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THE GREEN INNOVATION CENTRE IN ZAMBIA:

FIGHTING HUNGER THROUGH CORPORATE SUPPLY CHAINS?

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Abbreviations and Acronyms

<i>BMEL</i>	Bundesministerium für Ernährung und Landwirtschaft (German Federal Ministry of Food and Agriculture)
<i>BMZ</i>	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (German Federal Ministry for Economic Cooperation and Development)
<i>COMACO</i>	Community Markets for Conservation
<i>COMPACI</i>	Competitive African Cotton Initiative
<i>DAZ</i>	Dairy Association of Zambia
<i>DEG</i>	Deutsche Investitions und Entwicklungsgesellschaft (German Investment and Development Company)
<i>FANSER</i>	Food and Nutrition Security in Zambia
<i>FAO</i>	UN Food and Agriculture Organization
<i>GR</i>	Green Revolution
<i>GIC</i>	Green Innovation Centre
<i>GIZ</i>	Gesellschaft für Internationale Zusammenarbeit
<i>KfW</i>	Kreditanstalt für Wiederaufbau
<i>MoA</i>	Ministry of Agriculture
<i>M-DIP</i>	Market-led Dairy and Innovations Project
<i>OWNH</i>	One World No Hunger Special Initiative
<i>SACCO</i>	Savings and Credit Cooperative
<i>SNRD</i>	Sector Network Rural Development
<i>SNV</i>	Netherlands Development Organisation



Executive summary

In Zambia, agricultural policy follows the Green Revolution model of modernisation and commercialisation, including release of large blocks of land for large-scale commercial development. Medium-scale farming is expanding in Zambia as urban wealth has flowed into agriculture and as class differentiation emerges from the smallholder farming base.

One World - No Hunger (OWNH) is a German government intervention in Zambia. It is a global programme in 25 countries, with 18 in Africa. It pools a large part of German Ministry for Economic Cooperation and Development (BMZ) rural development and food security activities. Between 2014 and mid-2017, more than 500 million Euros were made available for the special initiative. Almost half of this sum, 266.5 million Euros, were set aside for the Green Innovation Centre (GIC). One GIC project is implemented in Zambia.

In Zambia OWNH consists of the following components:

- Food and Nutrition Security for Enhanced Resilience (FANSER);
- Agricultural finance; and
- Green Innovation Centre (GIC) in soya and groundnut in Eastern Province, and dairy in Southern Province.

The focus of OWNH in Zambia is the GIC project. It is implemented by the German Gesellschaft für Zusammenarbeit (GIZ). It takes the form of support for smallholder farmer integration into commercial value chains linked to national, regional and global markets. GIC is working with implementing partners on soya and groundnuts in Eastern Province, and dairy in Southern Province. Previous German interventions in smallholder cotton production through the Competitive African Cotton Initiative (COMPACI) project stopped in Zambia at the end of 2016 after 8 years.

The German government's development agency, GIZ, manages the largest part of OWNH in Zambia. Community Markets for Conservation (COMACO) and Good Nature Agro are the implementing partners on legumes in Eastern Province, and the Netherlands Development Organisation (SNV) is the dairy partner in Southern Province.

Soya and groundnut

Currently, soya is experiencing a boom in foreign direct investment (FDI) linked to its status as a flexible crop with multiple possible uses, such as feed, food and biofuel linked to industrial markets. A few multinational buyers - especially Cargill and NWK Agri-services - dominate the commercial soya market in Zambia. Low commodity prices for many fragmented smallholder producers in a concentrated buyers' market characterise the sector. Groundnut is a more localised crop but with national and regional demand for quantities as an aflatoxin-free product.

COMACO and Good Nature Agro are private enterprises from the US with hybrid business models that bridge public, development aid and private financing. This is tricky ground for BMZ which says that GIC, unlike the agricultural finance project, does not fund private enterprises. The idea is that OWNH is ring-fenced for smallholder farmer support and integration into commercial value chains. However, two out of the four indicators of the project are aiming to support downstream corporations.

The partners offer a wide range of services to participating smallholder farmers, including training in a range of topics from agronomy to business management, technical support and extension, capacity building, markets, organisational support, finance and others.

COMACO is an agro-food processor and manufacturer based in Eastern Province. It converts soya, groundnut and other legumes into a range of products under a nationally-recognised brand. COMACO claims a base of 167,000 registered smallholder farmers in organised in 70 cooperatives, saying collectively it could be considered the largest private farm in Zambia. However, only a tiny fraction of farmers can benefit from the full range of COMACO's measures, including selling to COMACO for a premium price. COMACO's long term stated objective is to conserve forest areas through enabling farmers to earn sustainable incomes and thereby not lessen the need for encroachment into the forests. This is quite ironic because COMACO's approach, supported by OWNH, is precisely to expand smallholder monocrop agriculture into high biodiversity areas, including forests in Eastern Province. A fundamental problem for the majority of soy and groundnut producers is the low price they achieve in the mainstream market, by selling to the bigger buyers such as Cargill or NWK.

Good Nature Agro is a seed enterprise producing certified legume open pollinated varieties (OPVs). Genetic materials come from the Consultative Group on International Agricultural Research (CGIAR) institutions. Smallholder outgrowers multiply the seed for certification and share some of the benefits of the seed enterprise. An explicit objective is to make improved, diverse legume seed available for farmers who can recycle the seed for a number of seasons in line with good agronomic practice. Although the seed is restricted to certified seed (i.e. goes through formal processes of germplasm acquisition, registration and seed multiplication) this goal can lead to increased agricultural biodiversity. In pursuit of financial sustainability, Good Nature Agro has also moved into output markets through the purchase of harvest.

Economically, both enterprises can only engage with a limited number of farmers. It selects participants based on an extensive set of criteria. Participating farmers receive special support and a premium on prices. Differentiation is built in at the selection stage. The majority of farmers are excluded. Extension is privatised and includes only participating farmers. This raises the question of whether German development aid is being spent on facilitating differentiation through artificial means, possibly in an effort to fast-track class development.

Dairy

The formal dairy market takes about 20% of all milk produced in Zambia. Large and medium commercial farmers account for 90% of the formal market. Most milk in the country is produced by smallholders and distributed locally and informally. Parmalat (Italian multinational), Varun (CreamBell) and Zam Milk (subsidiary of Zambeef) dominate the commercial market as buyers and processors and dictate prices. Imports are high, especially powdered milk and long life milk, from Kenya and South Africa in particular. High input and low output prices are obstacles to smallholder expansion in dairy production. In the past, structural adjustment has decimated vet services, contributing to exhausted livestock genetics and low productivity.

GIZ partners with SNV's Market-led Dairy Innovations Project (M-DIP) for expansion into Southern Province, to increase productivity in smallholder dairy production. M-DIP works with 8 smallholder dairy coops of various capacity and size.



It provides a range of services: Cooperative governance, financial services, input supply business linkages, dairy skills, feed and the feeding regime, breeding, as well as linking farmers to the dominant buyer, which is Parmalat.

As with the legume activities, the dairy work also focuses on smallholder integration into commercial value chains rather than supporting more decentralised local markets. The majority of farmers are not equipped to enter into commercial markets, or do not get the support, again resulting over time in differentiation. Even participating farmers are adversely incorporated into these buyer-driven value chains, with very low prices, in M-DIP's case through a monopoly buyer in the form of Parmalat.

Conclusion

The development concept behind the GIC is a commercial value chain approach. Interventions are made in sectors and regions where a few transnational corporations dominate the sector and search for cheap commodities from farmers (Parmalat, Cargill, NWK Agri-services). The majority of farmers are excluded by “farming as a business” ideology, with the diversity of farmers' livelihoods not taken into account. The value chain approach as implemented in the GIC project ignores informal market channels. It is unclear if GIZ took lessons learned from COMPACI, which also ultimately did not work.

The focus of the GIC is not fighting hunger directly, but to push commercial agricultural development as the means to overcome hunger and poverty. As the programmes are in the midst of implementation it is difficult to assess the indicators of GIC. However, we expect that indicator 1 (20% increase of profit contribution for 35,000 households) will be unlikely to be met, and will be based on a broad range of increases with few households benefitting disproportionately. Although indicator 4 aims at the reduction of food-insecure households, we expect the poorest households in the respective regions will not be met.

GIC is one piece in the mosaic of the Green Revolution approach among dominant donors. Good Nature Agro and COMACO interventions are not “classical” Green Revolution projects, but rather can be described as “intermediate” approaches between Green Revolution and more ecological approaches, where they are more sensitive to seed and soil matters on one hand, while remaining closely allied with corporations and their private interests on the other. GIC follows the general development trajectory of creating or working with cooperatives in an “instrumentalist” way to serve a development project purpose, rather than as critical and independent farmer organisations. Extension services are privatised and provided to an exclusive group. Public sector institutions such as ZARI are side-lined and replaced by hybrid, for-profit private enterprise NGOs.

The GIC interventions focus on a small number of smallholder farmers and provide them with exclusive access to finance, services and support. The aim is to identify and provide further support to those who can emerge as full commercial farmers (“stepping up”). For the majority of farmers, the gains are minimal and there are longer-term social and ecological consequences that are not accounted for in official programming. A more pro-poor approach, aiming above all to fight hunger in the region, would therefore need an orientation based on fundamental different principles, in particular: (1) strengthening local markets and alternative supply chains; (2) increasing capacities of the public sector, (3) investing in public goods; and (4) developing easy access financing tools for the poorer farmers.

Zusammenfassung

Die staatliche Agrarpolitik in Sambia folgt dem Leitbild der Grünen Revolution, mit dem Ziel einer vollständigen Modernisierung und Kommerzialisierung der Landwirtschaft. Dazu gehört auch die Bereitstellung von großflächigen „farm blocks“. Vor allem Agrarbetriebe mittlerer Größe gewinnen an Bedeutung, Kapital aus dem urbanen Raum fließt in die Landwirtschaft. Damit einher geht eine Ausdifferenzierung der Klassenstrukturen innerhalb der Landwirtschaft.

Die deutsche Bundesregierung ist im Rahmen der Sonderinitiative Eine Welt Ohne Hunger (EWOH) in Sambia aktiv. EWOH wird weltweit in 25 Ländern umgesetzt, darunter sind 18 afrikanische Länder. EWOH umfasst einen erheblichen Teil der Aktivitäten des Bundesministeriums für wirtschaftliche Zusammenarbeit und Entwicklung (BMZ) im Bereich ländlicher Entwicklung und Ernährungssicherung. Zwischen 2014 und Mitte 2017 wurden mehr als 500 Millionen Euro innerhalb der Sonderinitiative verausgabt. Etwa die Hälfte der Summe, 266,5 Millionen Euro, wurden für Grüne Innovationszentren (GI) bereitgestellt. Eines der GI-Projekte wird in Sambia implementiert.

Insgesamt bestehen die EWOH Aktivitäten des BMZ in Sambia aus drei Schwerpunkten:

- Ernährungssicherheit für verbesserte Resilienz (FANSER)
- Agrarfinanzierung
- Das GI-Projekt mit Bezug auf Soja- und Erdnusslieferketten in der Ostprovinz und mit Bezug auf Milch in der Südprovinz

Den Schwerpunkt der EWOH Aktivitäten in Sambia stellt das Projekt des Grünen Innovationszentrums dar. Es wird von der staatlichen Gesellschaft für internationale Zusammenarbeit (GIZ) umgesetzt, und zielt darauf ab, KleinbäuerInnen über Lieferketten mit Märkten auf nationaler, regionaler und internationaler Ebene verbinden. In dem Projekt wird mit Implementierungspartnern zu Soja und Erdnuss in der Ostprovinz und zu Milch in der Südprovinz zusammengearbeitet. Ein Projekt zur Förderung der kleinbäuerlichen Baumwollproduktion, durch die Competitive African Cotton Initiative (COMPACI), endete nach 8 Jahren der Umsetzung 2016.

Die deutsche Vorfeldorganisation Gesellschaft für internationale Zusammenarbeit (GIZ) setzt den größten Teil der EWOH Projekte in Sambia um. Community Markets for Conservation (COMACO) und Good Nature Agro sind die Implementierungspartner im Bereich der Leguminosen in der Ostprovinz, die niederländische Entwicklungsorganisation SNV implementiert die Komponente der Milchwirtschaft in der Südlichen Provinz.

Soja und Erdnuss

Soja erfährt gegenwärtig einen Boom durch ausländische Direktinvestitionen, vor allem aufgrund seiner Flexibilität in der Nutzung als Futter, als Rohstoff in Lebensmitteln und als Agrotreibstoff. Wenige multinationale Handelsakteure, insbesondere Cargill und NWK Agri-services, dominieren den Sojemarkt in Sambia. Niedrige Rohstoffpreise für die kleinbäuerlichen Produzenten gegenüber der konzentrierten Nachfragemacht kennzeichnen die Situation. Die Erdnussproduktion stößt auf stärkere lokale Nachfrage, aber auch die Nachfrage nach nachweislich Aflatoxin-freien Erdnüssen steigt auch auf nationaler und regionaler Ebene.



COMACO und Good Nature Agro sind private Organisationen aus den USA mit hybriden Geschäftsmodellen, die öffentliche Entwicklungsfinanzierung mit privaten Finanzierungsformen kombinieren. Dies ist insofern relevant als dass nach Aussage des BMZ die Grünen Innovationszentren in Sambia keine privaten Unternehmen direkt finanziert. Vielmehr sollen die Zentren eindeutig Kleinbauern unterstützen, zugleich jedoch zielen 2 der 4 Zielindikatoren der GI auf vor- und nachgelagerte Unternehmen.

Die Implementierungsorganisationen bieten kleinbäuerlichen Produzenten unterschiedliche Dienstleistungen an, darunter technische Trainings im Bereich des Anbaus und der wirtschaftlichen Betriebsführung, der Marktanalyse, Finanzierung und in anderen Bereichen.

COMACO ist aktiv in der Nahrungsmittelverarbeitung. Es verarbeitet Soja, Erdnuss und andere Leguminosen zu Nahrungsmitteln unter einem bekannten Label. Nach Angaben der Organisation arbeitet sie insgesamt mit 167.000 Bauern in 70 Kooperativen zusammen und rechnet vor, kollektiv stelle man die größte Farm Sambias dar. Nur ein kleiner Teil der Produzenten jedoch kann von der gesamten Bandbreite des Geschäftsmodells profitieren, inklusive der Möglichkeit, die eigenen Produkte samt Preiszuschlag an COMACO zu verkaufen. COMACOs langfristiges Ziel, Waldgebiete zu erhalten, indem Kleinbauern faire Einkommen erhalten und daher nicht weiter ins Waldgebiet vordringen, ist widersprüchlich. Faktisch erfolgt aktuell durch die Projektmaßnahmen eine Ausweitung der kleinbäuerlichen Produktion in Gebiete mit hoher Biodiversität, auch in der Ostprovinz. Ein fundamentales Problem der großen Mehrheit der Soja und Erdnussproduzenten bleibt aber der geringe Preis, den sie auf dem Mainstreammarkt durch Verkäufe an Cargill oder NWK erzielen.

Good Nature Agro produziert als Saatgutunternehmen zertifiziertes Saatgut von frei abblühenden Leguminosen, das von Forschungszentren der Consultative Group on International Agriculture Research (CGIAR) stammt. Vertragsbauern multiplizieren das Saatgut und lassen es zertifizieren. Ein Teil ihrer Einkommen geht an das Saatgutunternehmen. Ein Ziel von Good Nature Agro ist es, das verbesserte und diversifizierte Saatgut Bauern zugänglich zu machen, die das Saatgut wiederverwenden können. Obwohl die Organisation auf Zertifizierungen setzt (d.h. durch den Prozess geht, in dem Keimplasma erworben, Saatgut registriert und multipliziert wird), kann dieser Ansatz zu Erhöhung der Agro-Biodiversität beitragen. Um finanziell nachhaltig zu wirtschaften hat Good Nature Agro auch begonnen, als Zwischenhändler Leguminosen für den Nahrungsmittelmarkt an- und weiterzuverkaufen.

Sowohl COMACO als auch Good Nature Agro können nur mit einer begrenzten Zahl von Kleinbauern zusammenarbeiten. Beide wählen ihre Zielgruppen anhand verschiedener Kriterien aus, ein kleiner Teil der Bauern profitiert von Preisprämien. Diese privatisierte Form von Dienstleistungen und Beratung mit dem Fokus auf wenige Potentialbauern stellt die Frage, inwieweit die Entwicklungszusammenarbeit in diesem Fall zu einer Verstärkung der Klassendifferenzierung im ländlichen Raum beiträgt, statt breitenwirksame Agrarentwicklung zu ermöglichen.

Milch

Der formelle Milchsektor umfasst etwa 20% der in Sambia insgesamt produzierten Milch. Große und mittlere Agrarbetriebe decken 90% dieses formellen Marktes ab. Der bei weitem größte Teil der produzierten Milch kommt jedoch von KleinbäuerInnen und wird auf informellen Märkten lokal vermarktet. Parmalat, Varun (Cream Bell) und Zam Milk (Tochterunternehmen von Zambeef) dominieren den formellen Markt, und diktieren als Käufer und Verarbeiter die Preise. Der Anteil der Importe, insbesondere von Milchpulver und UHT Milch aus Kenia und Südafrika ist hoch. Hohe Input- und geringe Rohmilchpreise setzen die Produzenten unter Preisdruck. Strukturanpassungsmaßnahmen in der Vergangenheit, insbesondere die Dezimierung des Veterinärsektors, haben die Produktivität erheblich reduziert.

Die GIZ finanziert die Umsetzung des Market-led Dairy Innovations Project (M-DIP) von SNV in der Südpfrovinz Sambias, mit dem Ziel die Produktivität der kleinbäuerlichen Akteure zu erhöhen. M-DIP arbeitet mit 8 Kooperativen unterschiedlicher Größe zusammen und bietet eine Reihe von Dienstleistungen und Beratungen an: Management der Kooperative, Finanzdienstleistungen, Geschäftskontakte zu Inputproduzenten, Fütterungsstrategien, Zucht und die Verlinkung als Zulieferer zu Parmalat.

Ähnlich wie im Leguminosenbereich setzt der M-DIP Ansatz auf die Integration von Kleinbauern in konzerndominierte Lieferketten, anstatt dezentralisierte, lokale Märkte zu fördern. Die Mehrheit der Kleinproduzenten ist nicht in der Lage sich erfolgreich in diese Ketten zu integrieren oder die umfassenden Dienstleistungen in Anspruch zu nehmen, was ähnlich wie in den Leguminosen-Projekten eine Klassendifferenzierung verstärkt. Auch Kleinbauern die sich integrieren tun dies auf problematische Weise, erzielen geringe Preise, im Fall von M-Dip durch den faktischen Monopolisten Parmalat.

Fazit

Das Entwicklungskonzept hinter den GI ist ein Fokus auf konzerndominierte Lieferketten. Die Programme agieren in Sektoren, in denen wenige transnationale Konzerne dominieren und auf billige Agrarrohstoffe angewiesen sind (Parmalat, Cargill, NWK-Agri Services). Die Mehrheit der Produzenten wird durch die „farming as a business“ Ideologie, letztlich ausgeschlossen und der Vielfalt ihrer Livelihoods wird nicht Rechnung getragen. Der Lieferkettenansatz der GI ignoriert informelle Marktkanäle. Es bleibt unklar, inwiefern die GIZ aus dem Scheitern von COMPACI Schlüsse gezogen hat.

Der Ansatz des GI besteht nicht darin, Hunger direkt zu bekämpfen, sondern darin, über eine Entwicklung der kommerziellen Landwirtschaft Hunger und Armut zu bekämpfen. Da sich das Programm inmitten der Umsetzungsphase befindet, ist eine Bewertung der Zielerreichung noch nicht möglich. Wir halten es jedoch für unwahrscheinlich, dass Indikator 1 (20% Erhöhung des Profitanteils für 35.000 Haushalte) erreicht werden wird. Zudem ist davon auszugehen, dass die Erhöhung des Profitanteils unabhängig vom durchschnittlich erreichten Wert sehr ungleich verteilt sein wird. Auch wenn Indikator 4 auf eine Reduktion von Haushalten mit Ernährungsunsicherheit abzielt, gehen wir davon aus, dass die ärmsten Haushalte in der Region nicht erreicht werden.



Das GI Projekt ist ein Baustein im Mosaik des Grüne Revolution Ansatzes, der unter den entwicklungspolitischen Organisationen dominiert. Die Ansätze von Good Nature Agro und von COMACO folgen jedoch nicht dem „klassischen Ansatz der Grünen Revolution“, sondern können als eine Strategie zwischen Grüner Revolution und einem nachhaltig-ökologischen Ansatz beschrieben werden, weil sie einerseits in Bezug auf Saatgut und Bodennutzung ökologisch ausgerichtet sind zugleich jedoch auf enge Kooperation mit Konzernen und deren Geschäftsinteressen setzen. Die Zusammenarbeit mit bäuerlichen Milchkooperativen folgt dem verbreiteten instrumentellen Ansatz unter eng definierten ökonomischen Zielen, im Unterschied zu offeneren Kooperationen mit Produzentenorganisationen, die eigene Ziele entwickeln würden. Die Dienstleistungen erfolgen durch private Akteure und zielen auf eine eng gefasste Gruppe. Staatliche Institutionen wie das Forschungsinstitut ZARI bleiben weitgehend aussen vor und werden durch hybride, am Markt agierende NGOs ersetzt.

