken up. For instance the production of packaging material for export of Malinese mangoes, although plans for local production are being developed.
- Many local initiatives are NGO or donor driven. Without this support these small enterprises are most likely not viable.

5. Conclusion

Focus of sustainable procurement is aimed at primary producers, processors and sometimes handling companies. Very little effort from the procuring partner is focussed at supporting local businesses in the support services connected to certification. Where local companies are

involved these are often regional branches of internationally operating companies that supply services related to certification.

The table below shows to what extent local or international involvement played a part in the certification activities.

Case Type of certification	Activity carried out by: Country International	Training	Advisory	Inspection	Certification	Tracking & tracing	Processing	Logistics	Laboratory services	Monitoring	Marketing	Financial services
Cotton	Uganda	●	●	●			●	●				
Organic	International				●						●	●
Maize/Beans	DRC	●	●				●	●				(●)
Warehouse receipt system	International				?			●				
Mangoes	Mali	○	○			●	●	●	○		●	
GlobalGAP/BSCI	International	●	●		●			●	●		●	
Tea	Kenya		●				●	●	○?		●	
	International	●	●		●			●			●	●

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Appendix 6: Public Private Partnership for sustainable sourcing: the Ithuba farmers training project in South Africa

by: Jan Helder, CDI

1. Introduction

The Ithuba Farmers' Training Project is a joint initiative of the Tongaat Hulett Starch company and Buhle Farmers' Academy to train resource poor and previously disadvantaged individuals in South Africa who aspire to become farmers. The project's objective is to turn starting students into full-fledged commercial maize farmers within a time-span of 5 years. Although the project is only in its third year of implementation and, hence, no new commercial farmers have yet been established, there are already a number of valuable lessons. This paper describes the background to the project, its context and the lessons learned while some preliminary and potential ideas for the future are highlighted.

2. The intervention: safeguarding the foundations of a starch company

Seeking a stable maize supply

The Tongaat Hulett Starch company (THS) is the largest starch company in South Africa (RSA). Using only maize as their raw material, they produce a wide range of products for agro-industrial purposes including starches, glucose, maltose, dextrose syrups and much more. The mother company had an annual turnover in 2008 of over €700 million and a profit of over €100 million. THS itself started almost 100 years ago. Products are exported worldwide. [18]

One particular range of products is based on GM-free[19] maize as its raw material. Until recently THS was assured of a steady supply of raw material from the large-scale farms common in South Africa. Up to 5.000 ha large, most are owned and run by white farmers. However, since the turn of the century there is a declining trend in the number of productive large-scale farms since younger generations of these farmers leave the agricultural sector.

At the ending of the apartheid regime, some 87% of land was owned by whites with just 13% by blacks. Since then successive governments have made land reform a high priority. In total 86 million hectares must eventually be redistributed to black owners, with 30% achieved by 2014[20]. In practice land is given to blacks who have little or not experience with agriculture with resulting decline in production.

The combination of abandoned large-scale farms and less productive newly owned smallholder farms poses a threat to the maize supply base of THS. Neighbouring countries also do not offer reliable alternative supplies, requiring THS to find its own solution. These, then, were the drivers for business to focus on this issue:

1. TH Starch requires non-GM Maize: it needs long term arrangements with maize farmers.
2. Farming and food supply is an issue in RSA: farmers need to be trained to secure long-term supply.

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[18] For these and more figures see the 2008 annual report of THS through http://www.tongaat.co.za/imc/annual_reports/ar08/default.asp

[19] Genetically manipulated

[20] A revision of this target date is considered.

3. All South African companies have an obligation to implement the 'Broad Based Black Economic Empowerment' act of 1993 (BEE) in their operations.
4. The future success of RSA economy, and with it to some extent the fortunes of THS, depends on a successful transformation of land ownership.

A forward-thinking business solution

The managing director of THS had the vision to see a new generation of landed blacks as the potential supply base for THS GM-free maize. The approach followed is straight-forward: invest in the training of entrepreneurial farmers who will be able to establish commercial maize enterprises and be enticed to supply to THS.

To achieve this goal, the starch operation is involved in the development of commercial black farmers in partnership with the Buhle Farmers Academy (BFA) through the Ithuba Farmers' Training Project (IFT).

