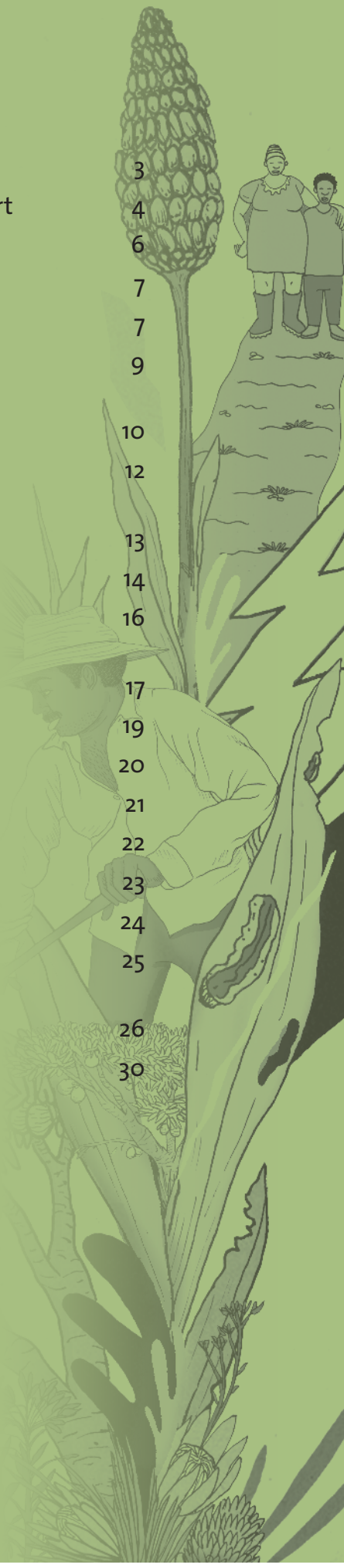
Securing equitable farmer support and the transition from the Farm Input Subsidy Programme in Zambia

May 2019

african centre for biodiversity

ZAAB
Zambia Alliance For Agroecology & Biodiversity

Contents



This report is a co-publication between the African Centre for Biodiversity (ACB) and the Zambia Alliance for Agroecology and Biodiversity (ZAAB).

The African Centre for Biodiversity (previously "Biosafety") was established in 2003 and registered in 2004. ACB carries out research and analysis, learning and exchange, capacity and movement building, and advocacy to widen awareness, catalyse collective action and influence decision-making on issues of biosafety, genetic modification (GM) and new technologies, seed laws, farmer seed systems, agricultural biodiversity, agroecology, corporate expansion in African agriculture, and food sovereignty in Africa.

ZAAB
Zambia Alliance For Agroecology & Biodiversity

The Zambia Alliance for Agroecology and Biodiversity (ZAAB) was formed in 2010 as a united network of concerned citizens, civil society groups and farmer-based organisations. ZAAB advocates for citizens' rights to food sovereignty, embedded within an ecologically and socially just Zambia. ZAAB supports the adoption of agroecology as a holistic, citizen-based solution to sustainably build Zambia's food and farming systems and strengthen resilience against climate change.

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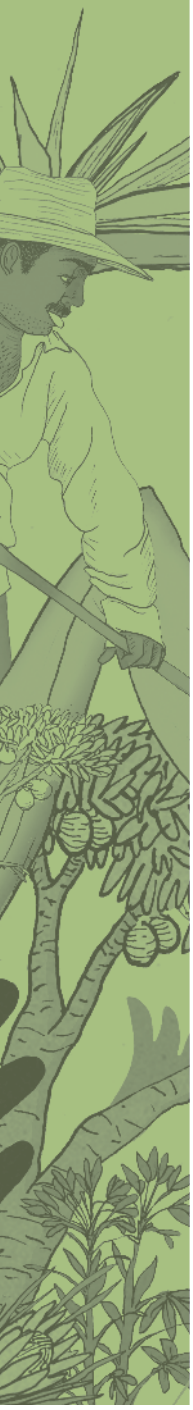
List of Acronyms

ACB	African Centre for Biodiversity
CSPR	Civil Society for Poverty Reduction
CTPD	Centre for Trade and Policy Development
CUTS	Consumer Unity and Trust Society
DUS	Distinct, uniform and stable
E-FISP	E-voucher programme for the Farmer Input Support Programme
FISP	Farmer Input Support Programme
FRA	Food Reserve Agency
GMO	Genetically modified organisms
GR	Green Revolution
IAPRI	Indaba Agricultural Policy Research Institute
NAIP	National Agricultural Investment Plan
NCD	Non-communicable disease
PGR	Plant genetic resources
PMRG	Policy Monitoring and Research Group
SDG	Sustainable development goals
SNAP	Second National Agricultural Plan
SOM	Soil organic matter
ZAAB	Zambia Alliance for Agroecology and Biodiversity



This discussion paper forms part of wider ZAAB-ACB[1] food sovereignty work. The objective is to enable advocacy for the development of a transformatory approach to farmer support and agriculture policy debates in Zambia. Our collective vision is to enable famers to have more control over their production systems and household security,[2] whilst embedding public sector investments in long-term solutions for building a more sustainable and ecologically sound agriculture sector. Such a move would leverage multiple downstream benefits in the local economy and in associated livelihoods, build resilience and go a long way towards achieving the complex targets of Zambian Sustainable Development Goals (SDGs).

The purpose of this discussion paper is to provide a foundational working document for a broader Farmer Input Support Programme (FISP) project. The paper will be used as a basis for further dialogue within ZAAB and in its wider engagements with multiple actors who hold an interest in farmer support and crafting a more equitable food system in Zambia.

1. Introduction – the need for a new conceptualisation of farmer support

Zambia's smallholder farmers are at the heart of a sustainable food system. Providing comprehensive equitable support to the two million farming households[3] is central to solving the chronic malnutrition-development nexus, as well as to achieving broader national commitments to poverty alleviation and long term economic stability and peace.

Farmer support in Zambia is however a highly contested subject with a long history. There is a proliferation of research and public debate on the matter. At the same time, there is an ongoing trend of a lack of accountability and transparency in public spending and of profit making in the private-sector from support programmes that are intended for social benefit and poverty reduction. Of greatest concern is the absence of any significant structural change over the years. Unless addressed, the current limits on farmer support pose a critical threat to Zambia's capacity to build more resilient systems to achieve our multiple and complex development agendas.

Much literature now illustrates the centrality of food within the global prospects for a sustainable and just future for all. The food system is a large producer of greenhouse gas emissions that contribute to climate change. It also provides the greatest number of livelihoods and is the space within which many cultures connect; through ritual and spiritual practices of sharing meals, harvest celebrations, or simple everyday community and family interactions.

1. For more documents please browse the African Centre for Biodiversity (ACB) website, https://www.acbio.org.za/en/ under the category of agroecology and the tag food sovereignty.
2. Including, but not limited to, food security. Farmers control over their means of production enables greater knock-on benefits that impact wider household security measurements: e.g. gendered relationships around decisions on use of household assets, livelihood costs, crops/livestock systems engaged in, etc.
3. The estimate in 2016 was 1.47 million households, or 9.3 million people (Chapoto and Chisanga 2016)

The Stockholm Centre for Resilience[4] illustrates how the failure to achieve the central sustainable development goals (SDGs) linked to sustainable production and consumption – in the context of climate change and the earth system boundaries – means a corresponding failure on every other sustainability goal[5] (see Annexure 1 for further information).

Investing in more sustainable production and equitable consumption in Zambia is thus not only imperative but also the single most effective way to achieve the national development goals. Equitable and sustainable support to smallholder farmers is at the heart of this.

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Zambia's development plans and the web of related international and local policy commitments maintain an overarching emphasis on the ultimate goal of sustainable economic growth "without leaving anyone behind" (7th National Development Plan 2017–2021). Agriculture is central is this development plan. All of this must also be achieved in the context of rapid and unpredictable climate change.

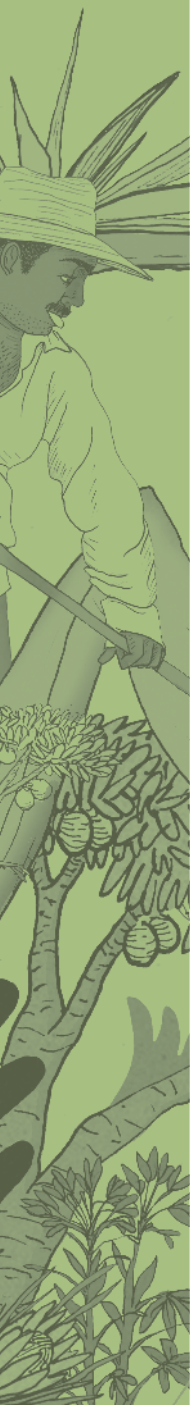
> *The goal of the 7NDP is to create a diversified and resilient economy for sustained growth and socio-economic transformation driven, among others, by agriculture (7NDP, Ministry of National Development Planning, Zambia 2017).*[6]

Zambian policy for the past decades has recognised the importance of farmer support and agriculture sector growth. In practice, farmer support has been narrowly focused on Green Revolution[7] (GR) technologies, orientated towards monocrop maize production and subsidised through government input programmes. These were, first the Fertiliser Credit Programme (1997/98–2001/02), then the Fertiliser Support Programme (2002/03–2008/09) and later the ongoing Farmer Input Support Programme (FISP) (2018/19), which includes e-vouchers and direct input supply. The maize outputs are then double-subsidised through Food Reserve Agency (FRA) purchases of maize at higher than market prices.

Members of the Zambia Alliance for Agroecology and Biodiversity (ZAAB) and their partners have contributed significantly to the FISP debate in Zambia. Extensive and comprehensive research and advocacy material related to this debate exist. This discussion paper provides a background overview of the well-documented policy and development challenges related to farmer support in Zambia. It then focuses on some of the more systemic and cross-cutting issues that are of growing concern. By doing this it does not intend to replicate work already done but rather to provide a working document of cross-cutting information to further the discussion with multiple stakeholders and, most importantly, with farmers.

In the long run, ZAAB hopes to enable the development of a new paradigm for public support of the agriculture sector; support based on the principles

4. http://www.stockholmresilience.org/
5. http://www.stockholmresilience.org/research/research-news/2016-06-14-how-food-connects-all-the-sdgs.html
6. "Furthermore, this Plan responds to the Smart Zambia transformation agenda 2064 and embeds in it the economic recovery necessary for the actualisation of a Smart Zambia. This is in support of the UN 2030 Agenda for Sustainable Development and the African Union Agenda 2063. Distinctively, the realisation of this goal will be achieved through the contribution of a number of developmental outcomes and this makes the 7NDP an effective guide towards Zambia's aspirations of being a developed middle-income nation. The key outcomes include economic diversification and job creation; poverty and vulnerability reduction; reduced developmental inequalities; enhanced human development; and an enhanced governance environment for a diversified and inclusive economy" (7NDP, Ministry of National Development Planning, Zambia 2017).
7. The "Green Revolution" includes a technological package for agriculture production of external inputs (hybrid seed, inorganic fertilisers and agrochemicals), together with finance, mechanisation, and supporting institutions and policy frameworks.



of agroecological farming systems and on enhancing the local resilience of both people and the environment.

2. Background

Zambia's agricultural development context is framed by the global political economy and the onset of anthropogenic climate change with its widespread systemic impacts that further connect the local and global scales. In the early 1990s structural adjustment programmes (SAPs) enabled the opening up of Zambia markets. Public sector goods and services and state-owned industries were privatised and state support was significantly reduced. The effects were, and continue to be, significantly felt throughout the food system. This complex system includes all the activities around food (production, distribution, processing, retail, consumption, waste) together with the encompassing institutional, economic, social, cultural and ecological supporting processes and boundaries. The food system is the biggest employer in Zambia and has considerable environmental impacts and associated opportunity costs. The functioning of the national food system is also increasingly tied to, and affected by, the global economy. The general public feels the impact of this close association most intensely in volatile food and commodity prices, long-term increases in production costs, decreasing gate prices, and associated negative impacts on local livelihoods and household nutrition outcomes.