Die GI zielen auf eine kleine Zahl von Produzenten ab und versorgen diese mit exklusivem Zugang zu Finanzen, Dienstleistungen und Beratung. Der Schwerpunkt liegt darauf, die Produzenten zu stärken, die zu voll kommerziellen Betrieben aufsteigen können („Stepping up“). Für die Mehrheit der Produzenten bleiben die Vorteile minimal und längerfristige soziale und ökologische Konsequenzen werden in der offiziellen Programmlogik ignoriert. Eine stärkere pro-poor Ausrichtung die primär darauf abzielte, Hunger vor Ort zu reduzieren, würde sich an grundsätzlich anderen Prinzipien orientieren, insbesondere: (1) einer Stärkung lokaler Märkte und alternativer Vermarktungskanäle, (2) einer Stärkung des staatlichen Sektors, (3) Bereitstellung von öffentlichen Gütern, (4) Projekte, die auch armen Produzenten einen Zugang zu Finanzierung ermöglicht.

1. Introduction

Agriculture is an integral part of Zambian society, accounting for a large share of employment and national income. In recent years, the country has witnessed rapid transformation of its food and agriculture system. This is characterised by corporate expansion throughout the agro-food system, medium and large scale commercial agriculture and foreign supermarket growth, incentives for Foreign Direct Investment (FDI), and transitions in consumption patterns in both urban and rural areas. The search for alternative sources of foreign revenue beyond the extractive industries, liberalised economic policies, as well as an increasing and urbanising population have all played their part. Significant support for these processes of transformation has come from foreign government development aid, increasingly in partnership with the private sector¹.

However, agricultural development is structured by the global context of combined and uneven development. Advanced technologies and huge wealth sit side by side with abject poverty, disease and hunger. The global corporate food regime (McMichael, 2005) has produced a shift in power and control from nation states to transnational corporations and their financial backers. Unequal trade systems are an integral part of this regime. There are concerns about value extraction by corporations and a reassertion of colonial-type relations based on extreme power imbalances in value chains (BASIC, 2014; RLS et al. 2017). There is evidence of ongoing net outflow of resources from Africa (Global Justice Now, 2017). Mega-mergers throughout food systems² indicate rapidly growing inequality and concentration of resources and power. At the same time, smallholder farmers in Africa and globally are less secure, with alienation of land a common trend.

In the local context, the global dimensions are often obscured by the mundane struggle for “development”. Some figures show that Zambia’s chronic hunger and malnutrition rates have dropped since the beginning of the 2000s (Mofya-Mukuka and Mofu, 2016), while others conclude that hunger has increased in Zambia, against Africa-wide trends (Mwanamwenge and Harris, 2017:7). However there is agreement that Zambia has amongst the highest hunger rates on the continent. Farmers are desperate for better cash crop markets, and the economy remains in constant search of growth and sources of FDI. Investment in agricultural education and training, technical capacity, physical infrastructure and material resources for production are essential. However, the questions are in what specific activities investments are being made, and what impact these are having on poverty and inequality.

This report considers the transformations in Zambian agriculture in the global food and development aid context. Rosa Luxembourg Foundation, a policy organisation affiliated to the German Left Party, commissioned the research with the objective of enhancing transparency around the German government’s foreign development interventions. The research focuses on German-supported activities under the One World No Hunger (OWNH) programme, with particular focus on the Green Innovation Centres (GICs). OWNH pools a large part of German

¹ e.g. Kalungwishi Farm Block development, proposal received from China Railways Seventh Group Zambia Limited (Lusaka Times 2017a); UKAID support to FoodTrade East and Southern African investment in ACTESA, to facilitate the domestication of COMESA harmonised seed trade regulations (FoodTrade ESA, n.d).

² A current example is the Bayer-Monsanto, Dow-Du Pont and Syngenta-ChemChina triad of mergers in the biotechnology-seed-agrochemical sector (ACB, 2017).



Federal Ministry for Economic Cooperation and Development (BMZ) activities in the field of rural development and food security. In Zambia OBNH is implemented primarily by the German government's development agency, Gesellschaft für Internationale Zusammenarbeit³ (GIZ). The programme is situated in the broader context of donor interventions in Zambian agriculture, focused as they are on a US-led Green Revolution model of agricultural development.

The report covers three areas. First, it analyses the political economy context of the Zambian agricultural sector in which the GIC initiative takes place; second, it describes and analyses the specific approach and underlying assumptions of the GIC; third, it describes preliminary impacts of the GIC projects. As the GIC is an ongoing process, this study has a scoping character and analyses preliminary impacts through qualitative interviews with various stakeholders.

The research is based on a desktop review and interviews and discussions with a range of stakeholders in Lusaka, and Southern and Eastern Provinces during field trips in February, May and June 2017. Interviews were conducted with 26 people from the Conservation Farming Unit (CFU), Netherlands Development Organisation (SNV), Musika, Cargill, AgCO, Department of Agriculture: Technical Services, Agricultural Knowledge and Training Centre (AKTC) at the Golden Valley Agricultural Research Trust (GART), National Union for Small-scale Farmers of Zambia (NUSFAZ), GIZ in Lusaka and Chipata, Community Markets for Conservation (COMACO), CRS/Caritas Chipata, Good Nature Agro, Farmers' Outgrower Foundation, Zambia Agricultural Research Institute (ZARI) Msekera, USAID Feed the Future Programme, NWK Agri-Services Zambia, Benjamin War (private) and Zambia Alliance for Agroecology and Biodiversity (ZAAB). We held six focus group discussions/meetings with farmers from chiefdoms around Chipata and Mfuwe in Eastern Province, Mumbwa in Central Province, Rufunsa in Lusaka Province, and interviews with Nyimba District Farmers' Association in Eastern Province, Mumbwa District Farmers Association and East and Southern Africa Small-scale Farmers' Forum (ESAFF) in Central Province, and the Magoye Dairy Farmers' Coop in Southern Province. In every case the research background, objectives, methods and funders were fully explained⁴. Third, we organised a thematic discussion workshop, with participation from various interviewed farmer and other stakeholders. At the workshop we raised key themes and issues arising from the research and facilitated a discussion with participants. The meeting was held at ZARI Msekera and included a short field visit to some of their legume and agroforestry plots.

³ Society for International Cooperation.

⁴ Confidentiality forms were used and the option to remain anonymous was respected throughout the research process. For focus groups, confidentiality forms were seen as an inappropriate tool, and thus it was ensured that the research process, expectations, outputs and option to participate were fully explained. Interviews where we did not get explicit consent have been left anonymous. Key interviewees and farmer representatives, together with government and other civil society representatives, were invited to a workshop held in Chipata in September 2017 to share the findings and facilitate discussion. This was to validate the findings and to give participants an opportunity to speak with each other directly, unmediated by author analysis.

2. Agricultural development in the Zambian context

2.1 Public Policies

In Zambia, approximately 70% of the population rely on agriculture for their livelihood and food access. Nevertheless, according to official statistics, in 2016 agriculture accounted for only 11% of GDP, second to mining that still comprises 80% of foreign earnings (AfDB, UNDP and OECD 2016). Agriculture is under pressure to increase foreign earnings as low and volatile global copper prices continue to plague the mining industry. Zambia's energy crisis of 2015/16 saw extensive downscaling in medium and large scale industry with significant ramifications to the economy. Zambia also has a rapidly growing and urbanizing population. 41% of the total population and 66% of the population under the age of 25 lived in urban areas in 2015 (Financial Mail, 2016:71). Despite a relatively industrialised economy for the region, in 2017 Zambia ranked as one of the most unequal and undernourished nations in Africa (Mwanamwenge and Harris, 2017). Food and malnutrition insecurity are also not only a rural phenomenon as is often portrayed (Crush and Frayne, 2010). Chronic hunger and malnutrition statistics for Zambia (Mofya-Mukuka and Mofu, 2016) expose the extent of embedded inequalities within the agro-food system.

The Second National Agriculture Policy (SNAP), launched in 2016, and its accompanying Investment Plan, illustrate the country's attempt to appease the demands of an increasingly dualistic sector:

“In arriving at this Policy, the NAP 2004-2015 had to be reviewed with particular attention to the concerns raised by various stakeholders, regarding the failure to ensure sustained increase in agriculture production and productivity, rural incomes and reduce poverty, failure to achieve inclusive growth, the perpetual agricultural financing and marketing challenges; and climate change associated with erratic rainfall patterns and the change of Government which necessitated new policy guidelines that are in line with the Government of the day” (MoA, 2016: 1).

The agriculture sector as envisioned in the SNAP, and evident in the Policy's implementation plan (MoA, 2016b), reflects a Green Revolution development paradigm and a focus on a value chain approach, centred on commercialisation, integration of smallholder farmers into value chains and building economies of scale. The African Union's Comprehensive African Agricultural Development Programme (CAADP) framework underpins the policy: Promoting a strong private sector, modernisation, and a market-driven approach. Focus is directed to 'small but viable' farmers, promoting 'farming as a business', commercial contract schemes, farm blocks⁵ and commodity production. This system is designed to attract foreign investment, nurture a seed bed of future commercial farmers and develop agriculture as a vehicle for economic growth.

The Zambian agricultural sector is mostly composed of smallholders farming on up to 2 ha of land (73% of farmers), with another 24% farming on 2-5 ha (Sitko and Jayne, 2014:196). They grow a mixture of crops for household consumption with some of the land being dedicated to cash crops. Around 30% of farmers on average produce a maize surplus. Farmers have become

⁵ Large-scale land tracts alienated in ten provinces, allocated for local and international investors, for development of at least one large scale commercial farm, and a number of medium and small scale farms.

reliant on certified seed and agrochemicals which they may receive from government and private sector players through various funding arrangements including contract farming and the farm input subsidy programme (FISP). The inputs do not reach all farmers, are not always appropriate to their requirements, and may also arrive late. If the inputs are delivered late, farmers may not plant a certain portion of their land until these inputs arrive. Otherwise they will rely on the resources they have at hand. Farmer seed saving is widespread as a guaranteed source of seed, and plays a critical role in rural food security in particular. Yields per hectare amongst smallholder farmers are still considered very low. There are a number of problems with yield as an isolate measure. For example, measuring tons of grain per hectare does not take into account multiple uses of crops (e.g. biomass for animal feed, fuel, and diverse nutrient content in lower yielding crops). Yield and productivity are important but they should not be the only considerations.

In the Green Revolution narrative, low yields have been attributed to inferior inputs as well as farmers persisting with subsistence agriculture, and failing to view farming as a business. Increasing productivity per unit of land is centred on access to commercial, certified seed with higher yield potential, and associated fertilisers and agrochemicals. Efforts to expand the area under commercial production accompany these productivity concerns. One way to do this is to feed farmers with commercial inputs and provide markets, to see which ones can arise for further support. It is built on processes of restructuring of production systems, and differentiation and selection of the 'winners'. Thereafter the focus is on consolidation and expanding economies of scale. Production is orientated towards commodity crops that can be traded through global value chains. Theoretically this system will provide farmers with greater cash returns, facilitate business development and reduce rural poverty and food insecurity levels.

2.2 Agri-food system restructuring

For over a decade now, efforts to launch a Green Revolution in Sub-Saharan Africa have been at the core of agrarian policies. Huge financial amounts have been channelled into commercial crop breeding, market development, and input subsidies. The hope behind these investments has been to replicate the successes of the Asian Green Revolution in the 1960s and 70s, based particularly on the promotion of hybrid seeds and fertilizers. Green Revolution technologies have also been powerfully endorsed for over a decade through public funding in Zambia. Double subsidies fund input and output markets through the FISP (initially the Fertilizer Support Programme) and the Food Reserve Agency (FRA) (almost entirely maize-based). Together these programmes are allocated between 37% and 53% of the agriculture budget (Kuteya et al, 2016a). Public spending on FISP and FRA, in combination with interventions by foreign development policies for the intensification of smallholder productivity and enhancing input and output markets, has significantly bolstered the distribution and use of external inputs in the past decade. In this current Green Revolution approach, the old technological approach has been combined with a new emphasis on free markets and partnerships with larger companies of the agro-chemical sector and the food industry. The Green Rev

- It has reshaped institutional and regulatory systems – policy and law, regulatory capacity, institutions (e.g. seed certification body), regional and global harmonisation of laws;

- The agendas in the field of research and development (R&D), education and training, and public-private partnerships for plant breeding and seed production (including biotechnology), agronomy, soil and water science, and extension. Key institutions include the research institutes of the Consultative Group on International Agricultural Research (CGIAR), national agricultural research institutes (ARIs), universities, and private sector and not-for-profit service providers;
- It has changed the concept on agrarian markets - both input markets (where the role of agro-dealers has become prominent); and output markets (value chain integration).

With specific reference to seed it is important to understand the different levels of research, breeding, seed production and distribution though. Various actors such as CGIAR institutions, the Zambian gene banks, ZARI, universities and private companies undertake breeding and own germplasm. ZARI Msekera in Eastern Province is mandated to breed legume seed in particular. To date the focus has been on groundnuts, with 14 varieties released. There is some recent movement into soya. Historically ZARI developed improved varieties which ended up sitting on the shelf, either because there were insufficient resources for bulking up and distributing to farmers, or, because there was insufficient marketing for varieties developed in the public sector, ZARI is under pressure only to develop varieties where there is proven market demand, or existing pre-production contracts⁶. Although the private sector is becoming more involved in breeding of legume seed, the money is not in breeding but in seed production and distribution. Here particularly, few corporations control the sector, while there is a continuing role retained for the public sector in 'early generation seed' production (Feed the Future, 2016).

Zambia has a history of smallholder seed multiplication through outgrower schemes with ZARI and the private sector. The Eastern Province Farmers' Cooperative (EPFC) played a big role in organising farmers for seed multiplication in the past. EPFC was a major supplier of groundnut seed in Zambia, especially for SeedCo and Zamseed, and it also worked with ZARI Msekera. EPFC had agreements to supply the private companies with seed for the government input programme. Around 5,000 farmers were involved at its peak. EPFC was forced to close when it lost the supply contract in 2013⁷. Smallholders are less active in soya seed multiplication. "Only about 4% [of certified soya bean seed is] produced by smallholder farmers, most of whom produce seed of public varieties. Almost all the certified seed of soybean produced by smallholder farmers is of the QDS [Quality Declared Seed] seed class" (GFA Consulting, 2016:5).

Large-scale commercial farmers are also involved in seed multiplication. Because of challenges in smallholder seed production (e.g. quality issues, contamination by other varieties due to excessively small plots of land, transaction costs, and support costs), breeders often prefer to work with a few large-scale producers. Seed is sold locally through formal seed channels, FISP, agro-dealers and through retail facilities of the seed companies themselves. Seed is also provided by commodity buyers as part of an input package, with costs deducted from sales at the end of the season. Zambia is one of the top exporters of maize seed in the region, making the sector a key focus for industry and subsequent policy regulations.

⁶ Interview, Kennedy Kanenga, ZARI Msekera, 17 May 2017.

⁷ Interview Whytson Sakala, Farmers' Outgrower Foundation, Chipata, 17 May 2017.

The facilitation of smallholder uptake of certified seed is highly subsidised as it is a turnkey aspect of the furthering the GR. Key channels are through the government FISP as well as donor-supported programmes aimed directly at the promotion and increased distribution of certified seed (predominantly USAID and DFID). There is a clear emphasis on seed for maize-soya rotations. These two key crops are oriented to global value chains as flex crops (i.e. produce fodder, serve as an energy source or as food according to price dynamics). Their commercial production at scale opens the door to profitability for the introduction of genetically modified (GM) crops. Companies have been lobbying for a long time at national and regional levels for the commercial use of GM crops.

The Green Revolution thrust in Zambia has resulted in the expansion of multinational and domestic corporations in Zambian agriculture and the introduction of national and regional corporate value chains in Zambian agro-food systems. These are partly based on regional strategic priorities in maize, soya, poultry and cotton value chains (Louw and Kapuya, 2012). Agricultural inputs is one main area of corporate activity. Almost 100% of certified seed is produced by the private sector, and all of it is multiplied by the private sector. In 2012 the top 4 seed companies (SeedCo, Pannar Seed, MRI Seed and Zamseed⁸) produced 85-90% of certified seed (World Bank, 2012:xii). Subsequently DuPont has acquired Pannar through Pioneer Hi-Bred, and Syngenta has acquired MRI. In a survey of 13 Sub-Saharan African countries, Zambia had the fewest active seed companies in its main crops, with very high levels of concentration especially in rice and groundnuts, and beans. The hybrid maize seed to grain price ratio was second highest in Zambia, after South Africa (TASAI, 2017).

Zambia has 9 major fertiliser importers (including global and regional multinationals Omnia, Yara and ETG), 2 domestic blenders (Greenbelt, recently acquired by Yara, and Zambia Fertilizer) and 1 state-owned blender. Corporations are also expanding in mechanisation, finance and transport in Zambia (World Bank, 2012). Input finance through outgrower schemes are commonplace in Zambia and endorsed through national policies. Outgrower schemes facilitate farmer access to inputs through contractual agreements with buyers, either organised by the buyers themselves or by farmer associations/local NGOs. Farmers receive inputs on credit at the beginning of a season, on condition that some or all of the harvest is sold back to the buyer. The cost of inputs provided, plus interest in some cases, is deducted from sales. Out-grower systems are widely used and developed by both foreign donor agencies and commodity traders⁹. Financing is through national financial institutions or through value chain financing driven by the commodity traders. Global and regional corporations occupy this space including Cargill, Louis Dreyfus and NWK.

⁸ Zamseed, now privatised, was previously a state-owned parastatal with a monopoly on commercial seed breeding and production except cotton and tobacco. The company had access to extensive germplasm from the Zambian ARIs and national gene banks, and commercialised a wide variety of crops - particularly locally significant crops such as sorghum, beans, cowpeas, sunflowers, and vegetable seeds - both hybrid and indigenous varieties. Under Zambian legislation, genetic resources are publically owned goods, and the development of Zamseed's germplasm was publically funded. Following the sale of the company, there has been public uncertainty regarding the details of sale, ensuing ownership and user rights of the genetic resources held by the company (Interview, Law Department, University of Zambia, Lusaka, 25 July 2017).

⁹ For instance, USAID initially supported the Profit Plus out-grower development programme, that took over Cargill's entire out-grower business section in 2016/17, reaching up to 70,000 farmers in Eastern Province under cotton contract agreements [Interview Cargill, Lusaka, 14/2].

Beyond input supply, corporate concentration in Zambia is also growing in other parts of the food economy. Zambia is a key target for South African corporations expanding into the region, across fertiliser, agri-services, agricultural production itself, logistics, grain milling and trading, food manufacturing and imports, and wholesale and retail (Greenberg, 2017). Shoprite, Spar and Pick 'n Pay dominate formal food retailing (das Nair, 2017).

The impacts on smallholder farmers in Zambia are uneven. The dominant value chain integration approach favours consolidation of farming units to realise economies of scale. This is resulting in differentiation and rapid growth in 'medium-scale' farmers working on 5-20 ha of land, raising questions about "the potential of current agricultural growth to act as a vehicle for broad based economic growth and poverty reduction" (Sitko and Jayne, 2014). Farm input subsidy programmes (FISPs) have assisted smallholders to increase maize yields in some places but there are fiscal and ecological sustainability questions about the continuation of this strategy. The FISPs tend to be skewed towards the relative elite, and smallholder yield increases are very dependent on timely delivery of inputs (Resnick and Mason, 2016). The recent introduction of e-vouchers, under the FISP, potentially offers farmers greater choice of inputs, as supported in the government's commitment to diversify agriculture. Currently, e-voucher systems remain restricted to what is available in participating agro-dealers that are essentially conduits for a narrow range of commercial products. The current redemption system does not track what farmers are using the vouchers for, making it difficult to assess whether and what types of diversification are occurring (Kuteya et al., 2016).

3. Donor interventions in the Zambian agriculture sector

Donor support plays a central role in Zambia's agriculture system and its development trajectory. As indicated, up to 53% of the national agriculture budget is estimated to be directed to FISP and FRA spending (Kuteya et al, 2016a:12). This is supported through both donor funding that goes to general government budgets and allocated to FISP, or through other public funds. The specifics of funding sources are an area that need further research. Regardless of such, the broader issue remains that there is minimal support to other agriculture-related activities, which are left with little choice but to seek outside sources of funding which may also come with its own conditions. In 2015, the agricultural budget was just below K5 billion¹⁰, just short of 10% of the total budget. The agricultural share of the total budget has varied between 6-10% of the national budget since 2001. The CAADP target is 10% (Kuteya et al, 2016a:10).