Building maize farmers' capacities

Buhle Farmers' Academy operates on the principle that their students must learn by doing. From their very first year, students are given a plot of land for which they are responsible and on which they can practice. For 2 hectares of maize they must manage the full production cycle, carry out market research, manage funds and make a business plan to get a loan.

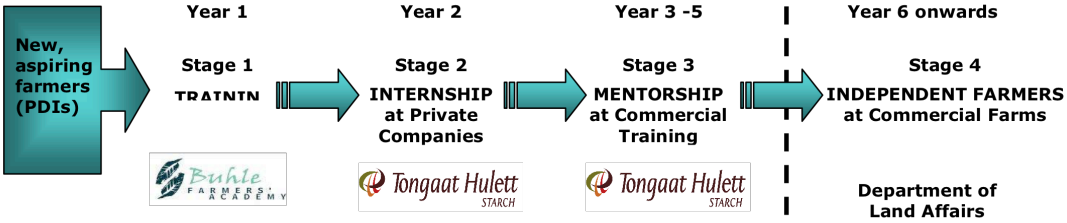
Students come from disadvantaged groups, with little or no work experience, few skills and without financial assets. Most have no experience with farming. A strong focus is therefore placed on developing the necessary discipline to run a farm. Students are also trained to see farming as a commercial enterprise that requires proper management.

From basic skills to commercial growers

The IFT project developed on a 'learning-by-doing' principle. Initially, THS was asked to subsidize the costs of training at BFA. They honoured the request based on the above mentioned considerations. It soon became apparent that a one-season training was not sufficient to become a commercial farmer. In response, THS developed a fully-equipped internship training farm of 125 ha on the site of the Kliprivier plant that could host 10 trainees. It soon transpired that this additional training would not be sufficient either. Therefore, the whole training program was reconsidered.

The result of the review is a five-year learning cycle incorporating the first two years while another three-year mentorship training on sizeable farms has been added to the program. These farms have to be leased from the Department of Land Affairs by the trainees themselves. Here the trainees, in groups of 10, manage the farms under the mentorship of a retired, commercial farmer. The learning cycle is presented in Figure 1. By year 6 the students will be fully equipped in terms of skills and experience to run their own commercial farm.

Figure 1: The training cycle of the Ithuba Farmer Training project



So far two farms have been leased, both close to Grootvallei. One farm of 3,000 ha with 1,600ha of arable land (rain-fed) and 1,400ha of grazing area and one farm of 1,600ha of which 850ha is irrigated. Both farms have been fully equipped by THS. During 2008, the first group of ten black student farmers successfully harvested 400 tons of maize at Kliprivier and subsequently moved to a larger farm near Grootvallei. Here they have just finalized the preparations for the 2010 season. At this moment there are a total of 40 trainees in the program: 10 at BFA, 10 at Kliprivier, 10 at the first farm near Grootvallei and ten at a newly leased farm.

Profit from the sale of the maize will be deposited into a trust account on behalf of the trainees. These funds will be incremented by the income from each subsequent harvest during the mentorship period. The trust will thus provide capital to be used in the eventual establishment of their own commercial farming businesses.

3. Joining forces for mutual benefit

The results of the land distribution programs in RSA are not yet having the positive impact on asset-poor blacks that they were meant to. For one thing, the rate at which land is being redistributed is well below target. By the end of 2007 less than 7% of land was handed over to black ownership. Not only that, but in 2008 the political think tank Centre for Development and Enterprise (CDE) concluded that more than half of government projects were a failure in terms of establishing viable farms. People had been given land but did not have the knowledge, skills or equipment to turn their natural assets into a livelihood. Some land distribution programs handed out unviably small landed parcels.

In the case of the IFT, the Ministry of Land Affairs has joined the party and agreed to distribute land to each student that graduates the 5-year program. As a result everyone has an incentive to collaborate:

- Government invests effectively in capable new farmers, thus securing rural economic development and contributing to a reliable food supply
- Business knows that the poor students they have invested in will be given the necessary land assets to set up as commercial farmers
- Most importantly the students themselves know with 5 years of dedicated work and very limited personal costs they will be able to build up a economically rewarding livelihoods.

