Modernisation of Arable Agriculture in Chobe District: A Search for Food Self-sufficiency through ALDEP, 1980s and 1990s

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Abstract

Food insecurity continues to be a major challenge to developing nations, including Botswana. While there is recognition that agriculture is still the primary source of employment and food supply in most sub-Saharan economies, it is ironic that agricultural productivity is cumulatively declining. In addressing the problem, authorities tended to adopt modernising strategies 'from above', churning out technologies but lacking synergies between targeted beneficiaries, extension workers and development institutions. The result had been failure to generate transformative impact on food production. This paper examines the ways in which the postcolonial Botswana government intervened to modernise farming practices with a view to improving food production and also to address the gender inequality in the agricultural sector in the impoverished Chobe District in north western Botswana. Focussing on the *molapo* (flood recession) and rainfed/dryland farming regimes peculiar to these riparian communities, the paper tracks government's subsidy Arable Land Development Programme (ALDEP) and agricultural extension services introduced in the district from the 1980s to the 1990s. It argues that the state's modernisation strategy from above encountered obstacles that inhibited the goal of increased grain production. Qualitative research design, government reports and oral interviews are utilised in the paper.

Introduction

The historiography on agricultural modernisation is bereft of the unique farming systems found in the wetlands, as it is equally patchy on livelihood strategies of communities in the remote Chobe District, despite a plethora of articles on wildlife conservation and tourism (Mbaiwa and Darkoh 2006). In Least Developed Countries (LDCs) agriculture is fundamental in food provisioning and employment creation with over two thirds of the populations being small farmers who subsist on agriculture for their livelihoods (De Vylder 2001). Of these farmers, it is women who 'make up the majority of the poorest marginal farmers, particularly in Africa' (Kent and MacRae 2010). In her study of peasant farmers in the Eastern Cape, South African gender analyst Nombulelo Siqwana-Ndulo (2007) observed the palpable men-women cleavage, arguing that most women farmers lack access to productive resources, such as land, agricultural credit, technology, and extension services.

In Botswana, extensive studies have been conducted on arable agricultural production and the search for food self-sufficiency, albeit from various perspectives. These include environmentalists, economists and agronomists who focused largely on socio-economic aspects with only very few proffering an historical analysis of trajectories of agricultural productivity (Magole and Thapelo 2005; Masire 2006; Magang 2015; Mfundisi and Petros 2015). However, a few historians examined government 'flagship programmes' on arable agricultural production (Tlou 1985; Tlou and Campbell 1997 and Makgala 2005). Notwithstanding, none of them wrote on the history of arable farming processes in the wetland district of Chobe (see Map 1). This paper, while building on this existing literature, sets out to historicise the nature and impact of state intervention in modernising arable farming through ALDEP in this district. It also makes a critical examination of gender dynamics in the roll out of ALDEP. It argues that the programme neither achieved food self-sufficiency nor narrowed the bridge between men and women in agricultural production in the district.