USAID, the international development arm of US government policy, plays the leading role in donor interventions in Zambia. Other states, including the European countries, illustrate a pattern of following the US model. China's focus is somewhat different although it remains within a Green Revolution framework; supporting infrastructure (transport, finance, communications) and large-scale industrial extraction of raw materials (forests/timber, minerals, commodity crops). A central role is also played by capitalist philanthropies. The Rockefeller Foundation was central to setting up the CGIAR and national ARI networks, and continues to play a core role in driving a US-style GR model. More recently the Gates Foundation, working with Rockefeller, set up the Alliance for the Green Revolution of Africa (AGRA). Other philanthropist funds also operate in African agriculture (e.g. Clinton, Lundin).

¹⁰ Which is roughly 400 Mio Euro.

USAID's significant role in development interventions across the globe illustrates its strategic shaping of the formation and structure of national agricultural sectors where there is commercial potential. USAID's emphasis on privatisation and profit as the driver of development historically have had a key impact in Africa on agricultural R&D, the functioning of the ARIs and links to CGIAR. DFID plays an increasingly similar role, with funding mechanisms supporting private sector driven multilateral frameworks as well as agricultural finance¹¹. A secondary focus from a number of the donor agencies has been on the development of specific value chains or crop varieties. For instance, smallholder production for commercial and export markets (e.g. support to link smallholder onion producers to supermarkets), the uptake of new crop varieties (particularly bio-fortified varieties like orange sweet potato/orange maize), or hybrid seed uptake (e.g. facilitation of smallholder access to hybrid tomato seedlings to promote uptake)¹².

Other donors have fitted into the US hegemonic model. German interventions are closely aligned with the US private sector driven framework. The next section focuses on German investment in the Zambian agricultural sector, primarily through the global One World No Hunger Initiative.

3.1 The 'One World - No Hunger' initiative

Research for this report focused on German government agricultural investment in Zambia. German-funded initiatives are thus outlined and drawn on within the analysis. However, we reiterate that these initiatives are part of, and embedded within, the broader global development context.

The German government has designed and is implementing a range of interventions to promote agricultural modernisation in Zambia. There are a number of separate programmes, the largest of which is the OWNH initiative under the German Ministry for Economic Cooperation and Development (BMZ).

OWNH is rolled out in 25 countries globally¹³; 18 are in Africa, with food insecure core countries, including Zambia, targeted with most resources (Schmitz, 2015:25). OWNH pools all BMZ rural development and food security activities (BMZ, 2015:3). It is based on the Sustainable Development Goals (SDGs), especially Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture (linking to other goals including health, education and gender); and SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, including halting and reversing land degradation, and ending biodiversity loss. It is framed in terms of climate adaptation and urgent action on climate change.

¹¹ For instance, on regional level, DFID support to the New Alliance for Food Security and Nutrition (NAFSN); UKAID support to Food Trade ESA that has supported COMESA regional seed harmonisation programmes; in Zambia DFID partners with AgDevCo, Financial Sector Deepening Zambia and CFU amongst others.

¹² Interview, USAID Feed the Future, Lusaka, 19 June 2017.

¹³ Bolivia and Paraguay in Latin America; India, Myanmar, Laos and Cambodia in Asia; Yemen and Tunisia in Middle East and North Africa; Burkina Faso, Mali, Niger, Cameroon, Nigeria, Benin, Togo, Ghana and Cote d'Ivoire in West Africa; and South Sudan, Ethiopia, Somalia, Kenya, Burundi, DR Congo, Zambia and Malawi in East, Central and Southern Africa.

There are 6 fields of action in OWNH (Schmitz 2015):

- Food security and nutrition;
- Resilience and food security in crises and conflicts;
- Innovation in agriculture and food production (Green Innovation Centres);
- Structural change in rural areas;
- Sustainable resource management in rural regions; and
- Responsible land rights.

The fields of action are broad enough to accommodate a wide range of interventions. Country programmes do also not need to fit into all fields of action.

Between 2014 and mid-2017, more than 500 million Euros were made available for the special initiative. Almost half of this sum, 266.5 million Euros were set aside for the GIC alone (Schaefer, 2017:8). Multiple channels of disbursement are possible including government and CSOs; however, direct funds to the private sector are excluded. All BMZ's partners must commit to complying with clear social, environmental and development standards in their activities (BMZ, 2015:3).

Documentation from the initiative does reveal critical comments about historical and recent development interventions. "Development benefits [of investments in recent years] are in many cases doubtful" and "much of this investment also exacerbates the already ruthless exploitation of natural resources in the name of agriculture" (BMZ, 2015: 1). As such, the OWNH initiative proposes a different conceptual framework, defined as a 'social and ecological market economy' that stands for "competition, and economic and fiscal stability, as well as social balance and sharing" (BMZ, 2007:2).

The conceptual framework views competitive markets as the best route to social and ecological benefits. The overall programme goal is that "agriculture everywhere must involve sustainable production, based on ecologically sound and socially equitable investment" realised through private sector activity in competitive markets; boosting agricultural productivity, jobs and incomes "for those who need them most", though a "modern and professional agricultural sector" (Schmitz, 2015:23).

Zambia is a core country of the OWNH initiative. It is one of 12 countries in the Food Security Programme (fields of action 1 and 2) and one of 13 countries in the Green Innovation initiative (field of action 3). GIZ is the lead implementing agent in Zambia.

OWNH though GIZ has three programmes in Zambia:

- Food and Nutrition Security for Enhanced Resilience (FANSER);
- Agricultural finance;
- Green Innovation Centres (GICs).

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The target recipients of the initiative are smallholder farmers. The primary objectives are to increase incomes, employment, food and nutrition; embedded within the difficult challenge of bridging the gap between improved livelihoods, income and long term sustainability. The biggest part of the programme by far is the GIC, which is dealt with in more detail as the focus of the case studies below. Other interventions, particularly through the German Federal Ministry of Agriculture (BMEL) are targeted at support for corporate expansion through large-scale commercial farming (LSCF). The focus areas are mechanisation and financing. Some efforts were made at planning stages of OWNH interventions in Zambia to link the two different streams of work but nothing materialised.

3.1.1 Food and Nutrition Security for Enhanced Resilience (FANSER) project

FANSER is a standalone project under OWNH, implemented by GIZ in Katete and Petauke districts in Eastern Province. The objective is to improve food and nutrition security and dietary diversity of pregnant/lactating women, and children under the age of two. Key interventions are support for production, processing, preparation and consumption of nutrient-rich foods; hygiene and health practices; and child care and feeding practices (GIZ 2016a:3). FANSER includes awareness raising at household and community level on the value of legumes, and promoting homestead gardens and including proteins into diets.

FANSER is an extension to new districts of the nutrition component of USAID's Zambia Mawa project (Feed the Future and PEPFAR). The Mawa project¹⁴, with US\$10m in funding, targets

¹⁴ Unless otherwise specified, information on the Mawa project from an interview with Caritas staff, Chipata, 16 May 2017.

interventions at household level on agriculture, nutrition, health, and savings, with a gender component. The project was implemented in Chipata and Lundazi districts of Eastern Province in 2013 - 2017. Focusing on smallholder farmers, Mawa facilitated conservation agriculture training and promotion of GR inputs; particularly uptake of certified seed (through vouchers to farmers to buy certified maize and legume seed, demo plots, and seed fairs to which private companies are invited); and information provision on post-harvest handling. 'Vulnerable but viable' farmers were targeted for seed vouchers. There is a strong private sector component to the intervention. Field agents are identified and supported to become private sector seed sellers. Under the Savings and Internal Lending Communities (SILCs), field agents are assessed and trained to become private sector service providers. The training fee is negotiated between the agent and the savings group: "in the public sector, the culture is to give free things. Our own experience is that farmers can run their own affairs. They can work through private transactions", according to Caritas project staff. The project then links the private agents to existing banking and micro-financing programmes as conduits. Seed fairs are used to expose farmers to private sector companies and their seed range. The structure of Mawa support tends towards looking for entrepreneurial opportunities in the development process, supporting development as a business. The project engages with MoA at provincial and district levels and provides some training. Public sector extension is understaffed and government has requested the expansion of the project into areas where the public sector does not have reach. The Mawa model thus supports the privatised entrepreneurial model of development.

Through FANSER, GIZ is expanding only the nutrition component of the Mawa project to Petauke and Katete districts in Eastern Province. Catholic Relief Services (CRS) are contracted to implement the project in Petauke, and Care is contracted for Katete. Four-fifths of the target population of 12,500 in FANSER are in Petauke. CRS leads a consortium which includes Caritas (subcontracted to implement), GART for training in new mechanisation, Women for Change (women's group), the University Research Council (in the US) on nutrition, and SILCs, which is a CRS regional activity. The Petauke nutrition project started in Oct 2015 with a first phase of 2 years. There is discussion of further project expansion in Katete and Nyimba, with extended time but with unknown budget allocations at the time of writing.

According to Caritas, smallholders are producing many crops but there is still a high level of stunting. The nutrition project aims to support the use of diverse crops in home consumption. They are monitoring children's nutrition status. Community level health promoters facilitate cooking demos on preparation of local foods, hygiene, advise on intercropping (maize and various legumes - soya, cowpea, pigeon pea, lablab, groundnut), and establishment of kitchen gardens (practical support on beds, composts, mulching etc.).

The links between the GIZ FANSER project and GIZ work on value chains through the GIC appears to be largely only through shared training materials, with nutritional information/knowledge included in radio sessions. FANSER indicated that the two projects are working together in a total of 102 villages. However, activities under GIC are in Chipata district while FANSER is in Petauke and Katete with no direct connections between participants in the two programmes.

3.1.2 Agricultural finance

There is a strong emphasis on developing finance for agriculture from the German interventions. Under the OWNH initiative, GIZ's included a programme on “promoting agriculture financing for agriculture-based companies in rural areas.” However, at the time of research this was only in its initial phases. GIZ aims to provide the technical assistance, with KfW¹⁵ partly implementing for BMZ. No actual financing was to be provided through the programme. The intended focus is instead on information and financial training on the supply side (with financial institutions to raise awareness of farmer needs and specific conditions), and on the demand side from farmers (promotion of the use of finance/credit through farmer investment and business schools, training lead farmers, etc.)¹⁶.

From the GIZ perspective, smallholder farmers are understood not to follow market-oriented approaches to farming and are poorly integrated into the monetary economy. “They often lack access to adequate financial services, which prevents and hinders investment in agricultural production, processing, and marketing” (GIZ, 2015). The GIZ model in Zambia follows the similar two-pronged approach to finance discussed earlier. Support is directed at developing the whole value chain – increasingly smallholder productivity, small business development for agriculture services, development of agribusiness institutions (inputs and financial services) – and capacity development for financial institutions to better serve the smallholder agriculture sector (GIZ, 2015).

A number of other German backed finance projects in Zambia are not directly related to the OWNH initiative. KfW, at the time of research, was in project development phase with NWK, a multinational grain miller and trader operating in Zambia, co-owned by Louis Dreyfus. The project proposal was aimed at financing a revamped NWK mechanisation programme, and in 2016, 6,5 Million Euro were calculated for this program. It attempts to re-design a previously unsuccessful mechanisation programme that lost NWK significant funds and reputation. It was part-funded through investment from AgDevCo with asset finance from three commercial banks - Zanaco, FNB, and Stanbic - for tractors delivered in the 2013/2014 season (KfW, 2016). The proposal for the new programme entails KfW providing capital investment and NWK managing the programme through establishment of a separate NGO arm of the company¹⁷. As the project was in concept phase, little information was made available. Similarly, GIZ is in the starting phase of an Agro-financing programme in Benin and Zambia which by 2016 was calculated to contain 2,6 Million Euro. In Zambia, a Public Private Partnership with the German Baywa seems to play a role in this program.

3.1.3 Green Innovation Centres

The Green Innovation Centres (GICs) are part of a bigger European Union (EU) project to support hubs for agro-food innovation production and diffusion, incorporating social and physical technologies. GICs are the biggest component of the OWNH initiative in Zambia. The current project started in November 2014 and runs until September 2019.

¹⁵ German government-owned development bank.

¹⁶ Interview, GIZ, Lusaka, 15 February 2017.

¹⁷ Interview, NWK, Lusaka, 23 January 2017.

GICs were originally conceptualised under the BMZ project as physical training centres, similar to those under the BMEL (EPO-Online 2014). In fact, the current projects of the GIC in most countries simply further the existing value chain approach of the GIZ. In Zambia, the target value chains – legumes and dairy - were identified upfront at the outset of the project, with implementing partners in Zambia selected accordingly¹⁸. It contains a budget of 10 million Euro overall.

The objective of the programme states: “Innovations in the agriculture and food sector have increased the incomes of small-scale farming enterprises, boosted employment and improved the regional food supply in selected Zambian regions.”

The programme is based on four indicators:

- 35,000 funded small-scale farming enterprises have experienced, on average, a 20% increase in the profit contribution (production output – variable costs)¹⁹ of products in the selected value chains (VC) soybean, peanuts, and milk.
- Employment levels in the funded upstream and downstream enterprises of selected value chains have increased by 140 jobs, with 20% of jobs being filled by young people and 35% by women.
- Annual soya, peanut, and milk sales of the funded upstream and downstream enterprises have increased by 20%.
- The share of funded small farming households that are moderately or severely food insecure, as measured by the Food Insecurity Experience Scale (FIES) of the Food and Agriculture Organization (FAO), have been reduced by 30%.

The GIZ GIC projects focus on facilitating smallholder market access and related support in legumes (soya and groundnut), implemented in partnership with COMACO, in Eastern Province; and dairy, implemented by the Netherlands Development Organisation (SNV), in Southern Province.

Under the GIC focus on legumes, an additional two smaller matching grants were approved for funding:

- Good Nature Agro²⁰ in Chipata, a for-profit seed company producing a range of certified legume seed varieties through smallholder outgrowers.
- The other applicant is a women's group in Katete, proposing to develop local legume processing capacity. A decision to fund had been taken but no work had yet started at the time of the research.

The section below outlines three value chains. The first two - legumes and dairy – are GIZ's current projects. The third – cotton – was a previous GIZ supported value chain through the Competitive African Cotton Initiative (COMPACI) , which might provide lessons for future value chain interventions.

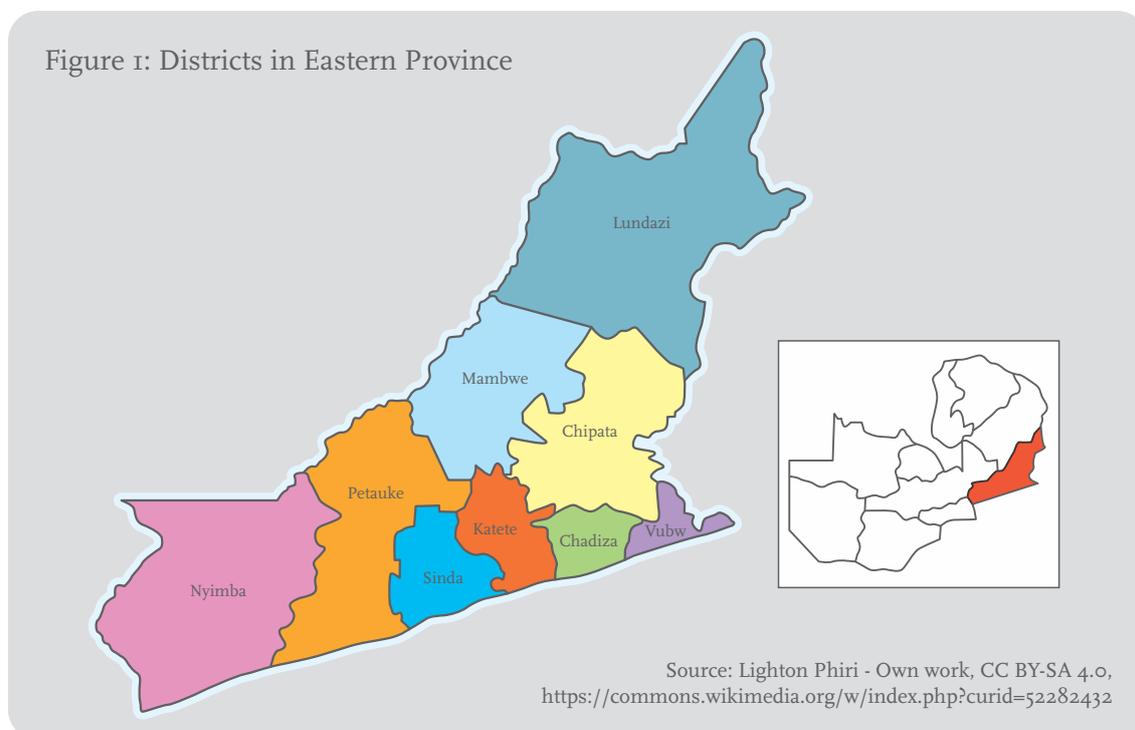
¹⁸ Interview, GIZ, Lusaka, 15 February 2017.

¹⁹ We should note that the difference between operating income and expenses is a less accurate measure of profit than the rate of return on investment in capital assets. The problem with the former definition is that short term 'profits' measured from season to season can disguise longer term losses on capital expenditure and other unrecognised costs (e.g. unpaid family labour). This is one way in which farmers can be trapped into believing their involvement in commercial value chains is generating a profit for them.

²⁰ Formerly Zasaka Seed.

4. Soya and groundnut value chains in Eastern Province

GIC activities in Eastern Province focus on integration of smallholder producers into soya and groundnut value chains in Chipata district (Figure 1). Specific projects support smallholder participation in the production of certified seed, and market access for soya and groundnut producers.

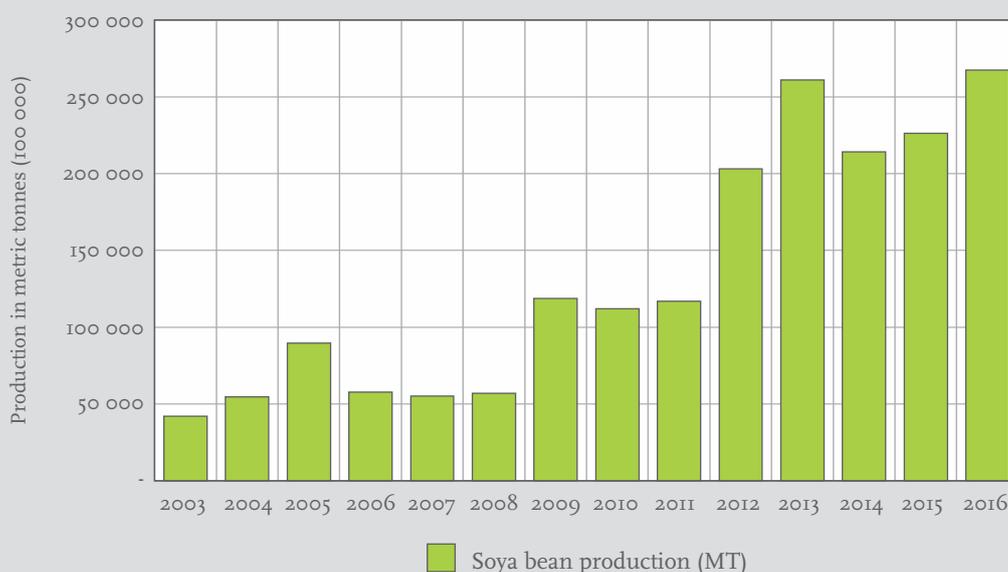


4.1 Overview of soya and groundnut sectors

Soya is one of the four main commercial crops in Zambia, which has experienced sharp growth in production since 2012 (Takala-Greenish, 2015:14). Within a decade, production grew around fivefold (Figure 2). The growth of the Zambian soya sector is driven by an influx of multinational capital. It is a 'flex crop' (Borras et al., 2014) with multiple uses including feed, oil, biofuel, industrial and food. It is generally recognised as an industrial crop, with raw exports for global feed markets a key driver. According to Sitko and Chisanga (2016:8) there are "three primary paths" along which transnational investment occurs in this sector. The first is through an expansion of existing cash crop operations into the grain sector, exemplified by Cargill's shift from cotton to soya. It is part of an overall shift from the more traditional crops (such as cotton, tea, cocoa) to grains and their use as flex crops.

Second, there is significant investment in soya from a regional level, e.g. Afgri and Senwes from South Africa, or the METI Group from East Africa, driven by the idea to provide soya as fodder for the growing commercial poultry and meat markets. There is big regional demand including from South Africa, but transport and logistics costs are prohibitive at present. Third, international trading firms are entering the Zambian soya sector through takeovers. For example, a joint venture of the South African NWK Agri Services and Louis Dreyfus acquired the Duvanat Cotton Company and then expanded into grain and oilseed trading and financing.

Figure 2: Soya bean production in Zambia, 2002 - 2016



Source: Imakando et al. 2017

Current investments in soya production are almost entirely confined to Eastern and Central Province. In 2010, these two provinces accounted for 75% of smallholder soya production (Lubungu et al., 2013:12-13). For Eastern Province as a whole, soya is the fourth most planted crop following maize, groundnuts and sunflower. 70% of soya is sold, and 30% is retained for household use (Lubungu et al., 2013:14). The expansion of smallholder soya production is linked to Conservation Agriculture. NWK Agri Services²¹ and Cargill both promote soya rotation to enhance crops. The companies purchase the output for processing and sale into national and export markets. Both companies provide inputs on loan and recover the costs on purchasing the crop (Lubungu et al., 2013:7-8).