4. Local agribusiness (potentially) generated/supported.

An immediate outcome of this approach has been the establishment of 3 productive farms by THS: a smaller one and two sizeable ones. A third sizeable farm will still have to be negotiated with DLA to complete the learning chain. Together the farms will be able to

accommodate a total of about 50 trainees that, in principle, could lead to a maximum of 30 graduates per year from 2013 onwards.

The maize grown on these 4 farms has a guaranteed market - THS itself – and therefore contributes to spin-off economic activity. In addition, the farms themselves generate a demand for inputs, no data is available on the value to local suppliers.

As there are no graduates yet of the project it is not possible to assess how many new smallholder commercial farms have been set up. The likelihood that there will be a high success rate is reasonable given that multiple assets are being developed simultaneously:

- Human assets: students get extensive training and guidance right up to the point that they are virtually autonomous farmers
- Financial assets: profit generated from maize sold by the training farms is put into a trust fund, which will be used to support students once they start up on their own. Furthermore, students are virtually assured a reliable market for when they start operations: THS needs long-term supply arrangements to keep their large scale operations running. There is a real risk is that no profits will be made. Though THS will cover any losses, the consequence could be that these groups of trainees will not be able to develop an endowment.
- Natural assets: students are more or less guaranteed the land necessary to create commercially viable businesses.
- Social assets: each year of 10 new students is set up as a cooperative. Students therefore build a social network that can be expanded on in later years. Furthermore, BFA is developing a venture model where BFA would work with start-up farmers during their first years in exchange for a annually declining share of profits. Students can rely on the back-up and facilities of the training institute, the institute can generate funds for own activities.
- Physical assets: this is not considered as yet. The presence of a trust fund means that investment in necessary physical assets will be possible.

5. Impact on poor households

At this point in the process it is too early to assess the full impact of the program. For the 40 maize students it would seem to already offer them vastly greater opportunities than they had before. Students come from disadvantaged groups with very limited possibilities in their direct environment. They are faced with a combination of having limited or no natural, financial, physical or human (skills) assets. This combination precludes weak assets from being compensated by others with bleak prospects.

6. Key shapers of the context

The context for this approach is determined by specific policy and business conditions.

The Government of RSA has a strong political, economic and social imperative to tackle the strong imbalance in land ownership between whites and blacks.

- Politically the enormous concentration of land under white ownership is a reminder of the apartheid regime, which was deliberately and popularly set aside almost 20 years ago.
- Economically the majority black population needs to play a rapidly more important role in all aspects of economic life in RSA to ensure that economic opportunities are generated for the large poor population.
- Socially the government must focus on guaranteeing food security. With a decline in the productivity of existing farms and a poorly trained agricultural population, its

current food situation is threatened in the long run. This is compounded by influences from climate change that are felt here like in large parts of Africa.

The result has been the setting up of land reform policies requiring land ownership to shift into increasingly black hands. Furthermore, the BEE sets obligatory targets for business to ensure ever greater participation of black employees in business activities at all company levels.

THS provides a specific business context. With an active export program, THS has chosen to become a world-class agribusiness player with a specific range of products. To maintain its position and even to capitalise on new opportunities as global demand for food grows, THS must be assured of a reliable supply base for its key raw ingredient: maize. Supply stability is probably more significant than minimising prices.

This combination of factors creates strong incentives for a public-private partnership where all parties actively participate.

7. Roles and activities

The approach being adopted here targets multiple assets simultaneously with different parties fulfilling complementary roles. The case illustrates that different actors in a given situation can be more particularly effective at enhancing the growth of different assets.

These roles have been identified collectively and are undertaken with the understanding that each party will do its share, thus making the whole much greater than the sum of the parts.