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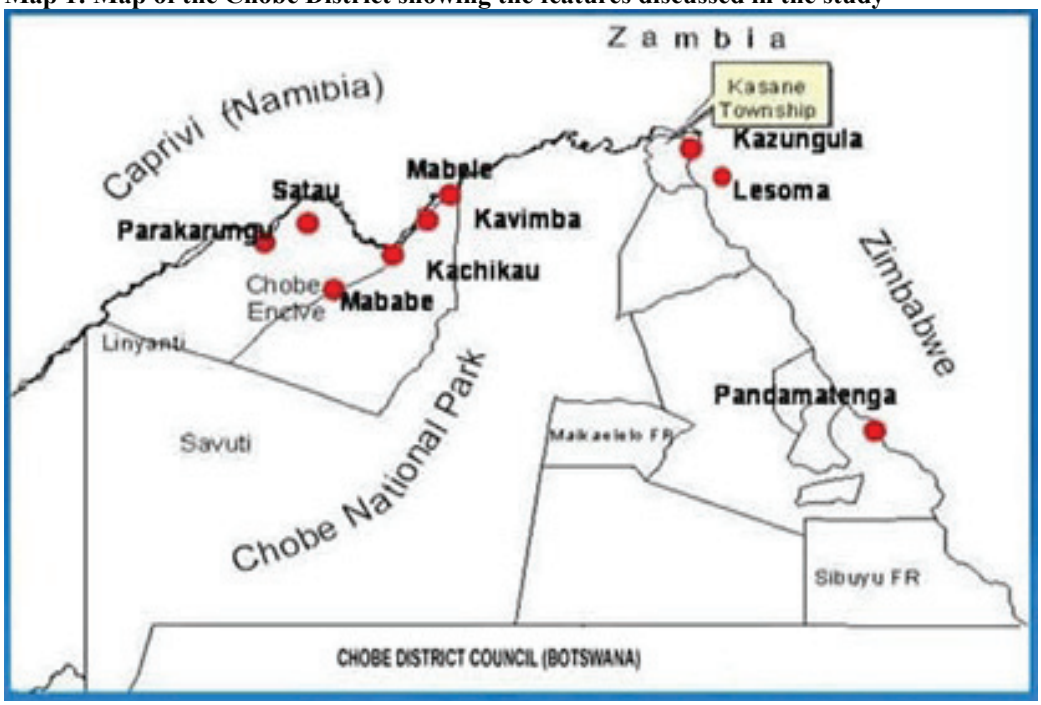
Map 1: Map of the Chobe District showing the features discussed in the study[1]



In the decade before Independence, the colonial authorities were concerned that cereal production could not meet the food requirements of the growing population, necessitating the importation of food (Republic of Botswana 1966). The national population almost doubled between 1946 and 1964 when it increased from 296,310 to 543,105 (Bechuanaland Protectorate 1964). Imports also increased due to successive droughts that affected crop yields in this period (Republic of Botswana 1966). While in 1954 the country had exported 675,130 bags (200 lbs) of sorghum, in the early 1960s drought necessitated importing maize and sorghum (Bechuanaland Protectorate 1965).

The first state initiatives in agriculture came from the administration of colonial Botswana (Bechuanaland Protectorate). In the run-up to Botswana's Independence, the colonial government sought ways of improving agricultural production and invited the Oxford Committee for Famine Relief (OXFAM) to establish research stations in Ngamiland, Gaborone and Mahalapye, and to train agricultural workers (Ministry of Overseas Development 1965). The project produced nearly a hundred agricultural demonstrators whose efforts led to a few 'progressively-minded farmers' adopting improved farming methods such as early ploughing which softened the soil before the rains came, increasing their yields. In 1969, three years after Independence, the postcolonial administration opened the Gaborone Agricultural College in order to train more agricultural demonstrators. However, unlike its predecessor, the new government focussed largely on rain-fed dryland farming, only paying lip service to the *molapo* farming system, a major traditional farming regime in the riverine environments of the wetlands of the Chobe District (Magole and Thapelo 2005).

The Chobe District's geographical environment is largely riverine, characterised by floodplains and river channels and, like the Okavango Delta, it is also regarded as a wetland. The Ramsar Convention defines wetlands as 'areas of marsh, or water, whether natural or artificial, permanent or temporary, with water that is static or flowing' (Masundire *et al* 1998:13). Covering an area of 22,040 square kilometres, the district is bounded by the Chobe River to the west, the Chobe National Park to the south, the Zambezi River to the north and a long stretch of boundary line with Zimbabwe to the east. The district is one of

Source: https: www.google.co.b/search?q=map+showing+chobe 'Images of map showing Chobe River', accessed 25 July 2016

Botswana's most important tourist destinations due to the abundant wildlife in the park. The rich biodiversity of this wetland has historically served as a resource base for local livelihoods (Shamukuni 1972). Major economic activities included agriculture, fishing, tourism, and hunting which was however banned, indefinitely, by a government moratorium in 2014. Situated about 1,000 kilometres from Gaborone (the centre of economic and political power), the district's remoteness suffered poor communication systems, transport infrastructure, and lack of investment, contributing to the marginalisation of the inhabitants. Human-wildlife conflict has been a common feature, leading to high levels of poverty in the district (Gumbo 2002).

