Co-Creating Sustainable Futures with Women Cotton Farmers in Pakistan

Insights on time use, support structures and farm-level programming

2025

This study was commissioned by Better Cotton Initiative (BCI) in Pakistan and carried out by consulting firm Ardis Research & Consultancy (ARC). Data collection and field coordination were made possible through the dedicated efforts of the CABI, Rural Development Foundation (RDF), and Sami Foundation teams in Sindh.

Contents

Introduction

This study was a rapid assessment conducted in 2025. It explored how 300 BCI women cotton farmers, across four districts in Sindh, allocate their time, perceive their own roles, and navigate gender norms that shape cotton production.

Women are indispensable to every manual stage of cotton production yet are faced with varied barriers to access markets, purchase inputs and meaningfully access facilities and support structures to improve yield and profitability at farm-level. BCI Pakistan and its programme partners have engaged women community leaders and self-help groups for women farmers to engage in peer learning, collective buying and contribute to participative co-design and collaboration on farm and beyond farmgate. This study examines perceptions of masculinity and femininity in farm work, mapping the vocational and technical needs of women farmers to build a pathway for more impactful programming.

Context & Background

Rural women in Pakistan constitute nearly 68% of the agricultural workforce (PBS, 2021). Many women farmers, much like male farmers, play a dual role within the agricultural system, manging their own farms and working as wage labourers on other farms. Despite the pivotal role that women farmers play, traditional gender roles and time use patterns often limit opportunities for women to increase farm income and profitability.

Women's labour is critical in planting, weeding, harvesting, and post-harvest processing activities (FAO, 2023). Despite their significant contributions to both household tasks and farm work, women's labour often goes unrecognized, contributing to low self-efficacy and limited awareness of their important roles in agricultural production (Luqman et al., 2018).

BCI Pakistan and our implementing partners has been engaging directly with women farmers to improve their knowledge, practice adoption and overall profitability and income diversification since 2009

Given the lack of data on women's self-perceptions and practices at the farm level, and against this backdrop of underrepresentation, it is important to examine how gendered roles and perceptions influence women's engagement in cotton farming and shape their broader economic opportunities.

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"Treating agricultural sustainability as a socio-ecological transformation will help reconcile the triple bottom line (economic, environmental, social). True sustainability requires aligning ecological regeneration with equity, inclusion, governance – putting farmers and communities at the centre of system design"

This study will allow for more informed and effectively tailored programming and interventions for our implementing partners.

Based on the findings from this rapid assessment, programme partners will be facilitated in implementing activities that recognise and reward women's sustainability outcomes. By rewarding equitable behaviour and practice adoption, combining practical services, norm-shifting dialogues, and stronger gender-sensitive data systems, women farmers will improve their time poverty and enhance their decision-making power within their communities.

Objective of the study

The primary objective of the research assessment was to analyse gender self-perception and conduct a survey among women farmers and workers in Sindh to examine their time use and explore the linkages between gender roles, women's self-perceptions, and actual practices.

By doing so, this research aimed to uncover the underlying factors that influence women's roles and contributions in cotton farming.

The findings will enable BCI and its programme partners to pinpoint critical areas where training and capacity building can be implemented for both men and women. These interventions can enhance trust and promote better inclusion of women in farm work, thereby fostering a more equitable and productive agricultural sector in the region.

This initiative not only seeks to empower women but also to shift cultural and social norms towards more gender-inclusive practices, ultimately benefiting the broader community and the cotton value chain.

Learning Questions

- Does women's self-perception impact the types of farm work they are involved in?
- Does community perception of the role of women influence the nature of their involvement in farm-level decision-making?
- Which types of work are considered "masculine" or "feminine," and what underlies these distinctions?
- What types of work are women currently engaged in?
- Are there linkages between perception and practice?
- What are women farmer priorities for programming and capacity building that would enhance their inclusion and agency?

Our Sample

Programme Partner	District(s)	Surveys (n)
CABI	Sanghar, Matiari, Tando Allahyar	40
RDF	Sanghar	60
Sami Foundation	Umerkot	200
Total	—	**300**

Survey Distribution

District	Tehsil (Sub-district)	Group type	No. of participants
Matiari	Hala	Men	6
		Women	11
Sanghar	Tando Adam	Men	6
		Women	22

FGD Distribution

Methodology

Stakeholder Engagement and Design Process

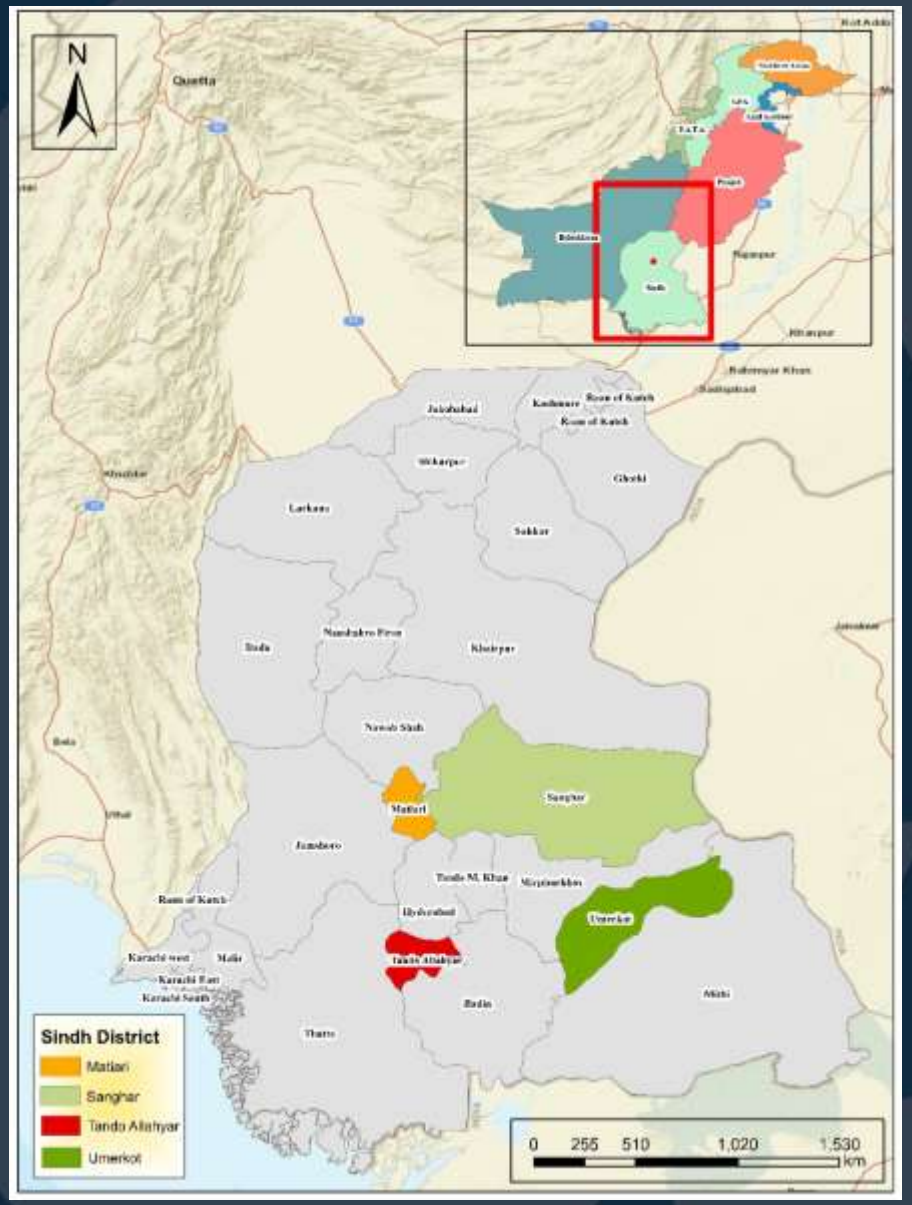
The design and implementation of the study followed a structured and participatory approach and combined structured household surveys with focus group discussions (FGDs) and key informant interviews (KIIs).