Individuals

- Active participation in long-term training program
- Offering skilled work force on commercial farm owned by business, generating key raw ingredients for business.
- Future collaboration with business as reliable supply partners

Business (THS)

- Investing in training programs for critical operators in their supply chain.
- Providing real-life training facilities: commercial farm
- Offering guaranteed market as incentive for students to start up private ventures

Government (Ministry of Land Affairs, Department of Trade and Industry)

- Creating policy requiring business to invest in underprivileged poor
- Distributing assets (land) which they control in an effective manner

Training institutes (BFA, Wageningen International)

- Offering effective training environment
- Offering possible transition model (joint venture) from learning situation to independent operation

8. Island of success?

While the Ithuba Farm project has a good likelihood of generating groups of successful commercial farmers, the truth is that it operates at a relative small scale. Thirty graduates per year means that in 20 years time only 600 new maize farmers would be in operation assuming a 100% success rate of graduates. The government of RSA wishes to eventually redistribute 84 million hectares of land. Even assuming relatively large parcels of 500 ha for each recipient this would require over 150 thousand capable farmers.

Furthermore, establishing a cluster of local agribusinesses requires a critical mass of activity to ensure a robust situation. A range of service providers, such as sellers of seeds, farm equipment, extension services, financial services etc. will only be able to establish if there is sufficient reliable demand for their services.

The approach taken is well adapted to the specific context. It will require further research to assess situations with comparable contexts where this model could be up scaled. Another area of research is to identify ways in which the model can be adapted in response to different contexts, thus identifying its potential wider influence. A third key element for further research efforts is to understand the critical mass of activity for robust agribusiness clusters. That will identify what must be aimed for to ensure that local economic development will be stable enough to continue, even if a key player like THS withdraws.

9. Ideas for successful support of agribusiness clusters

This case study was discussed in two international seminars, during which key ideas and questions were distilled.

Make sure business is involved

Business must have a vested interest and be involved from the beginning to ensure long-term success. This case clearly demonstrates the incentive that an influential business has to invest in this specific approach, in order to safeguard their own future. Support offered by government and knowledge institutes can readily leverage effective collaboration from business.

Engage committed key decision makers

The personal motivation of a visionary and key decision maker in an influential company is often an important driver of business participation. Those companies who are successfully engaging with transformation of underprivileged poor can act as an ambassador to get other companies to undertake their own pro-poor focussed activities.

Quick initial payback

There is a fairly early initial payback for business in this approach: THS has been acquiring maize from the new farms within several years.

Ensure external support at start up

External support is always necessary to get things going. The participation of BFA and the exposure of the project through the seminars organized by Wageningen International have both been important in this regard.

Enabling government policy is critical

Government can ensure key incentives through its policies. The land reform programs and the BEE policies are strong forces for change in this context. Other options might be financial incentives, such as tax exemption for pro-poor program investments.

Use local knowledge

Involve effective farmers in the system. They have knowledge already (participation of knowledge). An example could be farmer to farmer video training. In this approach this is ensured through the mentorship approach.

Focus on the 'viable poor'

If you want to be inclusive and have an impact on poverty alleviation (MDG 1), you have to focus on the least poor (who have a comparative advantage).

Build trust

Build trust in the supply chain. This approach brings all the players in the supply chain closer together to better understand each other. In time this should lead to more effective collaboration.

Build financial assets

Ensure necessary financial assets are available. The trust fund being created will allow necessary start-up investment. At the same time, it creates an added incentive for trainees to do their best since they know they are building up their future reserves.

Appendix 7: Floriculture for a blooming Africa?

By: Carin van der Lans, PPO[21]

Protected horticulture is rapidly expanding in developing countries. In Eastern Africa floriculture even seems to be booming business. This paper focuses on how the development of the floriculture industry contributes to local economic development in several African countries. A impression is given of Kenya and Ethiopia, two East- African countries with a young industry, as well of South-Africa, which is a country with a much more mature industry. As an example of the impact of a commercial intervention on a developing industry, this case ends with a description of the spin-off of an IPM project in Ethiopia.

1. Introduction

From the 90's floriculture started to develop in several East-African countries. The industry has grown enormously in Kenya and Ethiopia, but also in Uganda and Zimbabwe is floriculture. Production is mainly export driven in these countries: flower production is much cheaper than it is in The Netherlands, even when transport (airfreight) costs to the Dutch auction are taken into account. This makes it interesting for Dutch growers to start a production site in East-Africa. After these first Dutch initiatives also local entrepreneurs started to produce for the European market.