Smallholders match commercial producers' cost/yield efficiencies in dry lands. They have lower yields but correspondingly lower costs (Mwansa, 2015:33). Although fertiliser is 40-45% of the total cost of production for commercial producers (Mwansa, 2015:34), smallholder farmers in the Eastern Province do not rely on external fertilisers for soya production. Agrochemicals (all imported) are also widely used in commercial production. High transport and input costs constrain small-scale commercial production. According to farmers, people are running to soya because it is easy to plant, no fertiliser or chemicals are needed (only weeding), it fixes nitrogen in the soil, it is good for crop rotation because they don't need to extend their fields, it contains more protein than groundnut, and there is a ready market for it²².

²¹ Formerly Dunavant.

²² Informal discussion, Mpezeni coop members, Chipata, 15 May 2017; group discussion Nsefu farmers, Chipata, 18 May 2017; group discussion Rufunsa farmers, 19 May 2017.

Groundnuts are the second most important crop by production volume and area by Zambian smallholders, with an estimated half of smallholders producing the crop. More than 90% of production is from smallholders cultivating on land less than 2ha each (Mofya-Mukuka and Shipekesa, 2013:1). In 2010/11, 62,000ha of groundnuts were planted in Eastern Province. This is one third of the total for Zambia, the largest provincial share in country (Mofya-Mukuka and Shipekesa, 2013:5).

Groundnuts are an important part of diets with strong urban demand. It is a source of protein and as an input into processed products (e.g. peanut butter, oil, animal feed) (Ross and de Klerk, 2012:22). However, despite demand, production is relatively stagnant and groundnut is sometimes replaced by cotton, especially in the Eastern Province. Groundnut experiences high seasonal and year-to-year fluctuation in prices (Mofya-Mukuka and Shipekesa, 2013:vi), with the usual problems of farmers selling at harvest when there is a glut and prices are low, the need for quick cash and lack of storage. Only around 45% of producers market any of their product, and most of the crop is used for home consumption (Mofya-Mukuka and Shipekesa, 2013). Smallholders tend not to use fertilisers or agrochemicals on the crops partly because maize and cotton are prioritised for these inputs (Ross and de Klerk, 2012:15).

As with soya, there is generally value chain financing (provision of inputs and logistics and deduction of costs on receipt of product). Groundnut has a range of market channels, including local shop owners, agents who buy from the farm gate, COMACO and local and national traders, including Export Trading Group (ETG), Rabs from Malawi, smaller traders from Lusaka, Copperbelt and Tanzania. In each district there is at least one dominant large-scale local trader. There are problems with aflatoxin contamination, which restricts exports and which can be a health threat to consumers. Farmers are aware of the issue and some efforts have been made to respond, although technological solutions are expensive²³.

4.2 The GIC interventions

The GIC interventions in soya and groundnut are aimed at increasing smallholder farmer productivity and increasing access to market outlets. Legume development is viewed as having multiple benefits, including income generation, nutrition and soil fertility. Farmers clearly stated that while they are able to produce enough food for their own household consumption, they also need to generate incomes from their agricultural activities to cover other necessary household expenses. Specific costs mentioned were education for children, transport and water²⁴. From an income point of view, commercial market channels already exist for soya and groundnut, and the crops are comparatively easy to produce. Nutritionally, legume production can be part of the response to low protein consumption in Eastern Province. Legumes are a cheap protein source and there are efforts to encourage household consumption of soya and groundnut to anchor commercial production.

Legumes are known to fix nitrogen in the soil and the crops do not require high amounts of agrochemicals and synthetic fertilisers²⁵. Although soil fertility is not one of the GIC's three

²³ Interview, GIZ, Lusaka, 15 February 2017

²⁴ Informal discussion, Mpezeni coop members, Chipata, 15 May 2017; group discussion Nsefu farmers, Mambwe, 18 May 2017; group discussion Rufunsa farmers, 19 May 2017.

²⁵ Interview, GIZ, Lusaka, 15 February 2017.

core indicators (income, employment, food and nutrition) sustainability is very important and GIZ also recognises the importance of conserving wildlife and forests. Making alternative sources of income available can redirect people from encroaching on the forests.

The GIC builds on earlier donor interventions on legumes in Eastern Province. There is a long history of USAID and other donor interventions in the province, which is identified as a potential breadbasket area in Zambia. GIZ is partnering with two organisations to carry out the work: Community Markets for Conservation (COMACO) and Good Nature Agro/Good Nature Agro seed enterprise.

4.2.1 COMACO and market access

COMACO is a registered not-for-profit organisation in Zambia that has been operating since 2003. Its basic mission is conservation of forests and wildlife. But COMACO's founder and CEO, Dale Lewis, explains that the best route to natural resource conservation is to create opportunities for inhabitants to earn incomes that do not rely on unsustainable encroachment on these resources. He is a firm believer in a private sector approach, because profitability determines sustainability. As such, COMACO has developed a comprehensive business model that incorporates support to smallholder farmers to produce legumes and other crops for sale. COMACO provides a market, buying at a 10-15% premium over local market prices, but its capacities allow only to buy a small share of all the farmers production. It then adds value through local processing before selling its products nationwide, including into supermarkets.

All cooperatives are registered through the Ministry of Commerce, with COMACO support to the coops including registration, marketing, training materials, bicycles for lead farmers, etc. COMACO's stated aim is to build up local self-led, self-governed cooperatives and over time to transfer aggregation and purchasing from members to coops, which will earn a commission from COMACO acting purely as a market. COMACO has good relations with the Zambian government and works closely with it at all levels from local to national. It operates on the basis of a combination of donor funds and funds generated from its business activities²⁶.

COMACO currently has 167,000 registered farmers working through 70 cooperatives covering the whole of Luangwa Valley, making it “collectively the largest farm in Zambia”²⁷. COMACO is built on three innovative practices: Community-led extension services; smallholder farmers in certified seed multiplication; and training materials using radio. COMACO provides farmers with a Better Life manual which provides a range of practical information related to sustainable agricultural practices (a checklist includes compost use, whether the farmer is burning their field, agroforestry/gliceridia and details, firebreaks, crop rotation and others), governance and leadership (the aim is for self-led and self-governed communities; a checklist includes meetings and minutes, leaders in attendance, plan review and others), and conservation and wildlife.

COMACO signs conservation contracts with farmers to follow the manual, wherein farmers are tested and benchmarks are established to monitor performance over time. Training is directed to those who pass the test. COMACO provides extension services and supports the development of cooperatives through training and guidance. Farmer innovations are

²⁶ Interview, Dale Lewis, COMACO, Chipata, 15 May 2017.

²⁷ Interview, Dale Lewis, COMACO, Chipata, 15 May 2017.

integrated into the learning process. Farmers identify key issues that influenced them, these are taken up to the Principal Lead Farmer and key messages are shared with other farmers through radio. Extension services are based on a lead farmer model, with lead farmers recruited to support clusters of 4-5 producer groups of 15-20 farmers each, and a hierarchy of supervisory/coordination. It is based on a private sector model which provides support only to participating farmers. GIZ's support focuses on the cooperative and extension support activities. GIZ identified COMACO's work with cooperatives on community-led extension services, smallholder farmer seed multiplication and training materials as supporting the OWNH innovation fields²⁸.

COMACO orients its work towards ecological sustainability in a number of ways. The focus on legumes has an explicit soil health component to it²⁹. Another core component of COMACO's work is agroforestry and the distribution of gliricidia trees, which are fast-growing, multiple-use legume trees. GIZ identified this as well as support for knowledge acquisition and application of alternative fertilisation production as part of the reason for selecting COMACO as a partner (GIZ, 2016:10). GIZ says smallholder farmer application of fertiliser makes no economic sense and there is a need for organic pest management, use of manure, and intercropping with fertiliser fixing trees. According to ZARI Msekera, farmers have traditionally used improved fallows, moving from field to field to allow the land to rest and regenerate, and planting multipurpose trees³⁰. Gliricidia and tefrosia were introduced in the area in the 1990s already and have a number of ecological benefits including soil health and water retention, are used as an energy source, attract bees, are used for animal browsing and as an insecticide. ZARI work with farmers showed that use of multipurpose legume trees cut fertiliser input to soil by 70%.

Participating farmers acknowledge and appreciate the benefits of using gliricidia and planting legumes. Although some farmers are still using synthetic fertilisers, through working with COMACO they say they are shifting towards replacing these with legume trees. Farmers point to the multiple uses of gliricidia, including that it has kept army worm out of fields where it has been planted³¹.

With regard to soya and groundnut production, farmers appreciate these as cash crops that can generate much-needed income. However there are significant market challenges. In particular prices are so low that in some cases farmers are not making any profit. According to farmers from Mpezeni who work with COMACO, "COMACO buys from us, but only a small amount compared with the output. There are 2,600 farmers in one area, but only about 100 farmers can benefit from COMACO purchases. They must increase the capacity of the COMACO plant. Farmers have produced but cannot sell. If people can sell and make a living then agriculture will continue."³² After expenses are deducted, farmers producing groundnut on 0.25 ha can expect to earn around K600 for a season's work³³. As a comparison, fees for secondary school are K1,000/term³⁴.

²⁸ Interview, GIZ Lusaka, 15 February 2017.

²⁹ Interview, Dale Lewis, COMACO, Chipata, 15 May 2017.

³⁰ Interview GIZ Chipata, 15 May 2017.

³¹ Informal discussion, Mpezeni cooperative, Chipata, 15 May 2017.

³² Informal discussion, Mpezeni cooperative, Chipata, 15 May 2017.

³³ Interview GIZ Chipata, 15 May 2017.

³⁴ Group discussion Mfuwe farmers, Mambwe district, 17 May 2017.

Other farmers said: “Soya and groundnut are better than cotton. But the problem is the market because we have to sell at the buyers' price. We have to sign for seed, but when it comes to price, there is no agreement, we just have to accept what is given”³⁵. Farmers in Rufunsa raised the same issue, saying: “Farmers are price takers. Then the following year we try a different crop, and the same things happen again. We need advice on which crops to produce each year and what the market will be like. We do produce but we don't know what the outcome will be. The prices are not negotiated. The buyers don't take into account the cost of production, including labour”³⁶.

COMACO offers a hybrid type Green Revolution model. It reflects growing concern about environment, but remains within a framework that seeks to resolve social and ecological problems with the prevailing development model through markets. This aligns with the German government's approach. In particular, it remains within an approach that seeks to integrate smallholder farmers into commercial value chains. Although the COMACO processing and marketing enterprise theoretically will be handed over to farmers over time, farmers must conform to a commercial business model. Commodity crop production (cotton, soya, hybrid maize) is carved out of indigenous ecosystems, including forests, despite forest conservation being a key long-term objective for COMACO's founder. These expanding zones of commodity crop production generate a separation of production and conservation. Land is cleared for cash crops which significantly reduces biodiversity. Tefrosia is not enough to compensate for this loss: it is not indigenous, it replaces much wider diversity, and its introduction is narrowly functionalist, focusing on increasing nitrogen in the soil for the continuation of cash crop monocultures.

4.2.2 Good Nature Agro and certified legume seed production

In the context of expanding soya and groundnut production for commercial markets, lack of availability of sufficient certified seed suitable for the specific requirements of these markets (mainly industrial processing) is identified as a key constraint (GFA Consulting, 2016; Lubungu et al., 2013). Smallholder farmers did indicate that lack of availability of diverse soya and groundnut varieties is a key issue. Generally smallholders rely on one or two varieties, some of which do not perform well, whether certified or local³⁷. With this in mind, a key part of the GIC is support for smallholder farmer certified legume seed multiplication. Both COMACO and Good Nature Agro work with smallholders to multiply certified legume seed. However, GIZ is not currently directly supporting COMACO's seed work³⁸.

As part of the Green Innovation Centre, GIZ is supporting Good Nature Agro, a for-profit social enterprise established in 2014. Its business is outgrower production of certified open pollinated varieties (OPV). It has an explicit goal of enabling farmers to recycle seed and so circumvent the need to keep buying seed from commercial producers³⁹. Good Nature Agro operates a holistic model: it finances inputs, and provides extension and certified seed markets, purchasing the crop at a premium. In the first year it focused on maize and cowpea. It started

³⁵ Group discussion Mfuwe farmers, Chipata, 17 May 2017.

³⁶ Group discussion, farmers in Rufunsa district, 19 May 2017.

³⁷ Informal discussion, Mpezeni coop, 15 May 2017; Group discussion Nsefu farmers, 18 May 2017.

³⁸ Interview, GIZ, Lusaka, 15 February 2017.

³⁹ www.goodnatureagro.com

with a pilot of 40 outgrowers, which has now grown to 2,000. After that, government approached Good Nature Agro to produce certified cowpea for emergency aid. Good Nature Agro now focuses on legumes, including cowpea, soya, groundnut, pigeon pea and it is starting on sugar beans. The stated objective is to increase production, reduce market risk and find contracts that allow people to increase their income. Good Nature Agro has a wide range of donors including USAID, Feed the Future, CRS, Musika, Zanaco, ICRISAT, Omnia and others⁴⁰.

Seed genetics are OPVs sourced from IITA and ICRISAT. The seed is registered through ZARI and Good Nature Agro pays 2.5% royalties, and for a licence for multiplication. Most seed produced is quality declared seed (QDS) which still goes through the formal certification system but with slightly less tight standards, and they don't have to pay royalties for this. Good Nature Agro has three levels of production that produce different classes of certified seed:

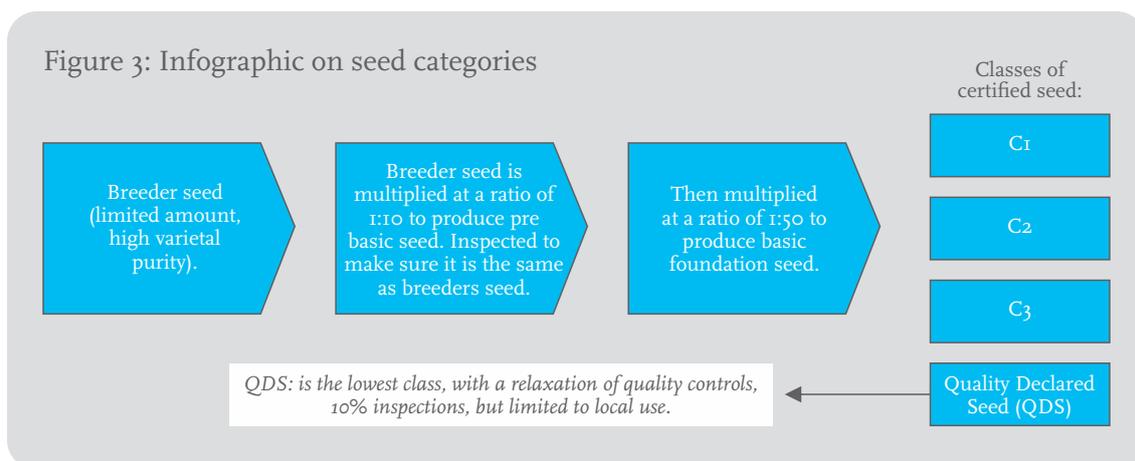
- Scaling up on their own 40 ha farm – C1;
- Around 50 farmers (less than 1% of the total grower base) on 3-6 ha each for bulking up – C2;
- Small-scale farmers take the seed to QDS – expanding to 5,200 farmers and a new area in south of Chipata⁴¹.



⁴⁰ www.goodnatureagro.com

⁴¹ Interview Good Nature Agro, Chipata, 16 May 2017.

Figure 3: Infographic on seed categories



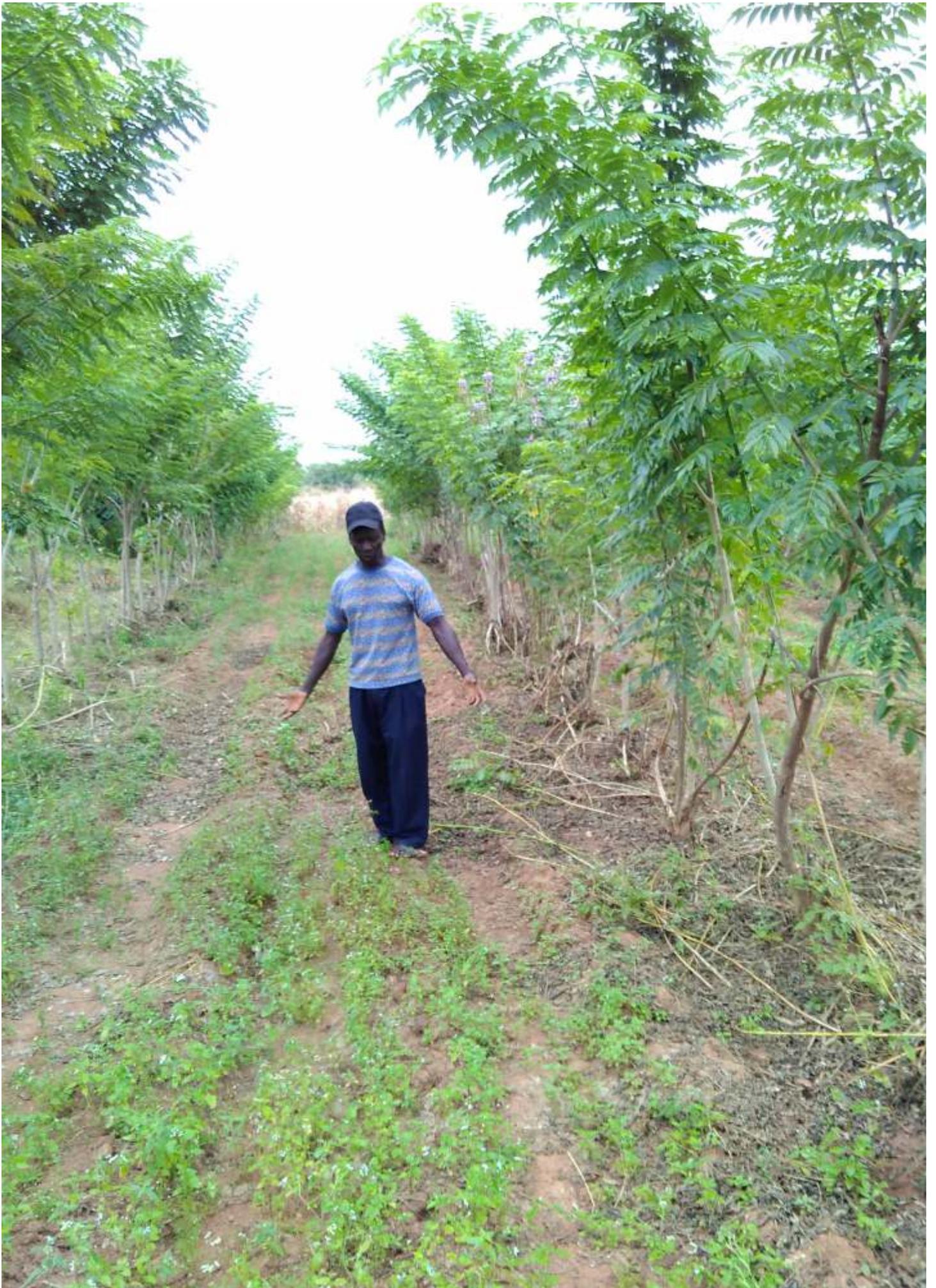
Breeder seed (limited amount, high varietal purity) -> breeders' seed is multiplied at a ratio of 1:10 to produce pre-basic seed - inspected to make sure it is the same as breeders' seed -> then multiplied at a ratio of 1:50 to produce basic/foundation seed -> used to produce certified seed in three classes (C1, C2, C3) and Quality Declared Seed (QDS) as the lowest class, with a relaxation of quality controls, 10% inspections, but limited to local use.

Participating farmers are all in the Chipata district for now, which allows Good Nature Agro to provide extension services. When Good Nature Agro enters an area, farmers apply in groups of 10. They are assessed on a set of basic parameters, which include: land size greater than 2ha, already producing legumes as a cash crop, 50:50 gender, and a geographic spread with camps within a 7 km radius of the extension agent. Farmer groups put forward one nominee for the position of private extension agent (PEA). Good Nature Agro selects one out of every four nominees as PEA, who will serve the four groups. The nominee receives one month of training at what is called the PEA College. Training covers agronomy (including seed production) along with financial and group management. Further training is provided during the year. A field supervisor is appointed for every 10 PEAs. Field supervisors are college graduates and they are certified for seed inspection. There is only one government seed inspector in Eastern Province. The existing inspection system is not designed for many small producers, and Good Nature Agro therefore does inspections through the certified agents. After training, the PEAs engage with the growers, starting with mapping fields and identifying grower priorities⁴².