The structure of today's dominant global food system is defined as a "corporate food regime" (McMichael, 2005). This industrial and profit-orientated regime has increased concentration in markets (with decreasing levels of competition) and is kept in place through western (particularly the US) foreign policy on the extraction of wealth and resources.

The main argument from the corporate food regime is that food availability (how much food is produced) and feeding a growing (poor) global population is the central development concern. The solutions are thus presented within the conceptual boundaries of solving hunger through increased intensive global production. This argument is often used as the basis for increasing the corporate market share in the food system and embedding GR technologies and its associated chemicals, as well as promoting the use of modern biotechnology (to produce genetically modified organisms (GMOs)) and new synthetic biology technologies.

However, *food accessibility*[8] is often the primary constraint for the realisation of the human right to food and nutrition (De Schutter, 2010). Limited food accessibility is most often a factor of poverty that includes significant gendered, cultural and spatial aspects (including public infrastructure). In the corporate food regime, it is multinational corporations that increasingly define both economic and geographic access to food in a locale. *Human agency*[9] is also a central, yet often unrecognised, tenet for the realisation of the right to adequate food and nutrition. This is understood through the concepts of power and control: a person can be defined as food secure – though not necessarily in control over their means of production or access to food that is culturally and gender appropriate, nutritionally adequate or ecologically just.

In the corporate food regime, it is multinational corporations that increasingly define both economic and geographic access to food in a locale.

Commercial market shares matter in thinking about national support to farmers because current agriculture development trends favour and further corporate control. Narrowing diversity in food production – and

8. Relating to the structural barriers to food security, for example there may be food on supermarket shelves but this does not guarantee food on its employee's plates.
9. A person's capacity (as part of a community) to control their own lives and act in a manner that enables the betterment of their own (and collective) livelihood and well-being.

thus consumption – is a direct outcome. In Zambia, agricultural production is increasingly dependent on global value chains and based on corporate-owned knowledge and industrial processes. Farmers are supported to produce monoculture commodity crops to sell for cash, in order to be able to purchase food from the commercial retail sector. The result is reduced, rather than increased, local farmer and consumer agency, and their collective power and sovereignty over food and farming choices. *This means that decisions related to food production and consumption increasingly lie outside the control of those responsible and accountable for food and nutrition security at both household and national level*. This impacts women especially; mothers and carers who are the traditional food and nutrition custodians in households and communities; as well as the state that must carry the responsibility for food security and the negative long term costs of poor nutrition, non-communicable diseases (NCDs), and increasing poverty.

The current global food system, of which farmer support is a part, is reducing national and household sovereignty over food and nutrition decisions.

The industrial food system is a major contributor to global climate change, which affects the poor, especially women, the most.

There is now wide evidence and institutional agreement that conventional agricultural practices based on Newtonian and reductionist theory are no longer capable of producing solutions for today's context.[10] Development paradigms were founded on the Newtonian theory of clear-cut and measurable actions and reactions. We understand today – and feel it in everyday climate effects – that this classical world view is no longer adequate for dealing with the demands and multiple development crises of today's world.[11]

Industrial food production that minimises diversity and strives for uniform monoculture cannot support requisite adaption to changing climate or social conditions. It instead fundamentally undermines resilience. The world needs alternative ecological approaches to agriculture that considers the ecological impacts of production and consumption whilst at the same time supporting the conditions for greater socio-economic equity and individual and collective agency (IPES-Food, 2016).

The recognition of the need for a new paradigm is embodied by the global movement for agroecology, advocated for by a wide range of actors inside and outside institutions around the world.

Zambia has committed itself to the global SDGs under the United Nations. Commitment to the SDGs is a commitment to formulating and implementing policies that consider, incorporate and respond to complexity at various levels, over time and across conventional sector divides. Agroecology principally aims to respond to this complexity.

3. Farmer support in Zambia

3.1 Logic of support

The logic behind support for farmers in Zambia is based on the theory of the GR to commercialise agriculture systems and boost high profit-return production. The GR was promoted between the 1930s and 1960s in Asia as a technological solution to end global hunger. It focused on transferring a package of new technologies, in particular hybrid seeds, inorganic fertilisers and synthetic industrial chemicals developed in the Second World War. These were reinvented to rapidly increase yields and support the industrialisation of agricultural production

10. The Newtonian world view constructs nature and humans as oppositional; viewing nature as a rational machine to be controlled; and reductionist theory reduces agriculture to its basic parts that are possible to manipulate. For instance, soil fertility has been reduced to chemical applications of phosphorus, potassium and nitrogen.
11. Contextualised by the anthropocene definition and understanding.

Photo Credit: Jonathan Odhong'/IITA

and stimulate the global economy. However, the industrial successes came with the long-term cost of eroding the natural resource base and increasing socio-economic inequality amongst farmers.

The first GR did not take off in Africa for many reasons, not least its ecological heterogeneity that meant a standardised package from outside did not fit the African contexts. A second GR for Africa is now in full swing, supported largely by the same institutional groupings as the first, among them the Rockefeller Foundation and USAID. But it has also widened to include other philanthropic, government and development agencies. It purports to consider specific contexts and thus adapt the input package. However, it continues to promote agricultural commercialisation based on a high input, high output production model. This includes high yielding, but resource intensive, crop varieties, chemical inputs, mechanised monocrop production and irrigation – accompanied by with the associated institutional and policy frameworks.

Regional and international institutions and their related governance frameworks encourage African states to integrate the GR model of agriculture into sovereign state policies, often through aligning national strategies with regional objectives. In Zambia the recent National Agricultural Policy 2016 and Second National Agricultural Policy, as well as the National Agriculture Investment Plan (NAIP 2014–2018), were based on the Regional Comprehensive African Agricultural Development Programme (CAADP) Compact and the Maputo Declaration. The forthcoming NAIP (2018–) is being developed with support from the African Union, and is based on Zambia's commitments to the Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods. National seed legislation is also aligned to regional and international standards (such as the Organisation for Economic Cooperation and Development, the Southern African Development Community, the Common Market for Eastern and Southern Africa, the Union for the Protection of New Plant Varieties, and others). There are complex and long term local implications on state, farmer and consumer sovereignty. These are discussed further below.

The first GR was successful in rapidly increasing the production of global food commodities. However, there is increasing awareness of the multiple, wide and ongoing negative impacts that have accompanied this expansion. These include: the major contribution to global climate change, biodiversity loss and extensive and rapid soil degradation; as well as exacerbating rural class differentiation,

increasing landlessness, rapid urbanisation (without absorptive capacity) and the breakdown of rural societies.

The historical view and our understanding of the complexity of agriculture and the global food systems provides perspective when conceptualising anew what equitable farmer support could meaningfully entail for Zambia, and indeed for the region.

3.2 Overview of FISP in Zambia

Farmer support over the past two decades in Zambia has predominately been conceived of as an *input subsidy* – in reality a narrow package including nitrogen-based fertiliser and certified hybrid maize seed – coupled with a maize *output subsidy*. The Fertiliser Support Programme (2002–2008), the Farmer Input Support Programme (FISP) (2009 to present), and the e-FISP (or e-voucher) programme (2016–2018) have, for nearly two decades, been dominant in what has been conceptualised as "farmer support". Input subsidies have been "a cornerstone of Zambia's agricultural policy" (Resnick and Mason, 2016:v).

The focus on fertiliser and maize input subsidies and the creation of a state supported maize market through the FRA annual maize purchases have bolstered annual maize production. However, the overbearing focus on maize has led to a serious demotion of Zambia's biocultural heritage and its agricultural biodiversity, both in the field and on people's plates. The stated aims of the recent move from FISP to e-FISP are to address some of the major impacts on agricultural and nutritional diversity and the historic provision of blanket agro-inputs across very diverse agroecological and socio-cultural contexts.[12]

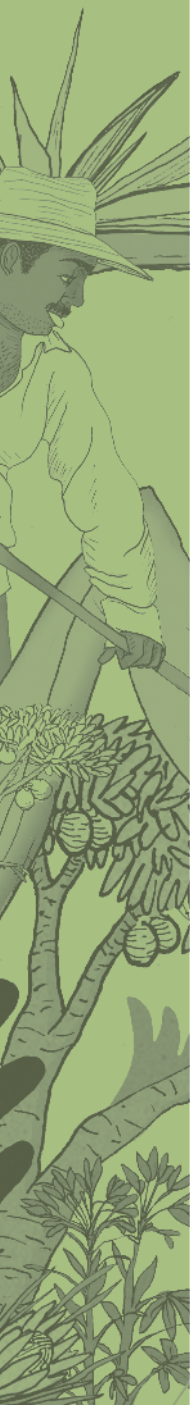
Around one million beneficiaries were targeted in the 2017/18 e-FISP programme, and 98% of these farmers paid the mandatory K400. The e-voucher is targeted at those who can pay – the "small but viable" farmers. Qualifying farmers are offered increased choice through a private-sector agro-dealer distribution network (Kuteya, 2019:16). Bureaucratic delays in payment, accreditation and training were among the challenges. Some farmers purchased a wider range of goods but still from GR technologies: fertiliser, maize seed, insecticides, herbicides, veterinary drugs, dip chemicals, etc. A new requirement for pre-financing of inputs by the agro-dealer resulted in exclusion of smaller agro-dealers who could not afford upfront payment for inputs received. Large-scale suppliers withheld stock until financial guarantees were in place.

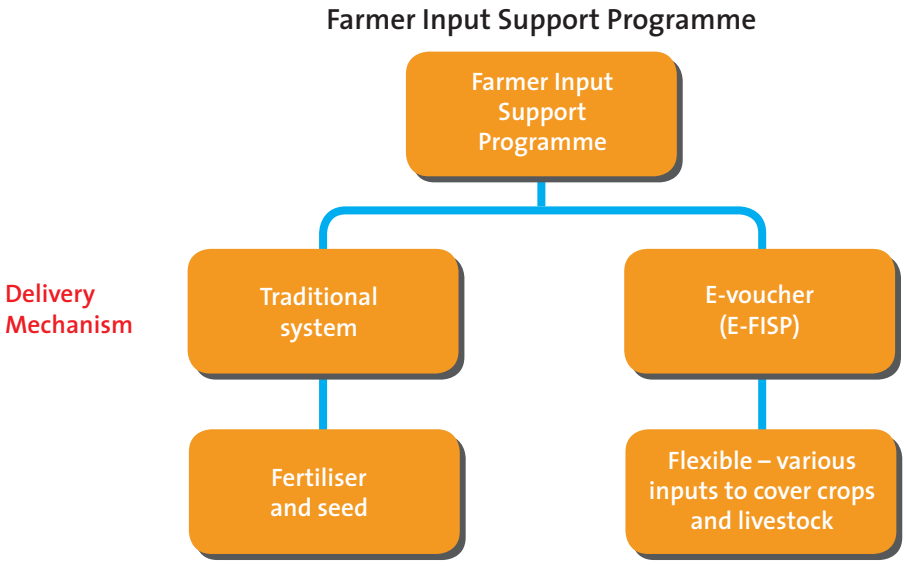
Network connectivity and agro-dealer capacity constraints hampered implementation of e-vouchers and there was a reversion to the traditional direct supply system for just over a third of farmers in 2017/18, with the accompanying problems (Kuteya, 2019:4). A big weakness is the restricted and pre-determined inputs, mostly limited to maize and synthetic fertilisers. Some farmers rejected the inputs as being imposed on them (Kuteya, 2019:13). In addition, there are long distances between seed distribution points.