There is one country in Africa where floriculture has a much longer history, going back to the early 1940's: South-Africa (RSA). The industry in this country has become quite independent and mature. While East-African flowers are mainly being exported to Europe, in South Africa the local market still is of major importance; only one third of all flowers are being exported. As a result of the Apartheid regime most countries boycotted trade, which was the main reason and trigger for the development of a local supply industry.

2. Floriculture industry development in Africa

The following three African cases of development of the floricultural cluster describes how (local and foreign) initiatives have contributed to the development of the floral industry in each country. The development phase of the floricultural sector differs per country. The development of the local floriculture activities (cluster) can partly be explained by this difference in development phase.

For Ethiopia an example is given of a Dutch intervention in the floral industry: IPM

South-Africa

South Africa has a surface area of 1.2 million km^2 and 28.7 million inhabitants (population growth: 0.28%). In 2001 ornamental production area was around 1.050 ha. Protea is the main cut flower. Recent years rose production strongly developed, into around 80 ha. Other important flowers are chrysanthemum, dianthus, gladiolus, lily, lisianthus, limonium and gypsophylla. Production in greenhouses is increasing. The number of producers is around

[21] Wageningen UR Greenhouse Horticulture, P.O. Box 20, 2665 ZG Bleiswijk, The Netherlands
www.glastuinbouw.wur.nl

1,000, with a high content of Dutchmen on the big companies. The so-called established companies are founded by Dutch emigrants. Therefore, many flowers and plants growers have Dutch roots. The ornamental companies are located around the big cities and airports, particularly around Johannesburg, Cape Town and Durban.

The floricultural sector in this country can profit from the good common economic structure, a huge workforce at relatively low cost (around 40% unemployment), low-cost energy and generally favorable weather conditions.

There are about 15 industry-leading cut flower companies and less then 10 potted plant companies. Their cultivation is becoming more professional. Companies invest in modern climate controlled greenhouses, high quality planting material, new production methods, to produce a good, year-round exportable product. Some companies invested in own laboratory facilities for propagation and breeding. Also a growing number of companies produce according to certificate schemes of EurepGAP and Hazard Analysis Critical Control Points (HACCP) and try to improve logistics, information management and storage facilities. To make year production and export more interesting, a large number of newer companies co-operate for marketing and export. Increasingly direct business is done with retail chains abroad.

However, the majority of South-African farms is of the type medium-size and small, and is characterized by low-technology. These are outdated companies, small companies and companies with a wide range of flowers. They are unable to export, so produce mainly for the local market.

The ornamental industry has developed into a mature, rather independent industry with hardly any dependency from other countries. Due to the Apartheid regime most countries boycotted trade. This made it necessary to develop a local supply industry, local producers associations and an own knowledge infrastructure. A complete independent industry was build up, as well as the cluster around it. Nowadays all inputs are locally available, except for innovative high-technology investments.

Some more characteristics and data about the South-African floral cluster:

- The local market is well developed, which makes marketing of flowers simple. There is a Flower Auction in Johannesberg, the largest auction in Africa. 60-70 % of the flowers are traded at this auction. Buyers are florists and wholesalers. Wholesalers distribute the flowers around the country. Around 30-40% of the flowers are exported or sold directly from the farm.
- Several producers and exporters organizations are set up. These associations support the growers with news, research, grower meetings, cooperation between growers, and organize conferences, tours and seminars. Some associations work together with other supporting organizations, for example to get support at arranging the air freight. All activities of the associations contribute to the professionalizing of the flower industry.
- Knowledge is readily available. The Agricultural Research Council (ARC) is the most important cross-cutting agricultural research Institute in South Africa. In some underlying centers research and knowledge transfer is done, also for the flower industry. Also the University of KwaZulu-Natal and the Department of agriculture, Cedara, undertake ornamentals research. Some knowledge must be obtained from the Netherlands.
- All inputs can be bought in the country itself. There are a number of specialized suppliers for ornamental horticulture. There is local production of plant material (cuttings and tissue culture), both for local use and for export.
  In order to meet the quality standards of the market, the exporting flower farms import a lot of the needed input. This regard innovative high-technology, which is not

local available, like modern greenhouses, cooling facilities, sorting and packaging machinery, and R&D.

