



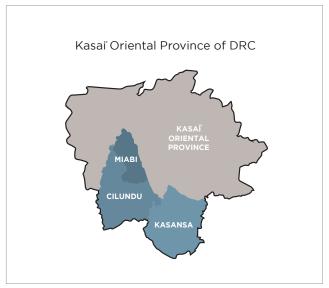


Learning from the Budikadidi Project in the DRC:

GENDER-SENSITIVE LABOR-SAVING TECHNOLOGIES & PRACTICES

Introduction

From 2017-2023, a Catholic Relief Services (CRS)led consortium has implemented a USAID-funded Resilience Food Security Activity (RFSA) in three health zones of the Kasai Oriental Province in the Democratic Republic of the Congo (DRC). The Budikadidi project delivers multisectoral technical assistance to sustainably improve household nutrition, food security and economic well-being. Prior to implementation, the Budikadidi team conducted a gender analysis in 2016 which revealed a high and unequal workload for women and girls. The analysis found that, on average, men enjoyed three or more hours of rest or leisure daily. In comparison, women had almost no time for leisure or social activities due to the heavy load of both productive and reproductive labor for which they are responsible. Women shared that their two most time-consuming activities were field work and transportation, with women and girls also noting a significant time investment in fetching water. As such, the Budikadidi team prioritized and promoted four gender-sensitive labor-saving technologies and practices (GSLTP) to reduce the amount of time and effort needed to carry out different tasks: permagardening, improved seeds use, minimum tillage and cover crop planting. These different, often mutually reinforcing, GSLTPs were primarily promoted on demonstration plots by Lead Farmers or Producer Organization (PO) leaders, and their adoption was further encouraged by other community volunteers. This intervention was integrated into the project's Theory of Change in addition to other approaches also aimed at



Budikadidi takes place in the Kasaï Oriental Province of the DRC, targeting communities in the Cilundu, Kasansa, and Miabi health zones.

reducing women's time burden. These interventions and their expected outcomes are listed below.

When properly planned and integrated as part of a holistic approach, GSLTPs can improve the wellbeing and nutrition of rural women and adolescent girls by reducing women's energy usage and time spent, allowing women to have more opportunities to participate in development activities, to increase their community participation and leisure time, or to undertake additional productive work to increase

BUDIKADIDI GENDER APPROACHES	KEY PATHWAYS TOWARD EXPECTED INTERMEDIATE AND LONGER-TERM OUTCOMES
GSLTP: promotion of permagardening, improved seeds, minimum tillage and cover crops	 Men, women and youth adopt time-saving techniques > Women's and girls' time and energy demands for household tasks reduced > Men and women share household responsibilities and decision-making equitably. Men, women and youth adopt time-saving techniques > Households are more productive > Household income increased > Households have access to diverse, appropriate foods for all members at all times.
Literacy and numeracy training	 More women have literacy and numeracy skills > Households are more productive. More women have literacy and numeracy skills > Community members adopt positive gender norms and customs > Women's and girls' time and energy demands for household tasks reduced. More women have literacy and numeracy skills > Increased confidence and self-respect among women and girls > Men and women share household responsibilities and decision-making equitably.
The Faithful House (TFH): promotion of joint household decision-making	 Men, women and youth equitably share responsibility for time-consuming livelihood tasks > Women's and girls' time and energy demands for household tasks reduced. Men and women have sense of shared responsibility for all household matters > Cooperation between men and women improved > Men and women share household responsibilities and decision-making equitably.

NOTE: As highlighted in colored text above, these distinct interventions were designed to contribute to similar outcomes. Not all Budikadidi participants were targeted for each of these interventions, so potential synergies were experienced differently according to an individual's unique Budikadidi participation.

income. In practice, however, several Budikadidi reports revealed anecdotes of participants failing to link the adoption of new technologies with the intended benefit of saving time for women. Instead, these cases suggested that community members appreciated the increase in production driven by the efficiency of these technologies, but continued to invest similar amounts of time to use them. Qualitative data also pointed to little to no shift in the division of reproductive labor. Late in fiscal year 2022 (FY22), the team launched a learning study to better understand whether the GSLTPs promoted by Budikadidi actually resulted in time savings and whether they impacted gendered roles and responsibilities.

