

## Framing Chinese and Norwegian supported agricultural interventions in Zambia: Project modalities, gendered contexts and impacts.

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### **Abstract**

*We use case studies from conservation agriculture and cotton production to examine the extent to which Chinese and Norwegian development aid actors plan for and achieve women empowerment in Zambia. We find that despite differences in project modalities, with the Chinese aid programme not having any explicit women empowerment goals while the Norwegian programmes claimed to mainstream gender, both modalities resulted in increased access and control over productive resources by women farmers. We conclude that interventions that do not demand any capital outlay from smallholders are more likely to engender women empowerment than those that do.*

### **Introduction**

Today, development agencies invariably include gender in their programme and project designs (Razavi, 1997), as gender is now part of mainstream development orthodoxy. Gender is thus included in programme and project descriptions, in descriptions of the problems to be addressed by projects, in campaigns targeting project beneficiaries, as part of personnel recruitment for project implementation (with many having a position for a gender expert), and as a key variable used to monitor and evaluate programme and project effects. Specifically, featuring ‘the empowerment of women’ as a stated goal is ubiquitous in mainstream development policy (Doepke and Tertilt, 2014) and is continuously the subject of debate and analysis in the development community (Alsop, 2005). Empowering women is conceptualized variously as gender equality and can take the following forms: alleviating the effects of the gender gap; granting women equal access to and control over critical productive resources (Tornquist and Schmitz, 2001); enabling women to organize themselves to increase

their self-reliance; encouraging women to assert their independence and their right to make choices and helping women to control those resources that can assist them in challenging and eliminating their own subordination (Keller and Mbwewe, 1991); ensuring that women have access to markets and adequate income, which will enable them to participate in economic decision making (Rolands, 1995, Mehra,1997); improving household nutritional diversity and household food security; and increasing expenditures on household goods by women and/or expanding the assets and capabilities of women to participate in, negotiate with, influence, control and hold accountable those institutions that affect their lives (Sen, 1989). With regard to agricultural development interventions, donors and project managers highlight the measures they take that are designed to empower women, such as training women in the use of agricultural technologies, helping women to adopt cash crops and enabling women to become increasingly engaged in market activities, including easing their access to credit (Mehra, 1997; Duflo, 2012). In its Human Development Report for 1995, the United Nations linked empowerment to participation and stressed that “development must be by people, not only for them. People must participate fully in the decisions and processes that shape their lives” (United Nations, 1995: 12). Women’s empowerment is frequently cited as a goal of rural development that aims at reducing household vulnerability to poverty and food insecurity (ActionAid International, 2001; Sharaunga et al, 2015).

Although many development practitioners refer to empowerment, they rarely define it (Rolands, 1995; Oxaal and Baden, 1997), and donor ambitions, goals and strategies to include women and to promote gender equality activities in their projects and analyses are often superficial ( Isserles, 2003; Aasen, 2006). Moreover, their actual practice frequently does not match their rhetoric (Isserles, 2003). Kabeer (2001) observed that the language of empowerment has been co-opted by scholars, governments and international development agencies who have little interest in actually empowering women beyond whether or not empowerment is capable of ‘delivering the goods’.

Evaluations of development interventions have revealed that many of the efforts aimed at improving the living conditions of women were unsustainable and did not address gender differences (International Labour Organization, 2005), that programmes designed to help women and promote gender equality were not systematically institutionalized to any great extent, and that gender mainstreaming has been unsuccessful and sufficient resources have

not been invested in implementing such gender mainstreaming as an objective (NORAD, 2005). In some interventions, efforts designed to promote women and gender equality were not systematically addressed or even identified (Aasen, 2006). Cornwall (2003) noted that some empowerment initiatives can turn out to be driven by particularly gendered interests, leaving the least powerful without a voice or much in the way of choice. The vagueness with which gender empowerment as a concept is used and the perfunctory approach to its inclusion in programmes and projects begs the question of whether or not development interventions actually address gender empowerment and measure it correctly. In this context, the definition of empowerment typically guides how the concept is operationalized in development interventions.

Friedmann (1992) conceptualized empowerment as providing social, psychological and political power. He defined the following three types of power. Social power involves access to certain assets, such as information, knowledge skills, participation in organizations, and financial resources. Political power includes access to decision making, particularly those decisions that affect a person's own future. Finally, psychological power involves an individual's sense of potency and self-esteem, which may, in turn, positively influence their access to social and political power. Friedman further identified participation as a pre-condition of empowerment. Moser (1989) had previously explained empowerment in a similar manner as the right to determine choices in life and to influence the direction of change by controlling crucial material and non-material resources. Kabeer (1999, 2001) extended this thinking by viewing empowerment as including the right to determine not only choices but also the types of choices in life. Kabeer contends that empowerment means acquiring the power to make *strategic life choices* in a context in which this power was previously denied (2001, emphasis added). She further elucidated that changes in the ability to exercise choice might be thought of in terms of changes in three inter-related dimensions that constitute choice: resources, agency and achievement. Resources form the conditions under which choices are made and are distributed through a variety of different institutions and processes. Moreover, access to resources is determined by the rules, norms and practices that prevail in different institutional domains. Thus, Kabeer (2001) posits that empowerment entails changing the terms on which resources are acquired as much as increasing access to resources. Agency is an individual's ability to define one's own life choices and to pursue

one's own goals even in the face of opposition from others. Finally, achievement represents the outcomes of choices.

Under such a framework, development actors espousing their interventions as empowerment projects for women would be compelled to include the three dimensions of empowerment discussed above. Comparisons would be made between men's and women's access and control over resources (material, social and human), their decision-making power over important life choices and the outcomes of their choices. Given the gendered contexts in which men and women access resources – contexts influenced by local norms and practices – and the differences between men and women in terms of societal roles, their starting positions would be expected to be different. The triple role of women (Molyneux, 1985) severely constrains women's abilities and the types of choices they make regarding development interventions, including those interventions that are ostensibly targeted at them. In this paper, we examine agricultural development interventions supported by China and Norway in Zambia by adopting Kabeer's (2001) articulation of and her framework for measuring empowerment. We use case studies on conservation agriculture and cotton production and marketing to examine the extent to which Chinese and Norwegian development aid actors plan for and achieve women's empowerment in Zambia. The two donor countries make for a good comparison because of their different development aid modalities. We argue that there are various levels of dissonance between their stated goals (or lack thereof) regarding women's empowerment, on one hand, and their practices and outcomes, on the other. The remainder of this paper is structured as follows. In the next section, we describe the local contexts of Eastern Province in Zambia, from where the case studies are drawn. Then, in our methods section, we detail the data collection and analytical methods used in the present study. Next, we present and discuss the results. Finally, the implications of the case studies are discussed in the conclusion.

## **Contextual background**

The study was set in Eastern Province of Zambia, which is bordered to the east by Malawi, to the west by Zambia's Central Province, to the north by Zambia's Muchinga and Northern provinces, and to the south by Mozambique (Figure 1).