There has been comprehensive national coverage of the shortfalls of farmer input subsidies through both FISP and e-FISP by various institutions and civil society groups in Zambia, including the Indaba Agricultural Policy Research Institute (IAPRI), the Policy Monitoring and Research Group (PMRG), the Centre for Trade and Policy Development (CTPD), Civil Society for Poverty Reduction (CSPR), the Consumer Unity, Trust Society (CUTS) and others. The input subsidies implemented through the e-voucher mechanism are generally agreed to offer significant benefits when compared to traditional FISPs (Kuteya and Chapoto, 2017). These benefits include:

- Formation of a consolidated and harmonised National Database of FISP beneficiaries.
- Systematised verification and tracking of beneficiaries to eliminate "ghost" or duplicate farmers.

12. In 2018, there is debate once again regarding the next season's input subsidy structure, with initial claims that government was considering reverting to direct supply due to the multiple problems recorded with the 2017/18 e-voucher programme.





Source: Indaba Agricultural Policy Research Institute 2017

Figure 1: Traditional FISP vs e-FISP (e-voucher)

- Formation of monitoring and evaluation systems, improved programme transparency and, particularly, tracking of purchased inputs to enable more informed and smart government interventions.
- Real time tracking of all transactions, including payments (Bwalya, 2018).

E-FISP and FISP, however, remain within the same "type" of agricultural support and its economic framing. Recent literature (Kuteya, 2019; Kuteya et al., 2018) makes it clear that there is heavy private-sector involvement in e-FISP including procurement, distribution to district and local levels, storage, and handling. Diversification is limited to a wider choice within the GR technology package (e.g. agrochemicals, veterinary pharmaceuticals).

E-FISP provides an alternative *delivery mechanism* of inputs that remain within an agricultural model based on the GR and *laissez faire* economic growth (see Figure 1 below). E-FISP offers farmers a choice of inputs dependent on agro-dealer's choice of supplies based on their profit orientation, rather than on public benefit or long term agricultural development. Examples of the latter are discussed further below but include farmer training, enhanced extension services, low-input and diverse integrated farming systems, participatory plant breeding for enhanced local adaptability and the development and conservation of gender and culturally appropriate PGR.

Much literature speaks to the history as well as the impacts of this type of farmer support in Zambia. The dominant and well known critique is outlined and summarised in the table below. Further discussion is then presented that highlights some of the deeper systemic concerns regarding narrow conceptualisation of farmer support and questions are raised for further dialogue in the hopes of building greater resilience in Zambia's agriculture and wider food system.

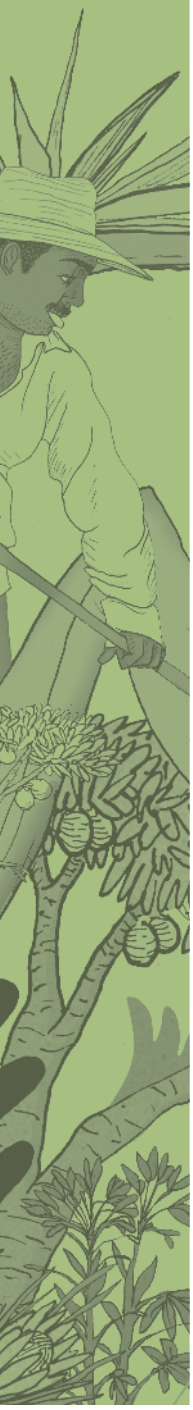
4. Deeper structural implications of farmer support based on a Green Revolution package

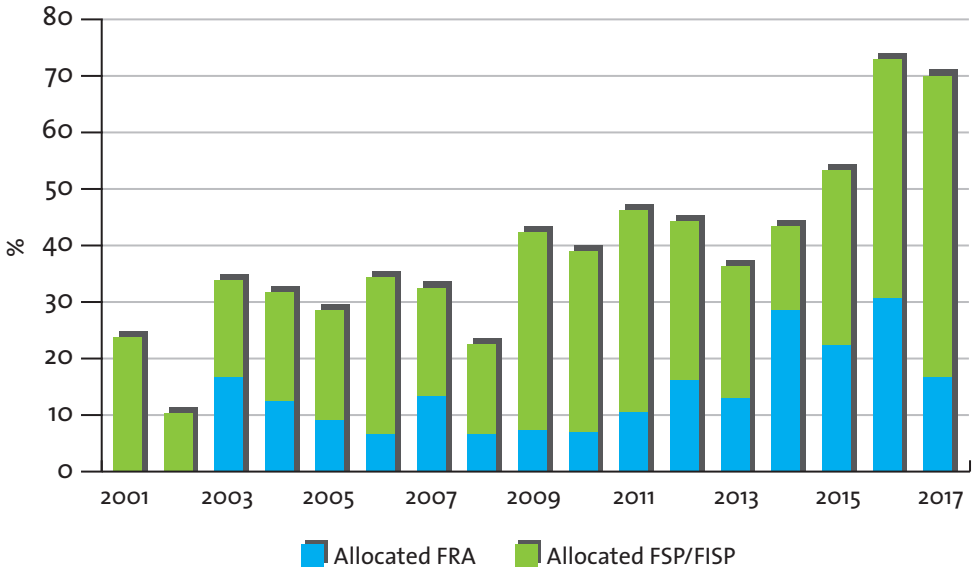
This section unpacks some of the deeper systemic issues that arise from GR-oriented farmer support and the outstanding areas of neglect of farmers' needs and holistic agricultural and rural development.

Table 1: Overview and critiques of Zambia's dominant farmer support programmes from 2002 to present

Mechanism and date	Programme objectives	Programme design	Beneficiary criteria	Frequently documented critique
Fertiliser Support Programme (2002–2008)	• Poverty reduction • Farmer "graduation" to commercial viability and independence • Increase market demand for GR technologies • Boost agriculture productivity • Reduce food prices, raise rural incomes and broaden economic growth • Support rural cooperatives • Improve savings mobilisation • Support farmer learning about commercial inputs	• Government direct supply/distribution system (2002–2008) of package of fertiliser and hybrid maize seed	• Member of farmer co-op or organisation • Registered small-scale farmer (cultivating up to 5ha) • Not benefiting from Food Security Pack • Not defaulter to Food Reserve Agency • Able to pay farmer contribution for inputs • Chiefs are eligible (2012–present)	• No significant impact on rural poverty • Limited productivity benefits (growth related to land expansion not yields) • Crowding out private-sector participation and investment • Long-standing delays in fund transfers, payments and delivery of inputs • Poor management of beneficiary targeting, politicised target beneficiaries and geographical reach • Hybrid maize centric, undermining of agrobiodiversity and nutritional security • Multiple diverse programme objectives, with potential for contradictions in outcomes and limited institutional capacity to resolve
Farmer Input Support Programme (2009–present)		• Government direct distribution of fertiliser and hybrid maize seed, plus occasional inclusion of rice, sorghum, groundnut and soya from 2010		
E-FISP (e-voucher) 2015–)	• As above with enhanced objectives addressing: • Timely distribution of inputs • Improved access and market competitiveness in input supply chain • Diversify agriculture and the economy	• Integration/full roll-out of e-voucher visa cards and compulsory insurance scheme, facilitated through agro-dealers, with input access widened to that supplied by the particular dealer	• Cultivate up to a maximum of 2ha • Livestock farmers included (up to 10 cattle, 30 pigs/goats, or 100 chickens)	• Delayed programme start, delayed response to problem management, delayed/non-delivery/activation of visa cards by contracted banks and government • Limited IT capacity of service providers and support to farmers • Lack of physical presence of contracted banks • Failure of finance institutions and agro-dealers to comply with management requirements • Inadequate funds for programme sensitisation, training, monitoring and implementation of all stakeholders • Nominal impact on agricultural or nutritional diversity • Agro-dealers taking advantage of farmers' lack of choice to demand extra payment or to retain some of the value of the subsidy

Source: Resnick *et al.*, 2017; Kuteya, 2017; Bwalya, 2018





Source: IAPRI, 2017

Figure 2: Share of FRA and FISP in total agriculture budget allocations

4.1 Government budgeting and impacts on institutional capacity

Within the current national agriculture budget structures, which are similar to previous years, farmer support is dominated by input subsidies and FRA maize output purchases (see Figure 2 below). The agriculture budget can be simplified into categories that include:

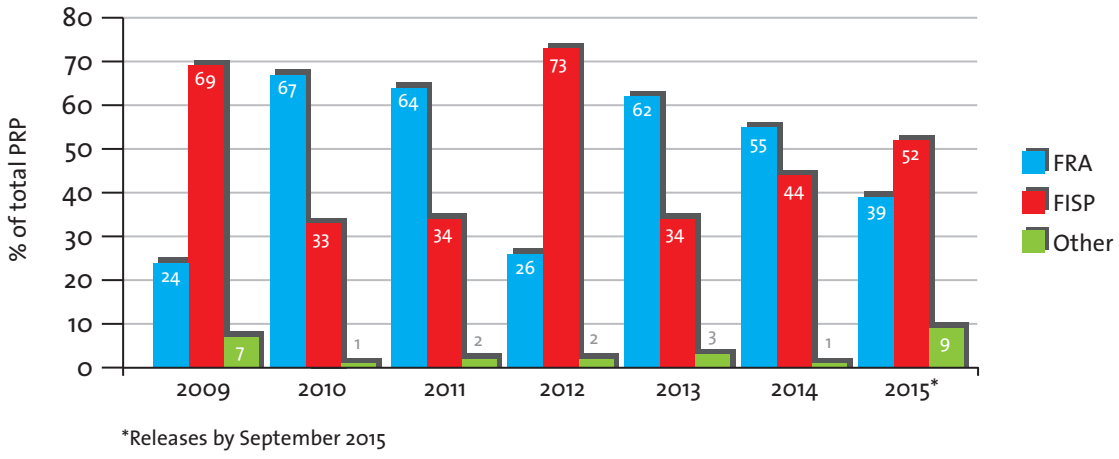
- Personnel and recurrent department costs;
- Poverty reduction programmes;
- Agriculture development programmes; and
- Capital expenditures and grants (Kuteya *et al*., 2016:10).

IAPRI and others illustrate that, for the past decade and half, between 37% and 60% of the total agriculture budget was spent on the combined input and maize-output market subsidy programmes (Figure 2). Slight fluctuations in the structure, budget proportions and geographical reach of programmes can be traced over the years, often dependent on the political economy of the time.

Government support to farmers is largely budgeted for under the Poverty Reduction Programme (PRP) in the national agriculture budget (Figure 3). Government funds are topped-up through donor, private or other government budgets. However, there is limited public access to actual expenditure. Of greatest concern for farmer support is that an average of 93% of the PRP is spent on input and FRA subsidies. Other essential services to farmers – and the basis of the local food system – are seriously underfunded. These include programmes related to agricultural research and development, soil fertility and water management, livestock support and disease control, and training and skills development.

Public institutions that are fundamental to the sustainability and adaptive capacity of any agricultural system have been almost entirely left to the care of donors or public-private partnerships (PPPs). This includes the national Agricultural Research Institutes and their provincial and district level operations, extension services and training institutions, gene banks and PGR conservation and development, as well as state veterinary services.

The results are evident in the considerable constraints that essential public sector goods and services operate for the majority of the population, whose primary livelihoods are derived from agricultural production. This is followed by the decline and narrowing of local markets and related infrastructure, further constraining livelihood options.



Source: Kuteya et al., 2016:12

Figure 3: Government spending on poverty reduction programmes 2009–2014

Public institutions that can attract operational donor funding are swayed by donor programme objectives, frequently defined by foreign, top-down and private-sector-oriented goals. Domestic institutions able to meet the foreign government and donor objectives grow in capacity and influence. Meanwhile, public sector institutions that support public benefit in goods and services, which are not necessarily related to private-sector interests, remain underfunded. They are drained of their intellectual and human resource capacity, and have limited relative power to shape a conducive policy and operational environment.

