

Designing Gender-Responsive Climate Finance

A Diagnostic Study and Product Framework
for Women Farmers in Pakistan



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I. Introduction

1.1. Background

Pakistan ranks among the world's most climate-vulnerable countries (Germanwatch e.V., 2025), with agriculture-dependent provinces Sindh and Punjab bearing acute impacts (Choudhry, 2025). The agricultural sector contributes roughly 23% of Pakistan's GDP and employs around 37% of the labor force (FAO, 2023). The 2022 floods alone caused \$30 billion in damages (Ministry of Planning, 2022), submerged one-third of the country (Metych & Rafferty, 2025), and left 14.6 million people requiring food security and agriculture assistance (FAO, 2023). Beyond floods, rising temperatures (Saeed, 2024), erratic rainfall (Memon, 2025), and prolonged droughts (Ghani & Abbas, 2025) are systematically undermining agricultural productivity (FAO, 2023).

Women farmers face a compounded vulnerability.

While they comprise 67-68% of the agricultural workforce in Pakistan (Khan P., 2025), they are systematically excluded from the resources necessary for climate adaptation. The disparities are stark: only 2% own land (Beg et al., 2025), and financial inclusion remains critically low, with bank account ownership at less than 6% in Punjab and under 2% in Sindh (Khan P., 2025). Lacking tangible collateral, these women are frequently unable to hold formal credit in their own names (Rahman et al., 2020), creating severe barriers to accessing key agricultural inputs and technologies. However, these constraints are not experienced uniformly. Factors such as decision-making authority, household structure, and socio-economic position create differentiated vulnerabilities, which are explored further in Chapter IV.

1.2. Disproportionate Impacts on Women Farmers

Climate change impacts are not gender-neutral. Women farmers are more exposed and less protected in the face of climate shocks due to pre-existing inequalities. Much of women's agricultural work is informal or unpaid family labor. Consequently, when floods or droughts destroy crops, women typically cannot claim compensation or insurance, since they do not own the land or assets they labor on (Puskur & Mishra, 2022; Janjua, 2023). Rural women rarely benefit from formal safety nets, most female farm workers have no social protection or crop insurance to cushion climate-related losses. More than two-thirds of women in agriculture are in the informal sector (seasonal laborers, sharecroppers, family help) and therefore are not enrolled in any pension, so-

cial security, or crop compensation schemes (Begum, 2025).

Climate shocks reduce women's economic and social participation in agriculture over time, as shown in case studies from Sindh's disaster-prone villages (Mustafa et al., 2018). Erratic weather, droughts, and floods have lowered crop yields, leading families to prioritize male labor and push women out of farm work and into domestic roles, reducing their income and visibility. As a result, women face a double burden being the first to lose work, nutrition, or schooling, while having fewer resources to cope making gender-responsive climate resilience essential. Addressing these gender-differentiated impacts is critical for any effective climate resilience strategy in agriculture.

1.3. Climate Change and Gender Inequality in Agriculture

In Pakistan's agricultural sector, deep-rooted gender inequalities restrict women's ability to adapt to climate change, while escalating climate stress further worsens these disparities by placing disproportionate hardships on resource-deprived female farmers. Land ownership and tenure illustrate this stark disparity. In rural Pakistan, women perform a large share of agricultural labor, yet very few women own the land they cultivate. Around 70% of working women are engaged in agriculture, yet only 2% of women own land (Beg, et al., 2025). This disparity is further compounded by a systemic lack of decision-making authority at the household level. According to Pakistan's Seventh Agricultural Census, only 1.5% of agricultural households nationwide are headed by women. Provincial breakdowns highlight a consistent marginalization across regions, with female-headed agricultural households accounting for approximately 2.36% in Sindh, 1.85% in Khyber Pakhtunkhwa, 1.05% in Punjab, and 0.80% in Balochistan (Pakistan Bureau of Statistics, 2024). Because formal policies, crop compensation, and adaptation programs almost exclusively target the recognized head of the farming household, women farmers are rendered structurally invisible to these interventions. In Punjab and Sindh, customary practices and inheritance laws (despite statutory rights) often result in land titles passing exclusively to male heirs, with daughters and wives usually excluded from land ownership or given very limited shares. This lack of land rights has cascading consequences for women's agency and resilience. Land ownership acts as a catalyst for security and influence, significantly enhancing a woman's household bargaining power, farm management authority, and access to essential agricultural services. Conversely, women lose the collateral and authority needed for farming, leaving them excluded from climate compensation and long-term adaptation programs that target formal landowners (Beg, et al., 2025). This highlights the

need for product designs that do not rely solely on formal land ownership as an eligibility criterion, and instead incorporate alternative mechanisms for verifying and reaching women farmers.