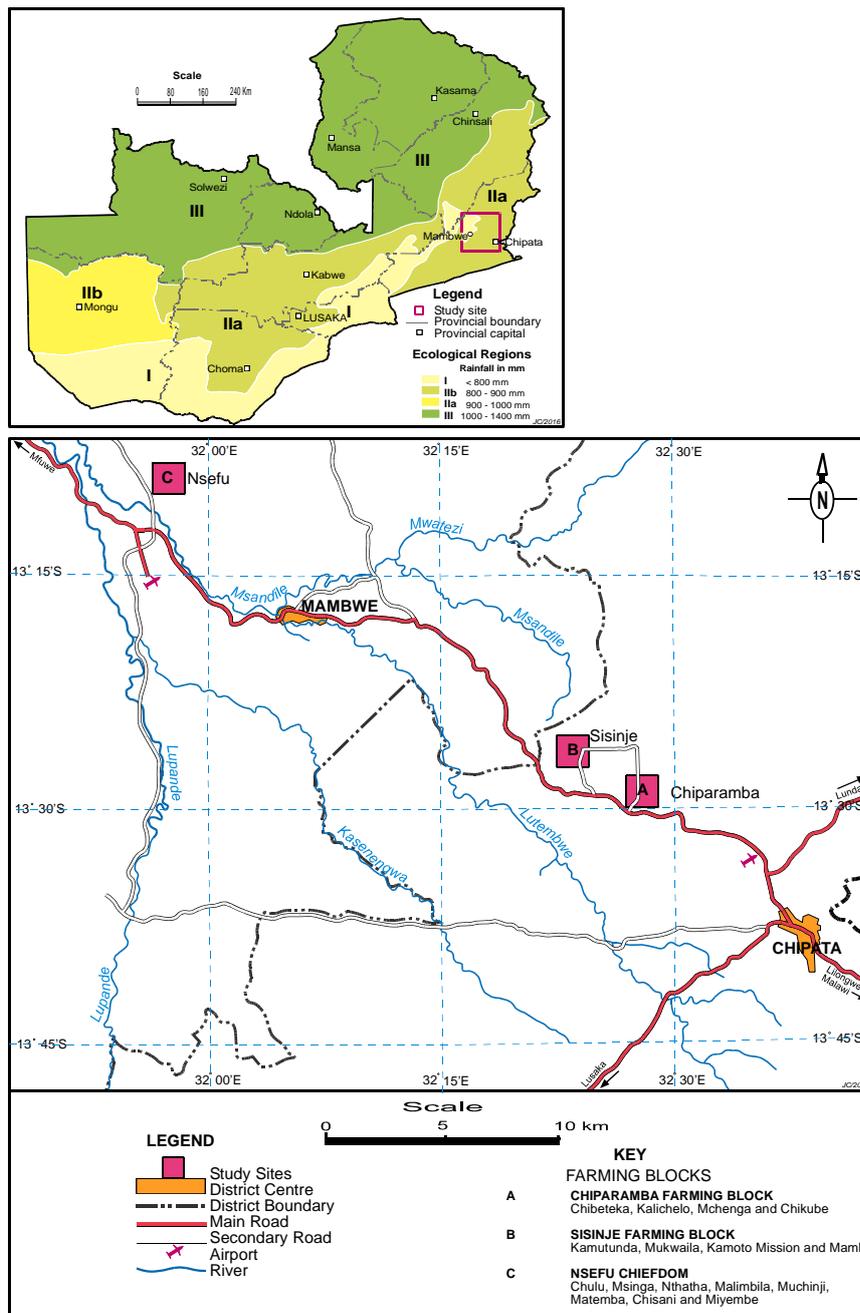


FIGURE 1 LOCATION OF CHIPATA AND MAMBWE, AND THE STUDY SITES IN EASTERN ZAMBIA.

The projected population in 2016 for Eastern Province is 1,861,491 (CSO, 2013), and most of this population are young individuals. The annual growth rate of the province's population is 2.4 per cent, and only 12.2 per cent of its population lives in urban areas. The average population density is 30.9 persons per km<sup>2</sup>, higher than the national average of 17.4 persons per km<sup>2</sup> (CSO, 2013).

## *2.1 Smallholder farming in Eastern Province*

Eastern Province's economy is mainly agro-based with limited industrial activity. The majority of residents are engaged in smallholder farming. Smallholder farming households are those that derive their livelihoods mainly but not exclusively from agriculture, predominantly utilize family labour in farm production, are characterized by partial engagement in input and output markets, and are both producers and consumers of agricultural goods and services (Ellis, 1998; Umar, 2014). Siegal (2005) notes that smallholder farming households are not homogenous but have notable differences in terms of landholding, asset portfolios, income-generating potential, livelihood strategies and wellbeing outcomes.

The agro-ecology of Eastern Province is characterized by seasonal rainfall of between 800 and 1,000 mm and a crop-growing period of 100-140 days. Average temperatures range from 23 to 25°C. Agricultural production by smallholder farming households is predominantly rain fed, and the crops commonly grown are maize (*Zea mays*), cotton (*Gossypium hirsutum*), sunflower (*Helianthus annuus*), tobacco (*Nicotiana tabacum*), groundnuts (*Arachis hypogaea*), soya beans (*Glycine max*), sweet potato (*Ipomea batatas*), rice (*Oryza sativa*), sorghum (*Sorghum bicolor*), cowpeas (*Vigna unguiculata*), millet (*Pennisetum glaucum*), cassava (*Manihot esculenta*), and cucurbits. Livestock farming as well as irrigated vegetable production are also important activities. Common livestock include cattle, goats, and pigs; commonly raised poultry includes mainly free-range chickens, ducks and guinea fowl.

## *2.2 Land access, ownership and inheritance in eastern Zambia*

Zambia has a dual land tenure system consisting of leasehold and customary tenure systems. Land held under leasehold tenure is governed by national legal statutes. Land held under customary tenure is dependent on the customs, practices and norms of the chieftaincy in which the land is situated, and claims on the land-based resources are made primarily by means of kinship linkages (Biru, 1998), which has resulted in a wide diversity of land access, management, control and alienation rules for customary land throughout the country. Traditional authorities have control over customary land, which covers up to 94 per cent of all the land in Zambia. Men and women can acquire – or acquire access to – customary land by purchase, inheritance or allocation. The Lands Act of 1996 provides for the sale of

customary land to both Zambians and non-Zambians alike (Government of the Republic of Zambia 1996). The National Gender Policy provides that 30 per cent of all land available for allocation should be given strictly to women, and the other 70 per cent to both men and women (Spichiger and Kabala, 2014). Despite legal provisions for equal access to land by men and women, more requests for title deeds are made by men than by women (Umar, 2016).

Land transfers through inheritance are governed by customary tenure systems that vary across chiefdoms, although all are based on a mixture of marriage and cultural practices. The inheritance system provides different tenure security to individuals in the household depending on the amount of land they bring into the marriage and their residential area (Lunduka 2009). The two most common marriage and residency practices are matrilineal-matrilocal and patrilineal-patrilocal. In the matrilineal-matrilocal system, land is bequeathed from uncle to nephew and the married couple resides in the wife's village. This system has been followed hitherto by the *Kunda* and *Chewa* of Eastern Zambia. In the patrilineal-patrilocal system that is common among the *Ngoni* and *Nsenga* tribes in Eastern Zambia, land is passed from father to son, and newly married couples reside in the husband's village (Lovo, 2013). A third and less common residency option involves both man and woman leaving their villages and settling in a neutral village in which land is either purchased or simply received (as a gift) by the couple from the resident chief (Lunduka, 2009). In patrilineal-patrilocal systems, women are not allowed to inherit land belonging to their spouses upon the death of their spouses but are free to use it as long as they do not remarry. Most tribal norms do not provide that married women can inherit land from their fathers but only guarantees them access and management rights, i.e., they can use the land and bequeath it to their children but they have no alienation rights themselves. Women are thus marginalized with regard to the land they can access and control under customary tenure. According to the FAO (2011), gender inequalities in access to land are overwhelming: social norms discriminate against women, and customary practices restrict women's ability to own or operate land. Moreover, when women can own land, that land is generally of lesser quality and size than the land that men own. However, it must be emphasized that there are many variations such that there is no single homogenous practice throughout a region. There are variations within family groups, tribal groupings and areas. This is the case for eastern Zambia as well, as the results of this study will show further below.