Women are responsible for productive labor, including agricultural activities (land preparation, planting, weeding, harvesting, post-harvest management and marketing) and other income-generating activities. They are also tasked with the bulk of reproductive labor, including child and elder care, water and fuel collection, meal preparation, laundry and other household tasks.

Methodology

The study was designed to capture insights to the following learning questions:

- What are the main drivers and barriers to reducing women's workload and time burden?
- What are the barriers to participants understanding/adopting the time-saving benefit of new technologies?
- How do women define "time savings" and its benefits for them?
- How are TFH and literacy interventions influencing women's time burden?
- Does GSLTP adoption improve household wellbeing (including consumption of nutritious foods)?

The study was launched with a desk review of the 2016 gender analysis as well as reports and learning briefs produced throughout the project lifetime. Further, the study team conducted a series of seven key informant interviews (KII) with Budikadidi staff from both the gender and agriculture teams. Interviews were open-ended to map out how the promotion of GSLTPs was implemented by the project team and to capture staff reflections on these approaches.

Based on the early analysis of KII data, the team then designed two tools to engage female Budikadidi participants. The first focused on the women's experience with GSLTPs in general, and the second performed time burden monitoring specific to one GSLTP (i.e., permagardening). Data collection took place in two of the three Budikadidi-targeted health zones of the Kasai Oriental Province—Kasansa and Cilundu—to capture any relevant differences in livelihood zones (agriculture and mining, respectively). Additionally, three profiles of participants were selected: A) women practicing permagardening, B) women practicing permagardening and participating in TFH intervention and C) women practicing permagardening and participating in both TFH and literacy interventions. The first, more general, tool was implemented with all 12 focus groups to capture whether these complementary gender interventions influenced the impact of the GSLTPs. The second tool was only introduced to profiles A and C in order to compare time burdens between women less engaged by the project (profile A) and women highly engaged by the project (profile C). The responses to some questions were collected individually in a group setting to attempt a quantifiable comparison across groups. The numerical results were less meaningful than the

TABLE 1: NUMBER OF FOCUS GROUP DISCUSSION (FGD) PARTICIPANTS BY TOOL, ZONE AND PROFILE EMPOWERED	TOOL 1: GSLTP EXPE	RIENCE	TOOL 2: PERMAGARDEN TIME BURDEN		
COMMUNITIES	Kasansa	Cilundu	Kasansa	Cilundu	
Profile A: women practicing permagardening	12	12	12	12	
Profile B: women practicing permagardening and participating in TFH intervention	11	10	n/a	n/a	
Profile C: women practicing permagardening and participating in TFH and literacy interventions	10	12	10	12	
Total	67		46		

trends they revealed as the collection of individual responses in a group setting is likely biased. This limitation (i.e., the absence of more robust survey data) could be overcome in the future by incorporating regular time burden monitoring into

the project's monitoring, evaluation, accountability and learning (MEAL) system to enable on-going learning and course corrections throughout GSLTP implementation.

Early Insights

Staff affirmed that the introduction of GSLTPs was designed to address women's time poverty, but intervention targeting was not tailored to specifically encourage female participation. In fact, staff estimate that only 20% of GSLTP participants are women. At the onset of GSLTP programming, agriculture staff struggled to identify women with experience and proven leadership in agriculture, which were established targeting criteria. As a result, GSLTP trainings attracted more men than women. Staff also questioned whether women's access to information and literacy skills were additional barriers to enrolling and participating in these trainings. GSLTPs may be most impactful amongst particularly vulnerable women yet considerations of intersectionality (age, marital status, literacy status, number and age of children) were not driving forces of targeting efforts. While some women did manage to attend GSLTP trainings, staff observed their struggle to sustain participation. GSLTPs are intended to address time constraints, yet time constraints appear to have prevented some women's initial access to GSLTPs.

