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CARING ABOUT CAREWORK:

LIFTING CONSTRAINTS TO THE PRODUCTIVITY OF WOMEN FARMERS IN THE DEMOCRATIC REPUBLIC OF THE CONGO

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Key Messages

- **Women farmers in the Western DRC bear the disproportionate burden of unpaid carework.** Women spend less time than men on their plots and more time on domestic work.
- **We use a combination of consultations in the field, desk research, and primary data collection** to understand the patterns of time allocation in rural households in Western DRC.
- **The gender differences in time allocation are striking:** female plot managers do 1 hour and 52 minutes more of domestic work per day than male plot managers, the gender differences are higher in male-headed households, and female plot managers spend significantly more time taking care of children when farming or going to market than their male counterparts.
- **The agricultural productivity of female plot managers is on average 26 percent lower than that of male plot managers.** Having young children is associated with lower productivity for women but not for men.
- **With the support of various stakeholders, we will pilot the provision of childcare services in the targeted region.** We will rigorously evaluate the importance of these services on women's time allocation to productive activities, as well as their productivity.

Background

The Democratic Republic of Congo (DRC) is the largest country in Sub-Saharan Africa (SSA), with a vast endowment of natural resources. However, less than 10 percent of its potential 80 million hectares of arable land are under cultivation (Herderschee et al. 2012; UNDP 2014). The agricultural sector in the DRC is performing well below its potential, lacking high quality inputs and generating low agricultural net income. Although agriculture is the cornerstone of the Congolese economy, employing about 70 percent of the labor force, productivity has been declining over the last fifty years (Akitoby and Cinyabuguma 2004), and yields of the principal food crops (such as cassava and rice) remain very low. The inadequate transport infrastructure and marketing channels exacerbates this effect, leading farmers to cultivate food crops mainly for self-consumption and/or to supply nearby markets.

These problems do not equally affect the entire population. More than 70 percent of economically active women in the DRC work in agriculture (FAO 2011), but female farmers face many disadvantages, including limited control over factors of production and bearing the disproportionate burden of unpaid carework (Ragasa et al. 2012). Female farmers face greater constraints than men in terms of access to agricultural inputs such as land, fertilizer and improved seeds (O'Sullivan et al. 2014; Peterman et al. 2014; Sheahan and Barrett 2014). Women farmers also face more time constraints due to their larger role in domestic work and childcare responsibilities. Our data show that on average, women in Kongo Central and Bandundu spend 20 hours a week on domestic work and care activities compared to men's 7 hours.

To address these major agricultural challenges and increase productivity and employment, the Government of the DRC is implementing the Western Growth Poles Project (WGPP), a US\$114.70 million project mostly financed by the World Bank. The Project Development Objective is to increase productivity and employment in the selected value chains of cassava, rice, and palm oil in target zones. The WGPP aims to increase the revenues of 50,000 farmers in the Kongo Central province, at least 40 percent of them women, by engaging in activities in three main components. Component 1 aims to develop and strengthen agricultural value chains in the Kongo Central province through a package of activities: provision of agricultural inputs; agricultural extension services, including Farmer Field Schools; building the capacity of farmer associations; provision of processing and marketing services; rehabilitating and maintaining priority rural roads; electrification of agro-industrial platforms. Component 2 will develop the Special Economic Zone of Maluku in the Kinshasa province. Component 3 will provide technical assistance to improve the business environment, promote investments, and support productive activities in the targeted value chains and poles.

The Africa Gender Innovation Lab is conducting an impact evaluation of the package of interventions under Component 1. Due to the geographical spread and multi-level nature of the interventions, the project is being evaluated through a quasi-experimental method (matching combined with difference-in-difference). Control zones were identified through a multistage analysis that included household surveys, key informant interviews and spatial data.

In this note, we review how gender consultations with counterparts and local stakeholders, literature reviews and data analysis led to designing this innovative childcare intervention. We present evidence on the size of the agricultural productivity gender gap and gender-differentiated time and care constraints for farmers. We describe operational parameters to consider when designing childcare centers in rural areas and conclude with next steps and the implications of this work for policy.