## *2.3 Agricultural interventions in eastern Zambia*

Over the years, various development interventions have been implemented in the Eastern province aimed at aiding smallholder farming households by improving their agricultural productivity with mixed outcomes. Programmes such as the Soil Conservation and Agro-Forestry Extension (SCAFE), Agricultural Credit Management Programme (ACMP) and the Agricultural Sector Investment Programme (ASIP) were launched in the 1980s and 1990s. The Farmer Input Support Programme (FISP) was established in 2002 to provide agricultural inputs to smallholder farmers nationwide. The Food Reserve Agency (FRA) was later established to provide a reliable market for maize marketed by smallholder farmers who participate in the FISP programme. More recent agricultural development programmes include the Community Markets for Conservation (COMACO), Conservation Agriculture Scaling Up (CASU) and the Conservation Agriculture Programme (CAP). Although these interventions have diverse objectives, they share one characteristic in that they are all donor-led and donor-funded (except for FISP and FRA). Thus, the programmes reflect their donors' interests, whether in terms of climate change adaptation, soil fertility enhancement, agro-forestry or gender empowerment.

More recently, private players in the form of agricultural input suppliers have bombarded Eastern Province. Multinational agro-companies such as Cargill, Pannar, Grafax, Manjeet, Continental, NWK Agri-Services, Seed Co, China Africa Cotton Company (CACC), Parrogate, and Japan Tobacco International (JTI) have quickly established themselves as important players in the smallholder agricultural sector under various contract-farming models. Unlike donor-driven agricultural interventions, private sector actors are profit motivated and their interactions with smallholder farmers are thus predictably different. The current study focused on the activities of the following three actors: the Conservation Farming Unit and its flagship programme, CAP; COMACO; and CACC. These three entities all have a significant presence in the Eastern Province of Zambia. CAP and COMACO are Norwegian-funded projects and will serve as the case studies for an examination of Norwegian agricultural aid project modalities, whereas CACC represents Chinese agricultural aid project modalities in this study.

## **Methods**

A sequential quantitative-qualitative mixed methods design (Johnson and Onwuegbuzie, 2004) was used in this study. The rationale for using this research design was to reach a comprehensive understanding of the role of gender in intra-household decision making related to Norwegian- and Chinese-supported agricultural interventions by drawing on the strengths of both qualitative and quantitative research methodologies.

## ***Data collection***

Key informant interviews were conducted during a scoping exercise in 2014 to obtain insights into the operations of the CAP, COMACO and CACC. A household questionnaire survey was later conducted and 235 randomly selected households were interviewed between October and November 2015. Of these households, 159 and 76 were participating in Norwegian and Chinese intervention projects, respectively. The survey was later complemented by six focus group discussions (FGDs) and 12 key informant interviews in August 2016. A triple-stream approach for focus discussions was used i.e., women-only FGDs, men-only FGDs and FGDs with both women and men. The access and control profile of the Harvard Gender Analysis Framework (March et al, 1999) was utilized in conducting these FGDs to ensure that views from each gender group could be vocalized with no interference from the other gender group and also to enable the observation of intra- and inter-gender dynamics. Key informants were interviewed regarding key matters that had emerged from the survey results, including how gender was mainstreamed in agricultural interventions, perceptions of gender differences in technology uptake and decision making, and land inheritance patterns.

## ***Data analysis***

An intra-household gender analysis was conducted for the household survey results, which improves our assessment of gender relations by eliminating selection bias against women heads of households who are often single or widowed in contrast to their married counterparts who are spouses of male household heads. Therefore, this study utilizes information collected from 235 smallholder farming households that include both spouses (husband and wife). These data on decision making, asset ownership and participation in agricultural projects were gender-segregated at the household level. The data were then even further segregated

based on development aid affiliation, i.e., farmers under the Norwegian development aid funded projects (CAP and COMACO) and those under China's aid fund (CACC). Quantitative data were analysed using basic descriptive statistics, i.e., two independent sample t-tests and two sample proportions tests at the 95% confidence level using the Minitab 17 (Minitab Inc., 2014) statistical software. Qualitative data were analysed using content and thematic analyses with the aid of the QDA Miner 3 qualitative data analysis software (Provalis Research, 2009).

## **Results and discussion**

### **4.0 Norwegian and Chinese aid projects in Eastern Zambia**

The results and discussion section commences with a brief overview of the three case studies, highlighting their primary activities and how if at all, gender is incorporated into their interventions.

#### **4.0.1 Conservation Agriculture Programme**

Implementation of the Norwegian-funded CAP began in 2006 and is due to end in 2017. The main activities under the programme include promoting conservation-based agriculture among smallholder farmers in Zambia. In Eastern Province, the CAP is implemented in Petauke, Sinda, Katete, Chipata, Vubwi and Lundazi Districts. It has a network of 390 farmer coordinators that had trained a total of 40,625 farmers by October 2015 (Conservation Farming Unit (CFU) field officer, personal communication). Key informants explained that gender is mainstreamed in the programme's planning and operations. As a result, 49 per cent of all the farmers trained in conservation agriculture tillage systems were women. The programme officers reportedly allowed the farmers themselves to set the dates and times for their training sessions and never planned meetings for mid-morning, as women's participation would be weak during those hours. Married women are encouraged to bring their husbands along for trainings. The CAP also operates 'Pass on' projects specifically for women to help them produce groundnuts. Women that receive groundnut seed from the CAP are expected to pass on 'the gift' to another woman after the harvest. Women farmers in the programme are encouraged to form labour pooling groups for tilling their fields. These two activities are aimed at addressing particular challenges women face with securing high-quality groundnut seed and agricultural labour during peak farming periods. One key

informant noted that despite the CAP's concerted efforts to recruit women as farmer coordinators, only 14 per cent of farmer coordinators were women, as most of the women either did not meet the criteria for becoming a farmer coordinator (i.e., being able to read and write, having the capacity to be a pace-setter in the community, and having the ability to influence other farmers) or they lacked the self-confidence required to be a farmer coordinator.

#### ***4.0.1 Community Markets for Conservation***

COMACO was established in 2001 by the Wildlife Conservation Society and has been funded by the Norwegian government since its inception. It focuses on alleviating poverty and enhancing food security in concert with halting environmentally destructive practices such as poaching and illegal charcoal production (COMACO, 2016). COMACO engages agrarian communities from around Zambia's national parks through extension programmes, reforms poachers and helps farmers use restorative measures to manage land and water while conserving ecosystems and wildlife. Farmers are offered training in how to grow ecologically smart crops such as rice, common beans, groundnuts and soya beans ([www.itswild.org](http://www.itswild.org)). COMACO's Extension Unit supplies its members, who are organized into producer cooperatives, with seed, lime, and farm implements; technologies for soil and yield improvement; infrastructure for aggregating crop surplus; and trainings in restorative land management practices. The business unit purchases, processes and markets its farmers' products at premium fair trade prices in many of Zambia's markets. COMACO operates ten farmer support centres that coordinate extension services with 65 chiefdoms across 12 districts (COMACO, 2016).