4.2 Subsidising corporate agribusiness and their entrenched market dominance

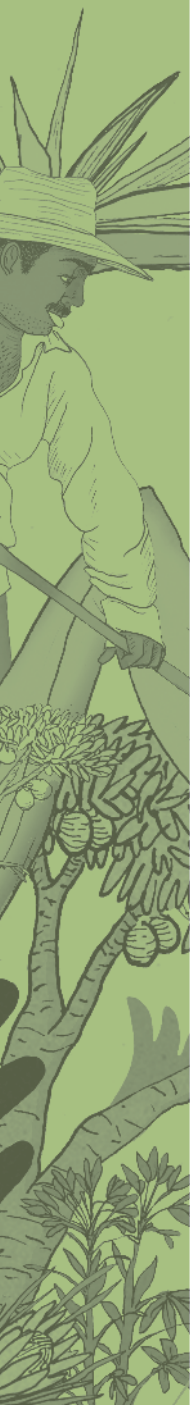
Public discussion and access to information about industry financial reports and market ownership and concentration in Zambia is minimal. There is little attention paid to what traditional economists suggest are "sound" levels of concentration in order to allow for functional competitive markets. Addressing market control was a primary justification of the SAPs, for instance, the dominance of state owned enterprises in the fertiliser and seed sector prior to 1990. Nearly three decades on market shares have turned significantly, shifting from state ownership to corporate ownership and their relative power to control the market.

The four-firm concentration ratio (CR4) rule in mainstream economic theory reasons that, in order for a market to have beneficial levels of competition, the joint market share of the four biggest companies should not exceed 40% of that total market. If they do, they will form what is known as an "oligopoly",[13] and have the combined market power to shape or control the market (ACB, 2017).

Lack of a public voice and institutional regulatory capacity has allowed the increasing market concentration across the agriculture sector in Zambia, which has gone largely uncontested. This has occurred in the input industries in seed and agrochemicals, animal genetics, fertiliser, machinery and – often unrealised, the big, key element – finance (ACB, 2017).

Over time, there has been a clear trend (as occurs around the world) of local or regional companies merging or being acquired by transnational companies, which now dominate the Zambian market, among them

13. An oligopoly exists when a small number of companies hold control over the supply of a commodity and are able to influence prices and directly affect the position of, or undermine, competitors. In resilience theory, an oligopolistic market is very vulnerable to shocks and exploitation in favour of economic gains over and above social and ecological well-being (ACB, 2017).



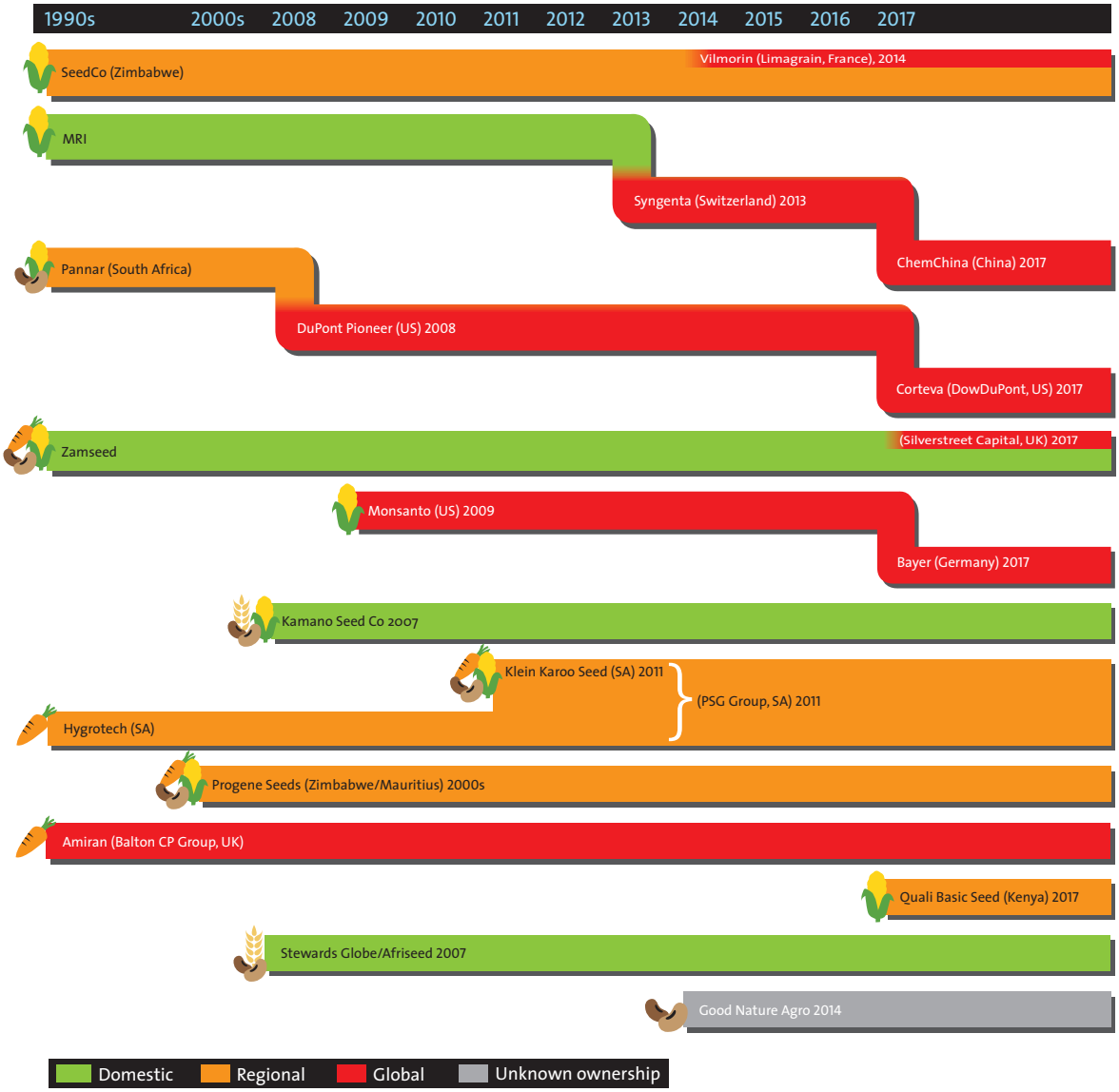


Figure 4: Timeline of seed companies (indicating maize, legumes and vegetables) in Zambia and their changing ownership

seed and agrochemical companies (Figure 4) and fertiliser companies (Figure 7).

More fertiliser is imported into Zambia than before. Regional and global multinationals increasingly dominate the importing, blending and distribution of fertiliser (Figure 7). FISP plays a central role in creating a market for fertiliser multinationals.

According to The Access to Seed in Africa Index (Mabaya *et al.*, 2017), the top four seed companies control 80% of the Zambian maize market, and 100% of the rice, groundnuts and beans. SeedCo, Zamseed, MRI and Pannar are the main seed companies (Figure 4) and are all full or majority foreign owned.[14]

4.2.1 Increasing market concentration

Increasing market concentration is a trend across the Zambian food system. Upstream concentration and market power is evident in processing, distribution and food retail, and is kept in place through strong corporate lobbies such as the Millers Association of Zambia and the Grain Traders Association of Zambia (GTA). In 2017, 24 large scale traders

14. ZAMSEED was bought in part by SilverStreet Capital in 2016, which is now the majority shareholder (as registered at PACRA Zambia).

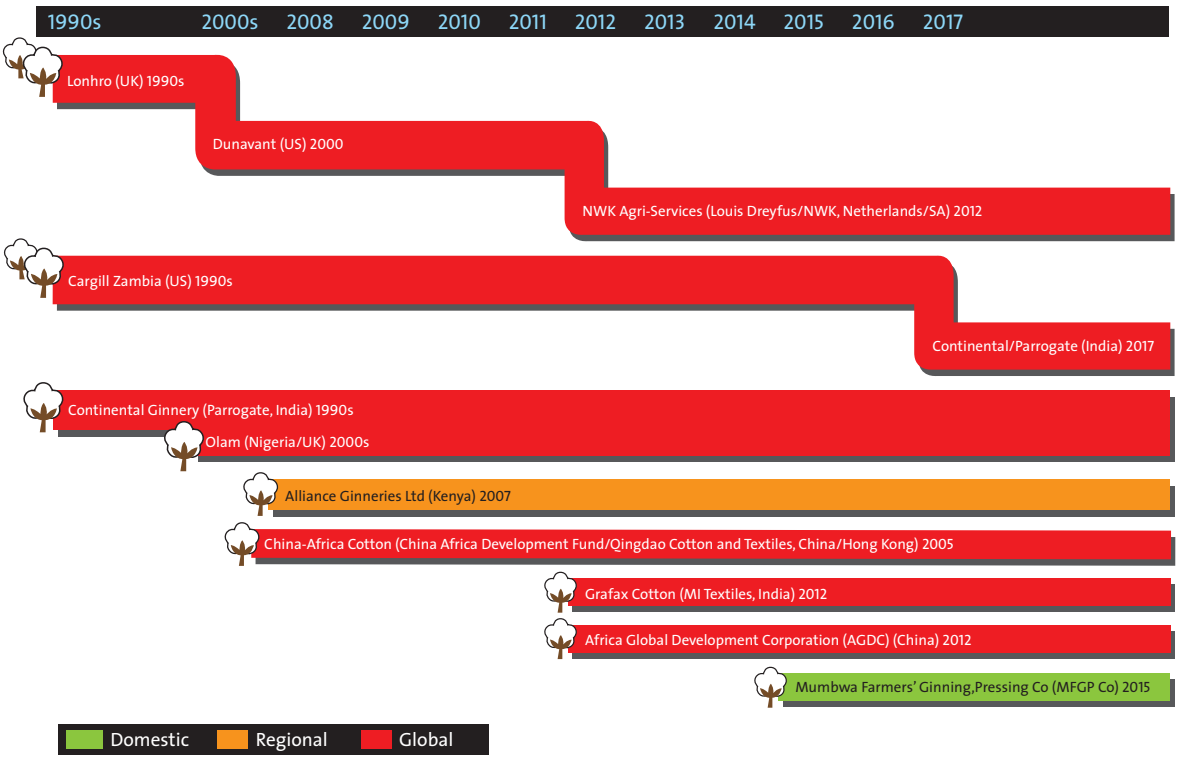


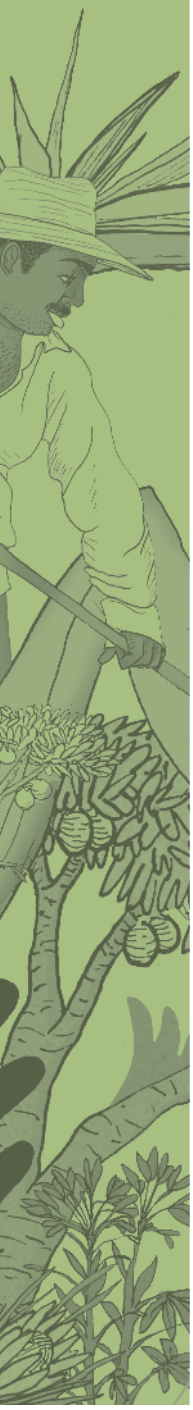
Figure 5: Cotton companies operating in Zambia, and their domestic, regional or international ownership status

were registered with the GTA, of which seven were multinationals. These include Seaboard, Cargill, Louis Dreyfus / NWK AgriServices, ETG Group and Afgri. Foreign supermarket retailers, particularly South African-owned Shoprite, Pick n Pay and Spar, as well as Botswanan-owned Choppies, are rapidly consolidating the market share at the consumer end.