The study focused on the Sindh province. Fieldwork was conducted across four districts: Umerkot, Sanghar, Matiari and Tando Allahyar.

Approach

In 2025, BCI Pakistan had 5,902 registered/licensed women farmers, with the number expected to grow to 8,000 in season 2026. For this study, the quantitative survey reached 300 registered women cotton farmers using a structured questionnaire (KoboCollect) that covered self-perception, agricultural tasks performed and a 24-hour recall time-use module.

A total of 4 FGDs were also conducted, two with men farmers and two with women farmers. This allowed the study to capture broader attitudes about gender roles, intra-household data, tracking how women's share of household and farm tasks impacts their income, agency and decision-making. These were held in the districts of Sanghar and Matiari, engaging 33 women and 12 men in total.



Quality Assurance & Monitoring

Data collected via KoboCollect was uploaded in real-time to a secure server, allowing the research team to perform ongoing quality checks (e.g., logical consistency checks, duplicate detection) and promptly flag any irregularities.

Built-in skip patterns, range checks, and timestamping in KoboCollect helped ensure data quality and integrity in the field. Daily debrief sessions with enumerators addressed inconsistencies in data entries, clarified question phrasing, and reinforced standardised procedures across districts to improve data quality.

Data Analysis

Following data collection, the survey dataset was exported from KoboCollect to SPSS 25 (Statistical Package for the Social Sciences) software programme for data cleaning and analysis. Entries were first screened for missing values and logical consistency before analysis.

Descriptive statistics (frequency distributions, means, and cross-tabulations) were calculated to profile women's time-use patterns, self-perception, division of labour, and capacity needs.

BCI Pakistan conducted:

- One enumerator training with field staff
- One refresher webinar with project focal points from programme partners
- One validation workshop with programme partners in Sindh

Data Limitations

- **Short data-collection window**: The assessment was conducted over a limited time frame (around three weeks), which restricted the depth of qualitative exploration and piloting.
- **Purposive sampling:** The sample was purposive, drawn from registered BCI farmers, and not statistically representative of all cotton farmers in Sindh.
- **Recall bias:** The 24-hour time-use recall method relied on participants' memory, which can lead to under- or over-reporting of certain activities.
- **Social desirability bias:** Respondents may have provided answers they considered "appropriate," particularly around gender roles and work contributions.
- Limited male participation: Fewer men participated compared to women, which constrained cross-gender comparison.

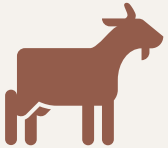
Demographic Profile of Sample

Women's Profile

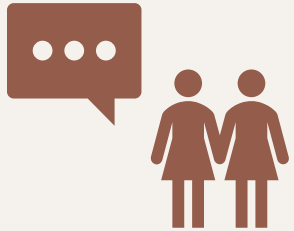
Average Age: 42 years
Marital status: 92% are married
Formal education: 91% have none
Average household size: 7
Farming experience: 10+ years

20% of the women own land

21% own mobile money accounts



Around 50% women farmers supplement earnings through livestock, embroidery, or small shops



Decision-making is reportedly shared: 60% say they and their husbands make household decisions equally

Only 22% report a full say in core cotton production decisions, underscoring a persistent gap between perceived and actual decision-making at farm level

Crop Portfolio and Income Sources

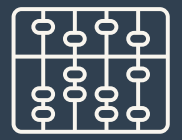
Subtracting reported costs from reported revenue implies an expected profit of PKR 80,300. Yet male farmers self-report net profits in the range of PKR 20,000-80,000 (USD 71-286) per acre, depending on yield, input costs, and market price. This discrepancy may stem from unreported or underreported expenses (e.g., land rent, family labour, transport or ginning fees), post-harvest losses, or simple recall bias during FGDs. Both men and women noted that changing weather patterns (heavy rainfall and dry spells) impact production and income each season. As cotton yields and prices fluctuate, actual margins can vary dramatically and may not align with simplified farmer estimates.

Most women farmers cultivate small plots under sharecropping arrangements: the mean household holding is 3.2 acres, of which 2.4 acres are planted with cotton, yielding 32-40 maunds per acre.

Reported production costs run between PKR 110,000-130,000 (USD 393-464), depending on seasonal fluctuations.