Interviews with staff from different technical teams revealed that sensitization on the purpose of GSLTPs was inconsistent. Messaging during other agricultural activities emphasized that GSLTPs can reduce laborious production. During nutrition-focused interventions, GSLTPs were communicated as an opportunity to improve the quantity or quality of food for household consumption. Meanwhile, gender interventions emphasized the importance of couples sharing the responsibility for adopting these practices. While the integration of GSLTP promotion across different activities and groups was strong, without a holistic approach the key message of reducing women's time burden was eventually lost in the siloed implementation of various teams. As such,

staff recall observing greater male enthusiasm for the introduction of GSLTPs, driven largely by the promise of greater yields.

In terms of GSLTP adoption, staff reflected on permagardening in particular, questioning whether households could overcome the initial time-intensive hurdle of establishing the garden before the timesaving benefits could be enjoyed by women. Staff considered households where permagardens were successfully launched and noted that the distance women walk to gather vegetables was reduced, but the laborious responsibility of fetching water (including for permagardening) had not shifted. Staff were able to note positive cases where the successful layering of GSLTP adoption and nutritional behavior change yielded improved food security. While a positive contribution to the project goal, these cases nonetheless underscore the challenge of shifting women's time burden. Presented with agricultural techniques and practices that can increase production and bolster household consumption, a commitment to time savings is likely less prioritized, particularly if not explicitly encouraged during intervention delivery. Overall, staff acknowledged that the execution of the GSLTP interventions was not as gender-sensitive as necessary to ensure a solid contribution to time savings. Gaps included unintentional targeting and failing to address women's most significant time constraint (fetching water). Both agriculture and gender staff questioned whether GSLTPs alone (even when implemented with greater gender sensitivity) would significantly reduce women's workload unless coupled with other interventions that explicitly support transformation of inequitable gender norms in the household.



Findings

Focus group participants revealed several challenges related to adopting GSLTPs and optimizing their potential benefits. Seven of the 12 female focus groups identified a lack of financial means for key inputs (including improved seeds, tools and permagarden fencing) as a barrier to GSLTP adoption, noting that they understood the value of, but lacked access to, additional inputs. This challenge is presumably shared by men, but heightened for women who enjoy less control over household resource allocation in general.¹ Five groups mentioned insects as a key obstacle. Integrated pest management is also promoted by Budikadidi, perhaps suggesting that promotion of this practice did not successfully reach a wide female audience.

No participant initially identified lack of time as a constraint to GSLTP adoption; however, when probed on whether they attended all GSLTP trainings, most participants said no, driven mostly by competing time demands. Some cited the distance between home and trainings as too timeconsuming while others felt training information did not reach them early enough or at all. Self-reported participation rates were worse for women from Kasansa than Cilundu, with the study team noting that the rural conditions of Cilundu often yield greater availability than in Kasansa where residents are more often busily commuting to and from the city center. Likely linked to these participation rates, all Cilundu participants felt the GSLTP instruction they received was clear while women from Kasansa reported that instruction received during training was unclear or unsuccessfully retained after the training. When asked which aspects of food production are most time-consuming, the majority noted land preparation (for fields and permagardens). One participant noted engaging her children to overcome this hurdle and others brainstormed the possibility of developing a small group system amongst women to mutually support one another. The majority of participants preferred the solution of paying day laborers despite the financial challenge to do so.

When asked whether literacy skills are important to the adoption of these technologies and practices, the majority responded in the negative. All respondents noted that no written material was provided during trainings, rendering literacy unnecessary for participation; however, many

1 A 2022 assessment with Budikadidi savings and internal lending community (SILC) group members revealed that 59% of men made seed purchases alone compared to 46% of women. Similarly, 55% of men made other agricultural input purchase decisions alone compared to 31% of women, revealing that a lack of joint decisionmaking negatively impacts women more than men.

literate women revealed that they revisited notes they took during trainings to hone their practice. Beyond taking notes, women with literacy and numeracy skills affirmed the added benefits, including the capacity to participate more meaningfully during the trainings and make calculations to adopt certain practices correctly (e.g., seed spacing). Illiterate women resoundingly underscored their ability to learn through observation. While more men than women are literate in the targeted zone, illiteracy does not appear to be a significant stand-alone barrier to accessing GSLTP information; instead, illiteracy may be a compounding factor underscoring women's poor leadership in the agriculture sector in general, which negatively impacts overall GSLTP targeting.