The Chobe wetland provided for two arable farming regimes, namely the *molapo* or flood recession cultivation on the floodplain lands, and the rain-fed arable agriculture on the gardens upland in the sandveld. These traditional subsistence cultivation systems were very largely shaped by the socio-economic cultures of the different ethnic groups that inhabited the region. Dependent on rainfall rather than floods, dryland cultivation was practised on the higher ground away from the river. Here, there was a preponderance of drought resistant crops such as sorghum, millet and beans.

In contrast, *molapo* farming was practised along seasonally flooded areas on the Chobe River due to the predominantly moist and more fertile soils of the floodplains. A recent study on soil fertility in the Okavango Delta shows that *molapo* farms are more fertile than dryland farms: 'There is higher organic matter accumulation in flood recession farms which [makes] the *molapo* farms more fertile than dryland farms' (Mfundisi and Petros 2015: 148). The *molapo* farming in the district was associated with the Basubiya communities living in the Chobe Enclave villages of Mabele, Kavimba, Kachikau, Satau and Parakarungu which were typical flood plains (Republic of Botswana 1983). *Molapo* fields were located usually on lower grounds of floodplains or in river channels. After the floods subsided, they left behind very fertile silt on which subsistence farmers ploughed, taking advantage of the moist soil. Crops could germinate before the rains and, in the event of rain failure the *molapo* moisture assisted the crop to reach maturity (Gumbo 2010).

Depending on environmental conditions, subsistence farmers in these riparian environments sometimes cultivated both *molapo* and dryland fields concurrently in a bid to limit the risk of crop failure. Elsewhere in the country, *molapo* farming was practised mostly by the Wayeyi ethnic group on the fringes of the Okavango Delta around 'river villages' such as Tubu, Nxamasere, Shorobe (Magole and Thapelo 2005).

Well into the 1970s the grain production in the district remained a subsistence activity. In order to incentivise crop producers to engage in commercial production, the government established the Botswana Agricultural Marketing Board (BAMB) to buy grain from local producers (Masire 2006). BAMB, as Magang (2015:7) notes, 'guaranteed a market for the "scheduled" harvest at set prices and therefore would be an automatic spur to aspiring farmer, so it was believed.' This was after the authorities expressed concern at the continued decline of grain production in the wetlands and in the country as a whole (Republic of Botswana 1978). In 1978 BAMB purchased 9,561 tonnes of maize and 4,153 tonnes of sorghum from peasant farmers all over the country and imported a roughly equal amount of each cereal from neighbouring South Africa and Zimbabwe (Republic of Botswana 1978). This scenario amplified the need to modernise agriculture in order to achieve household food security and nutritional security. Conceptually, 'household food security' refers to the household's ability to access a stable minimum amount of food required for a livelihood at all times – either what the household produced or purchased (Chaudry and Parthasarathy 2007). 'Nutritional security' is however about nutrition, namely 'adequate nutritional status in terms of proteins, energy, vitamins and minerals for all household members at all times' (Quisumbing *et al* 1995: 12).

Women and Farming in the Chobe Wetland

Subsistence agriculture in Africa cannot be described adequately without placing it in the broader context of a gendered division of labour. Cultural barriers have often constrained women's potential in crop production. Customarily, in many African societies, men and boys are socialised into 'super-ordinate positions' of owning critical productive resources such as land; also deciding on the production and distribution of farm produce (Apusigah 2009). As such, women have historically been 'losers in the household level distributive process', and as Chaudry and Parthasarathy (2007:523) point out, 'there is an urgent need for a focused understanding of women's status and work participation with respect to food security'. As the mainstay of the rural economy, women also need training, technical capacity, credit and financial services to enable them to feed their families and sustain themselves as communities.