Access to finance and inputs is another critical gap. Women farmers in Pakistan have markedly less access to credit, savings, and farm inputs compared to men. For example, it is reported that only 5.3% of rural women in Punjab and 1.6% in Sindh have a bank account, and an even smaller fraction receive agricultural loans (Khan P. , 2025). Women rarely hold formal credit in their own names because they typically lack collateral (land or assets) and because financial institutions often perceive men as the primary farmers (Rahman et al., 2020). As a result, female farmers turn to informal moneylenders who charge high interest. This financial exclusion severely limits women's capacity to adapt to climate change, and they cannot easily invest in new livelihoods when agriculture fails. After successive climate disasters, many women-headed farming households simply cannot afford to replant crops or restock animals without external support, trapping them in poverty (The Bill & Melinda Gates Foundation, 2024). Additionally, women face barriers in accessing key inputs and technologies (such as drought-tolerant seeds, efficient irrigation tools, or mechanized equipment). Agricultural extension services in Pakistan have historically been male-centric; few extension agents are women (only 9% of agriculture officers in Sindh and 25% in Punjab are female, for instance), which means information and training often do not reach women farmers. Illiteracy and social norms further constrain women's access to climate information (Hutchinson, 2023). This leads to a gender information gap: women are less likely to know about weather forecasts, pest alerts, or climate-smart farming techniques. However, despite these constraints, women actively navigate informal networks of knowledge, credit, and mutual support to manage risks and sustain

agricultural livelihoods, showing significant adaptive agency outside formal systems. This underscores the importance of designing financial and advisory products that build on these existing practices while remaining accessible without collateral, tailored to low-literacy users, and delivered through gender-responsive and trusted communication channels.

Decision-making power further compounds the vulnerability of women in the face of climate change. Women, especially younger or less educated women, may have little say in strategic decisions (Petesch et al., 2022). This dynamic means women's specific needs and knowledge are frequently overlooked in climate adaptation (Haque, Kumar, & Bhullar, 2023). At the community level, water user associations or disaster management committees seldom include women members, leading to adaptation plans that do not fully consider women's circumstances (Haque et al., 2023). Moreover, pervasive social

norms can worsen women's plight during climate-induced hardships. In some drought-affected rural communities, families resort to harmful coping mechanisms that disproportionately affect girls and women, an observed example is the increase in child marriages during drought periods, as marrying off young daughters is seen as a way to reduce household burden or secure bride wealth in tough times. Nationally, about 18.3% of girls are married before the age of 18 (versus 4.7% of boys), and such practices tend to spike when food and income are scarce. Early marriage and pregnancy resulting from these crises perpetuate the cycle of poor health, curtailed education, and poverty among women, undermining their resilience to future climate shocks (Khan P., 2025). This points to the need for product designs that account for intra-household dynamics, actively include women in decision-making processes, and incorporate safeguards to ensure equitable access and benefit-sharing.

1.4. Gender Norms shaping Women Farmers' Climate Resilience and Financial Inclusion

Gender norms are a subset of social norms: they are the informal rules and expectations that shape what women and men are seen as allowed to do, and what they are expected to do, often functioning like invisible guard rails that narrow choices, behaviors, and opportunities (Wilchins, 2020). In rural agricultural contexts, these norms matter because they influence women's mobility, information access, resource control, and decision-making authority, all of which directly shape whether women can adopt climate-smart practices and meaningfully use financial services.