Seeds and inputs are provided to farmers on loan. Each group of 40 farmers undertake seed production of the same variety of the same crop. There is an issue of mixed varieties but Good Nature Agro is working with farmers to improve this. The groups of 10 receive individual loans, which the group is responsible for repaying. The seed loan is based on 1kg out and 2kg back. Other inputs are provided on a cash basis at 15% interest. These costs are later deducted from revenue on sales. Inputs are from Yara, CHC and Syngenta/MRI and include inoculants, soil analysis with Yara (pH and immediate and long term solutions) and chicken manure compost. The latter is purchased from industrial chicken farms and farmers compost it themselves. Good Nature Agro aims to scale up its own production and pelletising. It is producing 120 tons currently, distributed to 400 farmers⁴³.

⁴² Interview Good Nature Agro, Chipata, 16 May 2017

⁴³ Interview Good Nature Agro, Chipata, 16 May 2017



Inoculation involves coating soya seed with rhizobium bacteria to facilitate nodulation and the benefits derived from it (healthier plants and nitrogen fixing for healthier soil). ZARI is the sole producer of inoculum in Zambia and mainly supplies to commercial farmers and corporates such as NWK Agri Services and Cargill (Lubungu et al., 2013:10-11). Few farmers in Eastern Province use inoculants. It is usually in liquid form, requires cold storage, and has a short shelf life. ZARI has developed a powder form but it needs rehydration and training in the field. The most popular soya variety used locally, Magoye, uses naturally-occurring inoculants and therefore does not require externally sourced inoculants (Lubungu et al., 2013:9).

Farmers produce seed on 0.5ha. The PEAs rate growers and make credit evaluations regarding the size of land they can enrol. Good Nature Agro does allow for pesticides, assessed on a case by case basis. Mostly farmers are producing seed on about one sixth of their land. Over time, Good Nature Agro aims to work with farmers on the whole farm on seed, commodity production and markets (both third party and Good Nature Agro purchases). Later they will try to do commodity trading but for now they only set up third party contracts to ensure markets. Gradually Good Nature Agro aims to operate throughout the supply chain from seed to output⁴⁴.

Good Nature Agro purchases all seed at five depots. Seed is aggregated and then taken to Chipata for basic processing including pre-cleaning, grading and hand sorting. Good Nature Agro is currently raising money for a seed treatment plant. They go through to packaging and SCCI certification. Some of the certified seed will then go back to farmers. 165 tons is held back for this, with the remaining 800 tons sold on the basis of forward contracts (e.g. there is a current contract with Cargill on cowpea). Good Nature Agro works back from end markets, linking buyers with the outgrower who contract directly with one another. The only condition is that the outgrower must purchase seed from Good Nature Agro. According to Good Nature Agro, this gives private sector stability to what is mostly a volatile market⁴⁵.

Good Nature Agro does a survey of commodity prices and pays farmers for seed at slightly above that rate in June every year. After the seed is certified, a 25% premium is paid in September, timed for inputs. The PEAs get a commission of 2% of the sale price, distributed across 12 months as an adjusted salary. Farmers are only producing seed for Good Nature Agro for now (not grain for commodity markets)⁴⁶. Good Nature Agro is aiming for 50 high achieving farmers in 2016-17, and 200+ farmers 2017-18⁴⁷. The certified seed is then distributed through NGOs and government programmes, with smaller volumes through local agro-dealers⁴⁸.

The positive aspect of Good Nature Agroproject is the emphasis on production of OPVs that can be recycled to reduce farmer input costs, and also involvement of smallholders in quality-controlled multiplication of seed. However, the model cannot extract itself for other structural problematic features of the Green Revolution. It targets 'emergent' farmers who are on the way to becoming medium size farmers (defined by the Zambian government as those producing

⁴⁴ Interview Good Nature Agro, Chipata, 16 May 2017

⁴⁵ Interview Good Nature Agro, Chipata, 16 May 2017

⁴⁶ Interview Good Nature Agro, Chipata, 16 May 2017

⁴⁷ www.goodnatureagro.com

⁴⁸ www.goodnatureagro.com

on 5-20 ha) and smaller farmers are excluded from support. There are some technical / agronomic reasons for this, e.g. difficulty in managing quality specifications on very small plots but in effect the programme is then oriented towards a relative elite of producers. The imperative for financial sustainability results in an orientation to bulk commodity markets, whether as a buyer or to facilitate market links for farmers. Seed improvements are thus based on industrial market requirements, which has impacts back up the chain to what farmers produce. To meet market requirements means farmers must adopt Green Revolution technologies such as pesticides and synthetic fertilisers. This in turn reinforces the Green Revolution and complete commercialisation as the only feasible development model.

5. Dairy value chain in Southern Province

5.1 Overview of the dairy sector

The second component of the GIC programme in Zambia is investment in smallholder market access in dairy value chains in Southern Province. The dairy industry in Zambia is historically dualistic. The formal market takes up approximately 20% of all milk produced in Zambia, amounting to 40 million litres of the estimated 220 – 250 million litres produced annually (Kawambwa, et al., 2014:12). A small number of commercial farmers (those with over 50 animals) supply over 70% of the formal market share. Emergent farmers (11-50 cows) contribute roughly 20%, with the remaining 10% made up small-scale farmers (1-10 cows) (ACF, 2012:2). Smallholders in the 'traditional' sector, produce the majority of Zambia's milk sold and consumed through local, informal channels (Kawambwa, et al., 2014). Per capita annual milk consumption is low, averaging 19.5 litres compared to 200 litres recommended by the World Health Organisation (WHO) (ACF, 2012:1). There is thus scope, and considerable effort from multiple players, to support growth in the sector, largely focused on increasing smallholder productivity (Kawambwa, et al., 2014).



Market structure plays a significant role in the dairy sector. Prior to privatisation of the economy and the dairy industry in 1991, the state-run Dairy Produce Board of Zambia was the sole milk processor and controlled the formal milk industry. Post-privatisation saw an increase in the number and capacity of processors, currently estimated at “about 20” processors of varying capacity (ACF, 2012:2). However, three companies dominate the market. The Italian multinational corporation Parmalat is the largest processor, followed by Varun (Cream Bell). Together the two companies buy the majority of milk from large- and medium-scale commercial operations, as well as milk collection centres (MCCs) along the main transport routes. ZamMilk, a subsidiary of the Zambian agriculture company Zambeef Products Group, is the biggest single dairy producer in Zambia, producing 90% of its own milk.

Zambia also imports a substantial 2 500 - 3 000 tons of milk and milk products annually (Kawambwa et al. 2014). Powdered milk (also reconstituted into white milk) and ultra-high temperature processed (UHT) milk is imported from South Africa and Kenya, with regional trade liberalisation (particularly under COMESA) opening the Zambian market further to outside competition. In 2012, Kenya could sell milk in Zambia at the same price as that which was paid to farmers by MCCs, before any processing and packaging had taken place (ACF, 2012:3). Imported milk prices versus local costs of production is a factor that significantly threatens local producers who cannot compete with imported milk sold in supermarkets (Lusaka Times, 2017).

In 2012, only 15% of the country's estimated dairy production potential was being realised (ACF, 2012:1), with 42% of processor capacity utilised as a result of a large number of new entrants following privatisation and deregulation from the single-channel Dairy Board after 1996 (Sutton and Langmead, 2013: 29). Processors have the largest value share in the milk value chain (53% of end product value), followed by farmers (28%), supermarkets (13%) and the cooperatives (7%) (Kawambwa et al. 2014:32). The limited number of processors leads to local monopolies. Processors in Zambia have control over the chain including over the smallholder run cooperatives and farmers that are price takers (Kawambwa et al. 2014:21). Milk prices are “basically dictated by the processors. The possibilities for farmers to translate high input costs in better prices are very limited. To be efficient in production is about the only [mechanism] for many farmers to make sure they generate a positive income. The price was determined by the processor and this price was passed on to the farmers. The processor had control over the chain including the cooperative” (Kawambwa, et al., 2014: 21).

Production costs versus farm gate prices appear to be the biggest limiting factor for small-scale dairy farmers. In the 2012 report, production costs for small-scale producers were estimated at \$0.27/litre (compared to \$0.33 for emergent and \$0.30 for commercial farmers). However MCCs were found to purchase milk from small-scale producers at an average of \$0.39, as opposed to the larger farmers that sell directly to processors at an average of \$0.50 litre (ACF, 2012:2). Geographical location and transport infrastructure play a significant part in price structuring to small producers, with those in Central and Southern provinces receiving better prices than those in more distant districts of Chipata, Mongu, Mbala and Mpika (ACF, 2012:2). Small-scale dairy productivity per cow averages 2 litres per day, as opposed to emergent farmer (who also keep cross breeds) production of between 12 and 15 litres, and commercial producers' average of 17 to 24 litres per cow per day. State veterinary services were greatly undermined in structural adjustment programmes and are still a significant gap in service for small-scale dairy producers, both in geographical access as well as affordability. High costs and lack of animal feed inhibits small-scale productivity that falls sharply in the dry season (Kawambwa et al. 2014:12).

Small-scale production is said to have doubled between 2007 and 2010, attributed “to the establishment of MCCs by stakeholders in the subsector and positive emergence of raw milk buyers” (ACF, 2012:2). Dairy industry development through farm blocks is also a strategy seen to support the sector. In 2016, Xamtium Dairies Zambia (a corporation registered in the US), was awarded 5,000 ha of land in the Luswishi Farm Block in Lufwayama District, Copperbelt Province. The corporation pledged to invest US\$18.9 million over 5 years in a dairy farm and UHT processing plant, create 700 jobs and provide 250 small-scale producer opportunities (Dairy Reporter, 19 February 2016).

A Musika/SNV report argues that the scope for growth in the dairy sector in Zambia will come from the 'traditional sector', provided input supply systems are improved - including access to improved breeds, enhanced animal management and veterinary services. In turn, these are anticipated to increase capacity for building herd size and economies of scale (Kawambwa et al. 2014:12).

5.2 OWNH support to SNV's Market-led Dairy Innovations Project (M-DIP)

The GIZ GIC project operationalises the OWNH initiative in the dairy sector. The GIC aims to address key production bottlenecks in the value chain, particularly focusing on the scale of dairy cooperatives. The premise is that well-organised, -governed and -skilled cooperatives can act as mechanisms for the provision of services rather than merely as milk collection and sales depots. It is envisioned that cooperatives could develop to offer goods and services such as agro-inputs, technical and veterinary advice, skills training, access to credit, as well as bulking and enhanced marketing services to their members. The ultimate benefits to be realised are improved yields, profits, incomes, and livelihoods of small-scale dairy producers⁴⁹.

SNV is the implementing agent for the GIC Dairy Value Chain project. SNV has a long history of working in Zambia, in the dairy sector and with smallholder cooperatives, particularly in the development of a dairy hub in the Copperbelt, and previous work with Agriterra. The SNV 'Market-led Dairy Innovations Project (M-DIP) is a private sector-led model for cooperative development, used previously in SNV programmes. The first phase of M-DIP runs from October 2015 to December 2017, with potential for an extension beyond that. With support from GIZ, SNV sought to expand the M-DIP project in Southern Province, to reach 10,000 smallholder farmers, working through eight established cooperatives⁵⁰. The cooperatives in Southern Province are of varying degree of organisation and capacity. Membership ranges from 50 to 1,000 farmers and fluctuates depending on the time of year and production capacity. Average herd size of farmer members is 10 head, but many farmers have only 2-3 milking cows, with very few milking between 60 and 1,000 animals.

Through the direct market-based approach, M-DIP links cooperatives to commercial buyers. In the case of the Southern Province cooperatives, Parmalat is the main buyer. Verun also buys in the province but is not part of M-DIP. Farmers produce milk and send it to their coops, which aggregate and the milk is either fetched or sent to Parmalat in the centres. The project stresses

⁴⁹ Interview, GIZ, Lusaka, 15 February 2017; Interview, SNV, Lusaka, 13 February 2017

⁵⁰ Magoye (Mazabuka District); Monze; Niko and Namwala (in Namwala district); Batoka and Choma (in Choma district); Kalomo; and Zimba.

the importance cooperative business sustainability, farmer access to commercial inputs, business support and credit. In order to achieve this, the M-DIP model aims to address all aspect of dairy cooperative development, through seven main work areas, identified in the GIC as 'innovation fields': cooperative governance, financial services, input supply business linkages, dairy skills, feed and the feeding regime, breeding and markets.

GIZ argues that institutions and their management are key, particularly in the dairy industry. Cooperatives require a stable structure and governance system in order for members to know their rights, enhance efficiency, transparency and member participation⁵¹. In the case of the Magoye Cooperative, SNV supported the development of a 5 year strategic plan for the cooperative, through FOSAP, a private consulting company. The plan includes facilitating and promoting improved technology at both farmer and cooperative level; promotion of financial services; facilitation of linkages between farmers and commercial input suppliers; strengthening cooperative governance and administration; and establishing a milk processing unit for business sustainability of the cooperative (Magoye DFCS 2016). The strategic plan provides a framework for investment. However the plan was developed by outside consultants and according to the manager at the Magoye Cooperative, the members may not know how to use it⁵².

The GIZ project also supports the National Dairy Platform, working with the Dairy Association of Zambia (DAZ), which is the national body intended to support farmers and lobby on their behalf. The platform holds regular regional meetings in Southern Province and has a campaign to promote milk consumption nationally⁵³. The Magoye cooperative is a member of DAZ. A milk levy (K0.1125/litre) is paid to DAZ for this membership, however the value of membership is not certain. "I would say DAZ could leave and there would be no effect", according to Magoye's manager. Concerns were raised about the dominance of the big processors on the Board of DAZ. Farmers may at times have different interests to the processors but they have limited influence in DAZ.

With regard to financial services, M-DIP supports a Savings and Credit Cooperatives (SACCOs) initiative and an Innovation Fund for smallholders. SACCOs are farmer-run savings schemes, where farmers pool their savings and then get loans at lower interest rates (30-36%, with micro-lenders charging at 70% at the time of research). Members can also get "in kind" loans, not only cash, e.g. they can get animals from breeding centres. The savings activities only started in 2016, and the first loans with a total value of around K60-70,000 were going out at the end of February 2017. At the moment only those involved in saving can get loans, of up to three times what they saved. Not all farmers are members yet but they are being encouraged to join⁵⁴. Farmers at Magoye are a bit skeptical of the saving scheme, having seen problems in other coops in the recent past. Farmers were also harmed in a poorly conceptualised loan scheme involving Zanaco to buy inappropriate cattle breeds from South Africa, which has pushed farmers into debt without improving productivity⁵⁵.

⁵¹ Interview, GIZ, Lusaka, 15 February 2017.

⁵² Interview, Fulgasio Ndungu, Manager, Magoye Smallholder Dairy Farmers' Cooperative, Magoye, 16 February 2017.

⁵³ Interview, SNV, Lusaka, 13 February 2017.

⁵⁴ Interview, SNV, Lusaka, 13 February 2017.

⁵⁵ Interview, Fulgasio Ndungu, Magoye Cooperative, Magoye, 16 February 2017.

The GIC dairy intervention also has an innovation fund open to all the M-DIP project work areas. Farmers are required to contribute 40% of their business plan amount, with 60% granted by the fund, to a maximum of K100,000. Nine grants have been awarded to date, covering private sector activities on vet services, feed projects, breeding and dairy management⁵⁶. The Magoye Cooperative stated that a number of cooperative members had applied for the grant, however they found the application process too complicated, and none were selected. There are no farmer representatives on the selection panel that consists of SNV, GIZ and DAZ representatives.

On business to business linkages, SNV facilitates brokerage events inviting a range of private sector service suppliers and farmers, including agro-dealers from amongst farmers. Specific links that have been made to date are private vet services and supply of machinery⁵⁷.

On dairy skills, the GIC is looking at how to provide support to pre-existing Practical Dairy Learning Centres in Southern Province, and to deepen their technical support to farmers⁵⁸. The Learning Centres are framed as centres of excellence. They have cows for practical training. The idea is that they must run as businesses and as a result they sell milk to generate income. Farmer training is done in small groups, with a fee levied on training. GART, which previously had a dairy project, provides the training. Three quarters of Magoye Coop members have previously received training on basic dairy knowledge, provided by Land o' Lakes, SNV and Farmer Organisation Support Group (FOSAG). The training centre servicing Magoye farmers was meant to have been handed over by M-DIP to the cooperative, but this was not yet done at the time of the research. The manager at the Magoye Coop raised some questions about space for participation in decisions and some design flaws (e.g. design was meant to be modular to allow for expansion, but it is not)⁵⁹.

On feed and the feeding regime, there is a major issue of shortage of feed in the dry season, and fodder production is a means to overcome this. The GIC is supporting the production of 40 ha of fodder pasture in Magoye. Two farmers are involved in the first stage, one with 30 ha (20 ha Rhodes grass, 10 ha velvet beans), and the other with 10 ha of brachiaria grass. The fodder will be harvested, baled and brought to the coop and sent out with farmers when they bring their milk in. There will be a five year contract agreement with the participating farmers. The farmers will receive inputs and then sell 60-70% of the output to the coop, with the remainder sold by the farmer for their own account. The coops selected participating farmers. Choma and Monze coops are doing mixing.

The project only started in 2017. Members would like to expand the activities but there are some constraints, including land access (current projects are on state land), knowledge and inputs including certified seed (very expensive at K5,000 for 5kg), fertiliser and land preparation. It is still the first season, so the farmers can't really see whether the fodder crop is established. It is growing in the natural veld. Further, Rhodes grass isn't harvested in the first season; it must go to seed and reproduce, and then is harvested in the second season⁶⁰.

⁵⁶ Interview, SNV, Lusaka, 13 February 2017.

⁵⁷ Interview, SNV, Lusaka, 13 February 2017.

⁵⁸ Interview, GIZ, Lusaka, 15 February 2017.

⁵⁹ Interview, Fulgasio Ndungu, Magoye Cooperative, Magoye, 16 February 2017.

⁶⁰ Interview, SNV, Lusaka, 13 February 2017; interview, Fulgasio Ndungu, Magoye Cooperative, Magoye, 16 February 2017.

On breeding, the project is targeting 1,000 cattle to be inseminated for improved breeds, partnering with National Artificial Insemination Services based in Mazabuka. They planned to work with farmers with a minimum of 50 animals each, but there were fewer animals than required, so farmers pooled their cattle to meet the quantity requirement. 32 Farmers are participating in this way. Herd sizes are from eight to 50. The project provides improved genetics provided for breeding – Friesian, Simmental and Jersey. With pure animals, sexed semen is provided for insemination; with good cross breeds, ordinary pure semen is provided; and with local animals where the body condition is not as good, ordinary semen is provided. The farmers who contribute their animals get the benefits of the breeding programme. SNV covers 30% of the costs, with farmers covering the rest themselves⁶¹.

Finally, on markets and pricing, the basic premise of the programme is integration of small-scale dairy farmers into commercial value chains. The programme operates throughout the value chain. Parmalat buys from the coops. The coops operate on a 45km radius catchment area. There is also a service centre 17km from the Magoye coop. More distant farmers take their milk to the service centre and the coop collects from there and takes the milk to Mazabuka. Parmalat collects directly from Magoye. The milk is tested for freshness, density and mastitis. Parmalat grades and pays according to the bacteria count. The coops have milk tanks, most of which were donated. Coops deduct a levy on sales to manage the coop business and the infrastructure. Few are breaking even at the moment.

There are a few challenges. The main issue is that the processors set the price. Parmalat had a meeting with the coops to explain global market difficulties and exchange rates. They showed a price comparison with other countries, and showed that Zambian farmers were being paid better. But, according to the manager at Magoye Coop, in other countries, for example Germany, farmers are subsidised. The farmers would prefer to have two processors who can compete with each other, rather than having an arrangement with just one processor which gives it monopoly power. The bacterial count undertaken by Parmalat is also done without input from farmers. Milk lasts up to two days in the tanks. But sometimes the processors do not collect milk and farmers have to carry the loss.

Farmers are not doing any value adding yet. SNV is encouraging farmers to go into processing. There are some local sales but it is not a big market. One coop is doing processing into cheese and yoghurt. There is good demand in local markets. The aim is to expand to wider markets over time, for example ice cream in Zimba. However, there are limits to sales into local markets. For example, Magoye already has a lot of informal production. Farmers are selling through vendors and not coming to the coop, who market at Mazabuka or around the area at a lower price for sour milk. The Magoye Coop has attempted value addition on yoghurt, but people prefer sour milk and it is much cheaper (K4/litre for yoghurt compared with K1/litre for sour milk)⁶².

⁶¹ Interview, SNV, Lusaka, 13 February 2017.

⁶² Interview, SNV, Lusaka, 13 February 2017; interview, Fulgasio Ndungu, Magoye Cooperative, Magoye, 16 February 2017.

6. COMPACI and the cotton value chain - reflecting on past donor initiatives

This section looks at cotton and the Competitive African Cotton Initiative (COMPACI) which was operational in Zambia from 2009-2016. COMPACI was initiated by the Gates Foundation and BMZ as a regional cotton project, aiming to enhance smallholder productivity, leading to improvements in household income and living conditions of farmers. Initial thoughts within BMZ to link COMPACI continuation with OWNH did not materialise and COMPACI closed in Zambia at the end of 2016, though it is still operational in other countries. Cotton remains a cash crop option for Zambian smallholder farmers, although contentious and marred by a conflicted history.