By 2015, COMACO had worked with 142,519 farming households, out of which 52 per cent were women. Almost half (49%) of COMACO's farmers in Eastern Province grew three or more food crops during the 2015/2016 agricultural season, 45 per cent used compost fertilizer, 76 per cent practiced leguminous crop rotations and 67 per cent left their crop residues unburnt (COMACO, 2016). COMACO (2016) reports that one of its central goals is to promote the role of women in agriculture and further notes that women in its growers' associations have increased their yields of groundnuts, maize and rice, while simultaneously reducing their vulnerability to food insecurity.

### ***4.0.3 China Africa Cotton Company***

CACC is jointly owned by a private Chinese firm and the China-Africa Fund, an investment wing of the Chinese government. Regionally, it has branches in Mozambique, Zimbabwe, Malawi and Mali. Nationally, it operates in the districts of Chipata, Nyimba, Katete, Sinda, and Mambwe, all found in Zambia's Eastern Province. It has engaged in contract farming for cotton production and marketing with approximately 50,000 smallholder farmers in these five districts. In fact, CACC is the third largest cotton company in Eastern Province. Despite the involvement of the Chinese government in the company, CACC is run as a purely profit-motivated business enterprise, as detailed below.

CACC loans cotton input packages to those smallholder farmers with whom it has entered into contractual farming arrangements. A 'full package' comprises inputs sufficient for one hectare and has a market value of between ZMW 200 and ZMW 300 (USD20-30). Free extension services are provided to its contract farmers by means of a network of 34 extension officers and 312 depots. The company also supplies packaging materials and doorstep pick up for harvested cotton. In exchange for these services, farmers are obligated to sell all their cotton harvest to CACC at a post-harvest seasonally determined price. This price was ZMW 2.1 per kg and ZMW 2.5 per kg during the 2013/2014 and 2014/2015 agricultural seasons, respectively. Every farming household that manages to produce at least ZMW 500 worth of lint is rewarded with a 500ml bottle of cooking oil.

The CACC key informants conceded that cotton farmers are recruited without any explicit considerations of gender. They argued that the cotton market is competitive, and the company thus focuses on how to improve its competitiveness, including by providing incentives to smallholder farmers such that greater numbers sign up to produce cotton for CACC and to improve farmer productivity. In this vein, the company does not involve itself with the gender of farmers and does not even capture data on the genders of its contract farmers. Women farmers participate by signing contracts with the company and also by working on their husbands' cotton fields. Harvesting cotton is demanding in terms of labour, requiring up to five rounds of manual weeding per season. Traditionally, women and young adult household members supply the bulk of this labour. Cotton picking is also typically undertaken by women. Thus, when women come forward to engage in contract farming themselves, they are typically already experienced in cotton production from working on their male relatives'

cotton fields. As such, although the company does not have an explicit gender mainstreaming policy, it informally prefers women farmers based on those reasons delineated above and because of the widely held perception that women are less likely to default on their loans. In the words of one CACC official, *‘women are less likely to be lazy and drunk, like most of the men, and less likely to default. You never hear of side-selling by women.’*

This presentation of the three programmes shows that the two Norwegian aid (NA) projects specifically focused on empowering women in both their programme design and implementation, whereas the Chinese funded programme made no such provisions. These results are in line with the two countries’ general aid modalities. The financing agreements for the CAP and COMACO programmes have explicit gender targets across their respective phases. For example, CAP II had a target of training 53,000 female smallholder farmers who would simultaneously be encouraged to participate in Chinese aid (CA) projects between 2011 and 2015 (CAP II, 2011). COMACO aimed at maintaining a level of at least 52 per cent overall female smallholder farmer participation throughout the three phases of the programme, in addition to employing gender sensitive communication, training and dissemination of knowledge (COMACO, 2014). In the remaining results and discussion section, we present and discuss the results using Kabeer’s (2001) empowerment framework by focusing on those mechanisms for accessing, owning and decision making over productive assets among married couples affiliated with NA and CA projects. The local gendered context vis-à-vis how men and women differentially access and control land and its mediating influence on decision making with regard to agricultural assets and activities is also examined.

#### ***4.1 Characteristics of respondents***

The mean ages for the men and women affiliated with NA projects were 40.8 and 34.9 years, respectively, with the women being statistically significantly younger than the men ( $p=0.044$ ). Conversely, there were no statistically significant differences between the mean ages for the men (37.5) and the women (32) from CA project households ( $p=0.317$ ). The mean household sizes were 6.5 and 6.2 for NA and CA households, respectively, with no statistically significant differences between them ( $p=0.479$ ). Overall, women were less literate than men, as they had an average of only 5 years of formal schooling compared to

almost 7 years for men. Only 7.7 per cent and 0.5 per cent of the men and women, respectively, could read words in English whereas 49 per cent of the men and 74.3 per cent of the women could not read any words in English. The literacy levels were slightly better for local languages, as 24.3 per cent and 10.2 per cent of the participants could read all words in their local languages. Nevertheless, 54.5 per cent and 27.5 per cent of the women and men, respectively, were completely illiterate in their local language.

## 4.2 Ownership of and decision making in terms of productive assets

### 4.2.1. Land

Ownership of land parcels accessed and controlled by households was varied; slightly below one-half of the households reported that ownership lay with the man while approximately one-quarter said it was owned by the man's family for both NA and CA project households (Table 1). Joint ownership and ownership by a woman's family were the least common variants of land ownership, and women owned the land utilized by households in only 15 to 18 per cent of the cases.

Table 1: Land ownership among households in Mambwe and Chipata Districts, Zambia

Affiliation	Ownership of land accessed and controlled by household (%)				
	Men	Women	Joint	Man's family	Woman's family
NA	44 <sup>a</sup>	15 <sup>a</sup>	7 <sup>a</sup>	27 <sup>a</sup>	7 <sup>a</sup>
CA	41.2 <sup>a</sup>	17.5 <sup>a</sup>	12.3 <sup>a</sup>	19.6 <sup>a</sup>	9.3 <sup>a</sup>

The same letter along a column means no significant difference in the results ( $p \geq 0.05$ ).

Participants in both the men-only and women-only FGDs explained that the wife was brought into the husband's village upon marriage. Because the husband already owned the land when his wife joins him, it is considered his land. Therefore, when it comes to decision making about such land, it is the man who has the authority to rent it out or sell it. In the words of a woman participant, '*Men are responsible for making decisions over land since it's theirs.*' Participants also noted that both sons and daughters now inherit land. An adult male child is

allocated land parcel(s) to farm and live on. Daughters' ownership of land was contingent upon them residing in their fathers' village; Adult daughters reside in their paternal villages for the three following reasons; they remain unmarried, they become divorced or widowed and/or they return to their paternal village. As long as the adult daughter resides in her father's village, she can utilize the land parcel(s) allocated to her, which means that she is also free to bequeath them to her children. The participants further elaborated that when a daughter gets married and relocates to her husband's village, she has access to her husband's land parcels for as long as she remains married to him. If he dies, she has two choices; (i) she can remain in his village and continue to live on her late husband's land provided she does not remarry. Her children inherit this land when they come of age. (ii) She can return to her village. If she chooses to return to her village, she forfeits her access privileges to her late husband's village. She can ask to be allocated land either in her father's or mother's village; she controls the use of this land but has no right to sell it. In the words of some women FGD participants;

*'Land is only considered as belonging to a woman if she inherited it from her parents. Otherwise if it came from the man's family, it belongs to the man.'*

*'Unmarried daughters are free to use parents' land; they have access and control rights but cannot dispose of it.'*

Some of the FGD participants noted that the norm was different in the past, when nephews and nieces inherited a man's land. It was also common for a man to reside in his wife's village after marriage and only to move back to his village after a few years. A senior *induna*<sup>1</sup> elaborated on this custom during a key informant interview.