The South-African government has no specific programs in the field of horticulture. Government is actively promoting "Black Economic Empowerment" (BEE) in the agricultural industry. According to Agri-BEE-policy black South-Africans should get involved in floral industry, as owner, manager, farmer, supplier, exporter, etcetera. The program resulted in the development of some new ornamental farms, with at the moment ten large-sized farms and many micro-business farms.

Summary

The floriculture industry of South-Africa has developed into a stabile, adult and complete cluster. The economic boycott due to the Apartheid regime is one of the most determining factors in this development; it forced South-Africa to build up the industry and the cluster around it by herself. Most inputs are locally available. Modern, exporting farms buy high-technology from Dutch suppliers.

Kenya

Kenya is situated at the equator, which means that there are no seasons. This makes the country very interesting for horticulture. Kenya has a surface area of 0.58 million km2 and 38.6 million inhabitants. The most important and well-known flower production area is around Lake Naivasha. Other important areas are around Kinangop, Nakuru, Mount Elgon, Kitale, Eldoret, Kericho, Limuru, Kiambu, Athi Plains, Thika and the region of Mount Kenya. In these areas floriculture has lead to an important growth in the economic activities: around 50,000 to 60,000 people work in the primary industry and another 500,000 people in the related industries like supply, transport, packing, financial services, etcetera.

The first initiatives in flower production took place in the mid 80's, when some Dutchmen started to produce roses in Kenya. The favorable climate as well as the availability of an international airport - which was already available in that period because of the large number of tourists that visited Kenya - played a very important role in their choice.

Since the 90's the industry developed explosively. Nowadays there are about 140 flower producing companies at a total area of around 2,100 ha greenhouses and 400 ha outdoor production. Over 90% of the export flowers are grown in greenhouses (plastic tunnels). The 25 largest companies produce 75% of total export, mainly rose (1400 ha). Also dianthus, statice, alstroemeria, lily and hypericum are grown.

There are considerable differences in size and technical level between the various farms. The large and medium-sized enterprises are owned and managed by Europeans. The trend is that the high-level management at these farms is being fulfilled by Kenyans. The farms vary in size between 20 and 100 ha and employ between 250 and 6,000 people. The production techniques at these companies are quite advanced. The greenhouses are of steel stands, some produce their own plant material, and the owners invest in post-harvest facilities and conditioned transport.

There are also small sized farms (5-20 ha), which are owned by indigenous Kenyans. These farms produce the less capital intensive flowers and export only part of the year (to the Dutch auction). The farms have insufficient finances, knowledge and management competencies for future development. They also need assistance for the future in co-operation in marketing and sales, technical assistance, financing for inputs, and advice in the field of irrigation and cooling.

The first Dutch investments in floriculture have lead to a huge spin-off in a period of two decades; a lot of local economic activities have set up since then. Although several inputs still

must be imported from abroad, the local flower cluster has developed rather well. Some characteristics about the Kenyan floral industry and cluster are:

- Various local and foreign (Dutch) growers and investors have invested in recent years in new production companies. Sometimes these are joint ventures.
- The Kenya Plant Health Inspection Service (KEPHIS) is set up for phytosanitary checks. The organization takes care of the needed export certificates, and also works at variety protection, seed certification, and analysis of soil, water, agricultural products, fertilizers and pesticides.
- Several producer (and exporter) organizations are set up to stimulate development and professionalizing of the industry, among others the Kenyan Flower Council (KFC). The associations support the growers in marketing and technical field, and stimulate them to meet international standards, to self regulate safe work and production circumstances according to local and international standards, to link producers and exporters, etcetera.
- With the accreditation of KFC, Kenya has the first foreign certification body for the Kenyan flower industry and for the industries in neighboring countries.
- Various inputs are locally available (often from joint ventures with foreign companies), like greenhouses, shadow nets, irrigation and cooling techniques, computers fertilizers, herbicides, transport, harvest cooling techniques, packaging materials and other supplies for post-harvest handling. Most planting material still has to be imported, but some large companies started to develop their own stock of plant material.
- Some small local companies supply irrigation systems and computers to the farms. Local people do the installation of these systems. About one fourth of the installation techniques are locally produced.
- Packaging materials, labels, trays and other value adding products are being produced in Kenya. This industry is growing.
- Two local, large companies supplying natural predators for IPM have started business. These are Real IPM Company and Dudutech. Real IPM also produces and develops bio pesticides. Because of this local availability of natural enemies, the need for biological control agents has grown. Foreign companies initiated joint ventures in Kenya that visit the flower farms in order to support the growers with IPM.