Using a Consultative Process to Assess the Importance of Time Use

CONSULTING WITH LOCAL STAKEHOLDERS

During the WGPP preparation, the need to address constraints faced specifically by female farmers emerged. A series of consultations were held with project stakeholders to identify specific constraints to women farmers, design an innovative intervention that would relax some of these constraints, and plan rigorous research that would produce results on the effectiveness of the intervention for potential scale-up.

These consultations mainly took place within impact evaluation workshops led by the Africa Gender Innovation Lab. The team engaged in a series of consultations with the Government Project Coordination Unit, the World Bank Task Team, and several local and international NGOs¹ to understand constraints that female farmers face before embarking on the impact evaluation of the project.

Various constraints to women's productivity were identified, including a lack of time due to their responsibilities as primary care providers of young children. The partners highlighted that a lack of childcare arrangements both reduce the time that female farmers spend in the field, but importantly also reduce the productivity of women's labor when they do farm. This led the team to think about an intervention, embedded within the WGPP, that would relieve part of the burden of childcare from women farmers. Overall, the importance emerged of listening to counterparts to identify constraints for specific populations such as female farmers, obtaining their buy-in for additional project components and then validating this information through primary data collection in the field. The first step in the process of designing this add-on intervention was thus to collect information, beyond anecdotal evidence, that supports the claim that there is a need and a demand for childcare in these communities. We did this by reviewing the literature on the impact of childcare provision on women's economic empowerment and by collecting and analyzing an original dataset of farmers in Western DRC.

REVIEWING THE LITERATURE ON CHILDCARE

The WDR on Gender Equality and Development (2012) shows that women dedicate more time to household tasks than men. In South Africa, women provide 71 percent of the aggregated time spent on housework and care. In Ghana, women remain responsible for 80 percent of the housework on average, even if they contribute more than their partner to the household's earnings. In Malawi, female business owners spend eight times as many hours preparing food than male business owners.

The vast majority of studies on the impact of childcare provision comes from developed countries. They generally find that increasing women's access to childcare (e.g., through subsidizing the cost) leads to increases in women's labor force participation (Bick 2016; Givord and Marbot 2014). A few studies from developing countries also focus on labor force participation. In Brazil, mothers' employment increased from 36 to 46 percent after the introduction of publicly-funded child care services, resulting in a significant increase in household incomes (Barros et al. 2011). In Argentina, a large pre-primary school building program increased the likelihood of maternal employment by between 7 and 14 percentage points (Berlinski and Galiani 2007).

Most studies on childcare in Sub-Saharan Africa focus on outcomes on children, and not on the economic well-being of their mothers (Dowd et al. 2016; McCoy et al. 2017). The studies that do exist validate the link found in the developed-country literature. A randomized controlled trial of an early childhood development (ECD) program in rural

¹ NGOs consulted include a farmer organization (FOPAKO), a women farmer organization (APROFEL), and the Dutch development NGO SNV. SNV is the implementing partner of the agricultural extension sub-component of the WGPP.

Mozambique demonstrated that preschools allowed caregivers (primarily mothers) to save 15 hours of childcare duties per week. As a result, the probability that beneficiary caregivers participated in the labor market was 26 percent higher than in the control group (Martinez et al. 2012). As the focus of this study was on child development rather than maternal labor outcomes, the authors conclude that “further research is required to understand the [caregiver employment] pathways more fully” (ibid, p.28). A quasi-experimental study in southern Togo concluded that enrolling children three to five years of age in preschool resulted in women being 37 percent more likely to work outside the home (Tabbert 2009). Other studies research the effect of the price of childcare and women’s labor market activity in low-income countries, concluding that high costs of outside-home care have a negative effect on maternal employment (see Lokshin et al. 1999 for Kenya).

In sum, a limited body of evidence exists, but it does not pertain specifically to the labor allocation decisions and productivity of women farmers in developing countries.

COLLECTING DATA

The baseline survey of the main impact evaluation of the WGPP was used to generate quantitative evidence on constraints to women’s productivity, time use and the potential for childcare to lift those constraints. The data was collected in December 2015 in Kongo Central and Bandundu. The survey was conducted among approximately 20 households per village in 169 villages, randomly selected within the targeted region. The sample totals 2,931 households, a quarter of which are female-headed. Eligible households had to be engaged in smallholder agriculture.