66 Literacy permitted me to be attentive in the meeting and give my point of view. Thanks to my intellectual capacity, I can apply [the GSLTP] in my field."

> - A FEMALE FOCUS GROUP PARTICIPANT **EXPLAINING THE BENEFIT OF LITERACY ON GSLTP ADOPTION**

In nearly half of the focus groups, no participants could recall hearing a message promoting time savings via GSLTP adoption (the majority in Cilundu could recall this message while the majority in Kasansa could not). While this is not inherently problematic (messaging is ideally designed to promote behavior uptake, but not necessarily understanding of the outcomes of this uptake), results point to inconsistency as over half of participants reported that messaging was unclear. Despite these findings, which affirm staff concerns that the time savings purpose was not evenly promoted or understood amongst participants, all focus group participants reported that less time is invested in agriculture since the introduction of GSLTPs and that this time has been shifted to other tasks. No woman reported investing more or even the same amount of time in agriculture. Three focus groups explicitly stated that the time saving purpose was not understood prior to the FGD, but as a result of this discussion, they could identify this advantage retrospectively. Those groups that demonstrated an understanding of the time saving benefit described its application specific to permagardens, which reduce meal preparation time by eliminating the walk to fields for vegetables.



A couple in the Cilundu health zone of DRC invest time in their family's permagarden to produce fruits and vegetables for consumption and sale. Photo by Michael Castofras for CRS

The majority (nearly 90%) report producing more since the introduction of GSLTPs. Of those, the most are doing so with the same amount of land while about a third reported expanding the land they farm since the introduction of GSLTPs. This finding helps frame participants' perception of the greatest advantages of GSLTP, which are listed below in order of frequency mentioned:

- Improved agricultural technique and yields.
- Easier access to vegetables and time savings from permagardening.
- Improved income, which supports a range of investments including addressing household needs and paying school fees.

While the time-saving factor of permagarden adoption was envisioned to reduce women's time burden, the ultimate aim of the intervention was to increase household dietary diversity. Only when specifically probed did participants speak about a link between permagardening and improved

nutrition. The majority of participants described the impact of permagardening in strengthening their family's nutrition during the lean season, both due to increasing immediate access to diversified foods and yielding a surplus that could be sold in order to purchase other foods. Multiple participants mentioned having increased their daily meal intake from once to twice a day since starting a permagarden (with some reverting to once per day during the lean season). This improvement was mentioned more frequently amongst Kasansa residents. In Cilundu, most women reported sustaining only one meal per day, but the dietary diversity within that meal had improved. In addition to the above-mentioned advantages, participants appreciated that permagardens enable women to spend more time at home, either to care for children or host guests. One participant mentioned that adopting GSLTPs has reduced conflict in her household, for when her husband or children request food, she now has a stock from which she can pull.

Following staff interviews, the study team anticipated that the driving force behind GSLTP adoption was not time savings. As such, focus groups were asked to reflect on what greater time savings would mean to them if available. The majority of responses focused on investing additional time in existing priorities, including both income-generating activities and household responsibilities. A few participants mentioned rest while a few others were eager to invest more time in literacy programming. CRS' global experience promoting GSLTP tells us that saved time can lead "to women having more opportunities to participate in development activities, increased community participation and leisure time, and the ability to undertake additional productive work to increase income, depending on how women choose or are able to use it." Study participants' reported advantages of GSLTP adoption and their expressed plans for the use of their additional time savings suggest that two of the potential impacts currently resonate in the targeted zone—increased participation in development programming and more income-generating productive work—while leisure and greater community participation appear less relevant or feasible. Overall, shifts to community participation received mixed results. Some participants reported more female participation in community meetings than prior to Budikadidi, with greater change reported in Kasansa. However, four different focus groups mentioned lacking the motivation to attend community meetings after doing so and failing to see the benefit, likely reflecting poor engagement of women within these communal meetings. Additionally, multiple participants explained that meetings are too often scheduled when women are unavailable and the distance from home requires too much time. One participant (not reached by TFH) reported that her husband refuses to allow her to attend community meetings. Others requested programmatic outreach to husbands to encourage female participation, reinforcing the significance of spousal permission as a factor in women's community participation (independent of time considerations). Overall, these findings demonstrate that time potentially gained from GSLTP adoption did not directly result in increased community participation as such participation is heavily impacted by other gender barriers.