Despite the local availability of several suppliers, European and Israeli suppliers still play an important role in Kenya. A number of European suppliers have settled, i.e. propagation companies, breeders, traders, exporters and suppliers. Most of the greenhouses and installation techniques are imported, as well as fertilizers, pesticides and various other inputs. Also almost all planting material is imported, mainly from The Netherlands. For growing advice Israeli and Dutch advisors visit the farms on a regularly basis. And, most knowledge is being imported from Western countries.

Almost all flowers are marketed in West-Europe, with about three quarters through the Dutch auction.

Summary

In Kenya the floriculture industry has developed into a rather adult and stabile industry. All kind of floriculture related companies and associations in the cluster were set up locally, sometimes in joint ventures with Dutch companies. The presence of various supplying companies, producer organizations, laboratory services, etcetera has contributed to further economic development of the Kenya.

Ethiopia

The floriculture industry in Ethiopia is the youngest of the three countries. The country has a surface area of 1.12 million km^2 and 72.8 million inhabitants. Production is mainly located at the central plains, in a circle of 50-100 km from Addis Ababa and in the environment of Lake Ziway.

After the fall of the communist regime the government introduced at the beginning of the 90's a free market policy. Private companies were allowed in the agricultural sector and the government started to attract foreign investors in order to obtain foreign exchange for economic growth, to create jobs and to develop new economic activities (i.e. supplying industry). In five years time the industry rapidly developed into 900 ha this year. Almost half of all these new companies are of foreign ownership, mainly Dutchmen, Indians and Israelis. Out of 90 farms are 20 of Dutch origin.

The floral industry has created a lot of jobs in this short period. About 16,500 people work at the farms and about 66,500 people in the related industries. Also new services have arisen in surrounding villages, like shops, hotels, restaurants, which changed the local environments. The result is a large labor migration from areas with low levels of employment.

There are three types of flower companies in Ethiopia: summer flowers (which were already grown during the communistic regime), roses in greenhouses and cuttings in greenhouses (chrysanthemum, poinsettia's). Rose is the main cut flower and is grown at 80% of the production area. Production of it is being modernized and becoming more sustainable. Experiments are done with production in coco and beads, and with IPM.

As the flower industry is a relatively young one, the surrounding cluster has to be developed. Almost all of the inputs must be imported, but a very small local cluster is present:

- Some local small-scale enterprises deliver irrigation systems and computers. Labor to install is often done by locals.
- With the setup of joint ventures local production of plant material is increasing. These are high-tech, sophisticated companies.
- Value-adding products like packaging materials are partly produced in Ethiopia. These are mostly cardboard products.
- Some producer and exporter associations are set up to professionalize the industry and support the members. They have developed a code of conduct - including requirements at the field of labor and environment - which is a requirement in obtaining an export license. Also courses are given and growers are stimulated to exchange experiences. Other tasks and gains of the associations are the collective agreements for air cargo and administrative issues with the airlines, more regular charter cargo flight by Ethiopian Airlines, and collective purchase of inputs like agro-chemicals and smaller equipment.
- Since 2009 there is an extra handling and storage compartment at Bole International Airport, which has lead to extra employment.
- With Dutch PSOM subsidy a number of Dutch companies started to cooperate with local companies. Companies have set up for propagation of young plants, for production of other flowers than rose (e.g. Lily, freesia, filler cut flowers), for breeding of indigenous wild flowers and a tissue culture company. This has led to new employment. Also local people get trained and attention is paid to sustainability.
- A phytosanitary laboratory is being set up to check export flowers for harmful organisms or pesticide residues.

Import of inputs comes mostly from Europe or Asia. Plastic tunnel greenhouses are imported from India, Israel, Spain and China. Almost all installation techniques are imported. Most fertilizers, insects, pesticides and substrate are imported; this is mainly from The Netherlands.