6.1 Overview of the cotton sector

Cotton has long been promoted as one of the necessary cash crop options for smallholder farmers as well as an export commodity for Zambia. National production has never reached significant levels however, totalling a “measly 35,000 tons” (Nkana, 2017) a decade ago, and more recently averaging 100,000 tons, although with marked annual fluctuations (Chitah, 2017). Only half, or around 400,000ha, of the potential 800,000ha identified as suitable for cotton production is under cultivation, largely in Eastern, Central and Southern provinces⁶³. Cotton is produced almost entirely by smallholder farmers under outgrower contracts with ginning companies (Esterhuizen, 2014:3). On average, 10% of Zambia's smallholder farmers produce cotton, often on an inconsistent basis dependent on perceived output prices of cotton as well as other cash crops that farmers interchange between (Sutton and Langmead, 2013).

There is a general consensus that the cotton sector in Zambia is in a deep crisis, which has many causes. According to the traders, ongoing low farm efficiency is a key hindrance to the development of the sector, particularly due to high input costs (all inputs are imported), and high costs of product export, all of which are factored into loans to farmers⁶⁴. However, there are several factors that lead to cotton production in Zambia going down by 50% from 2012. (Weng 2017). There has been a tremendous decline in world cotton prices. Over the last years we have seen rather erratic rainfall in the key producing regions.

All cotton goes through the ginners who have substantial control over the value chain. Out of the existing ginning companies, most are foreign owned multinationals, with the biggest six (NWK Agri Services, Cargill Zambia, Continental Ginneries, China Africa Cotton, Alliance Ginneries and Grafax Cotton Zambia), contracting around 90% of the farmers, hectares, and lint production (Esterhuizen, 2014:4). Prior to privatisation in the 1990s, LintCo, a parastatal, had complete control over the market. With the opening up of the sector, the number of ginning companies (both local and foreign owned) increased, coinciding with initial growth in production. However this was shortlived as consolidation of companies around of the world intensified, resulting in reduced competition and increasing concentration of the sector as a whole. NWK and Cargill now dominate the market in Zambia.

⁶³ Interview, Cargill, Lusaka, 14 February 2017.

⁶⁴ Interview, Cargill, Lusaka, 14 February 2017.

Ginners separate seed from the lint. Cotton seed is about 57% of weight, with high levels of edible oil (18-25%) and protein (50%), with potential to add value of 20-25%. Ginners have integrated oil crushing components in their manufacturing facilities (Chitah, 2017:21). Zambian oilseed processors and seed cake manufacturers include Cargill and NWK. Oilseed is used by Zambian oil refiners and animal feed companies in the same manner as soya. Major animal feed companies include Novatek (Zambeef), Tiger Animal Feeds and Meadow Feeds, with the latter two from South Africa.

Lint is about 40% of seed cotton weight when ginned and goes to production of yarn (Chitah 2017:13). Lint production exceeds domestic yarn demand after the textile industry collapsed in 2006 with the expiry of the WTO Multi Fibre Agreement (opened market to China and other Far Eastern countries rendering African textile exports uncompetitive) (Chitah 2017:13). Zambian lint is now predominantly exported, without value addition, to South Africa, Malawi, Indonesia, China, the EU and others. All overseas exports go through Durban in South Africa.

Cotton seed breeding is overseen by the Cotton Development Trust (CDT), with foundation seed controlled by ZARI. Three varieties were released from 1985-2005 (Traidcraft, 2011:29), with the sector too small to sustain a “good” breeding and development programme for cotton seed (Traidcraft, 2011:36). First generation hybrid seed distributed by ginners as part of contract input packages was the overwhelming majority of seed to households surveyed in Eastern Province. Access to seed is not a big issue because almost all producers are contracted and receive seed as part of the contract (USAID/USOFDA, 2013).

Cotton is a major user of synthetic fertilisers and pesticides. In 2009, chemicals amounted to 23% of the farm gate price for medium yield smallholders (World Bank, 2009:40). According to a farmer representative of the East and Southern Africa Small-scale Farmers Forum (ESAFF) Zambia, cotton is recognised to have brought agrochemicals to their farming community in Mumbwa⁶⁵.



⁶⁵ Interview, ESAFF Zambia, Mumbwa, Central Province, 22 June 2017.

6.2 Competitive African Cotton Initiative (COMPACI)

COMPACI⁶⁶ originated as a non-profit entity in 2005 from the Aid by Trade Foundation (AbTF). Its stated objectives were to improve conditions of life for smallholders, protect the environment and develop market access. GIZ and Deutsche Investitions- und Entwicklungsgesellschaft mbH (DEG, a subsidiary of KfW) sat on AbTF's advisory board, along with the Gates Foundation, cotton and textile industry representatives and three German-domiciled NGOs (without farmer representation)⁶⁷. The Cotton made in Africa (CmiA) pilot was launched and ran from 2005-2008, as a private sector, government, and NGO cooperation to facilitate trade as a means to overcome the need for aid. Geared at building an alliance of international textile companies as a market for the CmiA label, with independent verified social and ecological criteria, and licence fees for use of the label reinvested into CmiA (CmiA 2014:3).

Following the completion of the CmiA pilot in 2008, Gates Foundation and BMZ agreed to finance COMPACI 2009-2012, as a four year extension in six African countries, Zambia being one. COMPACI Phase II 2013-2016, expanded to 12 countries, with broadened finance from private cotton companies 47% (Alliance Ginneries Zambia; Cargill Zambia; Parrogate Ginneries/Continental Ginnery and NWK Agri-Services); Gates Foundation 22%; BMZ 20%; AbTF 9%; and Walmart Foundation and Gatsby Foundation 2% between them (CmiA 2014:4). Phase II aimed to reach 30% of cotton farmers in Sub-Saharan Africa, and included food crops (CmiA 2014:4).

COMPACI farmer participants had to be smallholders, managing land average of 1-3 ha and exclusively dependant on rain-fed agriculture⁶⁸. Exclusion criteria also included “inter alia, a ban on slavery, human trafficking, any form of exploitative child labour and deforestation of primary forests. Additionally, there is a ban on the use of hazardous pesticides and of genetically modified seeds” (CmiA, 2014:3). Ginneries needed to abide by selected International Labour Organisation (ILO) standards on contracts, wages, working hours, health and safety, and reduction of negative environmental impacts. 100% compliance was not however required: Plans and activities needed to be aimed at compliance but flexibility was allowed, potentially undermining accountability in implementation.

Activities for farmers undertaken with implementing partners included agronomic training, business training in 'Farmer Business Schools', facilitating access to microcredit and input financing, and strengthening producer groups in cooperatives (CmiA 2014:5). The initiative also included advice and lobbying of African governments to support an enabling environment for cotton production. The initiative had a strong financial approach: Profit analysis; financial planning and services to farmers, including to microcredit; and finance-based commercialisation of the sector.

⁶⁶ <http://www.compaci.org/en/>

⁶⁷ <http://www.cottonmadeinafrica.org/en/about-us/the-foundation>

⁶⁸ <http://www.cottonmadeinafrica.org/index.php/en/standards/criteria#ausschlusskriterien>

Efforts to link OWNH in Zambia to COMPACI did not succeed and COMPACI Zambia closed with no immediate follow-up programme planned. According to GIZ (2016:11): “It has not yet been possible to implement the planned public-private partnership (PPP) that was originally sought on the basis of well-established contacts of COMPACI with Cargill⁶⁹ and NWK, since the applications were not submitted and requirements not met”. “COMPACI was going for a long time but we have to stop at some time”⁷⁰. The expectation that CmiA would be self-financing based on licence fees by the end of 2016 (CmiA 2014:8) was not realised. In a number of group discussions farmers indicated they do not like to produce cotton, the main reason being the extreme volatile and far too low prices they achieved, as discussed above. The problems of COMPACI reflect a fundamental crisis of the Zambian cotton sector. According to the research organisation IIED, farmers currently get very little money after the deduction of loans. In urgent cash needs, they increasingly engage in side selling to companies outside the agreed contracts (Weng 2017). These experiences and tremendous risks for producers within a value chain approach focused on a single crop for a world markets should also be reflected in the design of the current OWNH projects.

7. Commentary and analysis

7.1 Development approach: Value chain integration and Green Revolution

All aspects of development support, from training to extension, provision of seed and other inputs must take place as (potentially) profitable activities or not at all. Farmers are targeted for participation in line with the ideology of ‘farming as a business’, hence “viable” emerging farmers are the focus. The explicit aim is to fully commercialise agriculture and develop a commercial farming class from the smallholder base. There is no specific size range but farming households – or in the reformulation, farming enterprises – must be large enough to run a full-time commercial operation, for example 3-6 ha of seed production (Good Nature Agro), or 10-50 ha of crops and livestock. This approach of top-down construction of a commercial farming class based on selecting the potential winners through targeted investments has the inevitable result of inducing greater inequality, and loss of land and livelihoods for some. This is seen as the unfortunate cost of development, with those who bear the cost sacrificing their well-being for the greater good of national growth and development.

Global corporations in the agro-food system today operate as ‘lead firms’ who exert significant control over a large base of fragmented suppliers/producers. These lead firms shape the conditions for all actors in the commodity chain. In these chains, producers are captive, dependent on buyers that control the chain (BASIC, 2014:22-23). Actors in Zambia recognise this. According to Dale Lewis at COMACO, commodity markets have strong negative impacts and the big companies have very little risk, and farmers are tied to incentives from the big companies. Farmers are price takers, they need money quickly and therefore buyers are at an advantage. In these conditions, farmers have weak negotiating power.

⁶⁹ Cargill Zambia was a significant player in smallholder cotton production; previously contracting 70,000 farmers in Eastern Province, that together with maize and soya contracts, amounted to up to US\$15m in credits. Cargill's has recently shifted procurement, handing over origination activities to Profit Plus (although not guaranteeing to continue purchase from Profit Plus farmers), leaving middlemen to organise production and retaining ownership of its ginnery and storage facilities (Interview, Cargill, Lusaka, 14 February 2017).

⁷⁰ Interview GIZ, Lusaka, 15 February 2017.

The specific value chains the German development agencies have selected for smallholder integration – cotton, soya, dairy – are all characterised by concentration at the trader or processing node. Cotton is a stark example of the unequal power relations globally that shape prices farmers receive on the ground. Large-scale intensive cotton production, with high input levels, is concentrated in a few countries where producers are highly subsidised. As indicated above, in the US cotton producers are amongst the most highly subsidised. This allows them to sell cotton at below the price of production, putting pressure on global prices and on incomes of smallholder farmers even if their production costs and environmental impacts are lower (BASIC, 2014: 39). Niche markets (e.g. organic and fair trade) can work for a while to stave off this pressure, but they have high levels of intervention in production, with onerous requirements, and eventually these niches become mainstream as other producers globally see the profit potential.

Soya also has high levels of concentrated power. Cargill, which operates in Zambia, is one of four corporations⁷¹ that control up to 90% of the global grain trade (BASIC, 2014:19). “Despite an apparently dispersed system of international grain trading, multinational traders coordinate their dominant position to the point that they are in reality price setters rather than price takers in international grain markets” (Turzi, 2017:55). Although the OWNH programme in Zambia links farmers to COMACO rather than one of the big corporations (e.g. Cargill or NWK, which is in partnership with Louis Dreyfus in Zambia), the multinationals structure prices. COMACO can offer a small premium above the prevailing price only for a tiny fraction of the farmers' produce.

Power is reinforced by a project approach where farmers are contracted to just one buyer, e.g. Parmalat in dairy. This produces a local buyer monopoly while on the other side, small-scale dairy farmers are fragmented, lacking access to information or bargaining power. In this case, farmers explicitly stated they would prefer a choice of buyers which may give them more leeway to negotiate prices⁷².

The groundnut case may be somewhat different because in some sense it is a more local crop. There isn't large global demand and farming communities have historically grown and consumed the crop. There is however, urban market demand. This indicates potential for a more localised value chain approach which is discussed further below.

GIZ's chosen method of support to smallholder farmers takes the form of value chain integration through outgrower schemes/contract farming. This model has been questioned in the past. It allows investors to reduce production risks by transferring them to direct producers. “Capital saturates and controls the production process through appropriation (machines, seeds, biotechnology, credit) ... the contract that stipulates specific technologies and inputs is an important juridical and institutional means by which appropriation advances onto the terrain of agro-food production” (Watts, 1994:250). The contracted farmer becomes “little more than a propertied labourer, a hired hand on his or her land”, a “self-employed proletariat ... contract farming is a vehicle to introduce new distinctive work routines, on-farm technologies and labour processes” (Watts, 1992:91). Direct control is exerted over the farmer

⁷¹ The others are Archer Daniels Midland (ADM), Bunge and Louis Dreyfus.

⁷² Interview, Fulgasio Ndungu, Manager, Magoye Smallholder Dairy Farmers' Cooperative, Magoye, 16 February 2017.

through the removal of the farmer's exclusive control over decisions and resources, including decisions concerning inputs, production, and the variety of crop to be grown (Mabbett and Carter, 1999:279). Cotton in Zambia is an example of this. The indication is that farmers are compelled into producing crops they do not necessarily want to produce.

A recent systematic review of the results of contract farming (Ton et al., 2017) found that farmers may enter into contract arrangements to get access to services and inputs which are otherwise more difficult to acquire. Farmers face risk of non-compliance by contracting firms. Better-off farmers are more able to absorb these the risks and therefore relatively larger or richer farmers are more likely to participate in these arrangements. Side-selling or opting out of the arrangement are indicators that the premium offered is insufficient to sustain farmer involvement. This raises questions about the sustainability of such arrangements without donor subsidisation.

Returns for Zambian smallholder farmers from cash crops are miserably low: K600 (around US\$66 at the time of writing) profit in a season for groundnuts, maybe up to K2,600 (US\$286) in a good season for soya, according to GIZ estimates⁷³. Compare these amounts with secondary school fees for one term of K1,000 (US\$110), according to farmers in Mfuwe. There is no way that these are reasonable returns on farmers' labour and use of the natural resources at their disposal. It merely shows the undervaluation of land, labour and agricultural production.

Farmers in Mfuwe said “We are being cheated, we are being disadvantaged ... We have to wait for the market at the end of the season, then they [determine] the price and we have no choice ... So, we have no decision at what price we sell at. It is better to continue to do cotton, soya, maize, groundnuts in case one market is not good, then we hope there will be another Sometimes we end up with two or three hundred kwacha for the crop at the end of the season”⁷⁴. Farmers in other places echoed these sentiments.

This is a perfect example of 'adverse incorporation' (Hickey and du Toit, 2007). Marginalised farmers are obliged to manage their vulnerability “through investing and maintaining forms of social capital which produce desirable short-term, immediate outcomes and practical needs while postponing and putting at permanent risk more desirable forms of social capital which offer the strategic prospect of supporting needs and maintaining rights in the longer term” (Geoff Wood, quoted in Hickey and du Toit, 2007:4). It is unlikely that these conditions will change for smallholder farmers as long as broader structural issues are not confronted. This really gets to the core of the problem with the development approach. It pitches short-term immediate farming household need for incomes against longer-term structural rebalancing that revalues agriculture, internalises some of the 'forgotten' costs on the environment and social fabric, and produces a more equitable distribution of power in food production.

These structural conditions precede the specific OWNH interventions. In comparison to the hegemonic US-driven development model, the 'social and ecological market economy' concept of the German OWNH initiative may be better than one which excludes any

⁷³ Interview, GIZ Chipata, 15 May 2017, based on an sale price of K3.50/kg although in the period of research the soya price had dropped to K2/kg, meaning farmers would only clear K610/ha.

⁷⁴ Group discussion Mfuwe farmers, 17 May 2017.



consideration of social and ecological cost except as a value with a market price. The plans and activities of the OWNH project do attempt to take into account some social and ecological aspects. In practice however, these remain framed within the context of the actual existing global economy and are rooted in the notion that competitive market relations can function in enclaves outside the corporate dominated systems of economic planning that permeate all countries regardless of the extent of their formal integration into capitalist circuits of accumulation.

The GIZ decision to support buyers or processing enterprises (at least in legumes in Eastern Province) with farmer-orientated business models, is an effort to allow farmers to get a better price. But as discussed before, this works for a limited share of produce, and probably for the better endowed farmers.

The design of the interventions ultimately facilitates corporate expansion of the major corporations Cargill, NWK / Louis Dreyfus or Parmalat. This is the case both in the character of output markets – commercial value chains managed by intermediaries – as well as input markets focusing on certified seed which excludes the vast majority of legume crops in the farmer seed system and which restricts the type of support that will be provided to improved seed only from the commercial/formal sector. It will not be possible for foreign donor initiatives to address poverty and improve rural livelihoods in the long run without addressing the imbalances of power that are maintained by global policies and approaches.

7.2 Seed

There are many dimensions to be considered with regard to the OWNH interventions around seed. These include farmer training and capacity, choice of crops and varieties, and impacts on biodiversity, prices and access, certification and quality, and questions about public and private roles in seed production and distribution.

As indicated, Zambia has a history of smallholder farmer participation in the multiplication of certified seed. Efforts to build farmer capacity to produce quality seed is a positive development. Indications are that many of the big seed companies would far prefer to outsource multiplication to a few large scale producers. It is easier, more cost effective, and less management intensive. However, there are not many medium or large scale producers doing seed multiplication who can be convinced that it is profitable for them. Working with smallholders can build technical capacity and widen the base of economic activity. Therefore GIZ's decision to support smallholder seed multiplication efforts are a positive step. Not only does Good Nature Agro work with smallholders on multiplication, but it also works on a number of legume crops, not restricted to those with big commodity markets. In addition, one of its stated objectives is to make quality legume seed varieties available to farmers to reuse for a number of years rather than having to repurchase every year.

However, there are questions about the specifics. The restriction to certified seed is a problem. This is directly related to the private sector model of development because it is based on seed multiplication for sale as a business. Legally, seed producers can only sell certified seed. According to Dale Lewis at COMACO “We were previously doing local seed recovery. It hasn't been bad but there is no market because seed has to be certified to sell. We are still doing it, but not for sale because it is illegal ... we have decided to go the route of working in the system”⁷⁵. In this way, investment is diverted away from diverse farmer seed appropriate for local contexts, and towards standardised certified seed which tends to be in centralised hands because of the complexities of passing through all the hurdles for certification. The direct result is less work being done on alternative legumes. According to Kennedy Kanenga at ZARI Msekera, “ZARI needs to indicate impact with large numbers. The agenda is driven by this. Local biodiversity and demand doesn't fit into this. Sometimes we have minimal input into project formulation and design, this comes from outside”⁷⁶. The 'investment model' that drives work on the ground, means that investors come in and invest money with no long term perspective. “They have invested so they need returns now ... They get their returns and then go, it doesn't matter to them how they produce those returns”. The emphasis on certified seed also converts seed into a commodity where exchange value is more important than the use value to the producing farmers.

This is related to the choice of crops and varieties. Support for legumes as a broad category does have a range of benefits as indicated above, potentially including nutrition and soil health. However, as indicated in the contract farming discussion above, support to farmers through the value chain approach reduces farmers' independent decisions about what to grow. Farmers are handed particular seed varieties that have been identified as having market demand and if they want support, they must grow these varieties. The broader, less visible impact is that identified market demand shapes investment decisions. Work will be done on varieties tailored for industrial processing. This directs R&D away from development of other traits and indeed other crops that may be favoured in smaller niches. Even where formal breeding work is being done on cowpea, for example, farmers indicate that although improved, certified varieties produce a much higher yield, the leaves are hard and cannot be used for relish as done with farmer varieties⁷⁷. The demands of a global corporate-dominated food system thus ends up redirecting seed research work in Zambia.

The impacts on biodiversity of farmer adoption of soya appears to be uneven. Some farmers who participated in the research indicated that they continue to grow their own crops and varieties and have just added soya into the mix⁷⁸. But there are also indications that other more local legume varieties are gradually losing traction in the face of expanded soya plantings. According to Good Nature Agro, “market growth will come from the bigger international markets, that are not concerned about biomass, nutrient needs or water use ... Local varieties accommodate these but there is no market demand”⁷⁹.

⁷⁵ Interview, Dale Lewis, COMACO, Chipata, 15 May 2017.

⁷⁶ Interview Kennedy Kanenga, ZARI Msekera, Chipata, 17 May 2017.

⁷⁷ Informal discussion, Mpezeni coop, 15 May 2017; group discussion Nsefu farmers, 18 May 2017.

⁷⁸ Group discussion, Rufunsa farmers, 19 May 2017.

⁷⁹ Interview Good Nature Agro, Chipata 16 May 2017.