One of the added values of how the survey was structured was the ability to collect information at the level of the plot manager. For each plot in the household, the identity of the plot manager was recorded. A plot manager is the person who makes the most decisions about crops to plant, inputs, timing of activities on the plot, or whether to rent out the plot. We are thus able to assign individual characteristics for each plot manager recorded within each household. Each plot can be managed solely or jointly. When the plots are jointly managed, two plot managers are recorded. This method allows us to study agricultural productivity by gender of the plot manager rather than stay at the level of the sex of the household head, which is less informative and conflates household headship gender with a host of other factors. As shown in the literature, the identity and gender of the person responsible for the plot within a given household matters (e.g., Udry 1996).

The sample was stratified by gender of the plot manager. Half of the surveyed households in each village had to have a female plot manager.² In addition to collecting agricultural information at the household level (such as production, inputs, transformation, commercialization), an entire section of the questionnaire was asked at the individual level, with one individual respondent interviewed per household. This included questions on care responsibilities, agricultural technical knowledge, risk and time preferences, decision making, credit and savings. A time use module was also administered to the individual respondent, which asked what activities they had performed in the last 24 hours, by 15-minute time periods. Forty-six percent of the individual respondents are women.

² Note that the data used in our analysis has not been reweighted to reflect actual occurrence of female plot managers within households, and is thus not representative of Kongo Central and Bandundu as a whole.

Findings From the Baseline on Time and Childcare Constraints

Using the baseline survey from the WGPP impact evaluation, we assess the gender differences in time use in farming and household activities, as well as the importance of these constraints in explaining the gender gaps in farm outcomes.

FEMALE PLOT MANAGERS SPEND LESS TIME ON ECONOMIC ACTIVITIES AND MORE TIME ON DOMESTIC AND CARE WORK

We first compare gender differences in the hourly time allocation of plot managers to various categories of activities, such as productive activities and domestic work. These are presented in Table 1.

Table 1: Time use summary statistics

	Male Plot Managers	Female Plot Managers	Difference
Farm and Other Income Generating Activities (hours/day)	6.51	6.29	-0.224
	(4.03)	(3.59)	(0.15)
Domestic Work (hours/day)	0.897	2.66	1.770***
	(1.45)	(1.78)	(0.06)
Care for Children and Elderly (hours/day)	0.112	0.213	0.101**
	(0.94)	(1.10)	(0.04)
Rest and Personal Care (hours/day)	12.1	11.8	-0.346***
	(3.31)	(3.09)	(0.12)
Social Activities (hours/day)	1.27	0.886	-0.383***
	(2.30)	(2.12)	(0.09)

N=2,719; Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Although female plot managers spend less time on economic activities compared to men, this difference is not statistically significant. Women however spend significantly more time than men on domestic and care work, while spending significantly less time on rest and personal care as well as social activities. Although female plot managers spend twice as much time on carework as their male counterparts, since the amount reported is only around 13 minutes a day, we aggregate care and domestic work (henceforth “domestic work”) in the remainder of our analysis.

A simple comparison of time spent between male and female plot managers might obscure differences in their characteristics that are unrelated to their gender. For example, female plot managers may be more prevalent in larger households, where there is more domestic work to do.

To make a more robust comparison between time use patterns by gender, we consider the plot manager's characteristics (such as age, education and marital status) as well as the wealth of the household they live in and its demographic composition. This allows us to see whether there is a residual effect of being a female plot manager, even when comparing plot managers similar on these characteristics. Moreover, we also control for unobserved village-specific factors by adding village fixed effects.

Table 2a shows that even once household composition, village characteristics (observable and unobservable) and individual characteristics are controlled for, female plot managers spend significantly more time on domestic work, and less time resting and conducting social activities than male plot managers. Women plot managers work on the farm and other income generating activities on average 16 minutes less per day than their male counterparts. On the other hand, they do 1 hour and 52 minutes more of domestic work.