According to Davidson (1988) in post-independence Botswana policy makers very often understood that in order to achieve self-sufficiency in food production it was necessary to empower women farmers. Government reports indicate that in the Chobe District about 65% of the total labour supply was provided by women, 20% by children and only 15% by men (Republic of Botswana 1983). Although there was often an overlap of roles along gender lines in agricultural chores, men usually cleared the land prior to cultivation. They also trained the oxen to ready them for ploughing (Mazhani 1995).

Notwithstanding, most households in the district were female-headed and crop agriculture was their major source of employment. Many, however, did not own cattle but depended on borrowing draught power from others, and consequently cultivating small fields. When the *molapo* fields became inundated with weeds and grasses extra labour was required for weeding, usually a purview of women. In mitigation, such households relied on *namukahu* (a Chisubiya term for work parties where people came together to help a community member in labour intensive activities). The host woman, who benefited from the labour of her neighbours brewed sorghum beer, in addition to a meal, as an appreciation for their assistance (Gumbo 2010).

ALDEP as an Attempt to Modernise from Above

By 1980, agriculture was still unable to meet national consumption requirements. In 1981/82, the agricultural sector contributed only 12.6% to the Gross Domestic Product (GDP) (Republic of Botswana 1998). While data on the ratio between arable and livestock farming's contribution to the GDP for the period 1981/1982, is not available, the livestock sector invariably always dominated the industry, for example, it contributed 70% to agriculture's share of the GDP in 1987 (Makepe 2005). The centrality of agrarian reform was recognised by the state as key to transforming arable agricultural production. The government believed that modernising peasant crop production was urgent if the people were to feed themselves, instructing various government departments to develop strategies for achieving household food security (Mazonde 1993).

Greg Mills (2010:172), in his classic publication *Why Africa Is Poor* notes that agriculture was 'not only key to development but an area of African comparative advantage'. Along these lines, in 1982, the state introduced the Arable Lands Development Programme (ALDEP) (Tlou and Campbell 1997; Magang 2015). The objective of ALDEP was to boost agricultural production by increasing income-earning opportunities through modernising subsistence farming, and make the economy less dependent on imported food (Mayende 1993). Funded by international organisations such as the African Development Bank and International Fund for African Development, ALDEP sought to introduce and diffuse improved crop production techniques to poor farmers. Described as 'the centre piece of Government's effort to promote arable agriculture' (Addy *et al* 1987:55), ALDEP also aimed at creating employment for rural communities in order to curb rural-urban migration. Modernisation of subsistence farming was thus a form of economic nationalism through which increased domestic cereal production would make the country less dependent

on food imports. ALDEP was the first policy directed towards this goal through assisting small-scale resource poor rural arable farmers, especially women and remote area dwellers (Curry 1986).

Government's allocation strategies centred on the provision of farm packages that included what was considered appropriate technology, subsidies on farm equipment and marketing facilities (Magang 2015). Various government departments concerned with agriculture, such as Regional and District Agricultural Offices, and institutions such as Regional Training Centres (RTCs) like the Nxaraga centre near Maun, were strengthened (Republic of Botswana 1989). Advice to subsistence farmers in the rural areas was seen as key. Extension workers distributed farm investment packages that included technology transfer such as cultivators, ploughs, fencing materials, seeds, fertilisers, and most importantly draught power. The distribution of packages was tiered; with the low income farmers receiving draught power (mostly donkeys) while medium-scale farmers received cultivators, planters and fencing material (Miti and Chipasula 1989).