How gender norms show up in climate-vulnerable farming communities

1. Recognition and legitimacy as farmers

As observed during the survey, even when women contribute substantially to farming, they may be

viewed as helpers rather than farmers in their own right. This reduces their visibility to institutions and can limit eligibility, outreach, and trust-building by service providers. In practice, women rarely hold formal credit in their own names due to limited collateral and because institutions often perceive men as the real farmers, pushing women toward male-mediated finance or high-cost informal sources. Evidence indicates that financial access supports women's empowerment only when women retain control over resources and decision-making; illustrative evidence is presented in *Annex Box A1*.

2. Mobility, market access, and gatekeepers

Norms that restrict women's movement and public interactions can shape *how* financial services must be accessed (and who can access them). In Punjab and Sindh, field insights show that key household

and farm decisions (crop choices, livestock sales, savings use, migration) are often made by men; women tend to have particularly limited say. This also affects uptake of insurance, new inputs, and adaptation shifts that require external engagement (banks, markets, training spaces).

Field evidence from Punjab and Sindh highlights that many rural women have limited awareness of climate-smart farming, restricting their access to training. Men often act as household decision-makers and gatekeepers to both information and financial services. During data collection, women's limited exposure sometimes made survey questions challenging, leading the team to also include men's responses to capture local farming practices, decision-making structures, and barriers to women's access to finance.

3. Information and training pathways are gendered

As observed during the survey, agricultural extension systems are often male-centric, and information may not reach women and restrictive norms around trainings, phones, and internet access, creating a gender information gap on forecasts, pest alerts, and climate-smart methods. This information gap can translate into delayed or missed adaptation actions.

4. Social sanctions, honor, and financial risk-taking

Financial choices (especially borrowing) are socially embedded: fear of stigma, reputational risk, or family honour can constrain women's ability to take loans even when credit could protect

livelihoods. Field insights reflected that men often oppose women taking loans, citing social norms and honor concerns.

In Niger and Uganda, mobile payments enhanced women's financial control and privacy, reduced household frictions, and shifted intra-household bargaining power; illustrative examples are provided in Annex Box A3.

5. Climate stress can intensify harmful gendered coping strategies

When climate shocks compress household resources, norms can shape who absorbs the shock, through reduced mobility, reduced participation in farming, or harmful coping practices. The project context notes instances where environmental crises can be associated with increases in child marriage as a coping mechanism, reinforcing long-term vulnerability for girls and women (UNFPA, 2021).

Implications for interpreting study findings

The evidence suggests that women's uptake of climate-smart finance should be read through a norms and power lens: reported preferences, risk perceptions, and product trust are shaped not only by individual needs but also by household decision hierarchies, mobility constraints, and the social acceptability of borrowing and market engagement. Importantly, norms are hyper-local and complex, there is no single universal approach to assessing or changing them, so interpretation should remain sensitive to variation across districts, household structures, and women's baseline decision-making power.

CASE STUDY:**Diagnosing hyper-local gender norms in financial inclusion (Kyrgyz Republic & Tajikistan)**

A social norms diagnostic under the IFC Central Asia Financial Inclusion Project (IFC, 2022) examined how social and gender norms shape women's (and youth's) ability to save, plan, and use financial services, reinforcing the point that expanding access alone may not translate into empowerment when norms govern control, privacy, and decision-making.

Methodologically, the study used a phased and triangulated approach to distinguish what is truly "normative" from what is structural or informational. It combined qualitative validation, a large quantitative survey, and qualitative deep dives across urban and rural sites in both countries, including women, youth, and household/community "influencers" (e.g., husbands, in-laws). In total, it conducted 800 surveys, alongside 32 KIIs (validation), 32 KIIs (deep dive), and 16 FGDs.

Findings illustrate how norms can operate as practical constraints. A strong expectation that women should hand over earnings for family management was widely reported; the study also documents how pressure for transparency can lead some women to save secretly, with the risk of serious household conflict if discovered. The research further shows that "privacy" in banking is not only about trust in the bank, but also about family permission and social visibility, women were often expected to consult husbands/in-laws before opening accounts, and private banking could trigger backlash, especially in rural contexts where gossip and reputational dynamics are stronger.