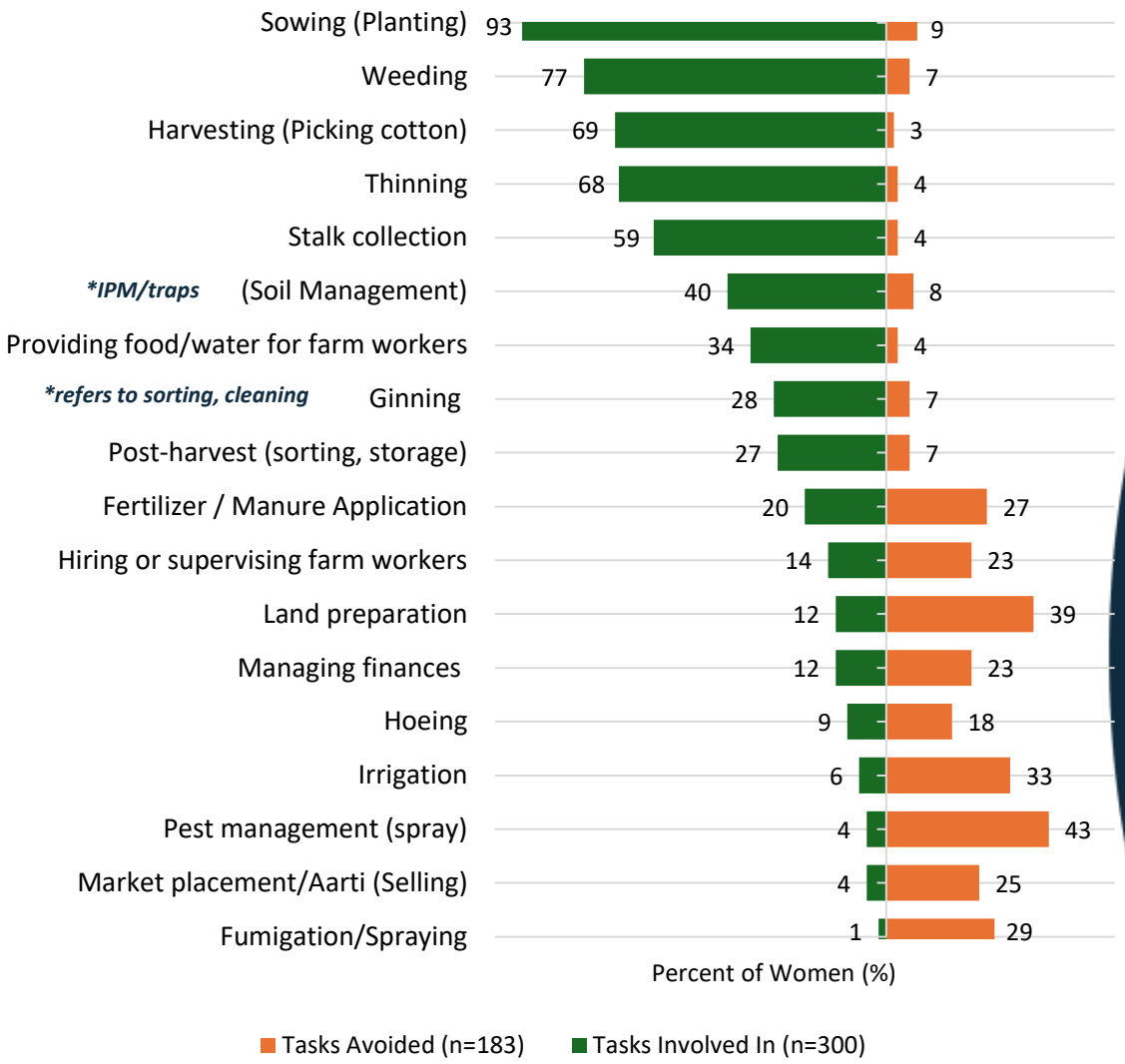
Male farmers self-report net profits in the range of PKR 20,000-80,000 (USD 71-286).

Based on survey data, the average household income per month is around PKR 25,000 (USD 89.3), well below the reported household expenses



While respondents are cotton farmers, 89% report cultivating other crops, mainly wheat and vegetables.

Most women report that they along with their spouses also work on other farms earning a minimum of PKR 500 (USD 1.8) per day



***Note**: Involvement values refer to the full sample of 300 women; avoidance values refer to the subset of 183 women (61% of the sample) who reported refraining from tasks they perceive as unsuitable. Figures are independent and do not sum to 100%. All mention of ginning relates to manual removal of seeds or debris.*

Gendered Division of Labour

Women are involved in a wide range of cotton farming activities. The figure shows that virtually all women sow cotton seed by hand (93%), three-quarters weed (77%), and roughly two-thirds harvest (69%) and thin (68%). Participation then drops sharply for tasks involving equipment, chemicals, or market transactions: only 12% prepare land, 6% operate irrigation, 4% spray pesticides, and 4% are involved in selling cotton. The figure also illustrates an inverse pattern of self-exclusion: 61% (n=183) of women report avoiding certain activities they consider unsuitable for women, most commonly pest spraying (43%), land preparation (39%), irrigation (33%), and fumigation (29%).

These results confirm a strong gendered division of labour in which women dominate manual, routine fieldwork but step back from mechanized, chemical, or market-facing operations. Men and women confirmed during the FGDs that land preparation, irrigation, fertilizer/manure application, fumigation and pest management, marketing/selling, managing finances, and hiring and supervising farm workers predominantly are men's work, while a small percentage of women may support in certain activities like land preparation and irrigation.

Overall, these patterns of task involvement mirror the underlying constraints on women's resources, skills development, and authority in cotton farming. Because women rarely irrigate, spray, or operate machinery – activities that require access to tubewells, pumps, pesticides, and technical know-how – they remain confined to manual chores like planting, weeding, and picking. This is where BCI projects and programme partners can enhance their efforts in engaging women in technical and resource management-facing inclusion and knowledge building.

Snapshot of Key Findings

Women are indispensable to every manual stage of cotton production yet remain largely invisible in management, mechanized tasks and market-facing roles. Results show:

Heavy, gender-segmented workloads: 65% of a woman's waking hours (16 hours) are split almost evenly between cotton farming (42%) and unpaid domestic/care work (36 %), with only 4% for leisure or learning. Women have virtually no discretionary time to pursue other activities of interest (both leisure and income-generating). While men work 6-7 hours per day in the field, they have longer periods of rest and leisure time throughout the day. Majority of women's time is spent on collecting firewood and water.

→ **Programmatic entry point for shared labour-intensive household tasks**

Norms are rigid at home, flexible in the field: Routine field labour and women-dominated manual tasks are considered shareable in principle, but technology-, finance- and market-related tasks are still viewed as men's domain.

→ **Programmatic entry point for shared household tasks and attitudinal change**

Knowledge gaps: By avoiding finance-related and market tasks, women lose out on information about input costs, market prices, and new technologies. This creates negative feedback loops: without day-to-day involvement, they remain unaware of cost–benefit trade-offs and are less likely to influence household decisions on seed choice, fertilizer use, irrigation schedules, or when (and whether) to use machinery.

→ **Programmatic entry point for farm-level capacity building**

Hidden decision power: 60% of women report joint decision-making on income, yet only 22% feel they influence core farm-management choices, highlighting a gap between perceived and real agency.

