

Chinese and Brazilian Cooperation with African Agriculture: The Case of Zimbabwe

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- This paper was produced as part of the China and Brazil in African Agriculture (CBAA) Project work stream

China and Brazil in African Agriculture (CBAA) project Working Paper series

The **ESRC (UK Economic and Social Research Council - ES/J018317/)** funded CBAA project is exploring the new development cooperation engagements in agriculture across four African countries. The project is examining the politics of aid and investment policy in China and Brazil, exploring how understandings of agricultural development are translated in aid and investment projects.

The project is being carried out as part of the Future Agricultures Consortium, connecting researchers from institutions in the UK and Africa with colleagues from China and Brazil. The research involves a mapping phase that is generating a geo-referenced database of Chinese and Brazilian agricultural development cooperation projects in Ethiopia, Ghana, Mozambique and Zimbabwe. In addition, in-depth case studies of a sample of these projects, are examining the ways in which experience and expertise from China and Brazil engage with the realities of African agriculture and the perspectives of African scientists and farmers.

Comparative analysis across projects, countries and types of intervention are addressing the question of whether a “new paradigm” of development cooperation is emerging, and assessing the implications for the future of agricultural aid and investment policy.

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Background

The agricultural sector is pivotal to the economy of Zimbabwe, providing 14-18 percent of the Gross Domestic Product, 40 percent of export earnings and 60 percent of raw materials for industry (AMID 2012a). Productivity of the wider economy mirrors that of the agricultural sector.

Commercial farming in Zimbabwe up until 1999 was financed predominantly by commercial banks. Since independence in 1980 to 2000, commercial banks are estimated to have provided 60 percent of the working capital and short term needs for commercial agriculture (Zumbika 2003); rising to 87 percent when direct input support by agro-processing firms is included (Mukwereza 2003). Commercial farmers secured loans for the balance of their financing needs for machinery and infrastructure development from the then Agricultural Finance Corporation – a quasi-state institution, that has since been 'privatised' into a 100 percent government-owned company called the Agricultural Development Bank of Zimbabwe.

High levels of funding have been needed to meet the demands of commercial agriculture. The generally low profit margins in commercial farming have seen farmers perpetually requiring outside funding. With the configuration of the agricultural sector up until 1999, land was used as the predominant form of collateral security in accessing farming finance. The Fast Track Land Reform Programme (FTLRP) embarked on by Zimbabwe from 1999 brought its own challenges, since the transfer of commercial farmland to the state meant that land ceased to be a form of collateral. By October 2002 a total of 14,156,022 hectares (over 90 percent of commercial farmland) had been acquired and distributed among 232,738 households (Pazvakavambwa 2007)ⁱ. As a consequence of transferring such vast expanses of land without the accompanying title deeds, financing commercial agriculture became a challenge and agricultural productivity and production plummeted thenceforth.

From the time of adopting the FTLRP to 2008, the burden of funding commercial agriculture in Zimbabwe was shouldered by the government and the Reserve Bank of Zimbabwe (RBZ). The government distributed major crop inputs, including diesel, among farmers at the beginning of each summer and winter season with the RBZ providing farm equipment. By the middle of June 2007, the RBZ had distributed 35 combines, 925 tractors, 586 ploughs, 463 harrows, 71 planters and 241 sprayers (RBZ 2007). The support provided to newly-resettled farmers by the government and the RBZ was inadequate and could not be sustained as it was achieved through printing money. AMID (2012) acknowledges poorly conceived policies (price controls that made most agriculture unviable), inadequate funding (including a severe shortage of foreign exchange for the importation of critically needed inputs and equipment), as well as inadequate skills among the newly resettled farmers as

some of the main reasons for the decline in agricultural production.

Exacerbating the precarious funding position of government, major donor nations not only suspended direct budget support to the government but vetoed all applications by Zimbabwe for funding through multi-lateral funding institutions such as the World Bank, the International Monetary Fund and African Development Bank.

Declining budgetary allocations to agriculture that were further discounted by high levels of inflation meant that the meagre allocations were barely adequate for salaries and made it necessary for staff development and field operations to be suspended. FAO (2009) laments that less than 5 percent of the Ministry of Agriculture budgets in 2006 and 2007 were used on field operations.

The declining macro economy resulted in increasing levels of poverty and, as there was a standoff between Zimbabwe and the developed world, traditional donors proceeded to extend humanitarian assistance directly to communities, by-passing government. Such support was provided in the form of seed and fertiliser packs sent each summer to meet the food security needs of vulnerable households. The aid was only extended to communal and older resettlement farming areas while the 'contested' FTLRP areas were excluded. Whilst the support provided to smallholder farmers was appreciated, productivity from that sector could not (neither was it meant to) compensate for the decline in production from commercial farming areas.

The agricultural sector declined annually by 7.1 percent between 2000 and 2008, a cumulative decline of 79.4 percent over the period between 2002 and 2008 (Ministry of Finance 2009). Agricultural exports and total exports declined by 53 percent and 27 percent between 1999 and 2008 respectively (AMID 2012a).

The stabilisation of the macro economy achieved in 2009 with the formation of a Government of National Unity halted economic haemorrhaging with the enactment of a number of key economic reforms that included the adoption of multiple currencies (United States Dollar, South African Rand, Botswana Pula) in place of the Zimbabwe dollar. As part of the new dispensation, the functions of the RBZ were streamlined and thenceforth the central bank ceased performing quasi-fiscal functions such as funding agriculture.

With its pivotal role in the economy of Zimbabwe, agriculture will be crucial to economic recovery. The agricultural sector and the economy have been recovering and grew by 21 percent in 2009, 33.9 percent in 2010 and 7.4 percent in 2011 (Ministry of Finance 2011; European Union 2012). The 2012 growth rate is expected to be 11.6 percent (Ministry of Finance 2012). These growth rates pale into insignificance when compared to the progressive decline in economic activity discussed earlier. Full recovery of the economy is contingent upon a considerable increase in production on land acquired

through the FTLRP. Traditional aid and development partners have ruled out any programmes in newly-resettled areas in the foreseeable future (European Union 2012). Pazvakavambwa (2007), however, contends that the programme cannot be reversed – bearing in mind that by October 2002, over 90 percent of Large Scale Commercial farmland (14.156 million ha out of 15.5 million ha) had been acquired and partitioned among 232,738 households.

Tobacco and cotton are among the agricultural commodities that Zimbabwe has a comparative advantage in producing (AMID 2012). Of all agricultural commodities, tobacco has generated the highest receipts, with cotton coming in second. Tobacco is by far the most important export crop and accounted for 48-65 percent of total agricultural export receipts between 1994 and 1998 (MoLA 2000); meanwhile the contribution from lint exports was 6-11 percent over the same period (ibid). It is against this background that the government of Zimbabwe approached China and Brazil among other countries to explore opportunities for aid and cooperation programmes to support the country's agricultural sector including newly resettled areas.

ZANU (PF) was the governing party in Zimbabwe from independence in 1980 up until the inauguration of the Government of National Unity in 2009. During that period, alliances and positions maintained by the ruling party and government were synonymous. After being ostracised by the West and international funding agencies following the land reform programme, China was sympathetic to the plight of Zimbabwe since strong links at party-to-party level had been established in the 1970s at the height of the liberation struggle. China has been a natural ally who, along with Russia, vetoed all United Nations Security Council resolutions on sanctioning Zimbabwe. The cooperative relationship with Brazil, however, is fairly recent, and driven largely by commercial considerations and a determination on the part of that country to assert itself as a global power.

China and Brazil have been achieving consistently high growth rates in their respective economies and the agricultural sector has made significant contributions in that regard. As a consequence, significant proportions of their populations have been moved out of poverty. Both countries are keen to share their experiences with other developing countries – particularly in the context of South-South cooperation.