The millers association holds the critical node of power in Zambia's food system, with minimal transparency related to commodity stocks, which makes market predictions for farmers highly uncertain.[15] The National Milling Corporation was a private company nationalised after independence, but then privatised again in 1996 when the government sold its 51% share to Erabus BV, a Dutch subsidiary of Anglo American South Africa. It was sold to the multinational Seaboard in 1998. The company claimed a 25% share of the flour market, a 30% share of the mealie meal (maize) market and a 40% share of the stock feed market in 2013.

Zambia's agriculture development strategy envisions further liberalisation, with the objective of attracting private-sector investment in agriculture and commercialisation of production systems. It rests on the GR logic of increasing profits through intensification and increased productivity whilst reducing input costs through homogenisation, mechanisation and economies of scale. The production of cash crops – globally traded food, fodder and fuel commodities – produced largely through out-grower/contract schemes is meant to enable farmers to access cash, to then buy their food, and to generate foreign revenue for the country through export sales. It however also increases farmers' risk through exposure to the volatility and uncertainty associated with the global food system. This global food system is characterised by price fluctuations, speculation, shocks and structurally inequitable competition through distorted trade subsidies in the US and Europe.

15. Interview with commercial farmer, Lusaka, 6 June 2018



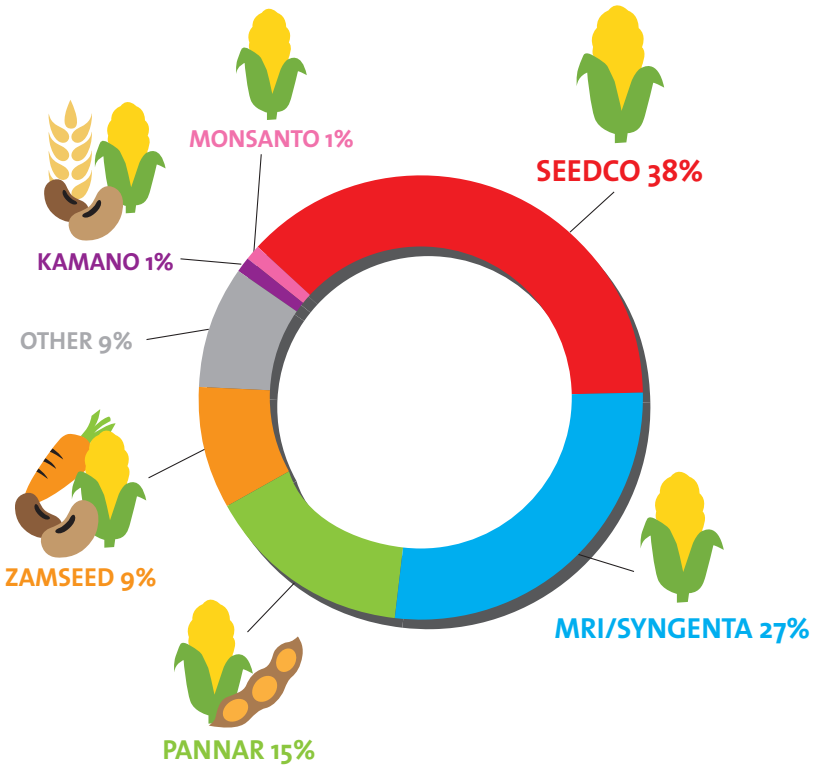


Figure 6: SeedCo, Zamseed, MRI and Pannar are the four top seed companies in Zambia controlling >80% of the market

4.2.2 Is "market smart" FISP really market smart?

A common argument in public discussion in Zambia on input subsidies rests on the idea of making FISP more "market smart" (Kuteya, 2017).[16] "Market smart subsidies" are based on the notion that the market does indeed respond to principles of supply and demand, and that inherent market competition will regulate price fairness and respond to farmers' demands. It is however increasingly recognised that global markets do not function in this classical manner and are shaped by unequal relations of power. The skewed rules of the World Trade Organisation (WTO) are a case in point. Essentially the Third World remains a natural resource (including labour) base for extraction of wealth to the metropoles. Market competition is replaced by large corporations working together to manage the market. For example, there were three mega-mergers in the biotech-seed-agrochemicals markets, i.e. ChemChina-Syngenta, Dow-DuPont to form Corteva Agribusiness, and most recently Bayer-Monsanto. These corporations have many cross-licensing and technology sharing agreements between them (ACB, 2017).

Unfair market subsidies, global trade disparities, and price and commodity speculation amongst a range of other global trade relations, structurally distort global prices and competition. Dangerous levels of market concentration throughout the global food system is well-documented (e.g. Oxfam, 2013; ETC Group, 2015; HBS/RLS/FoEE, 2017). Oligopolies exist in all industries related to agriculture input and output markets and are increasingly prominent in the Zambian market. Farmers in Zambia – big or small – are already at the mercy of concentrated agro-food chains, with inflated input prices, exploitative contract agreements for inputs and output markets, unpredictable exchange rate risks and unconducive government policies.[17] Assumptions about market smart subsidies for pro-poor growth, "sustainability"

16. These include: Subsidies should be part of a wider strategy; support market development/private-sector investment; promote competition; pay attention to farmer demand; insist on economic efficiency; put farmers in the driver's seat; have an exit strategy; pursue regional integration; ensure sustainability; and promote pro-poor growth (Kuteya, 2017)
17. Interview with commercial farmer, Lusaka, 6 June 2018

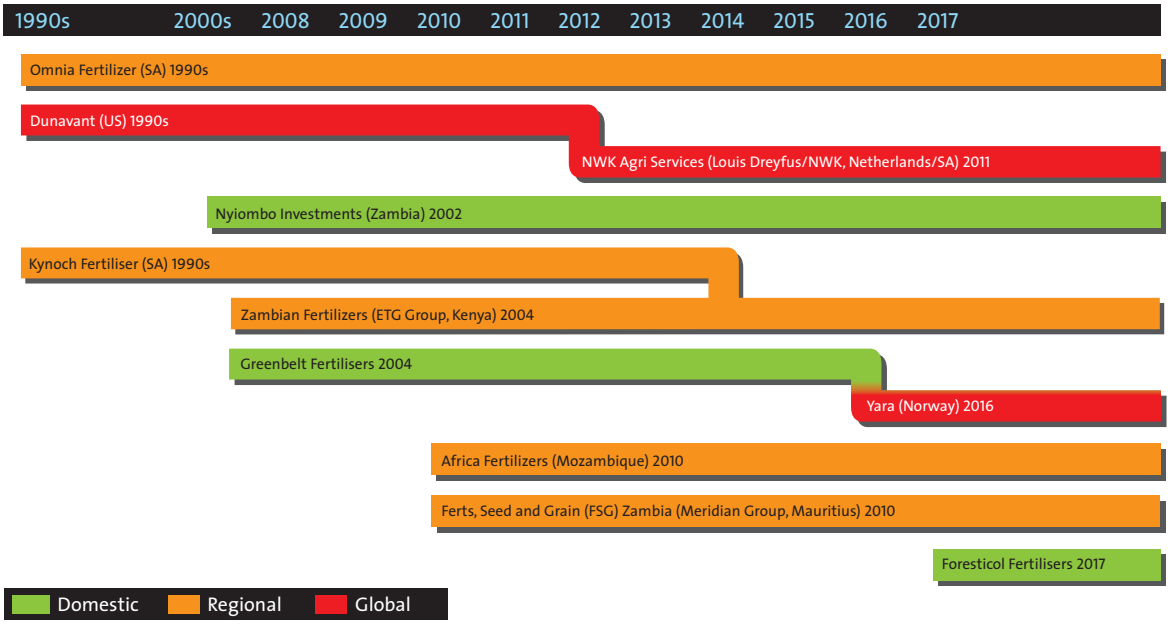


Figure 7: Timeline of fertiliser companies operating in Zambia and their changing ownership status

potential for farmer graduation or state exit strategy, are brought into question under this economic framework and the GR model that supports economies of scale.

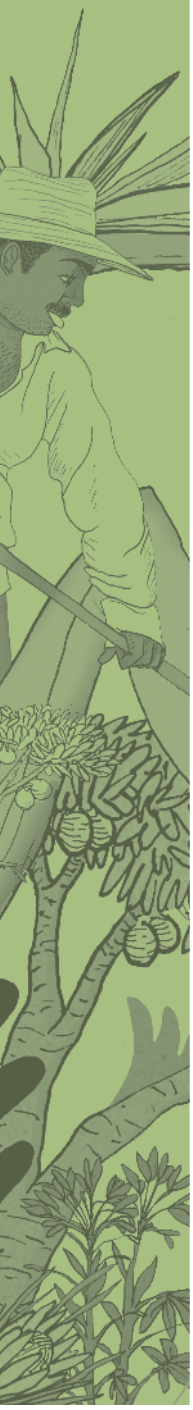
Understanding the wider structure of the global food and agricultural system, and the nodes of power and control is important in understanding the real beneficiaries of narrow input subsidies and the development trajectory it directs us onto. Combined with increasingly erratic weather conditions, it raises questions for long term resilience.

One of the acclaimed benefits of shifting FISP to e-FISP is the "crowding in" of more private-sector players. It is, however, important to distinguish between producers and distributors of inputs in Zambia's agricultural sector and thus trace where funds from government PRPs are ultimately going – both from input subsidies and maize output subsidies. E-FISP did indeed widen the category of agro-input suppliers. However, for the most part these are local agro-dealers who are conduits for corporate produced inputs. The real economic value per dollar spent is captured in technology ownership, already dominated by a small number of multinational corporations. Local economy spinoffs are thus significantly reduced. On the output side, FRA maize purchases directly benefit the milling industry that receives maize at subsidised prices.

4.3 Undermining farmer managed seed systems and conservation of Plant Genetic Resources

"Increasingly, seeds are the domain of professional breeders, agribusiness and policy makers. They decide what makes for a good variety and they develop legislation that excludes other varieties" (Petersen *et al*., 2014:30).

Just as farmers are the heart of a sustainable and just food system, genetic resources are the threads through which this system is bound. Plant genetic resources (PGR) have evolved with humanity over thousands of years. Farmers learned to select, cultivate, develop and save seed of plant materials that were valuable and usable in food production, storage, and processing – seed that tasted good and was able to adapt to particular growing conditions. Through this age-old biocultural process, over 7000 species of plants have been cultivated and used by people across the planet. In today's global food system, this immense diversity has been so narrowed down that only five cereal crops provide 60% of the energy intake of the world's population (FAO, 2015).



Access and further development and conservation of plant genetic resources with and for farmers are central elements in a number of international agreements. The International Convention of Biological Diversity (CBD) and the International Treaty for Plant Genetic Resources for Food and Agriculture (ITPGRFA), both legally binding and to which Zambia is party, stress the importance of the enduring work of farmers in-situ (on the farm) and ex-situ (in gene banks) in conservation and ongoing development of plant genetic resources.

A major and often overlooked negative implication of the FISP as it is structured is the resulting neglect of state obligations to fulfil its international agreements on PGR and instead actually directly undermine PGRs at farmer level. The distribution of conventional "improved" seeds (almost entirely hybrid in Zambia historically) through FISP, displaces the local diversity that has always adjusted to the natural and cultural environment. Commercial seeds are bred to maximise monoculture productivity and to comply with seed marketing laws that in turn are strongly influenced by the economic interests of the seed breeding companies. These certification and registration standards, based on DUS qualities (distinct, uniform and stable), are genetic values that are useful for classifying intellectual property protection and replicability under controlled production conditions. However, they do not consider the conditions of the actual fields of the majority of smallholder farmers, especially considering the impacts of climate change such as more frequent drier periods and changes in weather patterns. Further, DUS measures are not the only traits for, or those most valued by, farmers.

Commercial breeding tends to disregard the multiple and complex interlinking of other attributes of PGR; such as grain qualities, adaptability, the amount of biomass the plant produces, intercropping effects on building thriving agricultural ecosystems, plant health and, importantly, local cultural nutrition.