The newly married couple would live in the woman's village for 2-3 years. This was a probation period for the man to show his in-laws that he was hard working. He would perform laborious chores like cutting down big trees to open up new agricultural land. Shifting cultivation was common. Residents would only farm a field for 2-3 years, then shift to another. There was constant need for labour to open up new fields. This

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<sup>1</sup> A member of the council of elders who are appointed to act as the chief's counsel and help the chief in the day-to-day administration of the chiefdom.

task fell on the son-in-law. After working for the in-laws for the said period, he would normally then take his wife and resettle in his village. Occasionally, some men would choose to remain in the wife's village. If he had impressed the in-laws, they would entice him by offering him large parcels of land and a position of authority. Such land would be considered his despite having come from his wife's family. It would be considered as having been earned through all the hard work he put in [Key informant interview, 2<sup>nd</sup> September, 2016].

This practice encouraged many men to remain in their wives' villages and might explain the misconception by some scholars that the *Kunda* were matrilineal. Regarding the history of inheritance patterns, a woman *induna* confirmed what some FGD participants also reported. Her recollections of the period spanning from 1951 to the 1990s indicated that the *Kunda* followed a strictly matrilineal inheritance pattern. Nephews had preferential inheritance privileges over their uncles' land, but this practice was gradually changed following the 1990s into the current trend in which children – both sons and daughters – can inherit their fathers' land. This transition into a patrilineal system was confirmed by the senior *induna* referred to above. He attributed the changes to two factors; advocacy by churches and non-governmental organizations (NGOs) against 'property grabbing' by the extended family and a breakdown in the extended family system.

Children of today do not know their relatives. We have orphans on the streets today because children are raised in nuclear families. A child may not even know his uncles, so how can he inherit land from them? Before, uncles would invest in their nephews, make sure they were educated because they knew that the nephews would look after them. This has changed. Even in my case, it is my children who will inherit my land [Key informant interview, 2<sup>nd</sup> September, 2016].

A third scenario was reported in which a married couple acquired a land parcel while married, either through allocation by the chief or by purchasing. This land is understood as jointly owned, and neither party's family have any claim to it in the event of the death of one of the spouses. Such land parcels remain under the control of a woman even when widowed. A woman participant who had purchased land jointly with her husband observed, '*If the land*

*was obtained jointly from the village head, then the widow can inherit the land, since the land did not previously belong to either party's family.'*

Using Kabeer's (2001) framing of empowerment, we argue that women's access and control over land is mediated by local norms governing land inheritance and residency patterns. Women have more authority over land that either they individually own or that is owned by their family. They are able to exercise their agency in its use and disposal significantly more than over land jointly owned with their spouses or that is owned by their spouse's family. The change in land inheritance patterns, which involves sons and daughters inheriting their parents' land, can be perceived as empowerment based on a change in the terms on which resources are acquired, a change that results in stronger claims over land by the children. The similarities in the land ownership patterns between NA and CA households suggest that these developments are independent of project interventions and reflect the impact of wider socio-economic processes. The evolution in residency and inheritance patterns has implications for land ownership and concomitantly on intra-household decision making related to land-based agricultural activities.

## 4.2. 2. Livestock

The household survey results show that at least 60% of the respondents reported joint ownership of all the types of livestock and poultry under consideration (Table 2).

Table 2. Ownership of livestock/poultry within households

	Affiliation	Cattle			Goats			Pigs			Chicken		
		men	women	Joint	men	women	Joint	men	women	Joint	men	women	Joint
Ownership of livestock/poultry within the household	NA	31.5	8.2	60.2	21.4	8.9	69.6	23.4	17.0	59.6	21.3	11.7	67.0
	CA	31.3	6.3	62.5	7.1	14.3	78.6	19.0	38.1	71.4	17.7	17.7	64.5

old (% )													
Percent age of househ olds owning livestoc k/ poultry	NA	50			38.4			32.2			64.4		
	CA	21.1			18.4			27.6			81.6		

For the sole ownership category, more men than women owned cattle. Higher percentages of NA households owned livestock than their CA counterparts, although the CA households were more likely to own chickens. These results may be driven by the fact that the study had more respondents in the NA category from Chipata district, where keeping livestock has historically been culturally important. Conversely, more respondents in the CA category were from Mambwe district, an area that was previously ravaged by the tsetse fly (*glossina hippoboscoidae*), which had precluded livestock keeping. Thus, keeping livestock has developed only in the recent past in this area following the eradication of the tsetse fly and the immigration of the *Chewa*, the traditional cattle keepers.

Although joint cattle ownership was common (over 60% for all livestock types), the men were responsible for the day-to-day management of cattle, goats and pigs. The FGDs in Chipata district revealed a general consensus that livestock was predominantly owned by the men, particularly cattle, goats and pigs, whereas women were more likely to own poultry. Livestock that the husband had owned prior to marriage was deemed to be owned by him and that which was acquired during the course of the marriage was considered to be jointly owned.

*‘If the livestock was obtained jointly while married, then joint decision making is the norm. But if the man acquired this livestock before marriage, then he has more rights and can make decisions alone.’*

*“A woman can sell chickens without consultation, it’s just ZMW20, money for relish but for goats, there is need for consultation” [male FGD participant].*

However, a few FGD participants noted that if the marriage was good with no major hitches, the wife can be ‘upgraded’ to become a joint owner of the livestock that the husband had owned pre-marriage. The situation was different in Mambwe district in which the FGD participants noted that men were responsible for all the livestock, including the poultry.

### *Sale of livestock and poultry*

A dominance of joint decision making for the sale of livestock was reported from both NA and CA households for cattle, goats, pigs and chickens (Table 3), albeit by statistically significantly different proportions for cattle and goats. In terms of sole decision making, the men predominantly decide in all categories except for NA poultry farming, in which women are given sole decision-making responsibility more often than men (although still not as often as joint decision making).

**TABLE 3. DECISION MAKING ON SALE OF LIVESTOCK AND POULTRY**

	Affiliation	Cattle	Goats	Pigs	Chickens
<b>Men decide (%)</b>	NA	13.3 <sup>a</sup>	20.8 <sup>a</sup>	26.1 <sup>a</sup>	6.3 <sup>a</sup>
	CA	42.9 <sup>b</sup>	11.1 <sup>b</sup>	33.3 <sup>a</sup>	21.4 <sup>b</sup>
<b>Women decide (%)</b>	NA	6.7	8.3	0.0	9.4 <sup>c</sup>
	CA	0.0	0.0	0.0	7.1 <sup>c</sup>
<b>Joint decision (%)</b>	NA	80.0 <sup>c</sup>	70.8 <sup>c</sup>	73.9 <sup>b</sup>	84.4 <sup>d</sup>
	CA	57.1 <sup>d</sup>	88.9 <sup>d</sup>	66.7 <sup>b</sup>	71.4 <sup>d</sup>

The same letter along a column indicates no significant differences in opinion ( $p \geq 0.05$ ). The proportions were too small for statistical testing of the differences in the women-only category.