CRS experience also shows that GSLTP promotion is strengthened by complementary gender transformative approaches which can "serve as time and labor-saving strategies themselves through a focus on more equitable distribution of work, in addition to enhancing the overall environment

for uptake and adoption of technologies." To understand whether the adoption and benefits of these technologies and practices were experienced differently due to successful programming integration, this study compared the experience of women targeted for GSLTP alone versus those also engaged in TFH. The majority of both profiles of women reported greater joint decision-making with their spouses since the start of Budikadidi. TFH participants, however, offered concrete examples of how this couples-strengthening intervention impacted their household's GSLTP adoption:

"The tone of our husbands has changed... previously they were little lions, but for the moment, they are our friends thanks to the teachings of TFH. We can forget how to do the home garden and it's possible to ask our husbands."

"When there is a group discussion [in the household], it influences our technology adoption because there is common planning and if someone has forgotten, she can resort to her spouse and vice versa."

"Before everyone made their own decision on the varieties to cultivate, but TFH allows for a decision to be consulted and even facilitates adoption because it receives the support of the husband."

Almost all participants reported having more assistance with household tasks than before Budikadidi; however, the majority also stated still needing more support from their husbands and asked for more robust TFH programming to promote this. One group of women not reached by TFH reported relying on their children to accomplish the heavy load of reproductive labor. Another group reached by TFH explained that there is greater joint decision-making with their spouses but certain tasks remain "gendered," including fetching water and laundry, which both require significant time. To reduce the heavy time burden they continue to face, the majority of women desire greater income-generating activity participation to gain control over resources to pay for assistance. Despite the preceding discussion on sharing household tasks with husbands, no participant cited this as a prioritized solution for her current time challenge.

Case Study: Permagarden Time Burden Monitoring

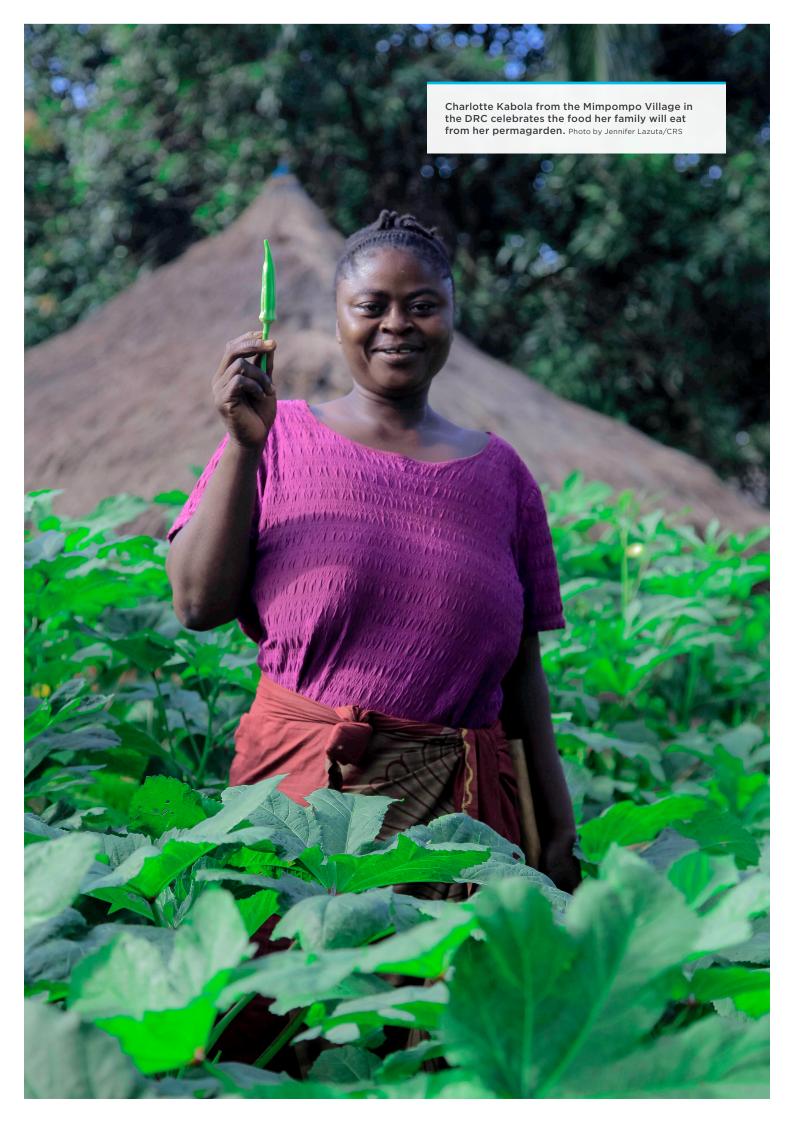
To more closely analyze the impact of GSLTP on women's time burden, participants were engaged in reflecting on permagardening alone. As successful permagardening permits household members to prepare daily nutritious meals using produce acquired directly next to their homes, the practice was incorporated into the project design as a GSLTP due to the potential to reduce time invested in traveling to and from the market to purchase vegetables.