2. Research focus and methods

This report describes the status of agricultural aid and cooperation programmes by Brazil and China in Zimbabwe from three perspectives:

- A specification for each programme: the actors (governmental or otherwise) and their roles in the provision of such aid.
- The nature of the aid and cooperation programmes: i.e. operational instruments used

(e.g. financial support, technical cooperation, food aid, government-to-government, private sector driven), volumes pledged/disbursed, and a description of the status with specific projects and programmes.

- An analysis of the relevance and impacts (current and foreseen) of the cooperation programmes.

Albeit preliminary at this stage, the scope for the cooperation programmes to accomplish intended outcomes is discussed throughout the ensuring sections, with reference made to the actors and interests being served, and any networks being formed.

The report was compiled from data gathered from secondary sources and interviews with a limited number of people drawn from the public sector, agro-industry and the diplomatic community.

3. China and Brazil in Zimbabwe agriculture: aid and private investment

Ties between Zimbabwe and China were strengthened further in 2003 at the height of trade and targeted sanctions by developed countries with the country proclaiming the Look East Policyⁱⁱ. The Policy aimed to expand trade and bilateral relations as well as promoting investments with China, Malaysia, Indonesia, Singapore, Japan, South Korea, Vietnam, India and Russia (wikipedia, 2012; Machadu 2012). The relationship has focused almost entirely on China to the exclusion of the other countries. This is largely due to links between the Chinese Communist Party and ZANU (PF) that date back to Zimbabwe's independence struggle, as well as China's espoused policy of non-interference in the internal affairs of sovereign countries.

Notable high profile visits between Harare and Beijing and numerous Memoranda of Understandings (MoUs) have been signed. Programmes with China include those between the two governments to those between non-state entities. Government-to-government programmes have been on building the capacities of specified units of the Ministry of Agriculture and its Departments with the Government of Zimbabwe not paying for the assistance. Cooperation between the private sectors of the two countries is largely through contract farming arrangements where the Chinese companies provide key inputs that the beneficiaries repay at the time of marketing the produce. Over the years, there has been an expansion of contract farming schemes for tobacco and cotton financed by Chinese firms; particularly with tobacco.

Agricultural cooperation with Brazil is still nascent with the signing of an MoU towards the end of 2011 on agricultural mechanisation and irrigation development under the More Food for Africa programme. With work still underway in developing administrative procedures

in both countries, the equipment has not yet been supplied. The programme blends a government-to-government technical cooperation arrangement focusing on capacity building with a commercial component for procuring farm equipment on loan, its maintenance, and repayment of loans. A Zimbabwean private sector concern has built a giant ethanol plant using Brazilian expertise.

All commercial arrangements between Zimbabwean farmers and the private sectors of the two countries are facilitated by the Ministries of Agriculture of the two countries who additionally undertake an oversight role at both ends. The official aid and cooperation programmes and commercial arrangements between Zimbabwe and each of the two countries are next discussed in greater detail.

3.1 Aid cooperation programmes in agriculture with China

Aid programmes completed, underway and planned between Zimbabwe and China in agriculture include the Agricultural Technology Demonstration Centre (ATDC), Emergency Food Aid, a loan agreement with the China Export and Import bank, a donation of agricultural machinery by the Sichuan Provincial Government of China, and the Training of key staff in the government of Zimbabwe's Ministry of Agriculture.

A US\$30million ATDC Centre funded by China was commissioned at Gwebi Agricultural College, about 40km north-west of Harare. The Centre is in a prime farming area and presents an ideal setting for experimentation and running demonstrations.

The three key objectives that are part of the mandate of the ATDC include:

- The provision of a setting for showcasing successes of technologies and methods of production from China.
- An all-round training centre for agricultural personnel, students and farmers.
- Provision of a centre for agricultural research and technology development including research in biotechnology (Niu Pengbo pers. comm.).

The Centre is a donation from the Chinese government and was established as part of the commitments made by China to Africa from the 2006 Forum on China-Africa Cooperation (FOCAC) conference and reiterated at subsequent such gatherings. The Centre was commissioned in the first quarter of 2012ⁱⁱⁱ and the Chinese will run it for the next three years thereafter handing it over to the host government. The centre will be absorbed as one of the Ministry of Agriculture's centres of excellence in research and extension that include research stations, farmer training centres, and agricultural colleges.

In February 2012 China made a US\$14million donation in the form of 4,910 tonnes of rice and 9,723 tonnes of wheat to Zimbabwe as Emergency Food Aid with the distribution modalities left to the government. From the country's annual food needs, the donation constituted 40 percent and 3 percent respectively of annual rice and wheat requirements for the country (SADC 2011).

In 2011, the China Export and Import bank extended to Zimbabwe a loan facility for US\$334.7million for procuring tractors and supporting the mechanisation programme for Zimbabwe's agricultural sector. Despite the loan agreement being subsequently ratified by the Parliament of Zimbabwe, it is yet to be drawn-down. Some of the 'sticking' points include a stipulation for 10 percent down-payment to activate the facility and that the debt has to be fully amortised in five years using agricultural produce.

The Sichuan Provincial Government of China donated to Zimbabwe a consignment of agricultural machinery that comprised of 10 farm trucks, 30 walking (two wheel) tractors and 50 water pumps.

After the suspension of government-to-government cooperation programmes with traditional donor countries, China stepped in to partly fill the void with study tours and short courses for key personnel in Zimbabwe's Ministry of Agriculture. Parallel to that programme has been the secondment of agricultural experts from China to AGRITEX, the public extension service. Zimbabwe has been specifying the preferred skills in staff that are seconded. Ten experts have been coming on a one year placement, with the first group completing their 'tour of duty' in 2011; this year, ten more are expected. The experts were seconded to AGRITEX Head Office and among their responsibilities has been the capacity building of the host institution in areas of land use planning, horticulture and agribusiness. The experts developed training programmes and accompanied AGRITEX staff on field visits and extension outings. The Chinese government provides a stipend and is responsible for the general welfare of the experts.

3.2 China-Zimbabwe commercial interactions in agriculture

A number of Chinese companies have established themselves in Zimbabwe to pursue business partnerships with local farmers. Contract farming arrangements have been set up between Chinese companies and Zimbabwean tobacco and cotton farmers. Both crops are considered suitable for such arrangements as they are not consumed at household level and the marketing for each crop is through pre-determined channels. The Chinese companies comply with the same regulations as local companies who have set up contract farming arrangements: they need to provide each contracted farmer with adequate inputs for the contracted area; they

need to provide proof of access to off-shore funds for purchasing the crop; and they are obliged to sell a specified quantity of the total crop to the local industry.

This section discusses contract farming and its evolution in Zimbabwe before discussing contract farming arrangements in tobacco and cotton with Chinese firms.

3.2.1 Contract farming in Zimbabwe

Contract farming arrangements have been part of Zimbabwe's agricultural landscape in both the crop and livestock sectors since the mid-1950s (Woodend 2003) and have been implemented with varying degrees of success, longevity and scale (Irwin et al 2012). 'Contract farming is defined as agricultural production carried out according to an agreement between a buyer and farmers, which establishes conditions for the production and marketing of a farm product or products. Typically, the farmer agrees to provide a set quantity of a specific agricultural product which meets the quality standards of the purchaser and is supplied at the time determined by the purchaser. In turn, the buyer commits to purchase the product and, in some cases, to support production through, for example, the supply of farm inputs, land preparation and the provision of technical advice' (ibid).

Between the 1980s and the mid 1990s major contract farming arrangements focused on export horticulture based on contracts with European supermarket chains. Large-scale commercial farmers sub-contracted smallholder farmers in nearby communal areas to produce an additional crop to fully meet the quota and provided inputs, extension and in some instances even sprayed the smallholder crop to ensure that it met the exacting standards set by European markets.