Things got off to a slow start. Drawing upon the writings of Sobhan (1993), it is presumed that a government that is sensitive to the needs of its poor farmers would back up its agrarian reform in all stages of allocative priorities. But, as Table 1 shows, the actual implementation of ALDEP contradicted the stated objectives in so far as gender was concerned, as more men were assisted than women. Table 1 shows the national distribution of subsidy packages. In the table 'Models' were categories based on cattle ownership, that is, in Model 1 were those peasants who owned no draught power, while those in Model 2 owned 'inadequate draught power' with 1-20 head of cattle, and Model 3 comprised those who owned 'adequate' draught power with 24-40 head of cattle. Significantly, the number of women beneficiaries in Model 1 was almost double that of men. Nonetheless, men received more packages than women in other Models. More farmers with fairly large numbers of livestock, as well as being men, as represented by Models 2 and 3 were assisted than those with no cattle as represented by Model 1. This represented an inequitable distribution of assistance between male and female farmers. The scenario was not surprising though. In a patriarchal society such as Botswana, developments have tended to focus more on men than women. Mills (2010:40), could not have been more instructive in his advice that 'The answer to the plight of African women, like many others in poor settings in Asia, Latin America and elsewhere, lies partly in improving their access to institutions and credit.'

In Table 1 below it should be noted that available data shows distribution at the national level and not much on the districts, including the Chobe District.

Table 1: Beneficiaries of ALDEP Phase I (By Model Farmer and Gender) (National), 1986

Farmer's Group	Assisted Male Farmers	Assisted Female Farmers	Total Assisted Farmers
Model 1	4259	5539	9798
Model 2	17617	14515	32132
Model 3	4559	1824	6383
Total	26435	21878	48313

Source: Republic of Botswana (2005:23)

Modernisation was not altogether free. While initially ALDEP provided loans for poor farmers to purchase inputs, 'it quickly became clear that providing financing via credit to the smallest farmers was very inefficient' (Masire 2006: 175). Farmers were thus required to make a contribution towards the packages. Female-headed households were expected to pay 10% down payment while men were required to contribute 15% and the government paid the balance of 90% and 85% respectively as grants (Republic of Botswana 2001). Extension workers were deployed to disburse the packages. Significantly, in 1985/1986 subsistence farmers in the Chobe District cultivated about 1000 hectares and realised about 2000 bags of sorghum. In the subsequent 1986/1987 farming season more than 3000 hectares were cultivated from

which 10,000 bags were harvested. Government attributed the incidental increase to the adoption of improved farming methods such as early ploughing, intercropping, row-planting and timely weeding (Republic of Botswana 1987). Beyond these years there are no records for any increased grain production.

Extension Services: Growing Pains?

The slow pace in the modernisation crusade was partly due to weak extension services. Perhaps, a more telling demonstration of this 'weakness' was the fact that not all agricultural demonstrators were adequately trained to deal with different ecological environments, especially in the remote *molapo* areas (Gumbo 2010). Some of the agricultural demonstrators sent to Chobe District did not understand the *molapo* farming regime. They struggled to interpret and apply what they had learnt during training and relate it to the realities of river bank soils. One informant alleged that some officers, most of who were from peri-urban areas in the south of the country did not hide their disdain for serving ethnic minority people, vilifying them for allegedly being 'slow learners' (Gumbo 2010). In Uganda, Kyambadde (2014) provides a structural analysis of a similar scenario concerning the incompetence of service providers. He attributed the failure of a government's agrarian reform programme, the National Agricultural Advisory Services, to the poor selection, recruitment, training and deployment of officers some of whom were opposed to being sent to their new and unfamiliar work stations.

In the Chobe District, fissures were soon evident between government and the extension workers. For their part, some committed extension workers experienced a myriad of challenges which compromised their effectiveness. For example, in these remote areas where government resources were thin on the ground, extension workers often had to share vehicles with other government department employees such as social workers and health officers, hence could not make regular visits (Republic of Botswana 1988). Individual officers were expected to cover wide geographical areas that were far apart –a situation that was worsened by recurrent flooding of the areas around Satau and Parakarungu villages in the floodplains making these villages inaccessible. Overburdened with too much work per officer, the extension workers' efficiency was compromised, translating into poor service delivery (Republic of Botswana 1983).