Zambia's FISP is entrenching the uptake of a very limited range of commercial seeds and the associated agrochemicals, whilst directly displacing local agricultural biodiversity and challenging the rights of farmers to freely, and without hindrance, reuse, share or sell farmer saved seed. Serious questions could be raised related to the effects of these actions in undermining human rights to adequate food and nutrition, especially given evidence of Zambia's alarmingly high rates of malnutrition (Grebmer *et al*., 2017; Grebmer *et al*., 2018).

> Through this age-old biocultural process, over 7000 species of plants have been cultivated and used by people across the planet. In today's global food system, this immense diversity has been so narrowed down that only five cereal crops provide 60% of the energy intake of the world's population (FAO, 2015).

The private-sector and donor agencies have bolstered the institutional power of the Seed Certification and Control Institute (SCCI), a Ministry of Agriculture department mandated to oversee seed policies and law. This has supported industry and Regional Economic Community efforts to harmonise Zambia's law with regional commercial standards. The long term results are the entrenching of GR technologies and the displacing of biocultural heritage and of local seed and food diversity.

Despite the central role that farmer access to PGRs, and the conservation thereof, plays in the local food system and its nutritional outcomes, there has been relatively limited public debate on the subject. Input subsidies through FISP are viewed as related to maize and livelihood only, while they ignore the wider negative impacts of narrowing diversity, alarming rising malnutrition and the long-term effects of entrenching poverty through restrictive seed certification and trade laws (Grebmer *et al*., 2017; Mwila, 2016). Seeds are a key node of control within the food system and determine multiple outcomes of it. Ensuring farmers have rights and equitable access to seeds that are socioeconomically

Photo Credit: Jonathan Odhong'/IITA

and ecologically appropriate is a key determinant in building resilience.

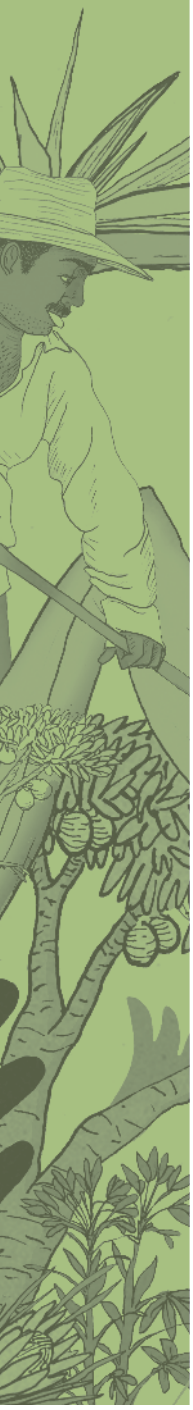
4.4 Declining soil fertility

There is now common agreement, even from strong GR proponents, on the need to better consider soil fertility in agriculture development programmes, its complex links to productivity and the negative implications of the misuse of inorganic fertilisers (Burke *et al*., 2017; IAPRI, 2017; Jayne *et al*., 2018). Jayne *et al*. (2018) provide a useful example with the alarming rates of soil degradation in Malawi, a poster child of FISPs and the success of the GR in boosting productivity, which has now reached a tipping point, where soil organic matter (SOM) is reduced below the minimum level for supporting crop productivity. As such, "yield gains currently possible through plant genetic improvements are largely out of reach to small famers where soils are depleted and crop response to fertiliser is low" (Jayne *et al*., 2018:6).

The one-size-fits-all fertiliser recommendations of the FISPs, focused solely on maize and with an emphasis on Compound D and Urea, are not suitable for – and can exacerbate – acidic soils.[18] The blanket approaches are based on the GR focus on nitrogen (N), phosphorus (P) and potassium (K). The main issues with most Zambian soils is that: (i) they formed from parent materials with little plant nutrients; (ii) they are generally acidic; and (iii) they do not have sufficient organic matter. The lack of phosphorus and the acidity of the soil then further inhibit N uptake. In smallholder farmer systems, with minimal expendable cash, increasingly unpredictable weather conditions and often depleted soils, SOM can therefore be more relevant than standardised fertiliser applications.

There are strong arguments in favour of diverse methods to increase SOM as the primary intervention (Burke et al., 2017; Jayne et al., 2018). An approach to address acidity would be to develop plant varieties tailored for Zambian soils. However this needs investment in plant improvement which is currently underfunded (Burke et al., 2017:123). Other options include the additional use of green manure, animal manure or agroforestry. Large quantities of animal manure can have a positive impact on soil acidity (Burke et al., 2017:124). Increasing SOM will benefit soil, no matter what the specific nutrient deficit. Soil analysis is

18. Causes of acidity include excess application of nitrogen fertiliser; removal of basic nutrients (Ca, Mg, K) through harvesting; accelerated decomposition of SOM as a result of tillage; and aluminium and manganese toxicity on plants, resulting in poor water uptake, magnifying the effects of drought. A symptom of acidity is drought stress, even on relatively moist soils. Acidic conditions have a negative impact on soil biological activity (Miles and Farina, 2013).



required – again another key, but neglected, role of agriculture research institutions. More recently donor-supported initiatives promote legume rotations, primarily soya, partially for soil fertility purposes. However, soil analysis and ongoing testing is still not common in project monitoring and evaluation systems (ACB, 2018).

Recently, there have been intensified efforts for the widespread use of herbicides, mostly glyphosate-based. There are ongoing debates on the long-term effects of glyphosate on soil fertility. Whereas it was initially reported that glyphosate had no negative effects on soil fertility, recent reports suggest that glyphosate is a strong metal chelate that has the potential to accumulate in the soil and negatively affect the soil life, as well as the availability of certain plant nutrients especially the micro-nutrients.

"The link between gender and food becomes clearer through an understanding of power and control in the food system. Giving away food does little to address the underlying causes of disempowerment that lead to hunger"

4.5 Embedding patriarchy

"The link between gender and food becomes clearer through an understanding of power and control in the food system. Giving away food does little to address the underlying causes of disempowerment that lead to hunger" (Patel, 2012:1).

Gender inequality, and more truthfully the sexual harassment and abuse of women, in both the public and private space is a harsh reality that is ingrained within Zambia's socio-economic fabric. The patriarchal economic system has allowed or facilitated the embedding of masculine dominance and the restriction of women's economic, and thus social and sexual, freedoms. Why does this matter so critically for equitable farmer support?

Food – and the production, preparation and consumption of it – is a fundamentally gendered social construct. Patel clearly describes: "Gender is key to food insecurity and malnourishment, because women and girls are disproportionately disempowered through current processes and politics of food's production, consumption, and distribution" (2012:2). Gender dynamics are often an invisible element within the food system. Viewing the food system through a gender lens, however, exposes the interconnectedness and the central role the food system plays in determining other development objectives.

The commercialisation of farming systems through the introduction of external inputs, and its financing, enables the monetisation of local diverse socio-ecological systems that are fundamentally gendered. Food and farming systems have inherent gendered roles. Changing local dynamics has obvious diverse effects on different groups of people with different levels of power and agency. Very narrow forms of farmer support – like that of GR input and maize output subsidies – may include "gender sensitive" targeting mechanisms, however gender targets do not address the underlying systemic causes of disempowerment. Failing to take into consideration the local scale gender complexities, can result in long term unintended negative outcomes.

Women in Mumbwa explain that they still have their own seed to grow food for household food security, but it is difficult to find land for these diverse crops now. The best land is claimed by the men, for planting cash crops. Men control cash cropping systems and women are required to produce food for nutritional purposes (Focus group discussion, Mumbwa, 2017).

The blanket approach of the Green Revolution and the commercialisation of agriculture disrupts local agroecological and socially complex food systems that are integrative and responsive to local power dynamics – such as gendered roles in the

Photo Credit: Rik Haanen

production, harvesting, preparation and consumption of food.[19]

4.6 Undermining rights to adequate food and nutrition

"As children, we would go to visit the village for holidays and return to the city fat. Now, we go to the village and we must carry food with us to feed our rural families" (Charles Nkhoma, Director, Community Technology Development Trust, 2016).

Nutrition is the ultimate outcome of the local food system and any national strategy to support smallholder farmers. In Zambia, so-called "national food security" is said to be reached annually. However extremely high rates of malnutrition are now evident and reflect serious failures in the food system (Grebmer *et al*., 2017).

The foremost purpose of cultivating land is to produce food. This is a simple notion that has been a primary pursuit of humanity since the dawn of agriculture. In the current economic and development framing agriculture has been separated from this primary objective. Agriculture is increasingly framed as an economic activity first and a means to access food second. The quality or appropriateness of this food is seen as of lesser concern, as are the social and ecological externalities of its production.

If children do not receive adequate nutrition from conception to two years of age, the capacity for full mental development is significantly curbed. If Zambia's malnutrition rates are even close to as high as the 2018 Global Hunger Index report says they are (Grebmer *et al*., 2018),[20] then most of Zambia's future population will be stripped of the critical capacity to develop into fully functional adults. It is for this reason that the human right to adequate food and nutrition becomes so important.

The model of agriculture development for smallholder farmers in Zambia, on which the narrow conceptualisation of input subsidies is technically based, has two potential outcomes:

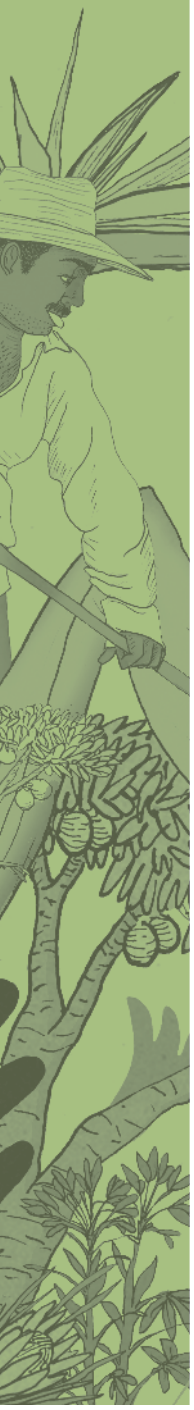
19. "The 'Green Revolution,' in which farmers are encouraged and to adopt a system of farming involving hybrid seeds, fertiliser, and pesticides, was initially funded by the Rockefeller and Ford Foundations, and is currently being encouraged by the Gates Foundation in Africa. These farming systems have had gender-negative impacts, as women's knowledge is excluded, and women are systematically less able to control the capital required to participate in resource-intensive farming" (Patel, 2012).
20. The results were contested by the Zambian government at the time of publication.

1) Commercialisation of farming through providing a kick-start to accessing GR technologies in order to become self-sufficient commercial farmers (this model is used in development aid or contract farming which provide pre-finance for inputs); or
2) Providing a continuous form of "social protection" through the subsidisation of GR technologies for poor farmers who cannot afford these external inputs on their own (and are affected by multiple other vulnerabilities, rendering them unable to be economically self-sufficient).

Considering outcome 1: the ability of farmers to "graduate" in the GR model is found to be extremely low and produces a small elite class of commercial, and ultimately corporate, farms. This is a known structural outcome of the model of the GR, based on its inherent design within the capitalist economic system (interest-based finance, external commercial inputs, externalisation of environmental and social costs, and economies of scale) where farms have to get bigger in order to keep up with long-term rising production costs and falling gate prices.

The remaining majority of the farming population falls into the social protection category. This promotes the uptake of GR technologies for essentially the most vulnerable sector of the population. Promoting a system of agriculture that increases rather than decreases production (and household) risks, in the context of the rising cost of living, environment degradation and climate change, is not a sound form of social projection.

Evidence from around the world shows that smallholder farmers' use of GR technologies increases their vulnerability – to economic risks and fluctuations, to undermining the agroecological system that supports their production in the first place, to disrupting the intricate social fabric upon which nutritional outcomes are ultimately dependent (IPES-Food, 2016). Individual nutritional outcomes are not just dependent on the availability of diverse food sources, but also on the social relationships that translate available food into accessible nutrition for different individual needs within a given food community.