For the development of a horticulture knowledge infrastructure various international projects have been started as well as cooperation between knowledge institutes (in which The Netherlands play a main role). These initiatives aim to set up a practical training center and to stimulate cooperation with and between growers. The Netherlands (i.e. Wageningen UR) supports by facilitating courses in cultivation, management, IPM, European quality standards, etcetera.

Summary

The floriculture industry in Ethiopia has developed rapidly. Government plays an important role in this development by a number of measures taken. But, still a lot of the needed input has to be imported from Europe or Asia. To further develop the industry and cluster, recently several projects are set up with support of subsidies.

3. Integrated Pest Management in Ethiopia

As an example of how an intervention can work out for a developing floral industry and local economic development a project of Wageningen UR Greenhouse Horticulture in Ethiopia is described. Aim of the project was the introduction and up-scaling of Integrated Pest Management at Ethiopian farms and in the floriculture industry.

The intervention

With the rapid development of the sector also public concerns within and outside Ethiopia started growing. These concerns regard the labor conditions at the farm, the environmental impact (over-exploiting water resources), and human health due to the misuse or overuse of pesticides and fertilizers. Ethiopian government as well as several research programs aims to reduce the pesticide use while maintaining agricultural productivity. In this light the Ethiopian Horticulture Producers and Exporters Organization (EPHEA) has taken the initiative to develop a code of conduct. It resulted in a project in the Ethiopia-Netherlands Horticulture Partnership Program, in which Wageningen UR and EPHEA worked together to develop a Code of Conduct. Narrowly related to this project also a project was done about Integrated Pest Management (IPM). In the project IPM was introduced at several Ethiopian farms. Also was worked at up-scaling of IPM in the industry. One of the project activities was training of growers in IPM. At the same time also extension agents and researchers were trained and supported in IPM. To provide on a regularly basis for natural enemies a supply chain was set up between a Dutch supplier of natural enemies and the growers in Ethiopia.

The spin-off

The intervention with IPM can be seen as a first step in a total new development towards sustainable production. Until now no new economic activities has resulted, but spin-off of the project has been mainly in the field of services development and capacity building: training the trainers and set up activities in Ethiopia horticultural research. The two most important resulting local social-economic activities are:

- The development of sustainable approaches for managing pests and diseases requires accurate training in specific topics. Therefore, people of EPHEA were trained to give courses around IPM. These are basic courses for staff of farms that have newly started IPM and advanced courses for already participating farms. Also EPHEA people were trained about the facilitating of study groups in which farm managers can exchange their experiences in IPM.
- As researchers, growers, field workers and students hold different sets of ecological knowledge, they can learn from ach other. Therefore MSc's at Jimma University

were given attention, in order to develop 'a new type of professionals'. This is done by linking research training with on farm trials.

As a result of the project the position of EPHEA has become stronger in the industry, because of the facilitating (training) role the association plays in IPM. Another effect is that at this moment a phytosanitaire lab is being set up which will strongly cooperate with the Dutch Plant Health Services.

Although no new agribusiness companies or other local economic activities have started, it can be expected that this will happen in a few years time. One can think of firms that produce and supply natural enemies, as well as commercial scout agents.

Catalyzing and hampering factors

In case of this project, both the Ethiopian government and the industry (EPHEA and growers) were convinced that besides the intervention of introducing IPM at the farms, it is also important to change the knowledge infrastructure (and in time other parts of the cluster). This willingness has catalyzed the introduction of IPM, which means the introduction of IPM at the farm, the setting up of training facilities at EPHEA and the linking of research training with on-farm trials.

There also have been hampering factors. During the project the introduction of IPM at local farms was hampered from the beginning by lack of knowledge of IPM. Therefore scouts and farm managers had to be trained in the application of natural enemies and in the recognition, scouting and monitoring of mite and natural enemies in the crop.

Also there were, and still are, no local companies available that can supply natural enemies. With the support of Koppert (a natural enemy firm in Holland) this problem was tackled. This company supplies on a regular basis the needed insects.

During the project it became clear that logistics of the imported insects from the airport to the farm needed to be better organized. It is extremely important that the predators reach the farms as soon as possible, without delay during transport, and are transported swiftly and under cooled conditions. Some arrangements were made for this.