The Cotton Company of Zimbabwe (Cottco), as the then only cotton merchant, started the input credit scheme in the 1992/93 season with some financial assistance from the World Bank (Woodend 2003). Inputs have been disbursed in up to four tranches and according to the growth stage of the crop. Each farmer is given a credit limit based on the previous production history. The contracted farmer is compelled to deliver the entire crop to the contracting company. A peer group monitoring mechanism is employed where smallholder farmers are organised into groups and each group member has to fully repay their loan in order for the members to be eligible for another loan the following season.

Zimbabwe's cotton crop has been sold on the world market at a premium due to the high standards that have been maintained through hand picking, grading according to cleanliness and fibre length, and ginning different grades separately (Esterhuizen 2009). The liberalisation of the cotton sector in 1994 saw the number of ginners and merchants permitted to buy the crop rising

from three to over 20. With the proliferation of buyers competing for a crop whose quantity was hardly changing over the years, newer entrants disregarded some of the buying and processing guidelines that the industry had long cherished. It was feared that such a development had potential to harm the industry and dent the reputation that the country's crop had painstakingly earned on the international market. Cotton merchants, ginners, government and farmers formed the Cotton Growers Association (CGA) and the Cotton Marketing Technical Committee (CMTC) to regulate the growing and marketing of the cotton crop; in particular providing inputs, ensuring that all merchants would buy and gin by grade, registering contracted farmers on a shared database, and making an undertaking not to engage in 'predatory' purchases; i.e. buying a crop from inputs supplied by a rival company. With the sector now better regulated, the number of cotton ginners and merchants that had risen to 25 has now stabilised at around 13 (Irwin et al 2012). From 2009, cotton merchants have used common input distribution and buying points in an effort to limit side-marketing.

Contract farming arrangements in tobacco were introduced in 2004 when it was apparent that financial institutions were not in a position to fund the crop. In the year of introducing the contract scheme, 23 percent of the tobacco crop was under that arrangement. In the 2011/12 summer, 13 companies contracted farmers on a total area of 39,227ha; this constitutes 60 percent of the total area under tobacco (AMID 2012a; AMID 2012b) and 65 percent of the total crop (Irwin et al 2012). A better quality crop is produced under the contract arrangement and this is attributed to the timely provision of inputs, extension and close monitoring provided by the contracting companies (TIMB 2012). The law on tobacco contract farming arrangements stipulates that at least eight percent of the contracted farmers be from the newly-resettled areas and the full package of inputs is to be provided to each participating farmer.

Each contracted farmer is obliged to deliver a crop to the contracting company to a value equivalent to the level of support provided. Contract arrangements and all marketing of tobacco are regulated by the Tobacco Industry and Marketing Board (TIMB); a quasi-state institution; an arrangement that has helped ensure a cordial relationship between contracting companies and the contracted.

Contract farming arrangements have become an even more significant form of funding agriculture in Zimbabwe as traditional sources of funds have become less able to do so of late.

With the demonetisation of the Zimbabwe dollar and adoption of multiple currencies in 2009, a liquidity crunch has persisted with the result that the local banking sector has been even more constrained in its ability to provide funding. Irwin et al (2012) estimate the total funding requirements for six major commodities (maize, paprika, cotton, tobacco, sugarcane, and coffee) at US\$213million and projected a \$136.58million financing shortfall in

the smallholder agricultural sector during the 2010/11 season. Tobacco and cotton under contract farming arrangements however have been better funded and are estimated to have got as much as 70 percent of total 2011/12 season agricultural funding (ibid).

3.2.2 Chinese support to Zimbabwe's tobacco sector

A key feature of the FTLRP was the decline in tobacco deliveries. By 2006, deliveries had declined to a mere 23 percent of the 2000 level of 236 million kg (Nyakazema 2010). Deliveries have since been recovering and 133.6 million kg is expected in 2012 (AMID 2012b; Ministry of Finance 2012). In 2011, tobacco accounted for 26 percent of the country's total export earnings (The Herald 2012).

A Chinese company, Tian ze Tobacco, has been one such contracting company and had an 11.7 percent share of the total contract crop marketed in 2011 (TIMB 2012)^{iv}. In 2012, China maintained its position as the top buyer of Zimbabwe's tobacco (The Herald 2012). Tian ze Tobacco offered the highest average price among all foreign buyers which was also higher than the average price for last year's crop (\$8.83 per kg from \$7.27 in 2011).

The company has been providing farmers on the scheme with inputs and capital equipment needed and recovering its money at the time of marketing. Each contracting company employs field officers who intensely monitor farmers on its scheme at all stages up until marketing. Of the companies that had contracts with tobacco farmers in 2011, Tian ze offered the highest price – 13 percent higher than the average among contracting companies (TIMB 2012).

Contract farming arrangements and the significant influx of buyers for the Chinese market have contributed significantly to the revival of the tobacco sector. Over the years, China has become Zimbabwe's largest buyer of tobacco with tobacco exports to that country more than doubling between 2010 and 2011, and constituting 21 percent of Zimbabwe's 2011 export crop (TIMB 2012). The TIMB (2012) posit that China's increased market share over that period was at the expense of the European Union whose share declined by 14 percent, partly due to the anti-smoking lobby. An added benefit with exporting to China was the much higher price that the country offered in comparison to other destinations – a position that has raised the average national price for that crop and helped with Zimbabwe's economic recovery.

Most farmers contracted by Tianze are from the newly-resettled areas as the company only contracts farmers who can commit at least 10ha to the crop in a season.

3.2.3 Chinese support to Zimbabwe's cotton sector

An estimated 300,000 smallholder farmers each committing an average area of 1ha account for over 99 percent of the crop (Esterhuizen 2009) and 95 percent of it is grown under contract arrangements (Makoshori 2010). Under contract arrangements, farmers are provided with seed, fertiliser and chemicals, and are in turn obliged to handover part of the harvested crop for the purpose of loan recovery.

Cotton is the only crop whose level of production was hardly affected by the FTLRP as it has traditionally been grown by smallholder farmers who have continued to be provided with inputs by merchants. Among the agricultural commodities exported, cotton brings in the second highest receipts after tobacco, with US\$150million realised from lint exports over the period 1 May 2008 to 30 April 2009 (Esterhuizen 2009).

Sino Zimbabwe Cotton Holdings (SZCH) is among the smaller merchants that are registered to buy the crop. The company has been accused of undertaking predatory purchases and not grading the crop at buying, neither do they gin by grade. Sino Zimbabwe has been accused of being among the merchants who provided little or no production inputs but were very aggressive at the time of marketing through offering prices higher than other merchants and not restricting themselves to buying a crop they provided inputs for (MISA 2010). Unlike tobacco which is sold in Harare, cotton is sold at the farm-gate often in remote areas and it is alleged that SZCH buyers often operate under the cover of local politicians and that they buy any offered crop – even that grown under contract with other ginners. Such practices could hurt the industry in the long run and some merchants are already scaling back their input support programmes.

Zimbabwe produces an average of 100,000 tonnes of lint each year but exports are only allowed after the local requirements set at 30 percent are met. Due to an economic downturn experienced in the country over the last decade that has badly hurt the local textile industry, more than 90 percent of the crop has been exported (Esterhuizen 2009; Mutenga 2012).

South Africa is the single largest buyer of Zimbabwe's lint. They accounted for 39.9 percent (2007) and 36.4 percent (2008) of Zimbabwe's total lint exports. South Africa has nevertheless been referred to as a 'warehousing' centre since it re-exports some of the lint. In 2008 China accounted for only 8 percent of Zimbabwe's lint exports, and this was an increase of 1.5 percent from the previous year. The total volume be higher, however, if considering that some such lint could have been re-exported to China from South Africa.