Some local residents accused extension officers of intolerance with women farmers who, in their view, were slow in adapting to the use of technology. According to Liswani (pseudonym), a female farmer in Satau village, extension workers preferred working with men (Interview with Liswani, Satau Village, 11 June 2008). Patriarchy also manifested itself in meetings at the *kgotla* (the traditional assembly), where matters concerning the village were discussed but dominated by men. An analysis of policies on women and agriculture indicates that almost invariably African governments' policies on agriculture showed a sexist bias in 'development planning and implementation' that was 'structured so as to ignore women's relationship with technology' (Stamp 1989:5).

In 1983 ALDEP broke ground by launching the 'Molapo Development Project' in Chobe and Ngamiland. The project was piloted in the flood areas of Shorobe in Ngamiland. By the end of 1983, 6,000 hectares of *molapo* land in Shorobe had been cultivated under this scheme (Republic of Botswana 1983). In the same year 3500 hectares were under *molapo* cultivation in the Okavango sub-district. This scheme was worked by 1300 active cultivators. As a support service, the state introduced in-service training programmes for local extension workers as well as short courses for farmers at the RTC in Nxaraga catering for farmers from both Chobe and Ngamiland. Significantly, according to a district agricultural officer in Kasane, women cultivators formed the majority of those who attended these courses (Republic of Botswana 1988). According to Catherine Limbo (district agricultural officer in Kasane) a few of them became productive 'progressive farmers' through applying appropriate farm technology and management skills acquired at Nxaraga (Interview with Limbo 23 May 2008).

Many farmers, however, continued practising unscientific methods of farming. They complained

that *molapo* farming was not a priority of government and alleged that the state supported dryland farmers as more of the latter were assisted with farm equipment while only paying lip service to the *molapo* cultivators. In their cogent analysis of the state's attitude towards *molapo* farming, Magole and Thapelo (2005:135) concur that 'it appears the government does not favour this production system and is now taking advantage of the impact of the flood to "encourage" people to move out to dryland areas where they may be allocated fields.'

Nonetheless, the ALDEP scheme had relative success. In the period between 1982 and 1995, 39,446 peasant farmers were assisted with investment packages of different types. Significantly, 45% of the recipients were female-headed households (Republic of Botswana 1999). According to government field reports the crop yields of those farmers assisted by the programme increased more than those that had not taken advantage of the packages. In 1986 improved husbandry, early ploughing and planting, and the moisture conditions of the *molapo* farming system led to improvements in productivity.

Did Peasant Production Modernise?

Overall, the subsidy scheme did not achieve its intended goals of increasing cereal production and food self-sufficiency. Agriculture's contribution to the GDP plummeted from about 40% at Independence in 1966 to about 3.4% in 1996/1997 (Republic of Botswana 1998). Critics argue that the effectiveness of the subsidy programme was hampered by, *inter alia,* the absence of a 'research basis and concrete guidelines' (Picard 1987:261). This meant that extension workers had no specific reference point when they found themselves in unfamiliar territory. This in turn led to indifference to planned socio-economic change on the part of the peasant producers.

The voices of local criticism were backed by independent researchers who grappled with the issue of 'modernising the peasantry'. A University of Botswana historian and political economy observer, Christian John Makgala, views efforts at modernising arable agriculture as 'politically motivated populism' by the ruling Botswana Democratic Party (BDP) with a view to 'attain[ing] their [peasants] vote as opposed to maximization of their production' (Makgala 2005:121-122). Robert Hitchcock, an American scholar described the process as 'planning from the centre', diffusing innovations to the peasant farmers without considering the latter's cultural social and economic circumstances. He notes that 'Aiming to "modernise" for the sake of increased productivity… planners presuppose the existence of the "traditional" as the negative condition that has to be changed. The reform designed by the planners at the centre gets subverted at the periphery, and a gross disjunction arises between the policy as it is officially formulated and the policy as it can effectively be applied' (Hitchcock 1980:1).