Table 2a: Time use regressions

	Farm and other IGA Work	Farm and other IGA Work	Domestic Work	Rest and Personal Care	Social Activities
Plot manager is a woman	-0.274	0.481***	1.867***	-0.602***	-0.285***
	(0.172)	(0.183)	(0.086)	(0.140)	(0.099)
Controlling for Domestic work	No	Yes	No	No	No
<i>Controls: individual characteristics, household composition, village fixed effects</i>					
Observations	2,558	2,558	2,558	2,558	2,558

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

In the second column, we introduce time spent on domestic work as a control in the first regression where we look at productive activities. We see that the coefficient nearly doubles in magnitude and switches to being positive. This means that holding the amount of time spent on domestic work constant, women farmers spend approximately half an hour more per day working than men. This points to the scope for female plot managers to engage more in productive activities, if the burden of domestic work was reduced.

THE GENDER DIFFERENCES IN TIME ALLOCATION ARE HIGHER IN MALE-HEADED HOUSEHOLDS

The sample comprises female plot managers in both male- and female-headed households. We hypothesize that their time allocation depends on whether they are the main adult in the household, which is likely to be the case in female-headed households, or whether they are in the presence of another adult, usually their husband.

We run the time use regression on the sub-sample of male-headed households, shown in Table 2b below. In these households, the negative correlation between being a female plot manager and spending less time on productive activities is larger. This result can be interpreted in two different ways. On the one hand, if there is a voluntary division of labor between productive activities and domestic work between men and women in the households, women in female-headed households are having to “pick up the slack” and work more. On the other hand, female plot managers could be worse off in male-headed households in terms of constraints on their productive time, due for example to gender norms in the task allocation.

Table 2b: Time use regressions in male-headed households

	Farm and other IGA Work	Domestic Work	Rest and Personal Care	Social Activities
Plot manager is a woman	-0.482**	2.065***	-0.578***	-0.317**
	(0.216)	(0.109)	(0.177)	(0.127)
<i>Controls: individual characteristics, household composition, village fixed effects</i>				
Observations	1,946	1,946	1,946	1,946

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

The fact that the patterns observed are stronger in male-headed households underscores the importance of conducting gender-disaggregated analysis within households, and not only by gender of the household head. This is particularly true since only a small minority of female plot managers live in female-headed households.

Moreover, the gender differences in time spent on domestic work we report above may underestimate the true value. For example, our data shows that women do not multitask significantly more than men. When a respondent is multitasking, the time use module allows the collection of up to two simultaneous activities for the same period. The activity that the respondent reports as his or her focus during the period is called the primary activity, and the second activity being done simultaneously is called the secondary activity. However, few respondents reported a secondary activity, likely because the concept of multitasking was not familiar to the respondents.

While nearly none of the villages in which the survey was conducted have access to any kind of childcare facility and it is common for women to carry children on their backs while farming, few women instinctively regard carrying a child on their backs while farming as engaging in carework.³ This may also explain why the reported time spent on carework is small, yet most women report that having a young child has a negative effect on their productivity (see below).

FEMALE PLOT MANAGERS SPEND MORE TIME TAKING CARE OF CHILDREN WHEN FARMING OR GOING TO MARKET

In the survey, we asked respondents who have at least one child under the age of 5 the following question: who looks after your children under 5 years old when you are [performing various activities]? We explore in Tables 3 and 4 the responses to this question for farming and going to the market, generating a dummy variable for each of four responses of interest.

Women are significantly more likely than male respondents to be the care provider of children under 5, both when farming and when selling at the market. Conversely, women are less likely to have their spouses care for their children when they engage in these activities.

³ This result is echoed in the newest Women's Empowerment Index Discussion Paper (Meinzen-Dick et al. 2017). IFPRI decided to drop secondary activity time use collection from their abbreviated index since excluding secondary activities from the workload indicator calculation resulted in only small changes in the empowerment status of individuals.