There has been an impasse with producer prices on offer for the 2011/12 season cotton crop. Merchants offered producer prices that were less than half of last year's average price, citing a slump in demand on the

world market. The government threatened to rescind the position taken in 1994 on liberalising the sector and proceeded to advertise for positions in a cotton marketing company that they intended to establish. Merchants asked the government for more time for negotiations as they provided \$42million in inputs for the current crop (Mutenga 2012). As an interim arrangement, merchants have been buying lint at 30-36c/kg with a promise to provide a top-up whose level would be determined at the end of the year – after exportation. The interim price has left cotton farmers dejected since most of their crop has gone to pay for inputs, leaving the farmer with no means to even partly finance the next crop. All merchants are reported to have made losses from last year's crop as they set a purchase price of 85c/kg in May, hoping that the world market price would recover toward the end of the year; there was however no upswing in the world cotton price.

Irwin et al (2012) estimate the breakeven price for cotton at 42c/kg at an average yield of 700kg/ha. The average yield for the 2011/12 cotton crop was 16 percent lower at 590kg/ha (AMID 2012b). Though indications have been made that the final settlement price could be as much as 70c/kg, we will only know by year-end whether such a price will be realised. Furthermore, even if a top-up price is paid, it will come too late to be of much use for the 2012/13 season beginning in October.

3.3 Aid and cooperation programmes in agriculture with Brazil

The flagship of Brazil-Zimbabwe cooperation in agriculture is the More Food for Africa programme. Brazil launched its More Food programme in 2008 with the aim of achieving food self-sufficiency at the small farm level, and spent over US\$2.3billion on it between then and 2010. Initiatives to extend the programme to Africa began in 2010 at the Brazil-Africa dialogue on Food Safety, Hunger Alleviation and Rural Development (Carrieri 2011) and have been spearheaded by the country's Ministry of Agrarian Development (MDA). Brazil's Foreign Trade Board (Camex) approved \$640million in lines of credit for the programme to Africa in the 2011/12 financial year. Under the programme, countries can obtain technical guidance from Brazilian specialists and may import equipment manufactured from that country. Ghana and Zimbabwe were the first African countries to have the More Food for Africa programme.

In Zimbabwe, the programme was widely publicised with the signing of the MoU in August 2011. Under that programme worth a total of US\$98million, Zimbabwe will receive agricultural machinery from Brazil through a loan agreement. The primary beneficiaries for the programme are smallholder farmers which could be from the country's communal, small-scale commercial or resettlement areas^v. The latest exchanges were in late September 2012 when Zimbabwe's Minister of

Agriculture visited Brazil to confer with his counterpart to further consummate the programme.

Some logistical issues with Brazilian companies to supply the equipment are being finalised, as are technical specifications of the equipment and arrangements for collecting repayments in Zimbabwe.

Government officials in Brazil and Zimbabwe will administer the programme. In Brazil, MDA will work with the companies supplying equipment and ensure that quality standards are maintained and prices are not increased unduly. In Zimbabwe, government officials are expected to train farmers in using the equipment and monitor its use, including maintenance. Zimbabwe government officials will continuously assess agricultural production on beneficiary farms and assist with ensuring that farmers repay the loans.

The government of Zimbabwe will be the borrower and will repay the loan within 10 years. Farmers are expected to pay for the equipment within 15 years at 2 percent interest. Considering the challenges with securing adequate funding that the government of Zimbabwe has been experiencing since the Zimbabwe dollar was demonetised – e.g. registering a budget shortfall of US\$98.6million between January and March 2012 (Ministry of Finance 2012) – the government could encounter problems servicing the loan, since the repayments by farmers are not synchronised with repayments to the Government of Brazil.

A number of exchange visits by senior government officials have been undertaken between the two countries in the lead-up to signing the MoU on the More Food for Africa programme and thereafter. From the Government of Zimbabwe side, Ministries involved include Agriculture, Mechanisation and Irrigation Development, and Finance and Investment Promotion. The Government of Brazil has been represented by MDA, Embrapa and the Ministry of Foreign Affairs.

A private investment firm, Green Fuels, has set up a \$600million ethanol processing plant in Chisumbanje, South East Zimbabwe, as a joint venture with the Agricultural and Rural Development Authority, a quasi-state institution on whose estate the plant is located. The joint venture was to run for 20 years under the Built-Operate-Transfer arrangement. The Brazilian private sector provided the expertise in building the plant and it is reported to represent the best of the available technology. Sugarcane is supplied primarily by the estate and is supplemented through out-grower arrangements with surrounding communal farmers. The ethanol is being sold as a 10 percent blend with petrol at a price slightly lower than that of 100 percent petrol. The product has received a lukewarm response from the market; without mandatory blending, the plant may have to shut down. The project has been mired in controversy with reports that a number of communal farmers were forcibly evicted with no compensation to make way for the expansion of the estate. Discussions are currently

underway to run the project as a joint venture with government, with mandatory blending being enforced.

4. An analysis of China and Brazil cooperation programmes with Zimbabwe: Assessing relevance and possible impacts

Distinguishing features for aid and cooperation programmes by Brazil and China in the agricultural sector of Zimbabwe include the nature of the assistance – particularly the size of budgets, length of time for the programmes, implementation modalities and inclusion of commercial components. Besides exploring these issues, this section includes a discussion on changes in perceptions towards China, given that the relationship between Zimbabwe and that country is maturing. The section also makes general comments on the compatibility of the aid and development programmes (with China and Brazil) with respect to some policies being pursued by Zimbabwe.

4.1 Nature of China/ Brazil aid and development programmes

Unlike programmes with traditional donors, engagement with China and Brazil is at government-to-government level, over the long- to medium-term. Traditional donors have been focusing on the poorest segments of the society and have not expected any repayments from the aid recipients. Moreover, they are only restoring direct links with government after severing them between 1999 and 2003. With the imposition of trade restrictions on main state entities and targeted sanctions on senior government and (then) ruling party officials by the European Union, and as part of an initiative to by-pass the government of Zimbabwe, a consortium of four key donors (DFID of the UK, Australia, Netherlands and Denmark) formed the Protracted Relief Programme (PRP) in 2004 to provide aid directly to the most vulnerable segments of the population. PRP gave out free inputs up until 2008 which entrenched a dependency syndrome. Over the second phase of the programme (2008-2013), US\$130million was earmarked for the programme, and implementation was carried out through 33 local and international NGOs. The poorest and most vulnerable households received subsidised inputs through vouchers, and in the 2011/12 season, each beneficiary contributed 10-50 percent towards the cost of inputs with the maximum value of each voucher set at US\$160. A criticism made is that the input pack given per farmer is so modest that whilst it could have been adequate to meet household food needs, the average farmer may not have had significant surpluses to sell to finance the next crop (Hanyani-Mlambo et al

2012)^{vii}. Consequently, with no major changes to the input package, support would have to be extended to the same farmers again in the next and subsequent seasons.

In contrast, the average size of Brazilian and Chinese aid per beneficiary is much larger (e.g. tractors issued to individuals, input pack for a minimum of 10ha tobacco). Cooperation programmes with China and Brazil support fewer beneficiaries, and ability to meet repayments is a major consideration. Beneficiaries have to make payments on the inputs and capital equipment supplied and cash cropping has hitherto been a major component of such programmes. A major advantage with the China/ Brazil cooperation programmes is that interest rates are much lower than those prevailing on the local market. The More Food for Africa programme will run for over 15 years and the contract farming arrangements with the Chinese could run into perpetuity. Protocols related to Chinese and Brazilian cooperation programmes are negotiated and signed at government level and the Zimbabwean government has provided the necessary guarantees. Implementation is overseen by government officials unlike the case with traditional donors who are not obliged to share all information with government.