Farmers have grown a wide range of legumes in Eastern Province historically, including cowpea, velvet beans, common beans, bambara nuts, green gram (mung), pigeon pea, groundnut and soya, and a number of legume trees⁸⁰. Zambia has an active campaign to promote soya consumption, including by the Ministry of Health⁸¹. COMACO has a central role in this, as it processes soya for human consumption in Zambia. These are efforts to build secondary markets through increasing local and domestic soya consumption, but mainly as a way of rooting production for the primary market, export. The larger context of the soya boom in eastern Zambia is the drive for producing soya as a protein source for the South African and global livestock sectors, and farmers also consider it that way⁸². The focus on soya and groundnut is primarily based on the potential to connect to commercial markets rather than the specific nutrition benefits in comparison with the wide diversity of legumes being grown. So we should set aside the issue of nutrition as being central to the intervention. The central issue is incomes.

Once the decision to focus on production for commercial markets is taken, a shortage of 'quality' certified legume seed to meet specific market requirements is identified as a key obstacle to the expansion of production for these markets. Across the board, quality seed is conflated with improved, certified seed. This is a central sleight of hand in the whole logic, because the commercial orientation then channels attention towards the conditions for production and dissemination of certified seed. All the rich diversity of legume seed in farmer systems disappears from the picture.

Commercial seed companies have a problem with farmers recycling seed, saying it threatens the viability of commercial activity (Mwansa, 2015:34; Mofya-Mukuka and Shipekesa, 2013:9). According to Kennedy Kanenga at ZARI Msekera, "it has taken us a long time to understand the private sector won't come unless they can make money, which is made in certified seed, not in basic seed"⁸³. As a result there is what amounts to an investment strike until conditions for profitability are secured. In practice this means restricting recycling without royalties going to private companies, which is the basis of the updating of seed laws. The logic is that: i) farmers need certified seed (this marginalises farmer seed); ii) there is need for private sector involvement, because the public sector lacks resources (itself a product of structural adjustment and development approaches); iii) in order to get the private sector involved, there is a need to restrict or discourage farmers from using non-certified seed or recycling certified seed. This latter takes the form of laws restricting the use of protected varieties and propaganda that denigrates farmer seed as inferior, regardless of the actual quality of that seed.

The value chain approach, where farmers receive inputs including certified seed at the start of the season, dampens issues of price and access, but only for those who are part of these schemes. For farmers who are not participating, access and prices will continue to be an issue. According to farmers in Mfuwe, "For soya and groundnut we get seed from COMACO ... [but] we don't have money for certified seed of maize, sorghum and cowpea. We recycle and save seed"⁸⁴. In Nyimba, where farmers are not participating in a value chain scheme, the farmer

⁸⁰ *Informal discussion, Mpezeni coop members, Chipata, 15 May 2017; group discussion Nsefu farmers, Mambwe, 18 May 2017; interview Kennedy Kanenga, ZARI Msekera, 17 May 2017.*

⁸¹ *Group discussion Nsefu farmers, 18 May 2017; see also Joala et al., 2016.*

⁸² *Group discussion Nsefu farmers, 18 May 2017.*

⁸³ *Interview Kennedy Kanenga, ZARI Msekera, Chipata, 17 May 2017.*

⁸⁴ *Group discussion, Mfuwe farmers, 17 May 2017.*

district association says “seed availability is an issue. It is produced somewhere else and comes into district ... High cost is the biggest challenge, farmers cannot afford it ... Certified seed is available but it is too expensive”⁸⁵. In Rufunsa, farmers said “farmers do exchange seed and there are some sales. When you buy local seed you know you are getting the right seed. You can't always trust the seed that comes from outside”⁸⁶.

The high cost of improved seed is a well-known and “severe constraint” to farmers (GFA Consulting, 2016:7). A number of donor programmes directly facilitate access to certified seed (for instance the USAID Feed the Future programme, Mawa project which provides vouchers to farmers in the first season to access certified varieties). However, access to seed is only one component of farmers' costs. For certified seed to perform, potential farmers will also be required to purchase or somehow access fertiliser and agrochemicals. It is also clear that farmers are very reliant on their own activities in saving seed to mediate these shortages. Laws and policies that seek to criminalise this behaviour pose an immediate threat to farmers' ability to access seed and hence to food security starting in these farming communities. In this context, GIZ's decision to limit support to certified seed appears to be going down the wrong path.

There are also questions about public and private roles in seed production and distribution. Good Nature Agro is a for-profit entity. GIZ support to Good Nature Agro follows logically from the developmental approach of private sector-led development as stated in project inception documents. However, BMZ has also explicitly said there will be no financial support for private businesses within OWNH (BMZ, 2015:3), so it not clear why Good Nature Agro, for example, is receiving donor funds as a profit making enterprise. Profit-making organisations should earn their own keep. It is very questionable whether they should be subsidised by development aid funds. We will return to this issue when proposing some possible alternative approaches based on support to rebuilding public sector capacity with regard to seed production and dissemination.

7.3 The Green Revolution project and social differentiation

As the description of the value chain interventions in soya, dairy and cotton revealed, the fundamental problem of linking smallholders to these markets lies in the fact that commodity prices per se are too low to improve livelihoods of smallholder farmers. Within the GIC framework in the soya sector, we showed that the majority of smallholder farmers will not benefit particularly producing soy on 0.5 ha for the mainstream market, e.g. selling it to Cargill. Only the 200 or so “high achieving farmers” that are integrated into a legume seed multiplication programme may achieve reasonable returns. To qualify for this group, a certain spatial proximity, a certain land size, and experience with legumes as a cash crop are prerequisites. The picture in the dairy sector looks similar: For coops of dairy farmers, simply being linked to Parmalat per se does not improve much, as raw milk prices are too low. The more fundamental intervention lies in the tools such as the “innovation fund”, a matching grant that can cover investment such as breeding, vet services and so on. Our interviews suggest that here again, a majority of dairy smallholder farmers are sidelined, as the application process seems to be complex. These findings suggest the price of the attempt to

⁸⁵ Interview, Zambia National Farmers' Union (ZNFU) Nyimba District Association, Nyimba, 18 May 2017.

⁸⁶ Group discussion Rufunsa farmers, 19 May 2017

integrate smallholder farmers into coordinated value chains and fully commercialise their practices comes at a cost. It ultimately aims at a process of social differentiation. Only those who are already better off will benefit and integrate into this model.

This finding becomes even clearer when we look at the other existing programmes of GIZ and KfW. On mechanisation, evidence from the previous partnership between KfW and NWK suggests that the provision of tractors, especially when coupled with interest-bearing finance, is a recipe for failure in the conditions facing resource-poor smallholder farmers. It is an effort to pick the winners, and an attempt at a short cut to class formation and the construction of a commercial farming class. The previous project saw the repossession of the majority of tractors following two seasons of bad rain (none of the farmers has access to irrigation), and interest rates of 30% and above. “No farmer can be truly successful in an environment where they have to pay 30% interest. It is an aspect we need to resolve before we will consider resuming with the project”, according to Pierre Lombard, Chief Executive Officer at NWK Agri-Services Zambia (Calver, n.d.). Agricultural finance is particularly difficult, especially asset finance. From a supplier point of view, if farmers don't repay their loan, a tractor may well be reclaimed, but it is then a used piece of machinery that has minimal resale value.

Smallholder farmers also see the limits of this model. Mumbwa farmers said:

“You have to put everything you earn in the year into paying off that tractor. You need 40-50 ha and above if you are going to pay something for the loan and manage to keep something for the household. Then there are still input costs for the next season. The problem is the banks live in heaven, they don't see there has been no rain, a national calamity for farmers and yet if you don't pay they will give you interest on your interest. They should bring people together to see how to work around things ... A farmer can grow enough if he [sic] has a tractor but now interest rates are 25% and above, it is then a question of the market. If you look at production costs, it is higher than the price we are getting today”.

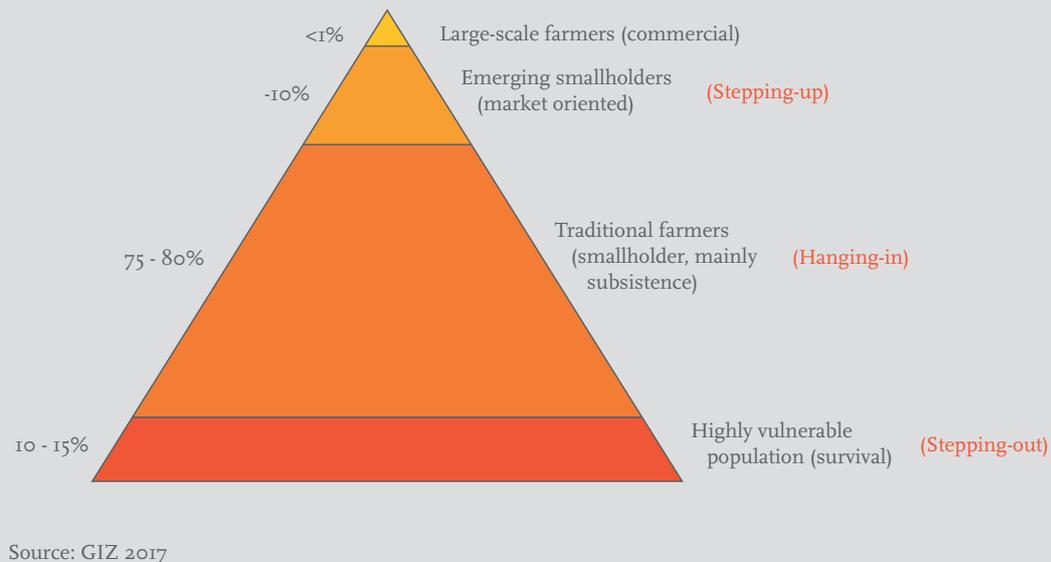
Financing may be of importance to some farmers, but mainly those who are already on the way to becoming commercial. This category is the prime target for Green Revolution interventions in the longer term, but farmers are very unprotected in these agreements. If farmers who receive tractors on credit are unable to pay, they may not only lose the asset but also whatever money they have already put into it. Farmers in Mfuwe said there are times when they have made no profit at all from cotton “Once we've repaid the loan, there is nothing left. They keep saying the prices will be better next year. It has often happened that we produce the crop and are unable to pay back the loan or get only a very small return”⁸⁷.

If we try to understand the underlying rationale and strategy behind the GIC interventions, it is useful to draw attention to rural livelihood change frameworks that have become prominent in the thinking of rural development practitioners in the last decade. Based on the work of Andrew Dorward and colleagues (2009: 6-7), we can differentiate between different livelihood strategies: people may aim to 'develop' in the sense of 'stepping up', which would mean they try to accumulate assets and expand their farming activities. They might aim to 'step out' which, according to Dorward et al., means accumulating assets which are then used to diversify into different products or activities. Third, people in precarious situations may adopt a strategy of 'hanging in'. Assets are held and activities are engaged to maintain livelihood levels, and shield

⁸⁷ Group discussion, Mfuwe farmers, 17 May 2017.

against external risks under difficult livelihood circumstances. While Dorward et al.'s concept of livelihood strategies is focused on the agency of rural constituencies, development practitioners tend to use the concept to differentiate between rural social groups or classes. One recent example is the discussion in the strategic GIZ publication on the role of social security for food security.

Figure 4: Land-based livelihoods in Sub-Saharan Africa according to GIZ



Here, the concept is rather used to differentiate between rural strata of smallholder farmers in Sub-Saharan Africa. Unlike Dorward et al.'s approach, where 'stepping out' implies diversifying their livelihood base from a rather stronger position, here 'stepping out' rather seems to imply 'dropping out', i.e. becoming destitute and migrating away (Scoones 2015:76). If we use this concept as a foundation, we can assume that the GIC and the connected GIZ and KfW programmes on mechanisation and financing are primarily targeting the second group above, i.e. the emerging smallholders who are supposed to be stepping up into coordinated value chains. For the majority of the “traditional farmers” production for the large traders and processors only seem to be of limited gain. Thus, our research shows that the development interventions in the soya and dairy sectors might be 'scale neutral', i.e. smallholder farmers are targeted, but that does not imply that they are 'resource neutral' (Bernstein 2010:105). This has implications for the GIC project indicators. Indicator 1 sets the ambitious target that 35.000 producers should on average get a 20% increase in their profit contribution (see Chapter 3.1.3). We can expect, that if that target will be reached at all, the increase in profit contribution will be highly unequal, with a limited number of producers getting the most. Those farmers who are better endowed in terms of capital, who have better access to markets and aim to expand and transform their farms into fully commercial enterprises seem to be the primary target group. Thus, the development interventions ultimately lead to social differentiation. On the other hand, indicator 4 aims at reducing those funded farming households that are “moderately or severely food insecure”, by 30%. Here, it will be decisive what the absolute number of households is, as we expect that the most vulnerable households in the region will not be part of the project.

7.4 Extension, coops and farmer organisation



Both COMACO and Good Nature Agro provide extension services to farmers and support farmers to organise themselves into cooperatives. This is positive to the extent that some farmers get access to this kind of support in conditions where public sector extension is thinly spread and under-resourced. However, it is precisely this imbalance - between a smaller group of participating farmers receiving exclusive services from private agents, and the majority of farmers who receive limited or no support - that is a concern.

In line with the private sector led development approach, there are efforts in FANSER as well as by Good Nature Agro to construct a for-profit extension and support service. This takes the form of commissions on sales to begin with, but with the longer term objective of completely privatising these services based on a model of selling services to farmers. OWNH is supporting this model, and in doing so has made an explicit choice not to build public sector capacity to provide these services. Which is more sustainable in the long run? It seems that a private extension model is going to lead to services for those 'stepping up' farmers, and other smaller and more marginalised farmers will not receive any extension support. This approach to extension is part of the neoliberal restructuring of agricultural services, a 'demand-driven' approach but only effective demand in the sense that only demand of those who can pay is recognised.

The approach to cooperatives and farmer organisation is similar to this. While the coops are not privatised as such, they appear to be constructed in a very instrumentalist way. “There are issues about development models and the way development organisations engage. Coops are essentially formed to perform a particular function in the value chain”⁸⁸. That is, private sector and development organisations tend to facilitate the construction of farmer organisations based on specific commodities (e.g. dairy), to allow farmers to be eligible for inputs (e.g. FISP coops) or to participate in specific programmes (e.g. COMACO, Good Nature Agro). It is a government requirement that farmers must form coops to access services and support including through the FISPs. They are set up for this purpose and do not provide services to their members. There is limited ownership⁸⁹. They are merely conduits for external inputs and services to members.

In the context of very unequal power relations in value chains, farmers could benefit from greater bargaining power. This means their organisations should have the capability of negotiating on behalf of their members. Individual coops will not be strong enough to do this on their own and therefore some horizontal exchange and connection may be required. It appears that OWNH development interventions are focused primarily on strengthening the capacity of individual coops to operate as business-oriented institutions, hence the emphasis on business training for example. The ability of farmers to develop independent positions and to negotiate collectively for higher prices runs counter to the interests of commercial buyers at whatever scale, who ultimately want to keep their costs as low as possible. Therefore 'captured' farmer organisations which are established and supported by buyers in unequal relationships cannot serve as an independent voice for farmers. The coops as they are structured have little or no effective political or negotiating representation.



⁸⁸ Interview, GIZ, Chipata, 15 May 2017

⁸⁹ Interview, GIZ, Chipata, 15 May 2017/90 Group discussion Mfuwe farmers, 17 May 2017

Smallholder farmers do struggle to form their own organisations. Market conditions may mitigate against collectivising, even if there could be wider benefit from doing so. Farmers explained that individuals often seek to sell their product individually just because they may desperately need money, or can find a buyer who is willing to take their product immediately⁹⁰. Farmers also expressed fears that if they aggregate their produce together and then sell, buyers will take the produce, promising payment later but then not paying farmers. Farmers say they have had experience of this⁹¹.

Farmers should be represented in decision making processes, including discussions on prices as the biggest concern farmers have raised. Timely access to information and transparency is required on project design and implementation, seed pricing, inputs, output markets, etc. Market information is a key issue. Currently farmers are reacting to last season's price data to make this season's planting decisions. The Magoye dairy coop raised a number of concerns about processes in which farmers are not involved in decisions – including the design and functioning of the Practical Learning Centres – but must bear the consequences of decisions. Representation is an issue for farmers across the board. “No one must speak on our behalf”, according to farmers in Mfuwe⁹². Kennedy Kanenga at ZARI Msekera says “farmers need so much info that goes beyond individual benefit ... Does the farmer get a fair share, is there information and transparency? The potential is huge if we do it right ... Farmers are knowledgeable. They have a role to play, and must be recognised as such. There are very good farmers out there”⁹³. At the minimum, farmer representation in decision making processes can assist farmer representatives to understand the wider dynamics shaping prices for example. It can equip farmers to discuss pricing and strategies amongst themselves and present proposals about a fairer process.



⁹⁰ Group discussion Mfuwe farmers, 17 May 2017.

⁹¹ Group discussion Rufunsa farmers, 19 May 2017.

⁹² Group discussion Mfuwe farmers, 17 May 2017.

⁹³ Interview Kennedy Kanenga, ZARI Msekera, 17 May 2017.

8. Conclusion and Alternatives

The focus of the GIC is not fighting hunger directly, but to push commercial agricultural development as the means to overcome hunger and poverty. As the programmes are in the midst of implementation it is difficult to assess the indicators of GIC. However, we expect that indicator 1 (20% increase of profit contribution for 35,000 households) will be unlikely to be met, and will be based on a broad range of increases with few households benefitting disproportionately. Although indicator 4 aims at the reduction of food-insecure households, we expect the poorest households in the respective regions will not be met.

GIC is one piece in the mosaic of the Green Revolution approach among dominant donors. Good Nature Agro and COMACO interventions are not “classical” Green Revolution projects, but rather can be described as “intermediate” approaches between Green Revolution and more ecological approaches, where they are more sensitive to seed and soil matters on one hand, while remaining closely allied with corporations and their private interests on the other. GIC follows the general development trajectory of creating or working with cooperatives in an “instrumentalist” way to serve a development project purpose, rather than as critical and independent farmer organisations. Extension services are privatised and provided to an exclusive group. Public sector institutions such as ZARI are side-lined and replaced by hybrid, for-profit private enterprise NGOs.

The GIC interventions focus on a small number of smallholder farmers and provide them with exclusive access to finance, services and support. The aim is to identify and provide further support to those who can emerge as full commercial farmers (“stepping up”). For the majority of farmers, the gains are minimal and there are longer-term social and ecological consequences that are not accounted for in official programming. A more pro-poor approach, aiming above all to fight hunger in the region, would therefore need an orientation based on fundamental different principles.

(1) Strengthening local markets and alternative supply chains

There is a view that a focus on smallholder agricultural production, local markets and the growth of community-based agro-food systems present a viable alternative. According to this view there is no inevitability in the elimination of smallholder agriculture-based livelihoods. Corporatisation, globalisation and commodification should be resisted and an alternative based on local resources and economies reimaged (Scoones 2011). Promoting and building local markets would start by bypassing bulk commodity crops and focusing on more marginalised crops (and livestock) farmers are already producing. This would need to be accompanied by building public sector capacity to work with smallholder farmers to breed and multiply these diverse crops and varieties. Small-scale, local processing facilities could enable farmers to add value. COMACO's stated goal is to transfer the business to cooperatives over time. But there are also other farmers who want to do processing themselves for local markets⁹⁴. Some farmers expressed clear interest in doing agro-processing at the farm level, either individually or in groups, including of oilseeds (groundnuts, sunflower), milk and honey. At Mpezeni, honey is being bought from farmers and processed by COMACO. Farmers

⁹⁴ Group discussion Rufunsa farmers, 19 May 2017

could add value locally to the product and directly reap the benefits⁹⁵. The idea would be to build links with smaller enterprises that operate locally or in specific provinces. At the very least, donors should cap the size of enterprises they provide resources to, so that multinationals such as Parmalat do not end up being the ultimate beneficiaries of development aid.

Diversification requires interventions throughout the chain, from breeding appropriate varieties to supporting farmer production and to stimulating markets. Good Nature Agro staff indicate cowpea and groundnut demand amongst farmers in Southern and Central Provinces including for the World Food Programme (WFP) and school feeding schemes. USAID has a 6 year programme on Scaling up Nutrition (SUN) which can contribute to legume demand.

Markets can include decentralised markets in towns, public sector procurement, market development in urban areas based on nutritional and health dimensions, diversification of FRA purchases to include 'non-standard' and diverse crops and varieties, and facilitating farmer links to these markets. COMACO is doing this to some extent but at a scale beyond farm or community level and with power imbalances in the supply chain.

(2) Increasing capacities of the public sector

The private sector-led development model aligns closely with the structural adjustment programmes imposed on African governments in the wake of the debt crisis (itself created by the World Bank and International Monetary Fund) in the 1980s and 1990s. This led to a shrinking of public sector capacity and resources to support farmers. The private sector was meant to step in to pick up these services where the state was stepping back. The private sector did so but only selectively, in areas where profits were to be made, hence investments in maize seed, and in selected commodity chains such as sugar, cotton, tobacco and others. But generally, farmers lost access to markets and lost power in supply chain relations, as discussed.