Overall, the case demonstrates why norms are described as complex, context-specific, and difficult to measure: the same financial behavior (saving, opening an account, controlling earnings) is shaped by different local enforcement logics, co-residence dynamics, community scrutiny, and intra-household authority, making one-size-fits-all measurement or solutions unreliable without careful local diagnosis.

1.5. Climate-Smart Financial Tools for Adaptation and Inclusive Development

In Pakistan, there is growing recognition of the need for climate-smart financing solutions, including crop insurance and weather-indexed insurance, tailored credit and microfinance for climate resilience, and digital financial platforms, to protect livelihoods and encourage investment in adaptation.

Pakistan introduced the Crop Loan Insurance Scheme (CLIS) in 2008 to insure loan-taking farmers against crop losses, particularly following climate shocks, with premiums for small farmers (up to 25 acres) paid by the government through the State Bank of Pakistan. During the 2010 floods, the scheme provided insurance payouts to affected borrowers, supporting recovery, though the program continues to face limitations (Omer, 2021). The scheme covers only farmers with formal bank credit, less than 20% nationwide

(Saeed, 2024), leaving most smallholders uninsured, and is further limited by low payout caps and reliance on official disaster declarations. These constraints have driven efforts to reform and expand agricultural insurance.

One promising approach is Index-based insurance, which offers a scalable alternative to traditional farm-level insurance by triggering payouts based on objective indicators—such as rainfall, temperature, or area-average yields, thereby reducing administrative costs and delays (CEGA, 2025). In Punjab, TPL Insurance piloted an Area-Yield Index Insurance (AYII) scheme for smallholder wheat, rice, and cotton farmers, with payouts triggered when local average yields fall below historical thresholds (TPL Insurance, 2022). Heavily subsidized or free for farmers, the scheme demonstrated early success by

delivering automatic payouts to wheat farmers in Sheikhpura after the 2022 heatwave and to rice farmers in Pakpattan following 2023 floods along the Sutlej River. Covering multiple risks, including heat, floods, and pests, the pilot has prompted calls to scale index insurance nationally (PAC, n.d.)

In addition to yield-index insurance, weather-index (parametric) insurance is being piloted in Pakistan, with payouts triggered by weather indicators such as rainfall levels, providing rapid relief without field assessments. A recent insurtech-led pilot covered 500 smallholders through a microfinance intermediary, using satellite data to insure against drought, excessive rainfall, and related shocks (Insurance Journal, 2021). While private insurers and development partners have tested similar models (Middle East Insurance Review, 2022), careful design is needed to avoid basis risk (since a single weather parameter may not capture all losses), leading to growing support for hybrid index solutions. Across both yield and weather indices, the objective is to extend coverage to uninsured small farmers, including tenants and sharecroppers who currently lack protection against climate shocks (Abdul Latif Jameel Poverty Action Lab, 2024). Globally, evidence from Kenya, Indonesia, and Bangladesh shows that bundling insurance with microfinance reduces post-disaster indebtedness and accelerates recovery. In Bangladesh, BRAC (one of the world's largest microfinance providers) provided weather-indexed crop insurance to over 200,000 smallholders; during the 2020 floods,

timely payouts helped farmers recover, avoid debt, and invest in climate-resilient practices (Naeem Z. , 2025).

In 2025, Pakistan accelerated digital agriculture finance through initiatives to expand access and efficiency. The National Agri Stack aims to assign farmers digital IDs and integrate land records, weather data, and profiles to streamline subsidies, credit, insurance, and advisories, enabling tools such as weather-indexed insurance and alternative credit scoring for previously excluded farmers, including sharecroppers (Dilawar, 2025). In parallel, the State Bank of Pakistan launched Zarkhez-e (Profit, 2025), a collateral-free digital loan program under the National Subsistence Farmers Support Initiative. Delivered via an online portal, the scheme disburses credit largely in-kind through input vouchers and automatically bundles crop and life insurance, with premiums and first-loss guarantees covered to reduce risk for farmers and banks. By combining digital delivery, credit, and insurance, these initiatives aim to deepen financial inclusion, accelerate payouts, and protect smallholders from climate-related shocks (Profit, 2025). Such initiatives, if effectively implemented, could be transformative. They have the potential to lower barriers to finance for vulnerable farmers, ensure that those farmers are insured against disasters, and use technology to speed up processes (for example, enabling rapid post-disaster payouts through mobile money).