Table 3: Care provider when respondent is farming

	Respondent is care provider when farming	Spouse is care provider when farming	Sibling <12 is care provider when respondent is farming	Sibling 12+ is care provider when respondent is farming
Female plot manager	0.117***	-0.132***	-0.029	0.036
	(0.029)	(0.029)	(0.031)	(0.023)
<i>Controls: individual characteristics, household composition, village fixed effects</i>				
Observations	1,446	1,446	1,446	1,446

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

In column 4 of Tables 3 and 4, we show the likelihood of an adolescent sibling being the care provider when the respondent is working on the farm or selling at the market. The coefficient is marginally insignificant, but positive. This suggests that providing childcare services, in addition to freeing up women's time, may also free up the adolescents' time for other activities such as schooling or socializing.

In the regressions, we also include the composition of the household and interact age categories with the gender of the plot manager to look at the differentiated effects of children on care constraints (full results available upon request). We interact the gender of the plot manager with the following categories: number of children under 2, aged 3 to 5, aged 6 to 12, and aged 13 to 18.⁴ When looking at the likelihood of the respondent being the care provider, the interacted coefficient is significant and negative for the number of children aged 6 to 12. This means that every additional child over 5 in the household is associated with a lower likelihood that women are the care providers for children under 5 when farming or going to the market.

Table 4: Care provider when respondent is selling at the market

	Respondent is care provider when selling at market	Spouse is care provider when selling at market	Sibling <12 is care provider when respondent is selling at market	Sibling 12+ is care provider when respondent is selling at market
Female plot manager	0.090***	-0.164***	0.017	0.028
	(0.029)	(0.030)	(0.030)	(0.023)
<i>Controls: individual characteristics, household composition, village fixed effects</i>				
Observations	1,445	1,445	1,445	1,445

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

4 We split the child age categories in this way to capture four different stages: (a) children that are breastfed or carried on the back (b) small/dependent children (c) school-age children who can also do some housework (d) adolescents with labor and caretaker potential.

Furthermore, having adolescent boys in the household reduces the likelihood of the respondent being the care provider while farming, in particular for women, for whom this effect is stronger and significant (results available upon request). This suggests that boys do participate in household tasks, when the women are working on the farm.

Gender Gap in Agricultural Productivity

When asked whether they believed that having a child under 5 has an impact on their productivity, 64 percent of plot managers responded in the affirmative and claimed a negative effect, with 35 percent reporting a strong negative effect. Female plot managers are 6 percentage points more likely to report a strong negative effect than male plot managers, a statistically significant difference, even after controlling for the household composition, as well as individual and household characteristics, and adding village fixed effects.

We assess whether this self-reported effect on productivity is also present in agricultural productivity regressions. Agricultural productivity is measured as the value of all harvested crops in Congolese Francs divided by the size of the plot. The value is determined by multiplying the quantity harvested by the market price. The market price is defined as the median selling price in the territoire for a particular crop.⁵ For the estimation, we use the inverse hyperbolic sine transformation of agricultural productivity, which allows for the inclusion of observations with zero productivity in the regression.

We estimate the gender gap in agricultural productivity and the correlation between household composition and agricultural productivity. We estimate an econometric model where the dependent variable is the plot manager's average agricultural productivity. For each plot manager, we average the yields over all the plots managed, either solely or jointly, and control for joint management in the regression.

The coefficient for the indicator variable capturing female plot management gives the size of the gender gap between female and male managed plots. We control for the plot manager's demographic characteristics (age, education, marriage status), household characteristics (size, gender of head, dependency ratio, number of assets, membership in farmer associations and economic shocks experienced in the past year) as well as plot characteristics (fertilizer use, distance to plot, use of irrigation, size of plot and whether the plot was jointly managed). Village fixed effects are included in all regressions.

We augment the model with household composition variables. First, we include the number of children of different age categories. Then, we disaggregate adolescents by gender. We then add interactions of the number of children of different age categories with the gender of the plot manager, to assess whether household composition has a heterogeneous effect on male or female plot managers.

5 If territoire-level unit sale prices are not available for some crops, we use the prices available for the next higher level geographical area.