Cooperation programmes with Brazil and China in agriculture are anchored on commercial arrangements involving private sectors of the two countries and are 'protected' as they are part of the aid protocols signed at government-to-government level. With time, it is expected that the current strong links at government level between Zimbabwe and China/Brazil will be replaced by stronger contacts between private sector companies in Zimbabwe and their counterparts in Brazil and China. That position is capable of sustaining itself in perpetuity through profits made by private companies in Zimbabwe and Brazil and China.

Cooperation with China, especially in tobacco, has already made an impact by reviving that sector. The higher prices that have been offered for the country's crop and the contract arrangements in place have spurred farmers to increase the area of productivity. It is projected that if the current trend continues, the pre-FTLRP position could soon be surpassed. Enhanced tobacco receipts are resulting in an improvement in liquidity in the whole economy.

Cooperation programmes with traditional donors as well as between Zimbabwe and China/Brazil are meeting different needs, and there may not be adequate basis for comparing their impacts with designs and target groups differently.

4.2 Changed perceptions towards China?

The inclusion of the ATDC as part of the aid programme with China could be invaluable in that it could change the widely held perception that Chinese technology is inferior to that of the West, with Chinese-made goods

earning the infamous tag *Zhing-Zhong*^{viii} in Zimbabwe. The Chinese will run the ATDC for three years and thereafter hand it over to the government of Zimbabwe. It is curious how a three-year period for eventual handover was set when the cooperation programme with China will run well beyond that timeframe.

Through engagements with China in wide areas of the economy, many more Zimbabweans now welcome Chinese investment. Even the two protagonists in Zimbabwe's politics now share the view that the Chinese are sincere development partners, and the Prime Minister whose party has been somewhat ambivalent of Chinese assistance is actively courting Chinese investment in other areas of the economy – e.g. rehabilitating the country's road-network, increased power generation, and the proposed giant pipeline of more than 400km from the Zambezi river to supply water to the city of Bulawayo with irrigation water being provided to farms along the route.

Cotton farmers who benefited through 'predatory purchases' by SZCH were grateful for the higher producer prices offered since, in the long run, such a practice could be prejudicial to the prospects of the country's cotton industry and the reputation of its lint exports.

Zimbabwe's cotton has been ginned by grade and its lint has been sold at a premium on the world market due to its consistent quality. With reports that SZCH has not been ginning the crop by grade, there are fears that increased exports of Zimbabwe's lint by that company could result in a loss of the crop's premium status that had been painstakingly acquired. Farmers who side-market a contracted crop are blacklisted and are ineligible for input support in subsequent seasons. There is a need for all merchants to join the CGA and CTMC and conform to the operational standards of the two institutions. Additionally, there is a need for the CTMC to revise the fine set for 'predatory purchasers' as the current level appears not to be deterrent enough.

4.3 Aid and cooperation programmes and some national policies

Foreign investments in any country can be structured to have aid and development components and cooperation programmes with China and Brazil are no exception. For Zimbabwe, all foreign investments in the agricultural sector have to conform to the Agricultural Policy (2012), Indigenisation and Economic Empowerment Act (2010) and the Industrialisation Development Policy (2012-2016).

4.3.1 Aid and cooperation programmes and the Agricultural Policy

The Agricultural Policy acknowledges the decline in the provision of credit to farmers and agribusiness in recent years due to general liquidity constraints in the economy, lack of collateral security, high cost of lending to some farm classes, insecurity of tenure and inaccessible low cost international lines of credit (AMID 2012a). The Government of Zimbabwe commits itself to ensuring that credit is available to all worthy farmers through, among other ways, prescribing that a certain percentage of bank lending be set aside for agriculture – ensuring that land leases are used as collateral as well as promoting contract farming. Contract farming arrangements through Tianze and SZCH are in line with that thrust.

The Government of Zimbabwe is constrained in its ability to fund agriculture and made available US\$45million in input support for the 2011/12 summer season (Kabudura 2011). Under that facility, farmers paid 50 percent of the cost of inputs. Restrictions were, however, imposed on the amount of inputs that each beneficiary could purchase (Box 1).

Box 1: Maximum area by type of farm for the USD45 million 2011/12 summer season government input facility

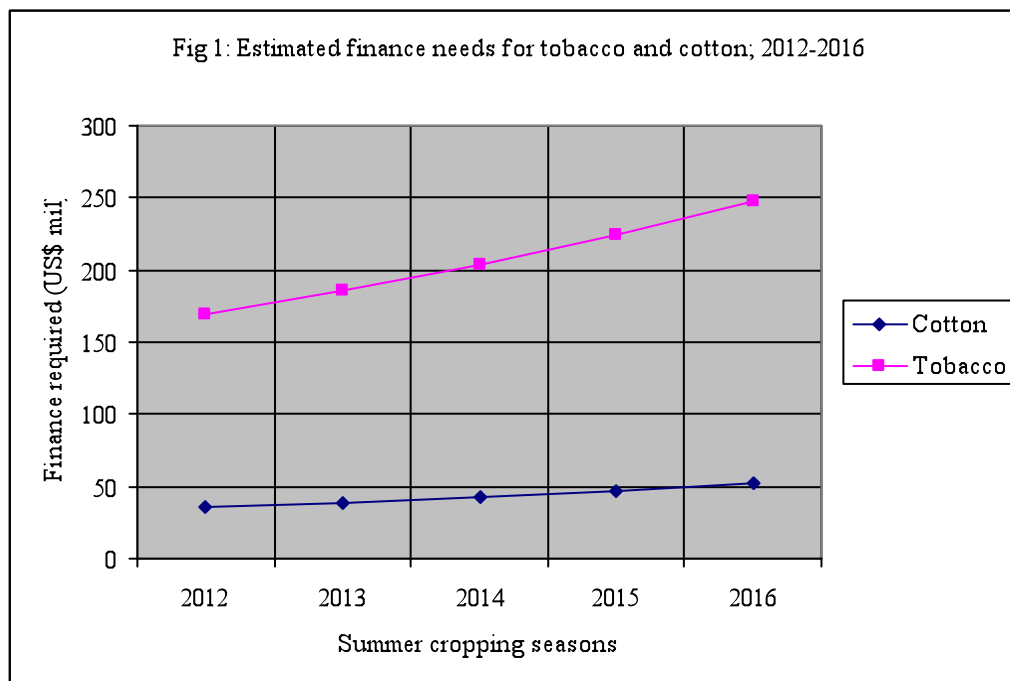
A2 farmers: 10ha
A1/ Small Scale Commercial/ Old Resettlement: 1ha
Communal: 0.5ha (See ^{iv} for farm types)

The amount provided by government is 22 percent of what Irwin et al (2012) estimate as funding requirements for cotton and tobacco in 2012. From Figure 1 where the projected funding requirements for tobacco and cotton over the period 2012-2016 are shown (ibid), it is apparent that productivity and production by the agricultural sector would have remained depressed had there been no contract farming arrangements, given the limited capacity of government to fund agriculture.

4.3.2 The Indigenisation and Economic Empowerment Act and the cooperation programmes

The Indigenisation and Economic Empowerment Act which became law in 2010 is yet another set of policies that foreign investors, including those coming through aid and cooperation programmes, have to comply with. The Act stipulates that 'at least 51 per centum of the shares of every public company and any other business

Figure 1: Estimated finance needs for tobacco and cotton; 2012 - 2016



shall be owned by indigenous Zimbabweans^{ix} (Government of Zimbabwe 2010: 5). Under the Act, investment licences are only to be issued to companies that comply. In the case of an exemption, a timeline for eventual compliance is set.