→ **Programmatic entry point for confidence building and enhancing voice**

Snapshot of Key Findings

Women are indispensable to every manual stage of cotton production yet remain largely invisible in management, mechanized tasks and market-facing roles. Results show:

High appetite for skills, low access: 98% of women want technical training (spraying, machinery, improved harvesting) and 65% are interested in land rights and leadership training, however, current programming focuses on picking, FPRW, and gender equality principles

→ **Programmatic entry point for household and farm-level capacity building**

Conflicting attitudes: Most women believe they *could* manage farms as well as men (84%), yet nearly half believe their farming contributions are less valued and that men "naturally" farm better – evidence of internalized norms.

→ **Programmatic entry point for confidence building and enhancing voice**

Overall, women's economic agency in cotton is constrained less by willingness than by (i) heavy unpaid workloads, (ii) limited access to technology, technical training and markets, and (iii) social norms that confine them to low-value tasks.

Strategic multi-level action is needed to unlock productivity gains for households across Sindh's cotton sector and to convert women's farm-level contributions into recognized, rewarded and self-directed roles."

Data Insights

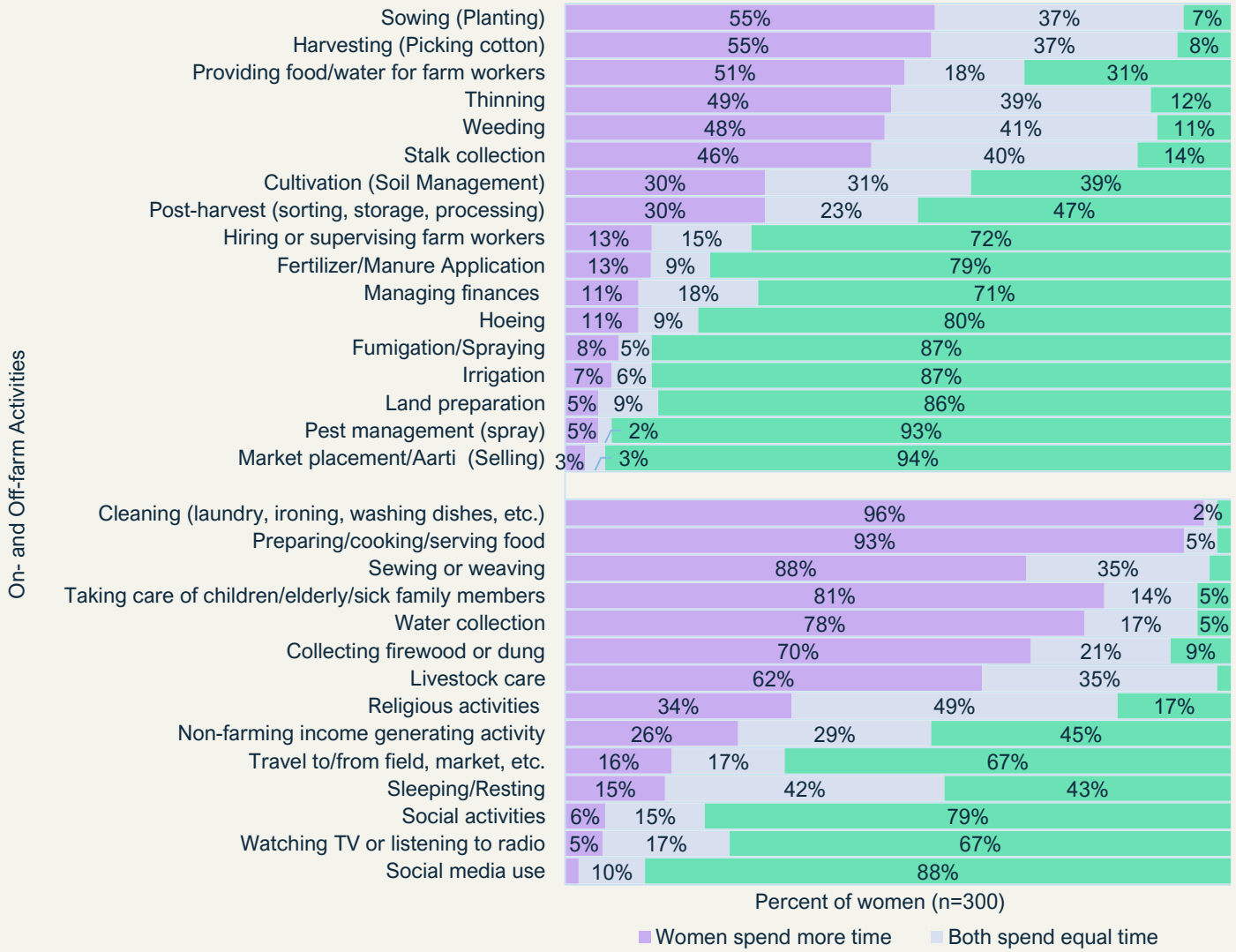
Analysis of key findings

Gender Perception Insights

Gendered Division of Labour (On and Off-Farm Tasks)

Women farmers report a clear gendered split in who spends the most time on various activities. Ploughing and harvest-related tasks remain largely women's domain. More than half of respondents say women do most of the planting (55%) and picking (55 %), while 37% say the work is shared equally. Nearly half also report leading thinning (49%), weeding (48%) and stalk collection (46%). In contrast, mechanized and heavy tasks (pest spraying, irrigation, land prep) are overwhelmingly attributed to men (87-93%), with less than 10% of women reporting those as female-led or equally shared.

Decision-making and oversight duties (supervising workers, handling finances, selling cotton) are also led my men (72-94%). In the domestic sphere, chores such as cleaning (96% women), cooking (93%), sewing/weaving (88%), and caregiving (81%) are largely considered women's responsibilities, whereas social or leisure activities (TV, social media) are largely male-dominated (67-88 %). Livestock care (35%) are more equally split by both sexes.