Table 5: Regression results on gender differences in agricultural productivity

Variables	(1) IHS agricultural productivity	(2) IHS agricultural productivity	(3) IHS agricultural productivity	(4) IHS agricultural productivity
Female plot manager	-0.262*	-0.253*	-0.254*	-0.132
	(0.137)	(0.137)	(0.137)	(0.235)
Number of children ages 0-2		0.193	0.207	0.384**
		(0.136)	(0.136)	(0.169)
				(0.153)
Number of members ages 6-12		0.043		-0.021
		(0.098)		(0.111)
Number of members ages 13-18		0.210**		0.276**
		(0.088)		(0.109)
Number of girls ages 6-12			-0.109	
			(0.109)	
Number of boys ages 6-12			0.216*	
			(0.112)	
Number of girls ages 13-18			0.271**	
			(0.112)	
Number of boys ages 13-18			0.143	
			(0.105)	
Female plot mgr x children under 2				-0.371*
				(0.199)
Female plot mgr x children 3-5				-0.033
				(0.176)
Female plot mgr x members 6-12				0.128
				(0.104)
Female plot mgr x members 13-18				-0.124
				(0.121)
Observations	4,100	4,100	4,100	4,100
R-Squared	0.02	0.022	0.025	0.023

Note: Village fixed effects included in all regressions. Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. Controls included but not shown: plot manager characteristics (age, education, marriage status), household characteristics (size, gender of head, dependency ratio, number of assets, membership in farmer associations and economic shocks experienced in the past year), plot characteristics (fertilizer use, distance to plot, use of irrigation, size of plot and whether the plot was jointly managed).

Table 5 shows our variables of interest (gender and household composition). Our baseline model (Column 1) shows that the adjusted agricultural productivity of female plot managers is on average 26 percent⁶ lower than for male farmers after controlling for plot manager characteristics, household characteristics, plot characteristics and village fixed effects. The size of the gender gap is in line with what is found in other countries of the region (O'Sullivan 2014; Aguilar et al. 2014).

Column 2 of Table 5 shows that adolescents have a positive and significant association with agricultural productivity. This could indicate that adolescents are providing extra, cheap (or free) labor on the household plots. When disaggregating adolescents by gender in Column 3, we find that the effect is driven by adolescent girls. Above, we showed that adolescents were often the care providers of young children. These results are therefore also consistent with older children take care of their younger siblings, thus freeing up productive time for their parents.

Column 4 augments the model with interactions of female plot manager with the number of children of each category. In households with no children or adolescents, we see that the gender gap is lower, corresponding to a 13 percent difference in agricultural productivity between male and female plot managers, and no longer significant. Having children in the household is thus a strong determinant of female plot managers' lower productivity. In particular, the interaction under 2 and being a female plot manager is negative and significant.

Designing a Childcare Intervention

ESTABLISHING PARENT DEMAND FOR CHILDCARE SERVICES

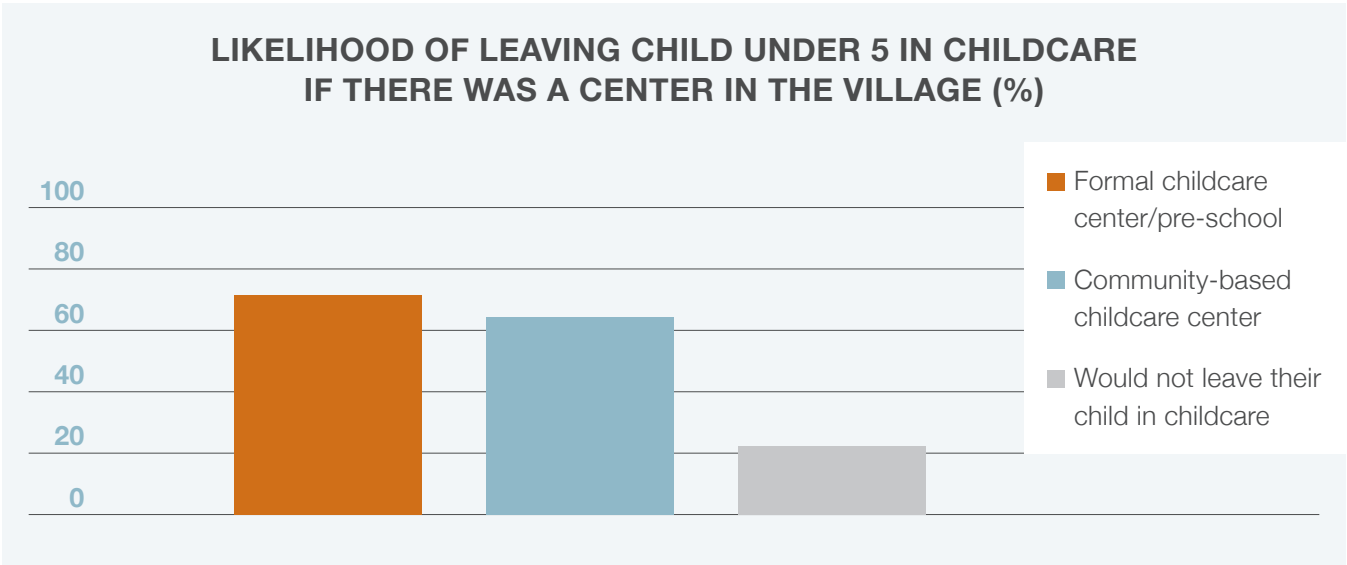
After having established that domestic work and childcare provision are important to women's productive time, we aim to pilot and evaluate a childcare intervention that would be suited to the population's needs and that would generate sufficient demand.