The Minister of Indigenisation and Economic Empowerment has ruled that Chinese companies are exempted from complying with the law and that they are allowed to retain 100 percent ownership since they are bringing in funds for supporting contract farming arrangements and are sub-contracting may smallholder farmers. Tian ze was specifically mentioned in that regard, with it reported to have supported 250 contract farmers in the 2011/12 season (Chibaya 2012). It is unclear how long the exemption extended to Chinese companies will last; the Act is, however, said to be a disincentive to would-be investors from the rest of the world.

4.3.3 Cooperation programmes and the Industrialisation Development Policy

The government of Zimbabwe has raised concerns that most of its goods are exported in a raw or semi-processed form rather as finished products. This earns the country less from exports and keeps the general economic activity in the country subdued.

The contribution by the manufacturing sector to the country's GDP declined from 20 percent in 2000 to 10 percent in 2008 (MIC 2012). The revival of the country's economy was initiated in 2009 with the establishment of a Government of National Unity. The Industrialisation Policy of Zimbabwe (2012-2016) encourages more beneficiation of the country's exports, conscious of the jobs and an improvement in livelihoods that could arise

through such an initiative. International prices of raw materials have been noted to be susceptible to higher price fluctuations than finished products and so Zimbabwe considered imposing a tax on the export of raw materials to discourage such activity (MIC 2012; Machadu 2012). Cotton lint and tobacco are among commodities that could be processed further before export. There is merit and scope for more beneficiation of export goods much as there are limitations in accomplishing that in the short term.

The setting up of the ethanol plant has been in line with the Industrialisation Policy. Ethanol production has, however, been suspended pending the resolution of issues on displaced communities and the development of an appropriate technical and business model^x. In the long term, it is envisaged that the project will establish even stronger cooperation with Brazil, with the ultimate aim of setting up a local assembly plant for vehicles that run on high ethanol (Mutambara 2012).

4.4 Cooperation programmes and indebtedness

Concerns have been raised on the implications of the increased indebtedness of the country to external partners through such cooperation programmes. Zimbabwe's current debt level is unsustainable and fears are that however much the aid programmes with China and Brazil are welcome, and indeed are imperative, they could entrench the country deeper into debt. The debt to GDP ratio for Zimbabwe was 104 percent in 2010 (World Bank 2012) and has since worsened. As at June 2011, the country's total debt stood at \$8,754 million; two thirds of the external debt (\$6,081 million) was in arrears and 75 percent of it was of a medium- to long-term nature (ibid). The country is currently auditing its

debt and developing a debt-restructuring plan; such initiatives need to be accompanied by a major debt-write off by Zimbabwe's major creditors. This year, the country is reportedly to have defaulted to the tune of \$200 million to China (Mashiri 2012).

As Zimbabwe pursues cooperation programmes with China, Brazil and other nations, it needs to revive ties with traditional donors that include the European Union, the United States, Canada, Japan and Australia^{xi} and engage creditors with a view to getting some of its debt pardoned.

4.5 Cooperation programmes and agricultural mechanisation

The Ministry of Agriculture, Mechanisation and Irrigation Development is still developing the agricultural mechanisation strategy for Zimbabwe and it is expected that the mechanisation components of the cooperation programmes with Brazil and China are part of that strategy.

As work is still underway in finalising the structure and components of the More Food for Africa cooperation programme with Brazil, it may be premature to comment on the suitability of the programme per se and its likely impact(s). There have been inordinate delays in getting the first shipment of equipment made and it is hoped that once administrative arrangements are finalised, the programme will be rolled out quickly.

Considering the average size of small farms in Zimbabwe and their potential, the Brazilian model of supporting family farms through the More Food programme may not be easily transferable. The Zimbabwean communal farm is much smaller with an average area of 2ha cropped each year. Meanwhile 75 percent of communal farms are located in areas of low rainfall and crop failures are frequently experienced. Due to the small average areas per household and low value of what is produced in communal areas, land preparation has been carried out by animal draught power rather than by tractors. Small-scale commercial farms at an average area of 123ha are largely not viable since 75 percent of them are located in low rainfall areas, and most of them are poorly developed – with no fencing, irrigation or electricity. Chavunduka (1982) estimates that as many as 40 percent of small-scale farms operating on leases as title deeds were denied as they were considered too poorly developed. Most beneficiaries of the More Food for Africa programme could be drawn from high potential resettlement areas. Moyo (1995) advocated that intensively managed farms of sizes ranging from 20 to 500ha can be viable, depending on enterprise choice and land quality.

Evidence from farm settlement schemes in the 1980s showed the medium sized tractor (65kw; 60-70hp) as most appropriate; the smaller and larger units were less

ideal due to higher operational costs. Furthermore, each unit can cope with an area of 60ha per year (AGRITEX 1983). Lessons on appropriateness of tractors and their management under smallholder communal farming settings in Zimbabwe provided in Rusike (1988) show that tractors may not be ideally suited for communal farming areas. Evidence from a donor funded project implemented in Chiweshe communal area shows that ownership and management of farm equipment such as tractors at group level can present challenges that, if not adequately addressed, can lead to the demise of such schemes. Aspects that can have a bearing on the sustainability of group mechanisation schemes include setting service charges at appropriate levels and adhering to maintenance guidelines. In the Chiweshe scheme, members charged sub-economic rates for services among themselves; they further allowed members to pay in instalments unlike non-members who had to pay for services in advance. That arrangement saw the service being used almost exclusively by members and along with poor bookkeeping skills saw most of the schemes collapsing.

There was no urgency for beneficiaries of the tractors and farm equipment given out by the RBZ to newly-resettled farmers in 2007 to repay for it, as this was during the era of the Zimbabwe dollar when repayments were made in a rapidly depreciating currency. Also, no mechanism was put in place to monitor the state and use of the machinery. With the mandate of the RBZ now changed, there may be no mechanism to enforce full repayments.

The Ministry of Agriculture, Mechanisation and Irrigation Development is promoting conservation agriculture (CA) with reduced tillage techniques as its cornerstone (AMID 2011)^{xii} and tractors under communal farm situations may not quite fit into that thrust. CA has been characterised by very low adoption rates due to heavy labour demand with the technology currently being used. No animal drawn CA equipment has been available and farmers have had to prepare planting stations through a heavy-drudgery process using hoes. FAO has acquired animal drawn CA equipment for demonstration at small-farm level through AGRITEX and CA equipment was among items that poor and vulnerable households could procure using the PRP crop input vouchers in the 2011/12 season. Higher adoption of CA among smallholder farmers is foreseen considering the higher maize yields reported among farmers who used CA animal-drawn equipment; furthermore, the price of such equipment is comparable to that of the conventional plough and its accessories.

At the time of preparing this report, the range of equipment that was to be provided to Zimbabwe under the More Food for Africa programme had not yet been finalised. Tractors given out to individual beneficiaries in newly-resettled areas could be an appropriate investment since, as it stands, significant areas of arable areas are not being used once cropped – partly due to a shortage of draught power. Higher production may not be assured, given the problems farmers have been

experiencing each year in securing adequate inputs (seed, fertiliser, pesticides), as well as constraints in the provision of extension.

improving food security particularly in smallholder farming areas.

4.6 Cooperation programme and irrigation development

Zimbabwe is divided into five farming areas (Natural Regions I-V) on the basis of agricultural potential, with Natural Region I being of highest potential (Figure 2).