Masculine & feminine perceptions in cotton production

Women's Perceptions of On and Off-Farm Activities

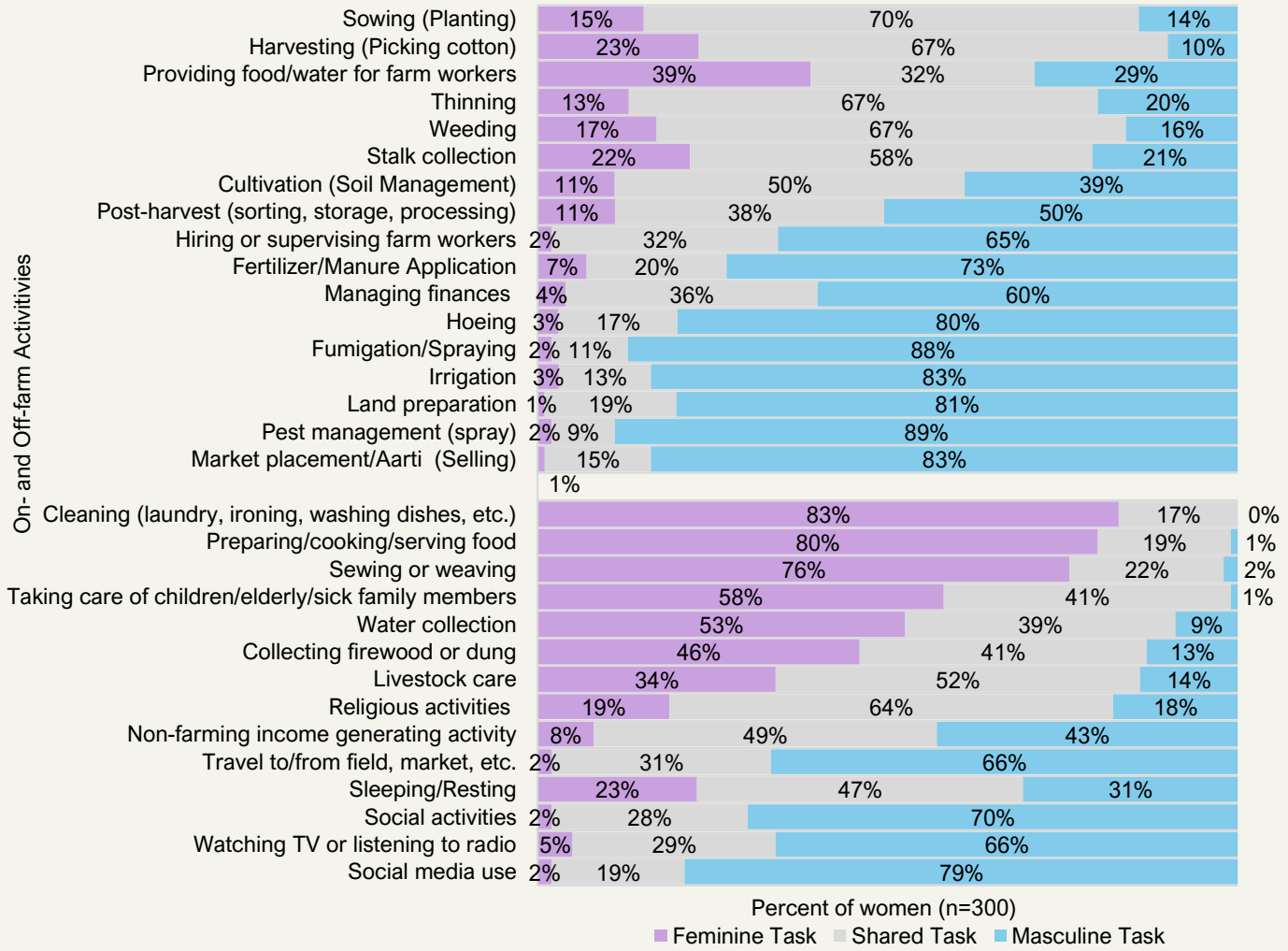
A comparison of 'who does what' with women's perceptions of feminine, masculine, and shared or neutral tasks (i.e., who should do what) also illustrates a sharp domain-based divide.

For on-farm activities (sowing, weeding, thinning, picking), women report spending more time on farm than men, yet *two-thirds or more* classify these tasks as ones that *ought* to be shared equally with men.

In contrast, for household chores (cleaning, cooking, sewing, caregiving), women both perform the bulk of the work and overwhelmingly state that these tasks should be women's responsibilities.

Thus, while agricultural labour is viewed as negotiable and potentially redistributable between sexes, domestic labour remains firmly labelled as feminine, signalling deeper normative resistance to change inside the home than in the field.

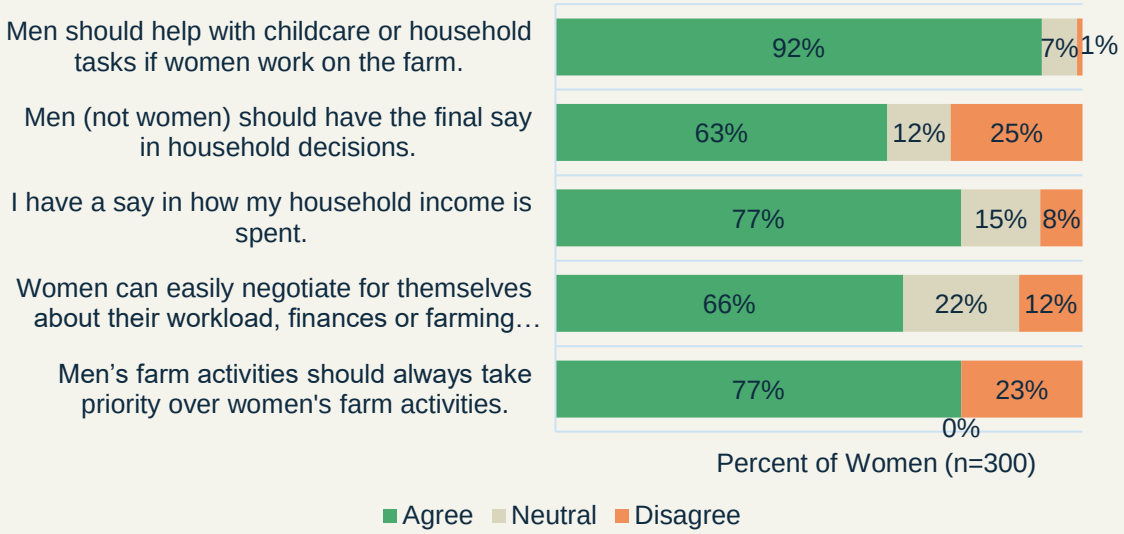
This suggests any effort to rebalance on-farm workloads will need to address household roles, not just technical training or farm-level interventions. In particular, the study finds that collecting water and firewood and grazing livestock are labour-intensive workloads that both men and women are more open to sharing. Moreover, inclcuding women in informal resource management groups such as 'Khal' Committees for water rotation scheduling is also a significant programming entry point.