We will be introducing these services in the Kongo Central region with the support of local and international providers. Here, we examine results from our survey data on whether childcare services would be used by parents, and review the various parameters that enter into the design of such an intervention.

The baseline data presented in Figure 1 indicates that 76 percent of female farmers would leave their children under 5 in any type of childcare center. There is a slight preference for formal centers, but 65 percent of female plot managers would also leave their children in a community childcare center.

6 The percentage change in a dependent variable that has been log-transformed associated to a dummy switching from 0 to 1 is $100 \cdot [\exp(b) - 1]$.

Figure 1: Willingness to leave child in childcare center, by type



For those who are unwilling to leave their children in a childcare center, Table 6 shows the reason for this response. Two main patterns emerge from respondents' answers. First, lack of trust in the quality of care others would provide (through witchcraft⁷, neglect or ineptitude) is extremely prevalent in communities. Second, respondents are concerned about the cost of formal childcare centers, while this is less of a concern for community care. Other reasons cited were disapproval on the part of the spouse, and having to breastfeed the child. Poor quality education and infrastructure were seldom cited.

Table 6: Top reason cited as main deterrent from leaving child in childcare center

	Why would you not let your child attend a formal center? (%)	Why would you not let your child attend a community center? (%)
No resources to pay	32%	13%
No trust in others to take care of my child	25%	39%
Must breastfeed the child	21%	13%
Witchcraft	13%	24%
My spouse would not agree	5%	8%
Poor infrastructure	3%	1%
Poor quality education	1%	2%
Observations	341	455

7 In the DRC, decades of war have led to the breakdown of family and social networks, contributing to the increase in witchcraft accusations within villages. These accusations are made, for example, in the event of a community member such as a child dying unexpectedly (Schnoebelen 2009).

DESIGNING A CHILDCARE INTERVENTION: ISSUES TO CONSIDER

Gathering information from local partners, experts on early child development, and our survey data, several operationally relevant factors to consider emerged.

First, one must determine the degree of formality of the center. Implementation modes range from formal, where infrastructure – such as a school or classroom – is financed by the project, food is supplied, and children are provided with toys and activities designed to aid their cognitive stimulation. Such models usually see high take-up rates from mothers, and can result in better Early Child Development (ECD) outcomes⁸. However, they may also prove less sustainable. Mothers can usually not afford to pay the actual cost of this type of childcare provision, as evidenced by the number who report a lack of resources as the top constraint to enrolling their child in a childcare center in Table 6. These centers are thus usually heavily subsidized. Once program funds run out, the childcare centers can no longer be realistically maintained by the community.