Firstly, participants compared their current average daily agenda with the daily calendars produced during the 2016 gender analysis (pictured below), which are considered the "baseline" before permagarden participation. Noted adjustments to women's daily calendar include:

■ The original gender analysis reported the average woman woke between 5 and 6 AM while study participants reported 5 AM or earlier, suggesting longer days for women since the project began. This is driven in part by the preparation and consumption of breakfast, a positive nutritional change that requires an additional time investment.

- Women continue to depart for the fields between 6 and 7 AM, spend long mornings performing agricultural work and return home between noon and 4 PM (early returns affirm results of agricultural time savings). Upon return, women tackle a list of household tasks until going to bed between 8 and 9 PM. Participants explained that regular permagarden care is squeezed into the two periods of household tasks—early morning to fetch water and irrigate permagardens and late afternoons to tend gardens and collect vegetables for that evening's meal.
- Women noted that the late afternoon period when the majority of permagarden care takes place—is when they participate in other Budikadidi activities such as literacy courses or various meetings (including PO meetings and Lead Mother home visits).
- This overarching schedule was shared by women who are less engaged in Budikadidi (permagardens only) as well as those who are highly engaged (permagardens plus literacy and TFH), with the latter carefully negotiating their late afternoon time to participate in various activities.

AVERAGE WOMAN'S DAILY CALENDAR	AVERAGE MAN'S DAILY CALENDAR					
Sleep	Sleep					
Fetch Water						
On the Road	Coffee / On the Road					
Work in Fields or at Market	Work in Fields or Mines					
Fetch Water						
Transport Products on the Road						
	Wash in River / Feed LIvestock					
Prepare Food	On the Road					
	Play Cards / Listen to Radio					
	Eat / Go to Cinema					
Eat	Advise Children / Chat					



The below table describes the time women invest in each step of permagarden management as well as how they negotiate the daily calendar on page 9 to perform these tasks:

PERMAGARDEN ACTIVITY:	TRAININGS	LAND PREPARATION & PLANTING	WEEDING	WATERING	HARVESTING
Daily/weekly investment:	1 hr/day, 1 day/ week	1-3 hrs/day, 1-3 days/week	30 mins-2 hrs/ day, 1-2 days/ week	10 mins-2 hrs/ day, 2-7 days/ week	5 mins-1 hr/day, 1-3 days/week
Responsible:	37/46 women	37/46 women	42/46 women	42/46 women	42/46 women
Time adjustment to perform this activity:	Abandoned other tasks, no coverage	Abandoned other tasks, one group's husbands supported other tasks	Abandoned other tasks, one group's husbands supported other tasks	Abandoned other tasks, with no coverage except for two Kasansa groups who noted children providing coverage for tasks	Abandoned other tasks, no coverage