Less than 10 per cent of women made decisions regarding the sale of chickens without involving their spouses (Table 3). The FGDs revealed that men in Chipata did not pay attention to the use of poultry and considered poultry too “*small to worry about and mostly women’s business*”. As observed above, households in Mambwe were characterized by limited ownership of large livestock due to tsetse fly infestations that had previously infiltrated the area. The proximity to the national park also makes the area unsuitable for rearing livestock. In Mambwe, men were also considered to be owners of poultry. Within households, the poultry was typically owned individually by both spouses.

The joint decision making that was observed even for large livestock such as cattle is notable. Is it a step towards (more) empowerment for women? Are women making sole decisions over cattle more empowered than women who are joint decision makers? Although Kabeer’s (2001) conceptualization of empowerment would suggest an increase in decision making power over important life choices (e.g., the power to make decisions to sell cattle for income-raising purposes) as empowerment, such a conceptualization may not reflect a higher level of empowerment in this case. Local norms extol joint decision making in the home but expect men to act as the heads of households and sole decision makers in the public sphere. Thus, a married woman may engage in joint decision making with her husband, or even let him be the sole decision maker, even in instances in which she has the agency (power) to decide alone. Most scholars, particularly those with a propensity to interpret the world through Eurocentric lenses, have tended to report only what they could observe in the public sphere and thus concluded that women were disempowered due to their inability to make strategic life choices. However, assessing empowerment through expressed public behaviour might be inaccurate, as public actions might be motivated by many different– motivations.

### **4.2.3. Agricultural implements**

Joint ownership was the norm for agricultural implements for both NA and CA households (Table 4). Compared to NA households, a smaller percentage of CA households owned animal draft-powered agricultural implements, which has implications for decisions related to household labour allocation. There is universal use of manual implements, as evidenced by 100% of the two household types owning traditional hand hoes. Not a single woman from CA households reported owning a plough, a ridger, an ox-cart or a yoke whereas between 5 and 10% of the women from NA households reported such ownership.

**Table 4. Ownership of agricultural implements by NA and CA households**

	Affiliation	Plough			Ridger			Oxcart			Yoke			Hoe		
		men	women	joint	men	women	joint	men	women	joint	men	women	joint	men	women	joint
Own (%)	NA	31.7	9.8	58.5	29.2	8.3	62.5	37.1	8.6	54.3	32.1	5.4	62.5	18a	16a	58a
	CA	16.7	0.0	83.3	20	0.0	80	37.5	0.0	62.5	18.2	0.0	81.8	26a	11a	63a
Percentage of HHDs owning implement	NA	28.1			16.4			24			31.8			100		
	CA	7.9			6.6			10.5			73.7			100		

The same letter along a column indicates no significant differences in the results ( $p \geq 0.05$ ).

The women-only FGD participants suggested that ox-carts, ploughs and ridgers were owned jointly but that the man was in charge of their day-to-day operations and maintenance. All household members were free to hire out ox-carts provided they informed the other household members. Axes were considered to be “a man’s tool”, although women use them when collecting firewood. For sprayers used in the application of herbicides and pesticides, ownership was contingent upon how they were accessed. If the woman had received them as part of a loan package from a cotton company, then they were considered to be hers, and vice versa.

## 4.3 Agricultural-related decision making

### 4.3.1. Sale of crops

Using the most commonly grown crops; cotton, groundnuts and maize, the results showed that between 70 per cent and 90 per cent of decisions were made jointly by man and wife in a household (Table 5).

**TABLE 5: HOUSEHOLD DECISION MAKING REGARDING THE SALE OF CROPS**

	Affiliation	Cotton	Groundnuts	Maize
<b>Men decided (%)</b>	NA	22.4 <sup>a</sup>	13.7 <sup>a</sup>	11.4
	CA	26.9 <sup>a</sup>	14.3 <sup>a</sup>	0.0
<b>Women decided (%)</b>	NA	2.6	12.3 <sup>a</sup>	2.3
	CA	3.0	14.3 <sup>a</sup>	9.1
<b>Joint decision (%)</b>	NA	75.0 <sup>b</sup>	74.0 <sup>c</sup>	86.4 <sup>a</sup>
	CA	70.1 <sup>b</sup>	71.4 <sup>c</sup>	90.9 <sup>a</sup>

The same letter along a column indicates no significant differences in the results ( $p \geq 0.05$ ).

No statistically significant differences were observed in the proportions of respondents for all the decision-making categories between NA and CA member households ( $p > 0.05$ ). Dominance by men was observed in sole decision making with regard to the sale of cotton by approximately one-quarter of the respondents from both NA and CA households, although over 70% of both types of households reported joint decision making for cotton sales. Women were the sole decision makers with regard to sales of cotton in very few households of respondents ( $\leq 3\%$ ). Remarkably, not a single respondent perceived men to be the sole decision makers for maize sales among CA households. A large majority ( $>80\%$  for both household types) indicated that there was joint decision making between couples with regard

to maize. Similar trends were observed for decision making regarding groundnuts in both NA and CA households.

The FGDs also indicated that joint decision making is the widespread practice with regard to maize production. FGD participants explained that it goes without saying that maize will always be produced, as it is their staple food crop; thus, there is little to discuss. For groundnuts, decision making was influenced by whether the crop was produced for sale or for household consumption. For instance, in Chipata district, where groundnuts are an important cash crop, men are involved in decision making about how much land to dedicate to the crop, whether to engage in contract farming and whether to sell any portion of the crop. Conversely, in Mambwe district, where the crop is produced in much smaller quantities that are mostly for household consumption and where sales occur only when women need small amounts of cash quickly, groundnuts represent the domain of women. Men help the women to dig the groundnuts out of the ground and leave the rest of the harvesting tasks to the women and children. In a Mambwe FGD, one middle-aged man asked, *'What would a man be doing even asking about money related to groundnuts?'* When the men were probed and informed that the women-only group had noted that the men were also involved in decision making related to groundnuts, several remarked that they were just forced to be involved, insisting that women were in charge of groundnuts.

Regarding cotton, several dynamics were at play. Cotton is the one crop that is exclusively produced for sale by smallholder farming households in central, eastern and southern Zambia. The cotton sector is structured in such a way that production occurs primarily through contract farming. A farmer and a cotton company agent sign a contract for the farmer to perform the following: (a) dedicate a part of the applicable land to cotton cultivation that is commensurate with the inputs received from the cotton company on credit; (b) manage the cotton crop based on training received from the cotton company, lead farmers or extension officers; (c) report any problems with the crop to company agents; and (d) sell all the harvested cotton exclusively to the cotton company that provided the loan at a price determined by the cotton company post-harvest. Given this structure, farmers do not invest their own resources in purchased inputs for cotton production at the beginning of the farming season. Thus, resource-constrained men and women smallholder farmers can thus engage in cotton production.