On the other end of the spectrum are informal arrangements between community members. One such arrangement is a rotating scheme, where groups of women band together and designate one woman as the “caretaker”. The other women take turns working in her agricultural fields or running her other income-generating activities while she fulfills this role. Often, the designated caretaker rotates season by season, or even more frequently. When conducting qualitative research, we found that this kind of arrangement often falls apart due to distrust towards other members of the group. This comes across starkly in Table 6: 24 percent of respondents said witchcraft was the main reason they would not leave their child in a community center, while an additional 39 percent said they would not due to lack of trust in others. Note that these numbers are for a community center, and thus a lower bound for even more informal arrangements. Moreover, there are concerns about ECD outcomes due to an inexperienced, rotating care provider.

In our intervention, we settled on a “hybrid” approach: only infrastructure already existing in the village would be used, and low-cost play-based curricula, that have been found highly effective in other settings, will be used to promote child development. For example, Interactive Audio Instruction (IAI) can be delivered via radio or cell phone, and even few episodes can suffice for a year-long program since episodes can be repeated (Christina and Louge 2015). The center will be run by someone local to the community, but they will be provided with in-depth professional training and will be remunerated by the project for the work.

A second consideration is the age range of children to be enrolled in the centers. Most childcare interventions restrict themselves to children above 2 years of age. The main reason is that opening up the center to children below this age raises a host of logistical issues, such as different training requirements for care providers and the development of activities that children this young can engage in. Moreover, many women breastfeed children under the age of 2. However, children of this age may make women’s work more difficult when in the field, due to the necessity of carrying them and taking breaks for breastfeeding.

A potential arrangement to circumvent this issue, which we are exploring in our intervention, is offering a shorter time window during which children between the ages of 1 and 2 can be left in the childcare center. This would still allow enough time for bonding with the mother and breastfeeding, but at the same time allow women to have a dedicated time during the day during which they can dedicate themselves to other activities. The center will be open during regular hours for children between 3 and 5 years old.

A last factor is how the success of these programs is evaluated. Childcare interventions are typically implemented to affect ECD outcomes. The impact on mothers is rarely comprehensively addressed, though we know that lack of time can be a binding constraint for women’s economic participation (O’Sullivan et al. 2014). In addition to measuring

8 These include child language, cognition, and motor skills, nutrition and health (weight and height).

ECD outcomes, our impact analysis will focus on how centers affect women's farming and non-farming activities, as well as their productivity. Collaborating across disciplines and evaluating programs for more comprehensive impacts will allow us to better determine the role childcare provision can play in improving overall economic development and growth.

Conclusion

To address the challenges of low agricultural productivity and income, the government of the DRC is implementing the Western Growth Poles project, which includes a package of interventions targeted at smallholder farmers in the Kongo Central region. 40 percent of the project's targeted beneficiaries will be female farmers, who have specific constraints to their productivity, including time constraints linked to their domestic and care responsibilities. During project preparation, the clear importance emerged of listening to counterparts to identify constraints for specific populations such as female farmers, obtaining their buy-in for additional project components and then validating this information through primary data collection in the field.

Baseline quantitative data collected for the impact evaluation of the project reveal that women farmers spend on average 16 minutes less than men per day on productive activities, and almost two hours more on domestic tasks. They are significantly more likely than their husbands to be the person looking after the children in the household while they are working on the farm or selling at the market, meaning that they must often perform income generating activities and caregiving simultaneously. Women farmers have on average 26 percent lower productivity on the plots they manage than men farmers.

These findings, the available knowledge base and anecdotal evidence suggest that women would use subsidized childcare to shift their time-use patterns. In our sample, more than 60 percent of women reported being likely to leave their children in childcare if it was available. However, the effectiveness of offering childcare as a pathway to increasing women farmers' productivity in Sub-Saharan is mostly unknown.

The authors are currently procuring an organization to implement a childcare intervention in Kongo Central. This intervention will be evaluated using a cluster-randomized control trial method. Eligible villages covered by the Western Growth Poles project will be randomly assigned to treatment and control. Quantitative data will be collected among potential users of the services in both treatment and control communities, before implementation, and after. We will test whether women will choose to substitute home care with agricultural work (including participation in project-related agricultural extension activities) and non-agricultural income generating activities.

This study will fill a knowledge gap on what works to increase women's agricultural productivity, a goal with the potential to not only increase their own economic status, but also that of the communities in which they live.

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