In the Chobe District, however, not all the problems came from 'the top' because peasant farmers themselves were also partly responsible for failing to improve their farming methods. Some subsistence farmers were not keen to adopt efficient modernisation practices such as row planting and double-ploughing. That said, it must also be noted that while the preference for continued practice of the traditional methods may appear as irrational behaviour on the part of the risk-averse subsistence farmers, they may in fact have been cautious as these methods were unknown and constituted a risk to them.

Unsurprisingly, very few smallholder farmers in the Chobe District embraced production for the market. Several factors discouraged them. Optimal production, which would produce surplus for sale was undermined by *inter alia,* crop destruction by wild animals due to the Chobe National Park's proximity to human settlement. Buffalo and elephants wrought havoc on peasants' crop fields while carnivores destroyed livestock and sometimes threatened human life (Republic of Botswana 2009). Conservation of wild animals is hotly contested between government and local communities with compensation for the losses being very low and demoralising to local farmers (Republic of Botswana 1989). The government was not successful in reconciling these competing interests. Consequently, the human-wildlife conflict

has continued, further weakening rural livelihoods and engendering negative attitudes towards wildlife conservation, and, cases of killing of the 'troublesome' animals have been the countervailing force that heightened this conflict (Gumbo 2010). While Botswana's elephant population is the largest in Africa and a 'conservation success story' elephants have also destroyed the vegetation around the Chobe River front (*Botswana Review* 2006/2007).

Furthermore, the indifference to commercialisation of crops in the Chobe District is reflected in local farmers' surprise when they were advised to produce in bulk and sell the surplus production for cash. Emely Kabuba (pseudonym), a female farmer from Satau was amazed that extension workers expected them to 'produce for sale to the government' (that is, to the BAMB) (Interview with Kabuba 11 June 2008). As the sole buyer, BAMB offered farmers low prices for their grain, a disincentive to farmers (*Mmegi* 24 November 2005). The recurring problem of market facilities and price expectations has been agriculture's Achilles heel ever since the BAMB was established in 1974 and government has seemingly been insensitive to these concerns (Magang 2015). And, as one of South Asia's most distinguished economists, Jagdish Bhagwati (1966) cautioned, 'If there is instability in the prices that the farmer expects, it can be disastrous to him [the farmer] in undertaking new investments.' Besides, the only BAMB depot in the Chobe District is in Pandamantenga, which is more than 200 kilometres from the Enclave villages where farming takes place. Poor road infrastructure militated against peasants' desire to transport crops to the monopoly BAMB market hence reluctance to engage in market driven production.

As a result, food imports continued to increase. In 1990 national agricultural production supplied only 30% of the demand for cereals while 70% was imported from South Africa (Republic of Botswana 2000). Table 2 shows the incremental nature of food imports. Maize products such as mealie-meal and meal rice dominated imports. Since the maize crop was prone to drought it was not as popular as sorghum among local producers. See also, Table 3 showing crop yields in the period 1990 to 1999. Sorghum quantities were almost always more than those of maize since sorghum withstood Botswana's adverse weather conditions. Until in recent years when sorghum was overtaken by maize, it was the staple food for most people in the country.

Table 2: Cereal Imports 1992-1996

Year	**Quantity (Metric Tonnes)**
1992	150,000
1993	180,000
1994	170,000
1995	220,000
1996	130,000

Source: Republic of Botswana (2000:126)

Table 3: Crop Production 1990-1999 ('000 Tonnes)

Crop	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Sorghum	38	*	*	11	*	114	59	13	4	7
Maize	12	*	*	3	*	19	25	23	2	4
Millet	2	*	*	2	*	19	3	1	1	1
Beans	2	*	*	1	*	10	4	4	1	1
G/Nuts	1	*	*	0	*	1	1	1	0	0

*Figures not provided.