Overall, the great majority of women report that they are responsible for each step of permagardening—from training to harvesting—with some male engagement present during training and land preparation. Training is a minimal commitment of only one hour, presenting little barrier to entry. Preparation and planting are the most time-consuming tasks within the weekly calendar, but in principle, should take place only once per week if permagardens are maintained year-round, as designed. Weeding, watering and harvesting take place several times a week (and presumably, consistently across the year) and range in daily time investment from five minutes to two hours. To perform these tasks, the majority of women simply

prioritize permagardening over sleep or other reproductive tasks with few mentions of receiving assistance from family to complete all tasks. Women affirmed staff suspicions that permagarden start-up (land preparation and planting) is the most difficult and time-consuming step and may effectively preclude some households from adopting this GSLTP. Otherwise, women stated their most significant challenge related to permagardening is the cost of fencing, without which animals will eat their produce.

Women also constructed a seasonal calendar detailing the distribution of time invested in permagardening year-round (pictured below).

MONTHS:	J	F	М	A	М	J	J	A	s	0	N	D
Women's Agricultular Labor (2016 Gender Analysis)												
Women's Gardening (2016 Gender Analysis)												
Typical Rainy Season (A)												
Typical Rainy Season (B)												
Typical Lean Seasons												
Permagarden: Preparation*	3	3	3	3	3	6		5	7	5	4	2
Permagarden: Weeding*	2	2	2	1	1	6	7	3	5	5	3	2
Permagarden: Watering*		1			3	7	7	2	2	2	3	
Permagarden: Harvesting*	2	3	3	3	2	6		7	8		5	1

^{*} Presented as the number of focus groups (out of eight) which reported performing this task during this month.



Moise Cienda tends to his family's permagarden in the Mukuna Village of DRC. Photo by Michael Castofras for CRS

Only three groups noted investing time in permagardening every month. The majority reported heavy time investments between June and September, aligning with women's typical gardening patterns prior to the introduction of permagardens. This time-intensive stretch coincides with the dry season, which six of the eight groups identified as the most difficult period to sustain permagardens due to the time required to fetch the requisite amount of water when the soil is most dry. As a result, staff suggested that abandoning permagardens is most likely to occur during this period when women's time burden is exacerbated by time-intensive water demands. This is particularly problematic as this period precedes the lean season, when accessibility to home-grown vegetables is most critical to food security. Importantly, permagarden harvesting does take place during the first phase of the lean season (August-September); however, year-round harvests are not consistently reported. In particular, harvests are not sustained throughout the two phases of lean season (covering August-December). Additionally, two Cilundu focus groups noted that the rainy season poses unique economic challenges to sustaining permagardens. Specifically, when vegetable production is highest, market prices are lowest. Women in these groups explained this cost-benefit analysis and their decision to purchase affordable market vegetables and reserve the limited space at home to grow maize (more profitable than selling vegetable surplus).

Overall, only three participants reported lacking time to fully participate in permagardening, but the great majority made sacrifices to make the time investment possible. Nonetheless, more than half of the focus groups reported satisfaction with permagardening, specifically noting that the

benefits outweigh the challenge of finding adequate time. To ease the burden of this beneficial but difficult activity in the lives of women, they reinforced the challenge of permagarden start-up, underscoring the importance of intentional planning of initial trainings and land preparation outside of busy periods, both within the seasonal calendar and the project overall. Women also noted preferences for better training/meeting planning (relevant beyond permagardening) and made the following suggestions: i) prioritize afternoons to prevent women from having to choose between productive labor and project participation, ii) provide earlier notice of trainings and meetings so women have ample time to negotiate between their many demands and iii) limit meetings to once per week as many community members participate in several project activities and groups and cannot make all afternoons flexible for development programming. Indeed, the average participant in these eight focus groups participates in at least five Budikadidi activities. In addition to permagardening and literacy (intentionally selected as 100% and 48% of this sample, respectively), nearly all of the women are also members of POs, over 75% are savings and internal lending community (SILC) group members and over half serve as Lead Mothers. These basic profile results highlight the extent of programmatic engagement, which, while a success in terms of integrated targeting, reinforce the challenge women face to sustain permagardens when even a minor investment of 15 minutes per day must be weighed amongst numerous demands and priorities.