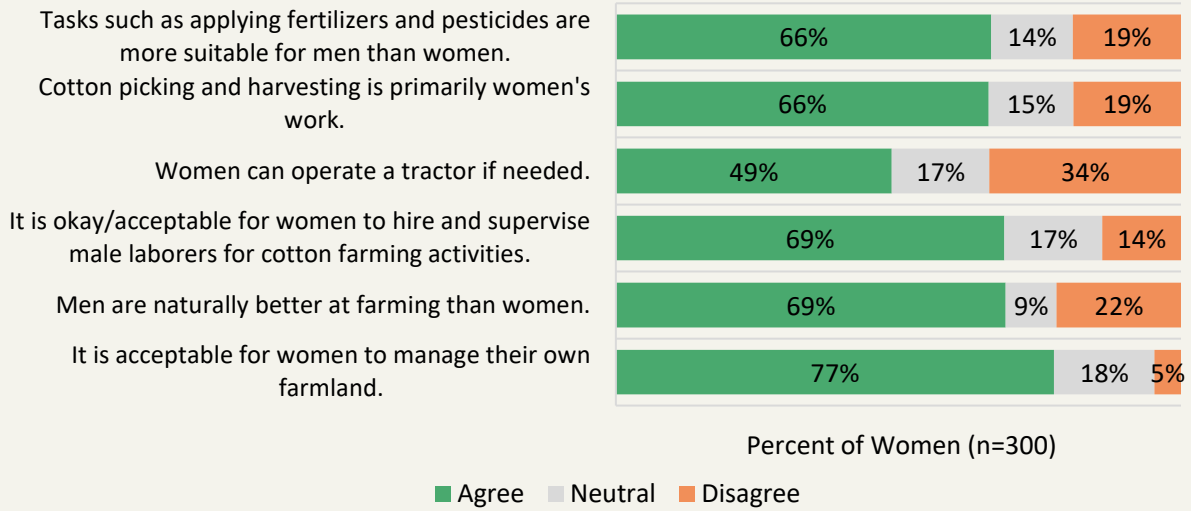


Normative Attitudes, Beliefs and Self-Perception

Household roles & autonomy

Most women want support at home: 92% agree men should step in with childcare and chores when women are busy in the field. A strong majority (77%) feel they already influence how household income is spent, yet 25% still think men should have the final say in family decisions and 77% believe men's farm work should take priority over women's. These mixed views reveal women perceive having a say in household financial matters, but there is still an unspoken rule and expectation that ultimate authority and task-setting remain men's responsibility.





Women's Opinions on Gendered Tasks and Suitability

Norms around gendered tasks may be changing, but selectively. Seven in ten women (77%) endorse women managing land, hiring male labour and supervising field operations (69%), but the same proportion (69%) labels cotton picking "women's work" and pesticide and fertilizer application "men's work." Almost half believe women could drive tractors (though in FGDs women were against operating tractors), while a third say men are naturally better farmers. Perceptions of innate male farming skill (69% agree) and women's lesser ability with machinery indicate that gender stereotypes and concerns about social approval still limit task redistribution. Women may agree with having more managerial power while reality still reflects a gendered division of labour.

Self-Perception and Gender Norm Opinions

Women's Opinions on Value, Fairness, and Market Access

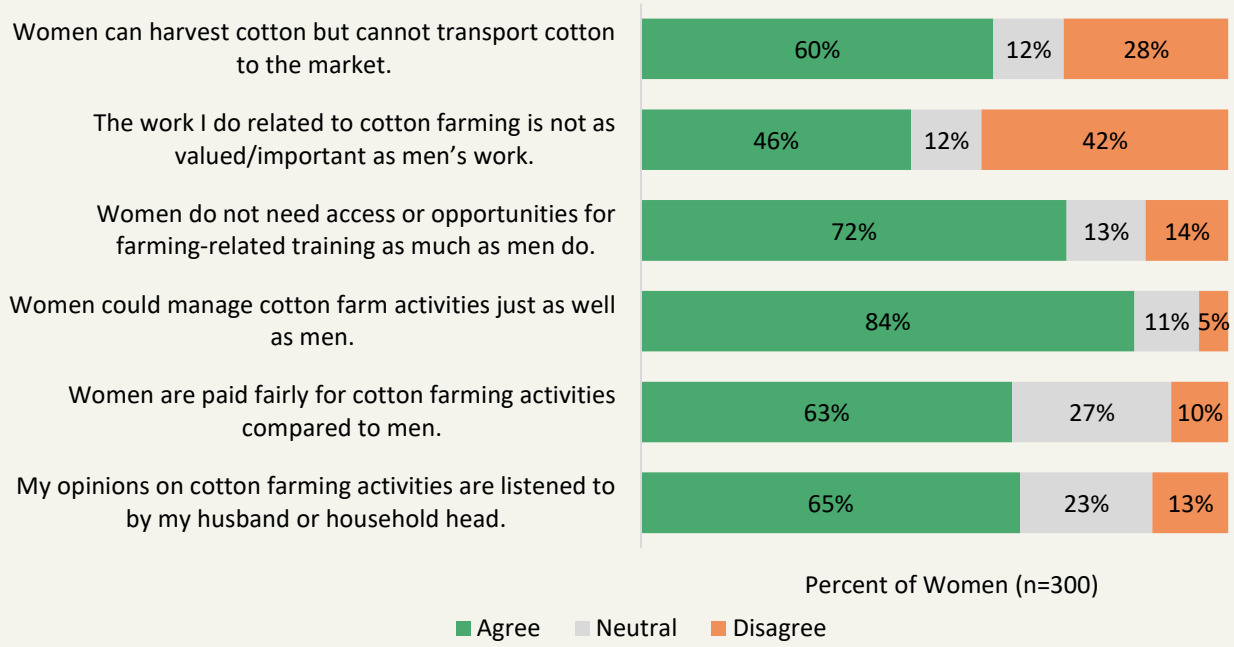
Women recognise both their capabilities and the shortfalls they face. Although 84% say they could run cotton operations as well as men, almost half (46%) still feel their farm work is undervalued, despite 65% reporting their opinions on farming are heard at home.

Most women (72%) believe men's farming training should prioritise their own.

While a third of women (63%) believe they are paid fairly for dual work as workers on other farms.

Results suggest that women's confidence and aspirations are in tension with their limited mobility outside the home.

Women farmers require more technical knowledge, ownership, recognition and meaningful inclusion in farmer groups to enhance their voice, capacity to improve cotton yields and overall household income.