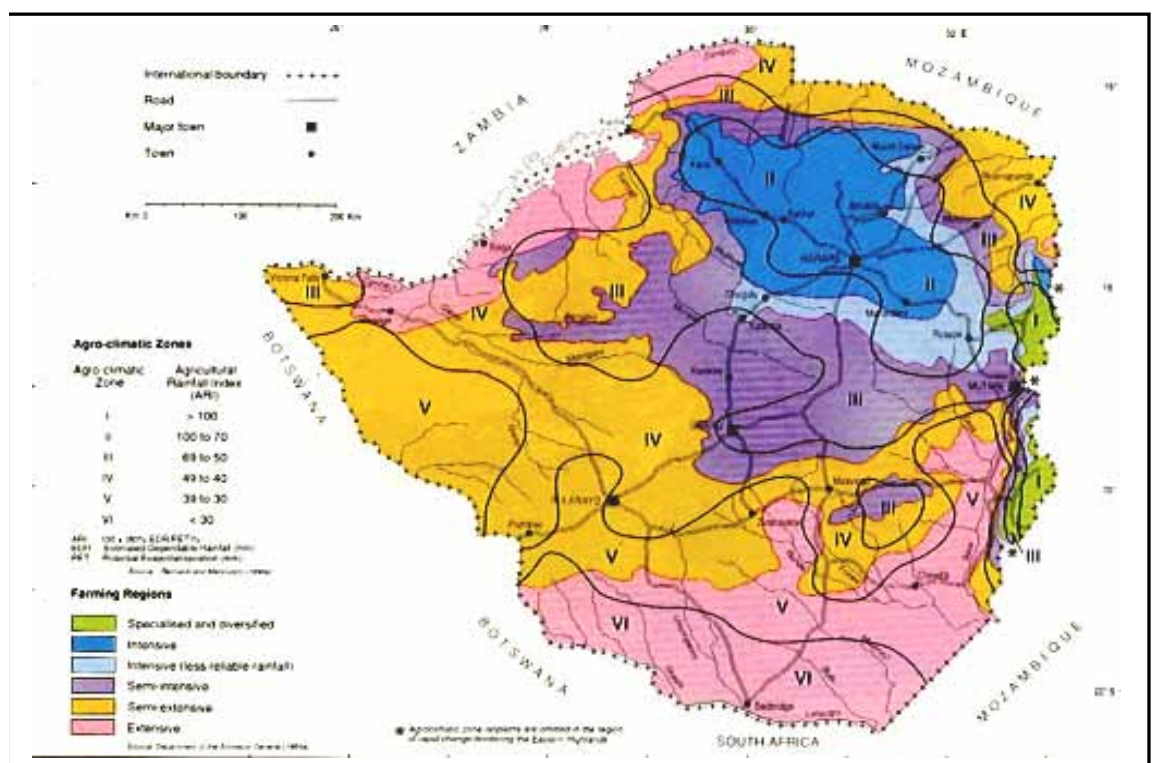
75 percent of the smallholder farming area of the country is in Natural Regions IV and V (Pazvakavambwa 2007). Without irrigation, these areas are not suitable for dryland cropping as they receive low rainfall, high temperatures and poor distribution^{xiii}. Droughts and mid-season droughts are also gathering frequency, resulting in substantial yield losses. As much as 40 percent of the 2011/12 summer crop was written-off due to a devastating mid-season drought (AMID 2012c).

Of Zimbabwe's annually cropped land less than 5 percent was under irrigation (Matiza in Rukuni ed. 1994; AMID 2012c). Prior to the FTLRP 90.7 percent was on former large-scale commercial farms and only 3.3 percent in communal farming areas (Rukuni and Svendsen 1994). A lot of infrastructure on former-large scale farms was vandalised and irrigation systems have to be re-designed following the subdivisions. It is in this context that irrigation development could be an equally important component of the More Food for Africa package for Zimbabwe, as it could make a major contribution in resuscitating and stabilising the agricultural sector and

Irrigation development in communal areas and on recently acquired farms, however, could present challenges. The viability of smallholder irrigation schemes in communal areas has long been questioned (Rukuni and Svendsen in Rukuni et al 1994). Such schemes have been established by government or donors and further government funding has periodically been needed to rehabilitate them. Viability issues arise with small plots allocated per household (typically up to 0.5ha each), poor choice of crops and issues around the management of a communally owned asset. With farm sizes much smaller under the FTLRP, irrigation schemes may have to be re-designed, and among issues to determine viability, choice of crops, size of scheme and competency of the new farmers must be considered. For the full benefits envisaged from irrigation development to be realised, extension services need to be strengthened, along with improvements in the availability of inputs including uninterrupted power supply from the national grid.

The local agri-business community has considered investment in farm equipment such as tractors as a medium-term undertaking that has to be repaid in five years; corresponding to the economic life of the asset. At the time of preparing this report, it was not clear how long beneficiaries of the More Food for Africa programme would be expected to pay for the equipment. Conscious of the wider objectives of South-South cooperation programme, it is suggested that repayments on key assets that will be supplied under the More Food for Africa programme be over the productive life of each asset.

Figure 2: Zimbabwe's Natural Regions and farming areas



5. Conclusion

The commercial agricultural sector in Zimbabwe shrank considerably over the period from 1999 to 2008, largely due to a re-configuration of the farming sector with the land reform programme and the attendant macro-economic challenges experienced. The decline in productivity was partly due to a liquidity crunch experienced in the economy and a drastic reduction in funding to agriculture from the local banking sector and agro-processors. Such decline was most pronounced in tobacco. Contract farming arrangements in tobacco and cotton as well as a deliberate policy of strengthening ties with China have helped the stabilisation and recovery efforts.

2008 saw more macro-economic stabilisation achieved with the demonetisation of the Zimbabwe dollar and an improvement in availability of inputs. Sustained investment in the agricultural sector is needed and, as the country cannot provide adequate funding for that sector on its own, the shortfall must be met through grants and loans from aid and development partners.

Support by traditional donors to smallholder farmers in communal areas has mainly been to poor and vulnerable households through providing subsidised seed and fertiliser. Such support is appreciated as it is resulting in improved food security at household level. Beneficiary households can, however, be considered as trapped in a state of perpetual dependency as they continue to need input support each season. Inadequate support has been provided to the better-off communal and resettlement farmers and agricultural recovery has remained stifled.

Cooperation programmes in the agricultural sector with Brazil and China provide a different perspective in that they have larger budgets, are implemented over a longer time period, include capital equipment and are not restricted to the poor and vulnerable smallholder farmers. As much as they have been initiated and driven at government-to-government level, they are anchored on commercial ties.

The agricultural cooperation programme with China that started as a bilateral programme has grown tremendously over the years and has become dominated by commercial arrangements between private companies and the quasi-state institutions of the two countries. Such cooperation programmes are credited for the revival of the country's tobacco sector, especially over the last five years. Concerns, however, have been raised in the cotton sector, with SZCH accused of some underhand dealings through buying a contracted crop, particularly in 2009 and 2010.

The roll-out of the agricultural mechanisation programme with Brazil is eagerly awaited, bearing in mind the dearth of funding for the agricultural sector – particularly of a medium and long term nature. For the More Food for Africa programme to fully realise its

intended benefits, forethought is needed on the capital equipment suitable for each sector, as well as its ownership and management.

The government of Zimbabwe will assume the debt on the equipment to be supplied by Brazil. Servicing of the loans could be a challenge bearing in mind the country's current debt burden. A preferable option would be for repayments to be collected directly from farmers.

End Notes

ⁱ Zimbabwe's farming sectors are as follows:

Large Scale Commercial Farms: These are individual holdings with title deeds. Farm sizes are variable but can be over 400ha for properties occupied by indigenous Zimbabweans prior to the land reform programme. Properties that have been occupied by whites are much smaller as they had to cede significant proportions of their properties for the Fast Track Land Reform Programme. With the land reform programme and all farmland now vested in the state, LSCFs are becoming either A1 or A2 farms.

Communal farms: the largest farm sector with 1,403,651 households (Government of Zimbabwe, 2011) sharing 16.4ha (Scoones et al, 2011). Households are allocated individual cropping lands with grazing shared. Land use is regulated through traditional structures (traditional chief, headmen). Land pressure is most acute in this sector, both for grazing and arable purposes. 75% of communal farming area is in low potential Natural Regions IV and V.