ZARI Msekera is a perfect case in point. It has great historical expertise but this has been marginalised as the impacts of structural adjustment and the neoliberal orientation towards development as a business have filtered into the system. Kennedy Kanenga from ZARI gives an example: “Information on climate change was around 20 years ago. SIDA [Swedish International Development Agency] funded ZARI work for 15 years on fertiliser trees (tefrosia, gliricidia) with support to farmers for 3 years. This was not documented or shared so we are left only with institutional memory. There was a funding gap from 1987-2002 and momentum was lost. Climate Smart Agriculture is now starting from zero with the wrong knowledge”⁹⁶.

In groundnuts, ZARI has already released 14 improved varieties, designed on the basis of local germplasm for specific local conditions. But these are sitting on the shelf because there are no resources for multiplication, promotion or dissemination. ZARI has the knowledge and expertise to expand to other legumes such as beans, cow pea, green gram and pigeon pea. According to Kennedy Kanenga, “seed is required but the information is not there. There is no structure in ZARI that just does seed. We need a separate structure tasked to do seed, to engage buyers of seed, packaging etc. This is not something easily grasped by funders. The private sector is not certain of the market, it is not prepared to invest in R&D ... We also look at what

⁹⁵ Informal discussion, Mpezeni coop members, Chipata, 15 May 2017

⁹⁶ Interview Kennedy Kanenga, ZARI Msekera, 17 May 2017.

farmers are doing traditionally, for example green gram, farmers are growing green gram consistently. If additional resources were available we would be willing to work on improving the varieties. Although ZARI must show large-scale impact, we are open to working on smaller things if there are resources”⁹⁷. Farmers agree: “We should rather work to improve local varieties than bring varieties from outside. At workshops we tell government we want to work on seed improvement but there is no response to date”⁹⁸. At the research report back workshop held in Chipata, officials indicated there was demand for legume seed in other provinces but a shortfall in supply. Smallholder farmers could be supported to meet this demand. Why shouldn't ZARI, as a mandated public sector institution, be supported to rebuild their capacity to work with smallholder farmers in breeding, multiplication and distribution of diverse legume seed? Why does GIZ choose rather to support a private sector start up in exactly the same field? How does this benefit farmers in the long run?

Theoretically, involving the private sector is supposed to relieve the burden on scarce public sector resources and allow the market to operate where it can. Aside from broader issues about the assumptions of competitive markets and development, there are a number of specific problems with this argument. First, leaving seed development and production to the private sector restricts production to varieties that have large-scale commercial potential. As mentioned, this distorts R&D towards varieties for use in industrial processing. It locks out support for diverse varieties and work the public sector is already doing. Second, as is evident in GIZ and other donor and government interventions, private sector involvement itself requires significant resources to get up and running. As the case of cotton indicates, once funding ends, it is not at all certain that the 'market' can (or wants to) stand on its own without constant subsidy. How long have African governments already spent public resources and effort to secure appropriate conditions for private sector investment? The public sector subsidises corporate inputs in the FISP. These programmes are over ten years old already. When do they end? In the meantime, the corporate beneficiaries of these programmes are forming ever-larger conglomerates that are reaching the point of being 'too big to fail', meaning they will insist on government bailouts when their business model collapses. In fact their business model is very much dependent on ongoing public sector subsidies, in the US and Europe and Africa alike.

The private sector will argue that economies of scale are essential for an investment to be sustainable and this is why the focus must be on soya and not other diverse crops. But this is a particular version of the economy which, as we can clearly see, leads to concentration of resources and power and widespread marginalisation and dispossession. It does not permit any space for alternatives. This is a highly risky strategy for food production and distribution, especially in the light of the 2008 financial collapse. This was unanticipated, even while the quants said they knew what they were doing. We cannot afford a collapse in the food system, we need to diversify, to reduce risk.

⁹⁷ Interview Kennedy Kanenga, ZARI Msekera, 17 May 2017.

⁹⁸ Group discussion Rufunsa farmers, 19 May 2017.

(3) Investing in public goods

If agriculture is to receive continuous subsidisation, why can this not be channelled more widely than to a handful of private businesses? Donor support could be better spent on building a broad base of support which is not channelled only to a restricted and exclusive set of farmers. For example, it could be used to build public sector R&D and extension capacity which can benefit all farmers, and to bulk water and transport infrastructure which anybody can access, as public goods. These kinds of public goods investments can also ease the pressure on farming households to have to earn an income by providing services. We have gone so far down the neo-liberal road that it is just normal to expect resource-poor citizens to pay for these essential services. That can probably go for food, too. Public sector subsidies could be used to distribute products from smallholder farmers to those who cannot afford them. Private sector organisations should be required to use their own resources reinvested from their profits to work with farmers. Corporations are sitting on huge cash piles but are relying on donor and development aid to facilitate their control in value chains.

(4) Accessible financing

The manager at the Magoye dairy producers' coop in Southern Province proposes that instead of exposing farmers to exchange and interest rate fluctuations, and the vagaries of the weather which increases risk for farmers, donors should provide a level of protection. He gives an example of the failure of the credit-based provision of cattle with Zanaco a few years ago where farmers were given inappropriate breeds and then were left to carry the cost when the cows died and interest rates went up. The result was that farmers ended up having to pay back loans even though the assets no longer existed. This is playing with people's vulnerability. The manager indicated a different model where the donor (in this case World Vision) fixes the loans. World Vision has a revolving fund where they pay the full amount of the loan up front on behalf of the farmers, and then the farmers repay World Vision rather than the financier. This eliminates interest rate and currency fluctuation risks for farmers⁹⁹. Donors can play a role in protecting farmers rather than exposing them to unmediated financial market forces.

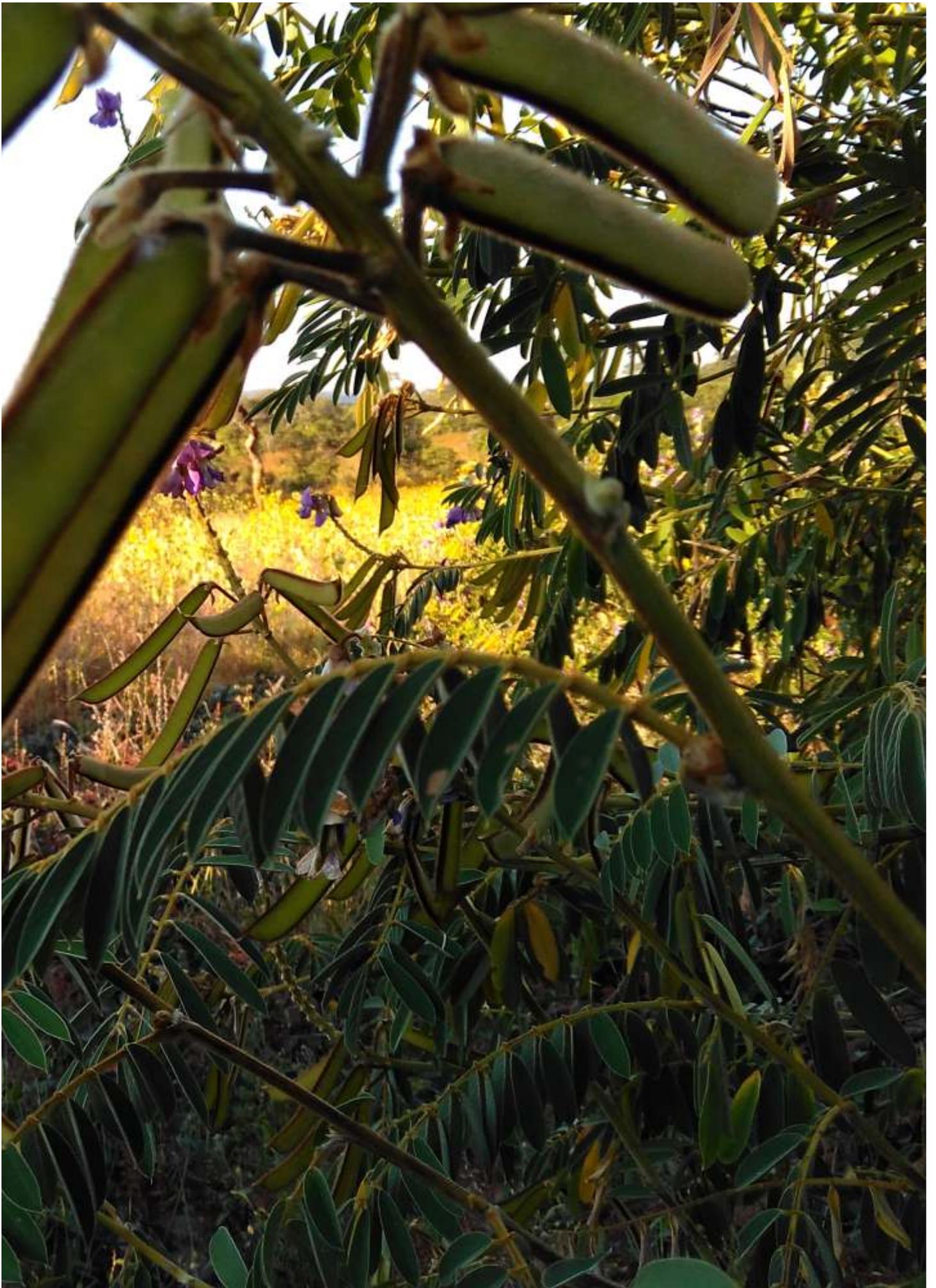
⁹⁹ Interview, Fulgasio Ndungu, Magoye Coop, 16 February 2017.



References

- ACB (African Centre for Biodiversity) 2017 “The three agricultural input mega-mergers: Grim reapers of South Africa's food and farming systems”. ACB, Johannesburg.
- ACF (Agriculture Consultative Forum) 2012. “Performance and competitiveness of the dairy value-chain in Zambia”, Policy Brief. Lusaka.
- BASIC (Bureau d'Analyse Sociétale pour une Information Citoyenne) 2014. “Who's got the power? Tackling imbalances in agricultural supply chains”. BASIC, Paris.
- Bernstein, H. 2010. *Class Dynamics of Agrarian Change*. Agrarian Change and Peasant Studies Series, Fernwood Publishing, Halifax.
- BMZ (Bundesministerium fuer wirtschaftliche Zusammenarbeit und Entwicklung) 2007. “Social and ecological market economy principles in German development policy”, BMZ Strategies 158. BMZ, Bonn/Berlin.
- BMZ (Bundesministerium fuer wirtschaftliche Zusammenarbeit und Entwicklung) 2015. “One World – No Hunger: A brief outline of the special initiative”. BMZ, Berlin.
- Borras, S., Franco, J., Isakson, R., Levidow, L. and Vervest, P. 2014. “Towards understanding the politics of flex crops and commodities: Implications for research and policy advocacy”, Transnational Institute (TNI) Agrarian Justice Program, Amsterdam.
- Calver, P. n.d. “Grow with us”, Africa Outlook, <http://www.africaoutlookmag.com/outlook-features/nwk-agri-services-zambia>
- Chitah, W. 2017. “Cotton and its by-products sector in Zambia: Background paper”. UNCTAD, Geneva.
- CmiA (Cotton made in Africa) 2014. “CmiA and COMACI Competitive African Cotton Initiative background”. CmiA, Koln.
- COMPSHIP 2016: COMESA Seed harmonisation implementation programme, mutual accountability framework meeting proceedings, Addis Ababa, Ethiopia; February 23-24, 2016.
- Crush, J. and Frayne, B. 2010. “The invisible crisis: Urban food security in Southern Africa.” Urban Food Security Series, 1. Queen's University/AFSUN, Kingston and Cape Town.
- Dairy Reporter 2016. “New dairy project set for Zambia. Dairy Reporter, 19 February, <http://www.dairyreporter.com/Manufacturers/New-dairy-project-set-for-Zambia>
- das Nair, R. 2017. “The internationalisation of supermarkets and the nature of competitive rivalry in retailing in southern Africa”, Development Southern Africa online, <http://dx.doi.org/10.1080/0376835X.2017.1390440>
- EPO-online 2014. “Mueller stellt neue Afrikapolitik des BMZ vor”, 21.3.2014, http://www.epo.de/index.php?option=com_content&view=article&id=9949:mueller-stellt-neue-afrikapolitik-des-bmz-vor&catid=45&Itemid=90
- Esterhuizen, D. 2014. “Supply and demand of cotton in Zambia”. USDA Foreign Agricultural Service, Global Agricultural Information Network, USDA FAS, Pretoria.
- Feed the Future 2016. “Zambia early generation seed study country report”. USAID, Washington DC.
- Financial Mail 2016. “AdFocus 2016”. Times Media, Johannesburg
- FoodTrade ESA n.d. “Domestication of harmonised seed trade regulations in East and Southern Africa”, <http://foodtradeesa.com/portfolio-items/development-fund-project-1/>
- GFA Consulting 2016. “Seed study country report Zambia (groundnut, soybean) final”, GIZ, Berlin.
- GIZ. 2015. “Programme proposal for a Global Project: Promoting agricultural financing for agriculture-based companies in rural areas”. Global, PN: 2015.0133.7
- GIZ 2016. “Green Innovation Centres for the Agriculture and Food Sector in Zambia”. Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ) GmbH, Lusaka.
- GIZ 2016a. “Food and Nutrition Security, Enhanced Resilience (FANSER) project in Petauke and Katete districts, Eastern Province”. GIZ, Bonn.
- GIZ 2017. “Die rolle von sozialer sicherung fuer die ernaehrungssicherung”. GIZ, Bonn.
- Global Justice Now 2017. “Honest accounts 2017: How the world profits from Africa's wealth”. Global Justice Now, London.
- Greenberg, S. 2017. “Corporate power in the agro-food system and the consumer food environment in South Africa”, *Journal of Peasant Studies*, 44:2, pp.467-496
- Hickey, S. and du Toit, A. 2007. “Adverse incorporation, social exclusion and chronic poverty”. Chronic Poverty Research Centre Working Paper 61, Institute for Development Policy and Management, University of Manchester/Institute for Poverty, Land and Agrarian Studies, Manchester/Cape Town.
- Imakando M. 2017. “An Initiative to Increase Trade and Regional Industrialisation: The Soya Bean Value Chain.” Presentation at CCRED / PLAAS Workshop “Competition, Concentration and Employment in the Food Sector”, Johannesburg, 23.8.17.
- Joala, R., Zamchiya, P., Ntauazi, C., Musole, P. and Katebe, C. 2016. “Changing agro-food systems: The impact of big agro investors on food rights. Case studies from Mozambique and Zambia”, PLAAS, Bellville.
- Kawambwa, P., Hendriksen, G., Zandonada, E. and Wang, L. 2014. “Business viability assessment study of small holder dairy farming in Zambia”. Alterra, Wageningen UR
- KfW, 2016. “KfW summary: NWK mechanisation programme in Zambia”. 9 February 2016, Frankfurt on the Main.
- Kuteya, A., Lukama, C, Chapoto, A. and Malata, V. 2016. “Lessons learnt from the implementation of the e-voucher pilot”, IAPRI Policy Brief 81, IAPRI, Lusaka.

- Kuteya, A., Sitko, N., Chapoto, A. and Malawo, E. 2016a. "An in-depth analysis of Zambia's agricultural budget: Distributional effects and opportunity cost", IAPRI Working Paper 107, IAPRI, Lusaka.
- Louw, A. and Kapuya, T. 2012. "SADC regional agricultural commodity value chains", report to Southern African Confederation of Agricultural Unions (SACAU), Department of Agricultural Economics, Extension and Rural Development, University of Pretoria.
- Lusaka Times, 2017. "Commercial farmer complains against dairy products flooding local market". 31 January <https://www.lusakatimes.com/2017/01/31/commercial-farmer-complains-dairy-products-flooding-local-market/>
- Mabbett, J. and Carter, I. 1999. "Contract farming in the New Zealand wine industry: An example of real subsumption", in D. Burch, J. Goss and G. Lawrence (eds) *Restructuring global and regional agricultures: Transformation in Australasian agri-food economies and spaces*. Ashgate, Aldershot.
- Magoye DFCS (Dairy Farmers Cooperative Society) 2016. "Strategic plan". Unpublished copy.
- McMichael, P. 2005. Global development and the corporate food regime. In *New Directions in the Sociology of Global Development Research in Rural Sociology and Development*, Volume II, pp.269–303.
- MoA (Ministry of Agriculture) 2013. "National Agriculture Investment Plan (NAIP) 2014-2018". Ministry of Agriculture, Lusaka.
- MoA (Ministry of Agriculture) 2016a. "Second National Agriculture Policy". Ministry of Agriculture, Lusaka.
- MoA (Ministry of Agriculture) 2016b. "Second National Agricultural Policy Implementation Plan 2016-2020". Ministry of Agriculture, Lusaka.
- Mofya-Mukuka, R. and Mofu, M. 2016. "The status of hunger and malnutrition in Zambia: A review of methods and indicators". IAPRI Technical Paper 5. IAPRI, Lusaka.
- Mofya-Mukuka, R. and Shipekesa, A. 2013. "Value chain analysis of the groundnuts sector in the Eastern Province of Zambia", Indaba Agricultural Policy Research Institute (IAPRI) Working Paper 78. IAPRI, Lusaka.
- Mwanamwenge, M. and Harris, J. 2017. "Sustainable diets for all: Agriculture, food systems, diets and nutrition in Zambia". Discussion paper. Hivos and IIED.
- Mwansa, R. 2015. "Investigating trade theory in the case of the Zambian soya value chain", MA research report in Development Theory and Policy, University of Witwatersrand.
- Nkana, N. 2017. "Lusaka cotton sector set for growth". Zambia Daily Mail, 7 June. <https://www.daily-mail.co.zm/cotton-sector-set-for-growth/>
- Resnick, D. and Mason, N. 2016. "What drives input subsidy policy reform? The case of Zambia, 2002-2016", IFPRI Discussion Paper 01572, IFPRI, Washington DC.
- RLS et al. 2017. *AgriFood Atlas. Facts and Figures about the Corporations that control what we eat*. Le Monde Diplomatique.
- Schaefer, N. 2017. "Doppeldeutige Rhetorik – Begrenzte Wirkung. Eine Bilanz der BMZ-Strategie zur Hungerbekämpfung unter Minister Gerd Mueller (2013-2017)", Forum Umwelt und Entwicklung, Berlin.
- Schmitz, S. 2015. "'One World – No Hunger': A look at the German Development Ministry's initiative", *Rural* 21, 01/2015, pp.22-25.
- Scoones, I. Marongwe, N., Mavedzenge, B., Mahenehene, J., Murimbarimba, F. and Sukume, C. 2011. *Zimbabwe's land reform: Myths and realities*. James Currey/Jacana Media, Suffolk/Johannesburg.
- Scoones, I. 2015. *Sustainable livelihoods and rural development*. Practical Action, London.
- Sitko, N. and Chisanga, B. 2016. "How is multinational investment in grain and oilseed trading reshaping the smallholder markets in Zambia?", IAPRI Working Paper, 104, IAPRI, Lusaka.
- Sitko, N. and Jayne, T. 2014. "Structural transformation or elite land capture? The growth of 'emergent' farmers in Zambia", *Food Policy*, 48, pp.194-202.
- Sutton, J. and Langmead, G. 2013. *An enterprise map of Zambia*. International Growth Centre, London Publishing Partnership, London.
- TASAI 2017. "The African Seed Access Index data appendix". http://tasai.org/wp-content/themes/tasai2016/img/tasai_appendix_current.pdf
- Ton, G., Desiere, S., Vellema, W., Weituschat, S. and D'Haese, M. 2017. "The effectiveness of contract farming in improving smallholder income and food security in low- and middle-income countries: A mixed-method systematic review". 31e *Systematic Review* 38, International Initiative for Impact Evaluation (3ie), London.
- Traidcraft 2011. "Cottonseed supply for planting in Africa: A study into the functioning of current structures for research, breeding, multiplication and distribution and their impacts on cotton farmers". Traidcraft, Gateshead.
- Turzi, M. 2017. *The political economy of agricultural booms: Managing soybean production in Argentina, Brazil and Paraguay*. Palgrave MacMillan, Cham.
- USAID/USOFDA (United States Agency for International Development/United States Office of Foreign Disaster Assistance) 2013. "Seed system security assessment: Eastern Zambia", USAID/USOFDA, Washington DC.
- Watts, M. 1992. "Peasants and flexible accumulation in the Third World: Producing under contract", *Economic and Political Weekly*, 27:30, pp.90-97.
- Watts, M. 1994. "Epilogue: Contracting, social labour and agrarian transitions", in P. Little and M. Watts (eds) *Living under contract: Contract farming and agrarian transformation in Sub-Saharan Africa*. University of Wisconsin Press, Madison, Wisc.
- Weng, X. et al. 2017. "Cotton at a crossroads. Making cotton policies work for smallholders in Zambia". <https://www.iied.org/cotton-crossroads>
- World Bank 2009. "Commercial value chains in Zambian agriculture: Do smallholders benefit?" Report No. 48774-ZM. World Bank Agriculture and Rural Development Africa Region. World Bank, Washington DC.
- World Bank 2012. "Agribusiness indicators: Zambia". World Bank, Washington DC.





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