Source: Republic of Botswana (2001:140)

As Bruno Dorin (1999:1709) says 'A common aim of national agricultural policies is to ensure

the country's food security.' Recognising the limitations of its efforts to achieve change, the government shifted away from a policy of food self-sufficiency to that of food security (Republic of Botswana 1991). Modernising subsistence farming was costly, the government acknowledged, and failed to transform the peasant farmers into commercial producers. The 1991 government's 'National Development Plan' states that 'Self-sufficiency made possible by high cost, heavily subsidised production is not what Government is seeking. Nor does Government desire food self-sufficiency that does not address the needs of the rural population for employment' (Republic of Botswana 1991:258).

In the context of gender, the desperate desire to achieve food security further alienated women as government initiated and massively supported the male dominated large-scale commercial farming projects such as the one at Pandamatenga in the early 1980s. This gendered economic engineering that prejudiced against women was not peculiar to Botswana. A similar situation characterised the Frafra and Kusasi areas of northern Ghana's extremely patriarchal societies where women were regarded as mere farm hands and thus not worthy of agricultural farmland (Apusigah 2009).

It is now generally acknowledged that gender sensitive development is as important to farming as it is in other sectors. Mwaniki (2005:10) appropriately observes that 'agricultural productivity has been said to increase by as much as 20 per cent when women are given the same inputs as men. If women are to be fully effective in contributing to food and nutrition security, discrimination against them must be eliminated and the value of their role promoted'. These are important lessons of history that policy makers ought to learn.

The death knell of ALDEP was sounded by an abrupt introduction of the Accelerated Rain-Fed Arable Programme (ARAP) in 1985, together with the ushering in of the Drought Relief Programme following the devastating droughts of 1982/1983-1987/1988 (Masire 2006). ALDEP's collapse was also blamed on pressure by medium to large-scale 'semi-mechanized' farmers who allegedly complained that ALDEP had been biased more towards smallholder farmers, ignoring the larger producers (Mayende 1993). Notwithstanding its imperfections, in its entire lifespan ALDEP distributed packages to 55,000 farmers, countrywide (Centre for Applied Research 2005). Also important is government's stated commitment to sustainable agriculture and attainment of food security as encapsulated in the country's national Vision 2016 which recognises the role of women in the country's development, with particular reference to agriculture, (Republic of Botswana 1997), although the actualisation of the vision is a subject for debate.

Conclusion

The role of agriculture in provisioning for rural communities in Africa's national economies has been well documented. The challenges besetting adequate productivity have, however, not been appropriately contextualised. The ways in which development strategies have been carried out resulted in limited transformation in agricultural productivity in many cases. This paper has explored the contentious issue of agricultural modernisation 'from above' in post-independence Botswana. It has discussed government attempts to improve subsistence farming in an effort to increase cereal production in the Chobe District. By exploring people's responses to state initiatives, the paper has shown how government's modernisation strategy through ALDEP encountered obstacles that inhibited the goal of increased grain production.

Arable practices have not changed much in the subsistence sector. Agriculture has remained largely an area of subsistence production in the period under study. Associated with hard work and meagre financial returns, it continued to be less attractive than livestock farming except for the largely expatriate managed Pandamatenga commercial farms in the district. There has not been any significant number of women transforming into commercial producers as a consequence of the modernisation attempts. Critics attributed government failure to poor planning and an overburdened and inadequately trained extension service network. Agricultural demonstrators found themselves at odds with the divergent socio-cultural systems of

the local farmers and working on unfamiliar ecological riparian zones. The paper has shown that peasants often preferred their own way of farming and resisted instructions from 'above'. While the state was keen on inducing surplus production, the peasants preferred the flexibility of combining livelihood strategies and held onto the possibility of taking up off-farm activities as the need arose.

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