In Mambwe, there was consensus among the men-only, women-only, and mixed gender FGD participants that both men and women household members sign contracts with cotton companies in their own cognizance. It is common for a man and his wife to engage in contract farming with different cotton companies, but this practice does not indicate that they manage their cotton fields separately. Instead, most cotton-producing households have developed labour allocation strategies that seem aimed at mitigating household labour shortages and limits set by the bio-physical characteristics of the region. In the words of one woman FGD participant,

We plant cotton first because it needs early planting<sup>2</sup>. We apply [pre-emergence] herbicides. This gives us time to go and work on the maize and groundnut fields. By the time we finish sowing the maize and groundnut fields, it is time to weed the cotton. We weed it twice. We are both involved, although we have separate cotton contracts...when it is hand weeding, everyone in the family is involved...the husband, wife, and the children when they are home from school. We do not have a secondary school nearby so most of our children go to boarding school in the next chiefdom. If it is weeding using herbicides, we women help by ferrying water needed for diluting the herbicides, while the men do the actual spraying. The man sprays both fields, both his and his wife's [Woman in her forties, 2<sup>nd</sup> September, 2016].

The men agreed with the women's views but insisted that they did more work. They indicated that they left for the fields earlier than the women, who remained home to perform household chores such as fetching water, cooking and looking after small children. One man indicated as follows: *'Men go to harvest early in the morning when it is cotton, they come back home for lunch and go again in the afternoon while the women give excuses; unless its groundnuts then you see the women come out in full force! Otherwise, for cotton, the woman would even say "I am going to the women's club". Men do more.'* Even before he finished speaking, the women FGD participants expressed their disagreement by vigorously shaking their heads.

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<sup>2</sup> Recommendations by agronomists are that cotton should be planted between the 15<sup>th</sup> and 30<sup>th</sup> of November. Timeliness in planting is critical for the Mambwe district which is in an agro-ecological region with the shortest crop-growing period in Zambia and the lowest mean annual rainfall.

One older woman repeatedly said, ‘That’s not the truth.’ The women insisted that their men did not do more. They argued that their men were drunkards who shirked work and used all the money from cotton sales on alcohol, which is what had forced them to sign contracts with cotton companies in the first place. One woman FGD participant stated as follows: *‘Our men are drunkards. It is we women who push for things to happen. The men get motivated for cotton because it is a cash crop, so they spray the herbicides.’*

The alleged drunkenness by men in Mambwe was alluded to on many occasions during the FGDs and was also referenced by key informants. Even the men-only group agreed that women had begun with separate accounts with cotton companies because married men hid the cotton income from their wives and used it to buy beer. In the many instances in which husbands and wives have separate cotton contracts, they keep separate accounts. However, they jointly decide on the payment of school fees and other pressing household needs. The women explained that they show the payment details to their husbands and even give them “something for their beer” and then hide the rest of the money, which they are free to use as they please. Nonetheless, they complained that not much is left after payment of school fees for their children in boarding schools. Most of these couples had 2-3 children in boarding school, which means paying ZMW1000 in school fees per term for each child and more for toiletries and groceries. The woman *induna* also noted that the availability of cheap strong alcohol had wreaked havoc on the men and forced the women to take up responsibilities that were previously only for men. *‘Nowadays you can buy Junta for ZMW1<sup>3</sup> right here in the village. It has destroyed the men. Women are more involved than before. Some women even spray herbicides on their own when things are bad at home.’*

In Chipata, men take the lead in most of the farming activities for most of the crops in terms of field preparation, planting, weeding and harvesting. They begin working in the fields early in the morning before their wives can join them, as women have various house chores to attend to before they can work in the fields. Similarly, women leave the fields early to prepare lunch, leaving their husbands still working in the fields. The same trend was reported for farming activities that were undertaken after lunch. Generally, men in Chipata are more ‘sober’ than their counterparts in Mambwe and are truly the ‘heads’ of their households, as

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<sup>3</sup> Junta is the brand name for a vodka that has 40% alcohol content. It is retailed in 150ml bottles and costs an equivalent of USD 0.70.

they own all the productive household assets on behalf of their families and are recognized as such by their spouses. However, women serve as ‘banks’ on behalf of their families for all household income, whether earned by husband or wife. The money is ‘withdrawn from the bank’ to be spent on various household needs that are mutually agreed upon pursuant to unwritten rules that are strictly adhered to by both parties. The drunkenness and laziness exhibited by men in Mambwe was not observed – or heard about – in Chipata. Thus, households in Chipata appear to be more stable, organized and prosperous than those in Mambwe.

In Chipata, one key informant observed that there have been many changes in gender roles, which this informant attributed to the gender-related training that most farmers have received from NGOs. He asserted that only those households that had not been exposed to gender training still engaged in individualized decision-making practices. The Chipata women-only group confirmed the changes in gender relations. They observed that men now cooked and went to the local millers to have maize grain ground into maize flour when the women were unavailable. They also attributed this development to including lessons on gender in agricultural trainings. These results further suggest that liberalizing cotton production in the early 1990s has empowered women on several fronts; women can enter into contracts with cotton companies, access productive resources through loans, and attend trainings in which they learn how to manage cotton, which includes the use of sprayers, a role traditionally reserved for men. Women’s income-earning opportunities have increased and, as a result, so have their expenditures on household goods and services. Women also typically have full control of income earned from cotton, groundnut and rice production. These developments are in line with the findings in Moser (1989), Friedman (1992), and UN (1995), in addition to Kabeer’s (2001) articulation of empowerment. Both the NA and CA modalities have arguably contributed to women’s empowerment in this regard. The CA project allows women to engage in contract farming without demanding permission from a married woman’s spouse, a conditionality that persists when women attempt to access customary land from traditional authorities. By not demanding any collateral or upfront payments for the input loans, the CA project helps severely resource-constrained women access inputs they would otherwise be unable to access. The two NA projects seek out women for participation in their activities. These women are trained in conservation agriculture and wildlife conservation and

are provided with markets for groundnuts and rice, which has increased their income-earning potential and their control over household income and expenditures.

### 4.3.2 Household expenditures

The results showed that, in general, decisions are jointly made by husband and wife for more than 70 per cent of the respondents in both NA and CA households (Table 6). In terms of independent decision making, between 12 and 27 per cent of the respondent households reported that men made decisions alone regarding various household items, whereas the equivalent figures for women ranged from 1.5 to 9.7 per cent. The proportion of CA members that identified men as independent decision makers was statistically significantly higher ( $p < 0.05$ ) than the equivalent figures for NA members for all household expenditure items except education.

Table 6: Decision making on household expenditures for NA and CA households

Decision maker	Affiliation	Expenditure Category									
		Agricultural	Food items	clothes	Education	lighting energy	Medical	remittances	Groceries	Grinding maize	Water
Men (%)	NA	14.3 <sup>a</sup>	12.9 <sup>a</sup>	13.0 <sup>a</sup>	12.8 <sup>a</sup>	12.6 <sup>a</sup>	12.8 <sup>a</sup>	16.1 <sup>a</sup>	12.0 <sup>a</sup>	12.3 <sup>a</sup>	14.0 <sup>a</sup>
	CA	22.4 <sup>b</sup>	27.6 <sup>b</sup>	28.6 <sup>b</sup>	18.9 <sup>a</sup>	27.3 <sup>b</sup>	25.8 <sup>b</sup>	25.0 <sup>b</sup>	23.0 <sup>b</sup>	24.0 <sup>b</sup>	26.7 <sup>b</sup>
Women (%)	NA	3.6	5.0	4.6	4.6	5.9	6.0	9.7	7.0	7.2	9.0
	CA	1.5	2.6	2.9	5.7	5.5	1.6	3.1	5.4	5.3	4.4
Joint (%)	NA	82.1 <sup>c</sup>	82.0 <sup>c</sup>	82.4 <sup>c</sup>	82.6 <sup>c</sup>	81.5 <sup>c</sup>	81.2 <sup>c</sup>	74.2 <sup>c</sup>	81.0 <sup>c</sup>	80.4 <sup>c</sup>	77.0 <sup>c</sup>
	CA	76.1 <sup>c</sup>	69.7 <sup>c</sup>	68.6 <sup>d</sup>	75.5 <sup>c</sup>	67.3 <sup>d</sup>	72.6 <sup>d</sup>	71.9 <sup>c</sup>	71.6 <sup>d</sup>	70.7 <sup>d</sup>	68.9 <sup>c</sup>

The same letter along a column indicates no significant difference in the results ( $p \geq 0.05$ ). The proportions were too small for statistical testing of differences for the women-only category.