Discussion

This study revealed that the adoption of GSLTPs has yielded agricultural efficiencies and time savings. Women report shifting time previously invested in agriculture to attend to reproductive labor or participate in other income-generating tasks. Time savings has not significantly altered women's experience of leisure or communal participation. Overall, the distribution of women's time has shifted, but the ratio of female to male work appears relatively unaltered. This may be due, in part, to the implementation of GSLTPs, which were successfully championed, but whose gender transformative potential was not regularly encouraged to support behavior change. To optimize the impact of GSLTPs, the following design considerations are recommended:

- Gender sensitive targeting and delivery: The very challenge these interventions seek to resolve (women's time burden) may serve as the greatest barrier to women's participation. In order to mitigate this challenge as much as possible, project design teams can leverage guidance from the CRS resource Gender-Sensitive Labor-Saving Technologies and Practices to carefully integrate GSLTP within the project Theory of Change and ensure gender and agricultural aims are clearly established. Then, gender and agriculture project leaders must collaborate and coach field staff to intentionally prioritize women, requiring both inclusive targeting criteria and sensitization amongst husbands to explain how their wives' participation will benefit the household. Furthermore, trainings and meetings must take place in locations and at times (both within the day and seasonally) which do not exclude vulnerable women or lead to increased workload for children. Materials provided to reinforce the content of trainings should include text and visuals to mitigate illiteracy as an obstacle. Additionally, numerical guidance could be adapted to mitigate the necessity of numeracy skills; for example, seed placement could be described as "one hand" instead of "six inches." Staff should monitor women's participation and actively seek solutions to identified challenges.
- Tonsistent, integrated sensitization: While this study revealed that time savings occurred whether or not it was promoted as an outcome, delivering clear messaging around this goal may elevate the impact from reducing women's agricultural time investment to reducing women's overall time burden. Reinforcing this consistent message across various activities is critical to successfully reaching both men and women and leveraging interest in increased production with an openness to distributing reproductive labor differently within households.

- Integration of GSLTP and gender transformative approaches: Greater overall results amongst women who were also TFH and literacy participants point to the potential benefits of coupling GSLTP with gender transformative approaches. Importantly, teams should actively move beyond implementing these various approaches in parallel toward an intentional plan for sequencing, layering and integration. For example, TFH coaching should explicitly discuss the daily time burden of both men and women and how time savings from GSLTP can be best applied. Literacy courses could incorporate these discussions into their curriculum. Most importantly, agriculture staff delivering the technical introduction to GSLTP should be supported, if not physically accompanied by gender staff, to encourage the benefit of these technologies in alleviating women's time poverty.
- Regular time burden monitoring: This study retrospectively explored the specific influence of permagardening on women's time burden. This effort could be systematically incorporated into on-going programming to monitor the influence of individual GSLTPs. To prevent leaning on dated gender analyses or identifying course corrections too late in the project timeline, such monitoring should take place at least twice—immediately before introducing the GSLTPs to establish a baseline that includes project participation todate and early enough within implementation to enable meaningful adaptations. This effort would serve two purposes: i) to explore how existing gender norms affect the adoption and continued use of GSLTPs and inform strategic shifts to address norms that are limiting the full range of these technologies and practices' benefits and ii) to continuously reinforce the desired outcome of women's time savings amongst staff. This pilot exercise also revealed the extent to which the project contributes to women's time burden and underscores the importance of comprehensive monitoring of programmatic time demands. While developing and executing such a monitoring system would require extensive buy-in across the project team, this effort would strengthen accountability to participants through more careful planning and formalize insights for more intentional sequencing and layering.