A1 farms: Settlers are allocated individual residential and arable plots but share common grazing, woodlots and water points. Arable land allocated per individual varies with agro-ecological region (12 ha in Natural Region I to 70ha in Natural Region V); household is allocated a minimum of 3ha arable land with the remainder set aside for communal grazing.

A2 farms: Is aimed at increasing the participation of black indigenous farmers in commercial farming. These are smaller self-contained commercial farms. Land is held through either 99 year leases or offer letters. Farm sizes are variable and range from Peri-Urban plots of 5ha to Large Scale Commercial farms of sizes ranging from 50ha.

Small Scale Commercial Farms: 8,500 in total, half with title deeds the rest with leases. Average farm size is 123ha with individual sizes ranging from 20 to 800ha (Chavunduka, 1982). Like communal farming areas, most SSC farms are not viable with over 70% of them located in Natural Regions IV and V.

ⁱⁱ Mixed views on the value of Zimbabwe's increasing ties with China – assistance with farm equipment and contract farming have been pivotal to revival of the country's agricultural sector. Trade between the two countries is in favour of China, e.g. trade deficit of US\$189million recorded in 2007 with Zimbabwe exporting US\$16million worth of goods to that country. The position has been worsening since then with exports to China growing annually by 31 percent (7.4 percent of total exports) and imports by 32 percent (6.2 percent of total imports). EU trade with Zimbabwe is worth US\$860million with a trade surplus of US\$271million in favour of Zimbabwe (Machadu, 2011); in 2011 country recorded a trade surplus with the US

with exports valued at US\$75million, imports at US\$64million. Zimbabwe's parliamentarians urged the government not to neglect traditional markets in the West as Far East markets were still in their infancy (for Zimbabwe).

- iii Commissioned by Zimbabwe's Vice President Joice Mujuru.
- iv In 2011, Tian ze secured just over 50 percent of the crop exported from Zimbabwe to China with other merchants supplying the rest.
- v The first major high-level government-to-government engagement with Brazil was in August 2011 when the Vice President of Zimbabwe (represented by Minister of Hospitality and Tourism W. Muzembi) led the Zimbabwean delegation to a Trade Promotion and Investment Business seminar held in Brasilia. The Zimbabwean delegation included the Minister of Economic Planning and Investment Promotion (T. Mashakada), Zimbabwe Trade Promotion Agency Deputy Director (Ms C. Zhanje) and the Zimbabwe Investment Authority Chief Executive (R. Mubaiwa). The Brazilian delegation was led by the Under Secretary General for Cooperation, Culture and Trade Promotion in the Ministry of External Affairs (Ambassador H. da Rocha Vianna), and included Trade and Investment Promotion Director (Ambassador N. Rapetsa), Trade and Investment Promotion Agency Business Manager (Ms A.P. Rapezza); Bulawayo24NEWS (2011).
- vi The sole ruling party from independence in 1980 to 2008 was Zimbabwe African National Union Patriotic Front (ZANU PF). Its stranglehold was only broken in 2009 when a Government of National Unity was formed with the Movement for Democratic Change following disputed elections. The EU has since been relaxing the sanctions but has not completely lifted them.
- vii The 2011/12 season input pack with most NGOs set at \$80 per beneficiary. Input prices: seed at \$2.50/kg, fertiliser at \$33/50kg bag. Average input rates per ha of maize: 25kg seed + 5 bags fertiliser (3 basal, 2 top dressing). Estimated yield: 1.5-2 tons/ha.
- viii A Zimbabwean slang word meaning cheap, Asian-mostly-Chinese of inferior quality. The word made its appearance at the onset of Chinese penetration in to the Zimbabwean economy at the turn of the 21st Century. It stems from the way the Chinese language sounds to a Zimbabwean hearing it for the first time, and from the names of the Chinese manufacturers on the labels of many cheap, low-quality products. Zhing-Zhong now also means anything that is low-quality, even a person unfit for their occupation or station in life. <http://en.wikipedia.org/wiki/Zhing-zhong> - cite_note-1
- ix Indigenous Zimbabweans defined as any person who before 18 April 1980 (date of independence) was disadvantaged by unfair discrimination on the grounds of his or her race.
- x Of the 1754 households displaced with the setting up of the project, only 516 have been resettled. No audit of the assets of those displaced was undertaken (land, livestock, crops, buildings, equipment, family size), none of the displaced households were compensated; 0.5ha was allocated to each resettled household when some households need much more – e.g. polygamists. The ethanol is reported to be over-priced; at \$1.00 per litre when the competitive price is 69.2c/kg. The partnership between Green Fuels and ARDA is reported to be

illegal. A report by an inter-Ministerial Committee on the stalled project has since been approved by the Government of Zimbabwe. The report recommends setting up a Joint Venture between Government and Green Fuels and directed that displaced communities be fully compensated, the quota of locals among the general workforce be increased from the present 32%, the land lease to Green Fuels be regularised, and price of ethanol be set at a level that reflects market realities, and the veracity that \$600million has been invested in the plant be established (Mutambara, 2012).

^{xi} www.newzimbabwe.com/ Zimbabwe's MPs critical of Mugabe's "Look East" Policy; argued that that there is no basis to neglect traditional markets in the west as the country is still developing links with the Far East markets. See also Chengu (2011)

^{xii} The strategic national target is to have at least 500,000 farmers practicing Conservation Agriculture on at least 250,000ha by the year 2015, attaining an average cereal yield of 1.5t/ha on such fields. Under the practice, the only operation undertaken prior to planting is the preparation of planting stations with ploughing of the whole field done away with.

^{xiii} **Zimbabwe's Farming Regions:**

Zimbabwe is divided into five Natural Regions (I-V) on the basis of rainfall, temperature, altitude and to some extent soils (Surveyor General, 1998).

Natural Region I: comprise most of the Eastern Highlands; a specialised and diversified farming region receiving the highest rainfall of over 1000mm per annum with some precipitation received each month. Temperatures are low due to altitude and rainfall is highly effective. Afforestation, fruit, intensive livestock production can be undertaken; coffee, tea and macadamia nuts can be grown in frost-free areas of this Natural Region.

Natural Region II: An Intensive Farming Region with rainfall confined to summer (October to April) and is moderately high; ranging from 750-1000mm per annum. Region is suitable for intensive systems of farming based on crops (tobacco, maize, groundnuts, soyabeans, wheat) and / or livestock production (cattle, piggery, dairy, chickens).

Natural Region III: A Semi-Intensive Farming Region that receives moderate rainfall in the range 650-800mm per annum. Most of it comes in infrequent heavy falls and its effectiveness is thus reduced. The Region is subject to fairly severe mid-season dry spells and is marginally suitable for crop production. The recommended farming system is livestock production (supported by fodder crops) and cash crops on heavier soils.

Natural Region IV: A Semi-Extensive Farming Region that experiences fairly low rainfall of 450-650mm per annum. Region is subject to periodic seasonal droughts and severe dry spells and rainfall is too low and unrealistic to support cash cropping. The recommended farming system is livestock production that can be intensified by growing drought-tolerant fodder crops.

Natural Region V: An Extensive Farming Region, rainfall is too low and erratic for the production of even drought-tolerant fodder and grain crops. Farming is to be based on the utilisation of natural vegetation only. Extensive cattle ranching and wildlife are the recommended farming systems.

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This **Working Paper** was written by **Langton Mukwereza** for the **Future Agricultures Consortium**. The series editors are **Amy Thompson, Rachel Whitfield** and **Beatrice Ouma**. Further information about this series of Working Papers at: www.future-agricultures.org

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FAC appreciates the support of the UK Economic and Social Research Council and UK Department for International Development (DfID)



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