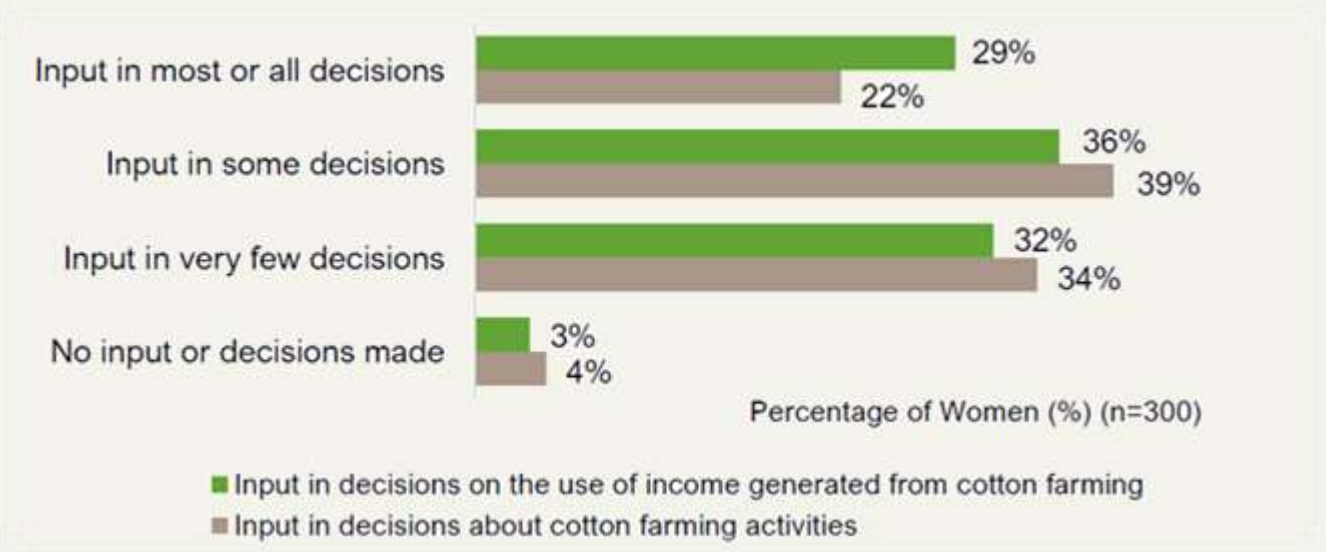
Gender Perception Insights

Household and Farm-Level Decision-Making

The study findings show that decision-making within the household is shared to an extent. 22% women farmers report having full input in decisions related specifically to cotton farming activities (e.g., seed selection, which fertilizer to use, when to irrigate, etc.) and 29% in decisions on use of household income generated from cotton farming. During FGDs, it was difficult for women to fully articulate which specific decisions they have input in; while they stated that they have input on all farm-related activities, men shared that women give no input on farm-related decisions.

Based on the learning from the FGDs, programming and capacity building that encourages both women and men to speak more during sessions, ask questions openly, and conduct peer learning exercises will improving learning and retention, especially for middle-aged farmers.

Women's decision-making input in cotton farming activities and use of income



Time Use Patterns: How do farmers spend their day?

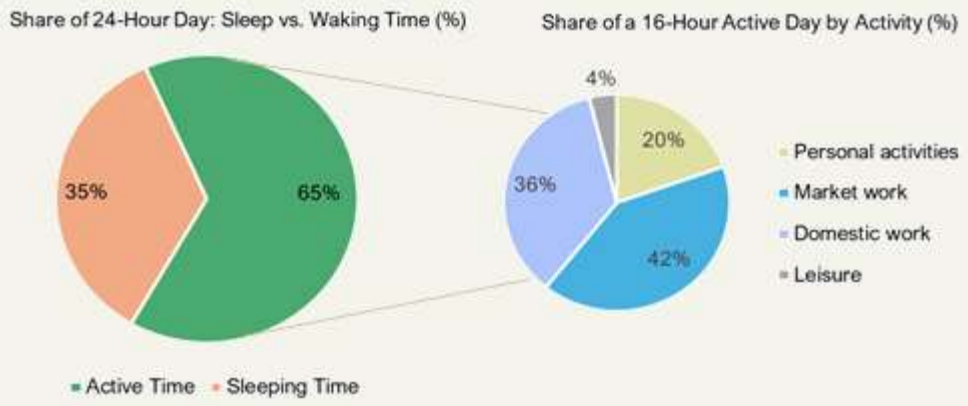
Category	Activity	Mean hours/day	Share of 24-hour day
Personal activities	Sleeping/resting	8.4	35%
	Eating and drinking	1.7	7%
	Personal hygiene	1.4	6%
Market work	Cotton farming (all associated activities)	5	21%
	Livestock care (animal husbandry)	1.2	5%
	Waged work (non-cotton farming)	0.2	1%
	Other non-agricultural income-earning	0.2	1%
Domestic tasks	Preparing/cooking/serving food	1.7	7%
	Cleaning/laundry/washing dishes/ironing	1.2	5%
	Water collection	1	4%
	Care for children/elderly/sick family members	0.7	3%
	Sewing/weaving	0.5	2%
	Collecting firewood or dung	0.5	2%
Leisure	Religious activities	0.5	2%
	Social activities/hobbies	0.2	1%
	Travel/commuting (to fields, markets, etc.)	0	0%
	Watching TV	0	0%
	Social media use	0	0%
	Exercising	0	0%

The Table summarizes the mean hours per day and share of the 24-hour day spent on each activity for women farmers (n=300).

Women's Daily Time Use

In the figure, market work refers to all agricultural and livelihoods activities conducted in a day. Women farmers divide nearly all waking hours between cotton production and domestic chores, leaving very little time for rest, leisure, or skill-building that could enhance their economic agency and overall well-being.

Women farmers spend nearly 30% of 24 hours on agricultural production, livestock care and water collection. This clearly indicates where women farmers need support and where programming should focus on skills development, labour-saving technologies, natural resource management and shared workloads.



Day in the Life of a Female Farmer

The largest proportion of time is spent on cotton farming and other income-generating activities. Focus group discussions with women align with survey results with slight variations:

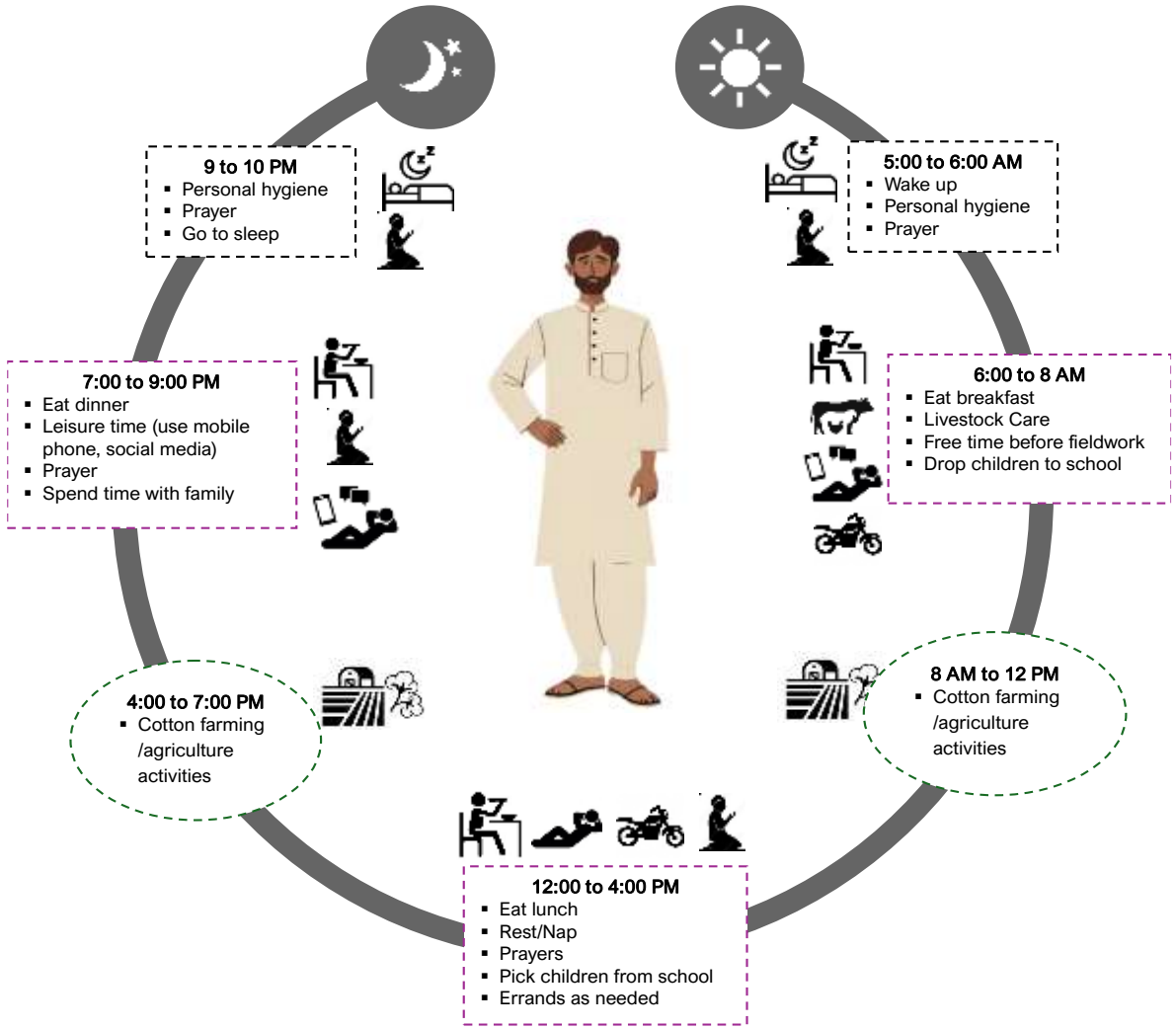
Women reported more time spent daily on domestic tasks (9 hours) than reported in the survey (6 hours).

Both men and women have two cotton-farming shifts in the early afternoon and evening, though men's time in the field is slightly longer.

Women have 3 large blocks of domestic/unpaid care work at home (2-3 hours per block). This is time spent cleaning, preparing and serving meals, doing laundry, taking care of children, and livestock care.

By analysing these large block, programme partners can further align their capacity building schedules and improve the linkages between social and ecological programming.

Day in the Life of a Male Farmer



This figure represents an average routine based on survey data and FGDs.

In contrast with women, men have solid blocks of leisure and rest time at home as they do not participate in major household chores.

Men help with livestock care and firewood and water collection when needed.

Further, men stressed in FGDs that during peak sowing and harvest their field hours are much longer and intense, while also claiming that men work more than woman:

“Women mainly do household work and only help in cotton farming during the time of sowing and harvesting.”

Lessons and Recommendations for Responsive Programming

Strengthening the socio-ecological nexus in sustainable cotton production in Pakistan

Barriers to Integrated Ecosystem & Equity Health

Fragmented Understanding & Implementation of Systems

Integrated approach

Data is siloed - programs streams separate livelihoods, gender relations, and natural ecosystems in their capacity building plans and overall project design

Lacking meaningful engagement with collective governance (e.g., farmer water user groups, land committees) that blend social/ ecological management.

Integrated approach

Limited Recognition of Farmers as System Actors

Barriers to Integrated Ecosystem & Equity Health

Extractive Data Reinforces Inequities

Integrated approach

Weak local ownership; farmers disengage from sustainability processes

Gender, care work, informal labour, and intra-household dynamics often go unmeasured in conventional monitoring systems

Integrated approach

Non-Participatory Data Misses Social Realities

BCI Pakistan pathways for improved on-farm Programming

Better evidence & adaptive learning – gender disaggregated analysis of practice adoption and RIR data

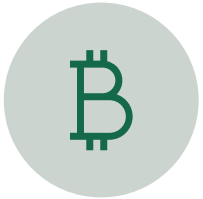
Improved consultative approaches for meaningful co-creation of programmes – guiding farmers towards open discussion

Strengthening capacity to respond to learning needs, farmer age-groups and time schedules

Integrated socio-ecological approaches that align productivity, profitability and equity

Labor-saving farm kits targeted toward female farmers- pilot test tools such as jab seeder/single-row push seed drills for sowing to reduce stooping and planting time; adjustable wheel hoes to speed weeding and stalk collection; tools offered via shared-cost models

Labor saving technologies, tools and practices geared towards firewood collection/replacement, water collection, and livestock grazing



Enhance participation and inclusion in resource management committees, farmer groups etc (for example Khal Committees managing water channels and rotation scheduling)

Digital finance push: subsidize smartphone dissemination among registered women farmers and facilitate opening 100 mobile-money accounts; link to a micro-credit line for input purchases and provide basic digital training

Pair couple dialogues and peer groups (culturally/socially appropriate) with incentives (e.g., inputs voucher raffle, farmer awards, collective reward for village) for participating farmers; publish quarterly bulletins for each Producer Unit featuring women's yield gains or farm leadership stories to normalize women's success/contribution.

Integrated eco-system and equity health

When inclusion is tied to measurable gains in productivity, product quality, and supply reliability - it becomes an integrated programming approach that puts the farmer first.

We like to thank our valued Programme Partners in Pakistan for their dedication and receptiveness to co-creating new initiatives with us, specifically:

- SAMI Foundation
- Centre for Agriculture and Biosciences International (CABI)
- Rural Development Foundation

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