4.7 Donor responsibility

Comparative analysis of Zambian FISPs and regional programmes highlight four main factors that make GR input subsidies possible (Resnick *et al*., 2017:6). The first and most important is availability of requisite funds. Although donors have had less influence in shaping the Zambian government's decisions regarding FISP budgets over the years than other governments in the region, their funds have enabled the continuation and expansion of the input subsidies.

In Zambia, donors allocated US$1.2 billion between 2002 and 2004 to support implementation of the Poverty Reduction Strategy, which accorded priority to agriculture. Poverty reduction budget support enabling FISP (then FSP) began in 2006 and enabled the programme to continue beyond its original three-year time horizon. A decade later, funding coordinated by the European Union allowed for key logistical elements of the e-voucher to be implemented (Resnick et al., 2017:6).

Given global commitments to the UN's SDGs and thus donor home country commitments to global sustainability, coupled with the chronic levels of malnutrition found in Zambia, donor countries and their respective agencies have a responsibility to support policies and programmes that enable – rather than undermine – local resilience. Many foreign government development strategies support agriculture programmes in Zambia, and the majority are based on a GR agenda (Mubanga et al., 2018). Despite Resnick et al. (2017) finding that donors had less influence over government input subsidies in Zambia than in other countries, they still play a significant role in shaping local as well as regional food production and consumption frameworks and interventions. Donors and civil society organisations therefore have a responsibility to rethink their support of GR technologies, not only from a sustainability perspective, but as a matter of human rights and ethical practice.

5. Conclusion – National efforts to secure equitable farmer support

There is wide consensus that farmers need support. Conventional farmer support, including through FISPs in their various forms, subsidises the uptake of an industrial technology package that is not appropriate for the needs of the majority of the country's farmers and is designed for the production of cheap commodities for extraction.

Zambia's socio-economic structure means that the majority of the population depends either directly or indirectly on the agriculture sector for a livelihood and access to daily food. The economic orientation of national strategies and private-sector marketing has, however, obscured the primary role of production: in providing good nutrition and quality of life on a household and community scale.

Farmer support in Zambia is almost entirely directed at subsidising smallholder uptake of GR technologies. The argument for subsidisation of GR inputs rests on the flawed claim that if farmers can access finance and commercial inputs they have an opportunity to break the cycle of rural poverty. This is a structurally flawed concept.

GR technologies externalise the real costs of production in the long run. These are borne instead by the environment, by the public health system coping with chronic widespread malnourishment and NCDs, and by future generations forced off the land: often into urban slums, unskilled, hungry and unable to live fully functional lives. This is coupled with the dislocation caused by climate change – driven in itself by GR and the industrial trade-orientated global food system.

Input subsidies in Zambia have drained state resources and re-allocated essential public sector funds. This has undermined the delivery of critical institutional functions mandated to the public sector. The state has a responsibility to ensure a fully functional local food system and public sector services are central to achieving this.

Farmer support needs to be reconceptualised to encompass systematic long term enabling of smallholder farming systems in their entirety – aimed at building local resilience rather than undermining it. This is a foundational principle of farmer and peasant organisations around the world in their calls for systematic support to agroecology and the fulfilment of people's demands for food sovereignty.

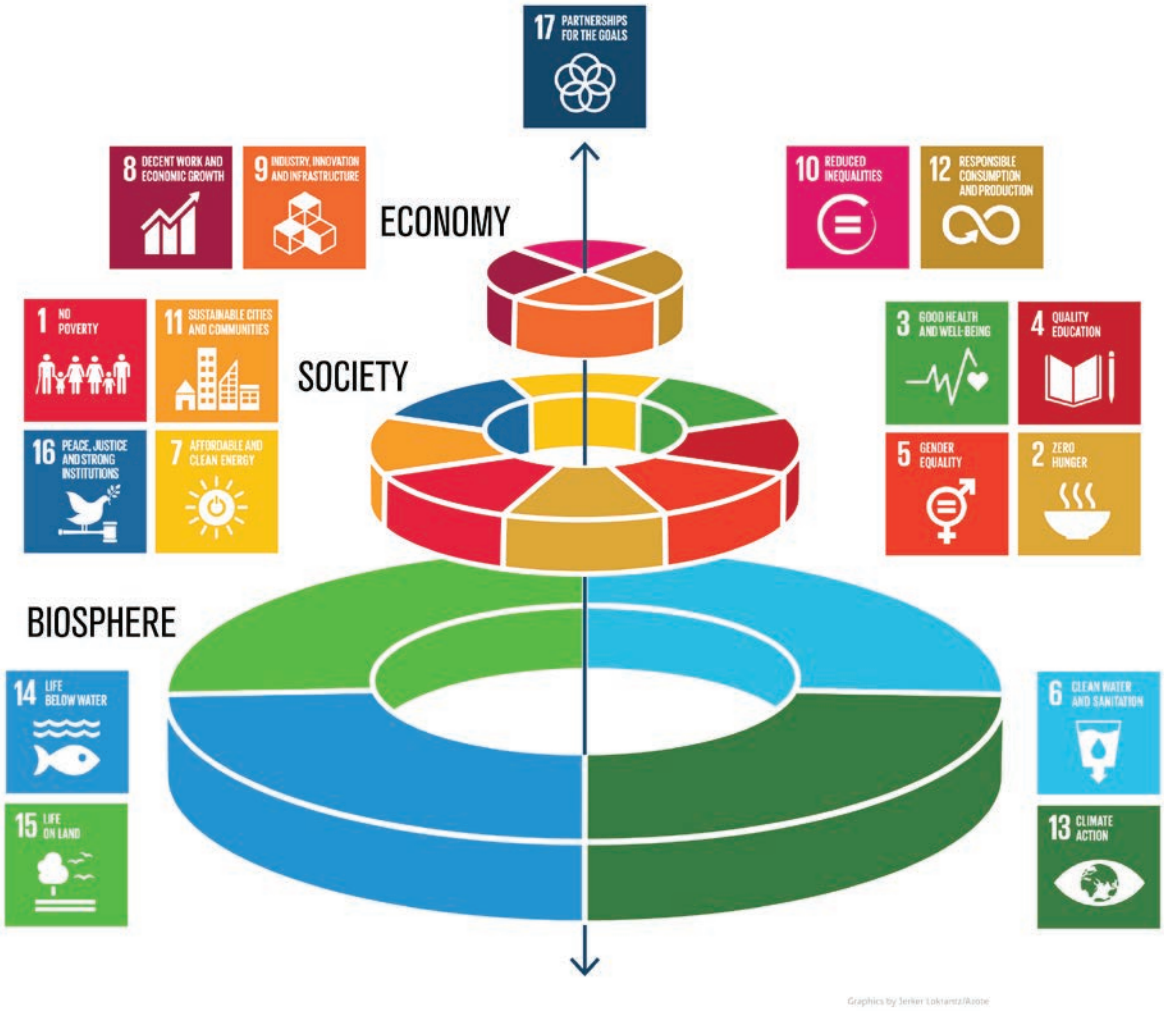
ZAAB recognises that the complex social and ecological aspects of the fast-changing agriculture sector and local food system play a critical role in the country's current development conundrum. We realise that the food system is central to supporting local economies and multiple livelihood-related activities, as well as having broad secondary impacts on public health, education, gender equality and local ecological sustainability. It is for this reason that we call for an urgent transformation in the way agriculture and smallholder farmers are thought about. Smallholder farmers can no longer be viewed as passive recipients of government, donor and private-sector projects, but as active agents in re-shaping and reviving the local food system and its critical multiple outcomes.

The proliferation of research, debate and policy submissions on farmer input subsides in Zambia gives evidence to the high levels of public concern on this matter. This report, and the network of civil society and farmers in Zambia, is however concerned that the popular debate is not going far enough. Arguments seek merely to tweak the current system that views farmer support from a narrow and isolated single sector approach. The climate crisis, the extreme levels of malnutrition and NCDs, the rising gender and economic inequality all give a moral obligation to do more than tweak the current system in our country, which has so much to offer. The complex nature of the crisis that Zambia faces requires a transformatory approach to viewing food production and consumption. Equitable and sustainable support to farmers forms the foundation of this new paradigm.

Annex 1: The SDGs and the centrality of food

The new "Wedding Cake" integrated illustration of the Sustainable Development Goals, shows how economies and societies are embedded elements within the biosphere and fundamental earth system boundaries. Sustainable and healthy food is directly and indirectly connected to all of the other goals and impacts on how successfully nations and the world can achieve them.

This model changes our paradigm for development, moving away from the current sectorial approach where social, economic, and ecological development are seen as separate parts. Now, we must transition toward a world logic where the economy serves society so that it evolves within the safe operating space of the planet (Rockström and Sukhdev, 2016).



The "Wedding cake" illustration of the SDGs

(http://www.stockholmresilience.org/research/research-news/2016-06-14-how-food-connects-all-the-sdgs.html)

The Sustainable Development Goals (SDGs) sets targets for ending poverty, protecting the planet, and ensuring prosperity for all. Food is central to achieving this ambitious agenda, as it lies at the heart of most of the 17 SDGs. Food systems are the main cause of greenhouse gas (GHG) emissions, the main user of fresh water, the leading cause of biodiversity loss, the main driver of land-use change and the main cause behind human interference in biogeochemical cycles such as nitrogen and phosphorus. Nothing short of a global transformation of the food system will be needed to stand any chance of reaching all 17 SDGs. In short, if we get it right with food, we get it right with everything else (Rockström, 2018).

Annex 2: Complexity in the world food system

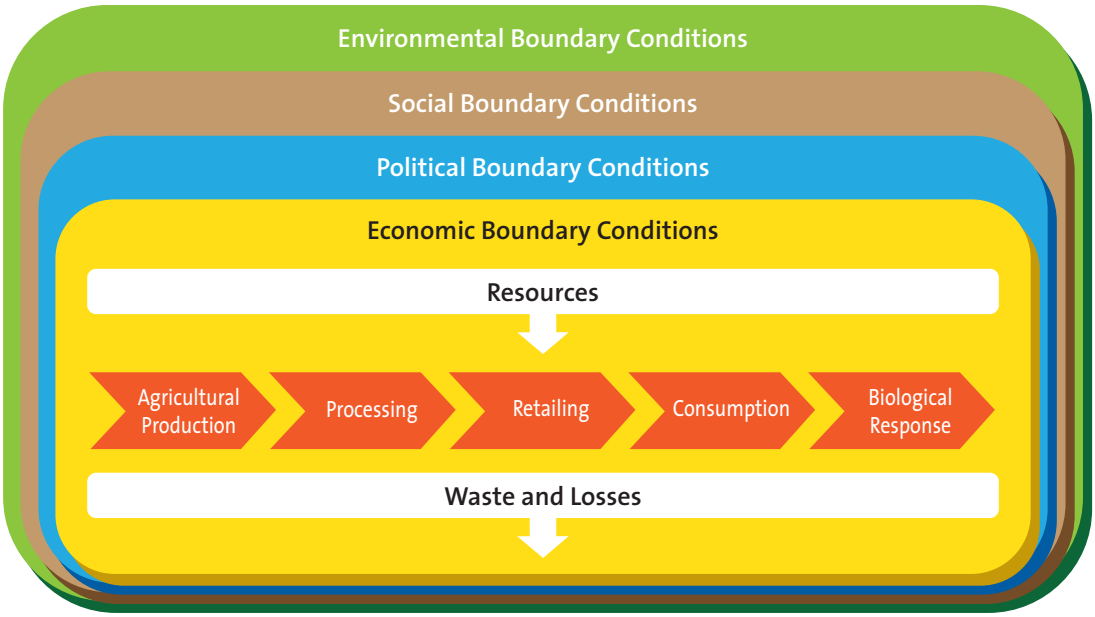


Diagram of the complexity of the World Food System

(Michelle Grant, World Food System Centre, ETH Zurich
https://www.ethz.ch/en/news-and-events/eth-news/news/2014/01/resilience-in-food-systems.html)

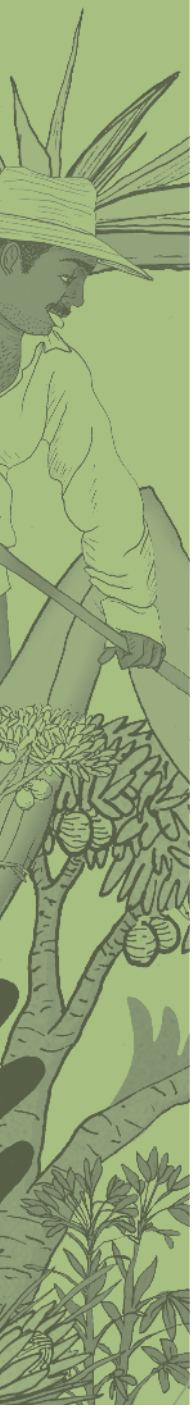
Annex 3: ZAAB policy brief – Re-envisioning equitable farmer support in Zambia

POLICY BRIEF: RE-ENVISIONING EQUITABLE FARMER SUPPORT IN ZAMBIA

May 2019

Zambia will not attain its national developmental goals unless it amends its agricultural framework. The current system, based on the "Green Revolution" model, exacerbates the challenges the country faces: chronic malnutrition, rural poverty and environmental degradation.