Conversely, a large proportion of the NA households believed that joint decision making was the norm for household expenditures on food, clothes, groceries, lighting energy, grinding maize, and medical services. There were no statistically significant differences in the proportion of households that reported joint decision making for remittances, agricultural inputs and education.

## 4.4. Earning agricultural income within the household

### 4.4.1. Crop income

Between 70 and 90 per cent of the crop income earned by both NA and CA households was reported as jointly earned (Table 7).

**Table 7. Crop income within households in Chipata and Mambwe Districts**

	Affiliation	Cotton			Groundnuts			Maize		
		men	women	Joint	men	women	joint	men	women	joint
Earned income (%)	NA	14	5	81	14	15	71	10	6	84
	CA	7	4	89	10	14	76	9	0.0	91
Percentage of HHDs earning agricultural income	NA	54			50			61		
	CA	92			28			14.5		

CA households were more engaged (92%) in earning income from cotton sales, as the CA project focused exclusively on cotton production, a cash crop that is not consumed at home.

Approximately 5 per cent of both NA and CA households reported that cotton income was earned by the woman exclusively, which suggests a high degree of collaboration among the couples in the production of cotton. Even when women enter into contract farming with the cotton company, cotton management operations are performed by the entire household, and the applicable income is considered to be earned jointly. Much lower levels of groundnut and maize income earning were reported by CA households (28% and 14.5%, respectively), as the project did not provide any inputs or extension services for producing these two crops. Only small quantities were produced, and these were mainly for household consumption, with sales mainly occurring in times of household emergencies that required cash.

#### 4.4.2. Livestock income

Income earned from livestock was limited, with a mean of 9 households engaged in livestock sales for both NA and CA households, revealing low percentages for joint earning of livestock income (Table 8).

**Table 8. Livestock income within households in Chipata and Mambwe Districts**

	Affiliation	Cattle			Goat			Pig			Chicken		
		men	women	Joint	men	women	Joint	men	Women	Joint	men	women	Joint
Earned income (%)	NA	3.4	0.7	6.2	2.7	1.4	12.3	4.8	0.0	11.0	3.4	2.1	16.4
	CA	3.9	0.0	5.3	2.6	0.0	9.2	2.6	0.0	1.3	5.3	2.6	11.8
Percentage of HHDs earning livestock income (n)	NA (n=146)	10.3			16.4			5			22		
	CA	9.2			12			2.6			20		

Notably, no women from the CA households earned income singly from cattle, goats or pigs, whereas the percentages for the NA households were also near zero, which generally reflects the low levels of livestock rearing in the study sites. Both NA and CA projects had not incorporated livestock management into their programmes despite the obvious labour-saving

benefits of animal draft power.

## 4.5 Participation in agricultural training

Both men and women farmers attended training sessions, although the percentages of respondents attending the training sessions are lower for both men and women farmers affiliated with CA than with NA affiliates (Table 9).

Table 9. Attendance of training sessions in agricultural practices

Training		Land preparation		Input application		Weeding	
		Men	Women	Men	Women	Men	Women
Attending (%)	NA	61.6	54.9	67.8	55.6	61.6	52.8
	CA	31.6	27.6	32.9	25.0	21.1	23.7

These results likely reflect the more intense focus on training by the CFU for its CAP farmers. CA trainings are limited to cotton management, whereas NA projects are more holistic. NA projects have a clear focus on training and employ strategies designed to include more women. The FGDs indicated that women farmers are able to attend trainings, provided that they do not interfere unduly with their household chores and are deemed to be worth the effort. Further, it was reported that it is quite common for a woman – as the household member that signed the cotton contract – to attend the trainings and to later instruct the husband on how to manage the cotton, e.g., on how to correctly apply the pesticides to the cotton crop. Women have a sense of empowerment once they are trained and are able to utilize their knowledge and skills in their agricultural activities. COMACO specifically targets women in its community conservation projects as they are understood to be the ideal change agents, which is a deviation from what was formerly the norm in sub-Saharan Africa. Notably, the International Fund for Agricultural Development (2014) has observed that, historically, women farmers were overwhelmingly excluded from many of the communication channels that are critical to their ability to adapt because of numerous factors linked to social norms and work burdens that resulted in women missing out on key information and education.

## Conclusion

This study has highlighted the differences between Chinese- and Norwegian-funded interventions in the agricultural sector in Zambia in terms of project modalities, gender and the effects of these projects on rural livelihoods. The two Norwegian-funded projects were designed with explicit targets for women, whereas the Chinese-funded project did not have such targets. Although setting explicit targets for women is important, the CA model indicates that many smallholder women farmers can still be empowered by simply attaching gender-neutral incentives to the interventions. However, it is notable that the Chinese aid model is implemented in a highly agro-ecologically constrained region in which women have literally no other crop production choices apart from the target crop, cotton. Thus, the incentive approach employed by the CA model may not hold in areas in which women have several viable crop production options at their disposal, in addition to the target crop.

In terms of empowering women by providing access to agricultural resources, agency and achievement, the findings suggest that women are much better off today than they have been historically. Although access to land remains tied to a woman's marital status, key informant interviews and FGDs in both Chipata and Mambwe revealed that land inheritance and ownership trends have changed dramatically in recent years. Today, daughters and sons can inherit land directly from their parents, whereas inheritance was formerly reserved exclusively for nephews. This development will allow women to have more access to and control over land in the long run, thereby augmenting their empowerment.

With regard to agency, if it can be conceived of as the extent to which women are involved in making decisions that govern the day-to-day running of household affairs, women are substantially involved. Women have a say in almost all household decisions, ranging from land preparation, crop selection, the area of land under production, and labour hiring to household expenditures on various needs. This finding appears to question the validity of the dominant Euro-centric view that posits that rural women in sub-Saharan Africa have little or no voice in household decision making.

Both the NA and CA models appear to have contributed to improving the livelihoods of the rural smallholder farmers in the areas studied. The income earned by the farmers based on their participation in the two interventions have allowed them to build better houses – some even with corrugated iron sheets and modern windows. A few farmers have acquired solar panels for lighting, whereas many others have changed from kerosene lamps to torches powered by alkaline batteries, reducing indoor pollution. These results have ensued despite the distinct differences in project modalities and focus on gender between the NA and CA models. We therefore contend that development aid modalities alone do not guarantee gendered outcomes but are mediated by other factors – such as the local cultural and agro-ecological contexts – in their impact on the empowerment of women in these contexts.

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