Zambia must build an agricultural base able to deliver nutrient-dense and diverse food, to restore ecological health and to build resilience to climate change.



GREEN REVOLUTION MODEL

The Green Revolution model encourages the cultivation of cash crops using external agro-inputs. There is pressure to conform to this model from trading partner countries, donor and philanthropic organisations, and, increasingly, from other African countries caught up in regional harmonisation efforts.

This model on its own is dangerous, but Zambia has further entrenched its impact through the farm input subsidy programmes (FISPs) that promote hybrid maize production using synthetic nitrogen-based fertilisers.

Zambia will not attain its Sustainable Development Goals unless it focuses on attaining the goal of sustainable food production and consumption. This goal is recognised as key to achieving the others.

The conventional agricultural and resultant food system is driving a nutrition transition to diets of highly processed, chemically laden and "empty calorie" foods. It is the primary cause of global greenhouse gas emissions and biodiversity loss. It is the main user of fresh water and it drives land-use change. This model actively contributes to climate change, which Zambia is already experiencing.

Average temperature in Zambia increasing by 0.6° Celsius a decade

THE FAILURES OF THE FISP

The structural adjustment programmes in the 1990s forced Zambia to curtail its spending on agricultural public services. Government has since primarily supported farmers by distributing a subsidised package of mostly hybrid maize seed and nitrogen-based fertilisers. It also provides a maize output subsidy, through the Food Reserve Agency's annual maize purchases.

Shift to low-nutrition maize cultivation in Zambia

THE FLAWS OF THE FISP

Zambia's FISPs started in 2002 with two primary goals. The first was to shift a select group of farmers to commercial farming.

The second was to provide a form of social protection to poorer farmers. The mechanism has benefitted a small, elite group of farmers able to access the land and capital necessary to use the subsidies as a

springboard to shift into commercial farming. But these farmers must keep expanding to keep up with rising production costs and falling gate prices. This drives rural class differentiation.

The second group has a growing dependency on the subsidy to maintain production. There is increasing evidence that when smallholder farmers use Green Revolution technologies their vulnerability to external shocks increases.

Some well-documented critiques of the FISPs are:
- No significant impact on rural poverty
- Limited productivity benefits
- Limited choice of inputs
- Poor management of beneficiary targeting
- Crowds out private-sector participation

THE FISP E-VOUCHER

The FISP was revised in 2015 and an e-voucher scheme launched, accompanied by compulsory insurance. The e-FISP allows farmers to buy what they want through qualifying agro-dealers. It appears to be more efficient and enabling of smallholder farmers.

While farmers do have a larger choice, they are restricted to buying through agro-dealers that deal primarily in Green Revolution technologies.

The e-FISP has enabled more private-sector parties to participate. Agro-dealers, however, also need to pre-finance the inputs, which excludes numerous smaller dealers from participating in this market.
The market, however, is dominated by multinational corporations. This group still captures the biggest profits generated from subsidised sales of seed and fertiliser inputs.

Profits from FISP leave the country

IS THERE A FUTURE FOR THE FISP?

The FISP will never enable food and nutrition security or alleviate rural poverty as long as it is embedded in a framework aligned with the Green Revolution model.

The e-FISP does not change the framework, it merely provides an alternative delivery mechanism for external inputs. Any attempt to make the FISP more "market smart" – able to respond to the principles of supply and demand and thus able to respond adequately to farmer needs – is naïve. Global markets do not function in this way. These markets are shaped by unequal power relations, unfair market subsidies, global trade disparities, and price and commodity speculation. These are just a few of the factors that structurally distort global prices and competition.

The model encourages dependency on these inputs and thus dependency on global value chains that are based on corporate-owned knowledge and industrial processes.

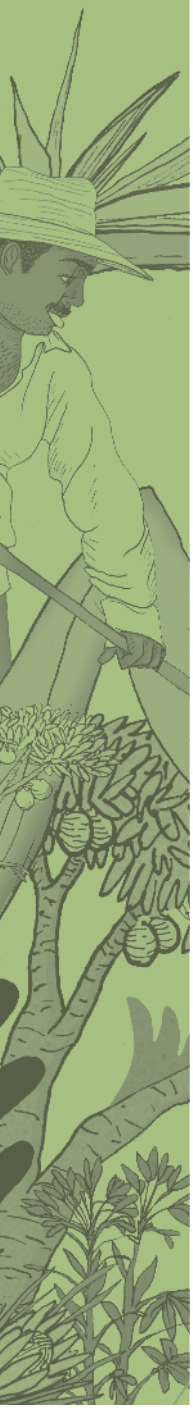
THE IMPACT ON ZAMBIA

DOWNGRADED PUBLIC SERVICES

The FISP and Food Reserve Agency's subsidies absorb more than 90% of the Ministry of Agriculture's Poverty Reduction Programme budget. Up to 60% of the total agricultural budget over the past 15 years has been spent on maize input and output subsidies.

This funding is meant to support essential public agricultural services, including agricultural research and development, soil fertility and water management, livestock support and disease control, as well as skills development.

The FISP has left critical public institutions severely underfunded and drained of their intellectual and human resources.



MARKET CONCENTRATION
Corporate companies literally "own" the Zambian agricultural and food sectors. Mainstream economic theory notes that when the four biggest companies have a joint market share of more than 40% of the total market, they have the power to shape the market to the detriment of other businesses and consumers.

In Zambia, SeedCo, Zamseed, Syngenta and Pannar control more than 80% of the maize seed market. The National Milling Corporation holds a 25% share of the flour market, a 30% share of the mealie meal market and a 40% share of the stock feed market.

Rise of oligarchies in Zambia

AGROBIODIVERSITY LOSS
The loss of agrobiodiversity is of grave global concern. We will need it to ensure food production in a time of uncertain climate change. Green Revolution agriculture is a primary driver of agrobiodiversity loss. The model disregards what we now know to be complex interlinkages between crops, soil, water sources, animals and insects, and the broader agroecological system.

250–300 000 hectares of natural forest lost each year in Zambia

DECLINING SOIL FERTILITY
There is no longer any doubt that healthy soils form the basis of agricultural productivity. Zambia's soils are generally acidic, without enough organic matter. They do not take up nitrogen easily. The focus on nitrogen-rich fertilisers is detrimental to soil health.

40% of African soils are degraded

EMBEDDING PATRIARCHY
Girls and women have been systematically disempowered in their roles and right to produce, prepare and consume food in Zambia.

Women report that they struggle to access land to grow food for their households because men claim the land to grow maize. Men also tend to control cash-cropping systems and to benefit from FISP subsidies focused on these crops.

A MALNUTRITION CRISIS
The 2018 Global Hunger Index report notes that Zambia has alarmingly high levels of malnutrition at about 37% of the population with correspondingly high levels of stunting in children under the age of five.

If children do not receive adequate nutrition from conception to two years of age, the capacity for full mental development is significantly curbed. This means that a significant portion of Zambia's future population will be critically stripped of their capacity to develop into fully functional adults.

40% of Zambian children are stunted

RECOMMENDATIONS

To achieve its development goals Zambia must recognise and support smallholder farmers as active agents in reclaiming and reshaping their local food systems. It must:

MEET ITS INTERNATIONAL AND REGIONAL OBLIGATIONS

- Maputo Declaration: Allocate 10% of the budget to agricultural and holistic rural development
- Paris Climate Agreement and Intended Nationally Determined Contributions
- Sustainable Development Goals
- International Treaty on Plant Genetic Resources for Food and Agriculture
- Declaration on the Rights of Peasants and Other People Working in Rural Areas

Zambia should take note of the United Nations' ongoing work to realise human rights obligations related to the enjoyment of a safe, clean and healthy environment.

FOCUS ON TRADE EQUITY

Ensure that farmers and those they feed are the focus of trade and investment agreements.

SUPPORT THE TRANSITION

Establish a national interagency committee to support the transition from the FISPs to a system that focuses on building soil health and producing nutrient-dense food.

REVIVE RESEARCH INSTITUTIONS

Support them in becoming local centres of excellence in agroecological production.
Support activities such as:

- Adopting farmer-to-farmer exchange and learning as a preferred extension model
- Investing in extension officers and services.

PROVIDE APPROPRIATE SUPPORT

Direct public funding towards, among others:

- Promoting farmer seed varieties
- Facilitating farmer seed banks and fairs
- Developing soil, water conservation and biological pest management technologies
- Establishing appropriate rural infrastructure and systems.

CONCLUSION

Farmers play a critical role in building food and nutrition security. Their work underpins social stability and well-being, particularly in rural areas. They produce a diversity of crop varieties for a diversity of purposes in a diversity of micro-climates. For this reason, farming and resultant food systems do not respond to one-size-fits-all solutions. Zambia's agricultural policy and the structure of the FISP subsidises the uptake of an industrial technology package that is inappropriate for the needs of most of the country's farmers. It also actively degrades agricultural soils and reduces agrobiodiversity. Both are needed to adapt to climate change.

The Zambian government must support a transition to a farming system that will help the country achieve its national development goals and build adaptive capacity to climate change.

ZAAB
Zambia Alliance For Agroecology & Biodiversity

The Zambia Alliance for Agroecology and Biodiversity (ZAAB) is an advocacy network of faith, farmer and civil society organisations committed to a common cause of realising a just and sustainable food and agroecological system in Zambia.

www.zambianagroecology.org

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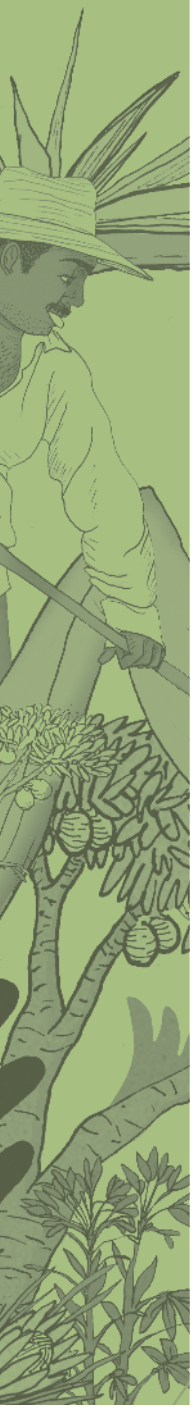

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