1.6. Conceptual Framework: Gender Transformative Finance

Financial policies and products are often gender-neutral, favoring men and overlooking social norms that hinder women's use of services. Achieving lasting impact requires Gender Transformative Finance (Arnold, El-Zoghbi, & Kessler, 2021), a process that enhances women's capabilities and strengthens capacities to challenge norms and improve shared control over resources (Njuki et al., 2019).

This framework identifies that true financial inclusion must result in enhanced female empowerment. These outcomes are categorized into four distinct spheres of change:

- **Economic Wellbeing:** Material outcomes (e.g., household wealth) and active participation in economic systems (labor supply, personal income).

- **Household Wellbeing (Relational):** Empowerment within the domestic space, specifically a woman's capability to make decisions that advance family welfare.
- **Personal Wellbeing (Internal):** Internal welfare, including mental health, self-worth, and the ability to set personal goals.
- **Socio-Political Wellbeing (Agency):** Agency outside the household, such as participation in community governance.

Gender-transformative financial inclusion is about making financial systems 'women-able' rather than making women 'bankable.' This paradigm was applied to the financial inclusion life cycle, suggesting transformative interventions at each stage (Njuki, et al., 2019).

Norms are increasingly recognized as a key constraint to women's financial inclusion in account ownership and usage. Without addressing these norms, financial inclusion is unlikely to lead to meaningful economic empowerment.

- Analysis of financial diaries in Kenya, Mexico, and India (Njuki, et al., 2019) reveals that women are more risk-averse, prioritize household protection, face care-related interruptions, and rely on peer networks rather than upwardly mobile ones.
- Limited mobility restricts women's transactions, and a study in Mexico found that low trust in formal institutions hinders savings, though debit cards enabling regular monitoring can help.

1.6.1. Access friction: How intermediation limits inclusion

A central pillar of the gender-transformative framework is the recognition that women's financial behavior does not occur in a vacuum. It is deeply embedded in intra-household power dynamics, where male family members often act as "gatekeepers" to resources, mobility, and information. The literature defines these gatekeepers not merely as barriers, but as critical stakeholders who must be strategically navigated, and potentially engaged, to ensure

Figure: Drivers of Gender-Transformative Change in Financial Inclusion (Njuki, et al., 2019)

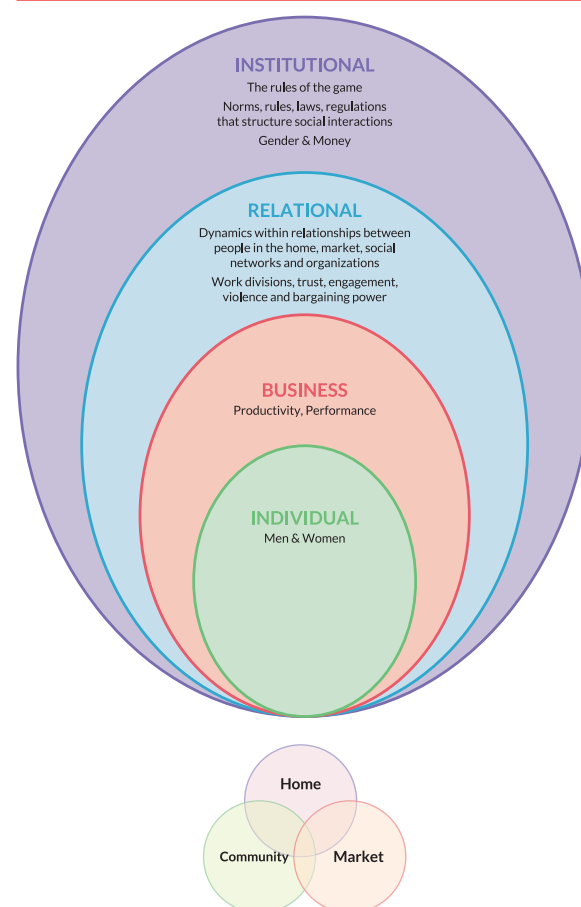
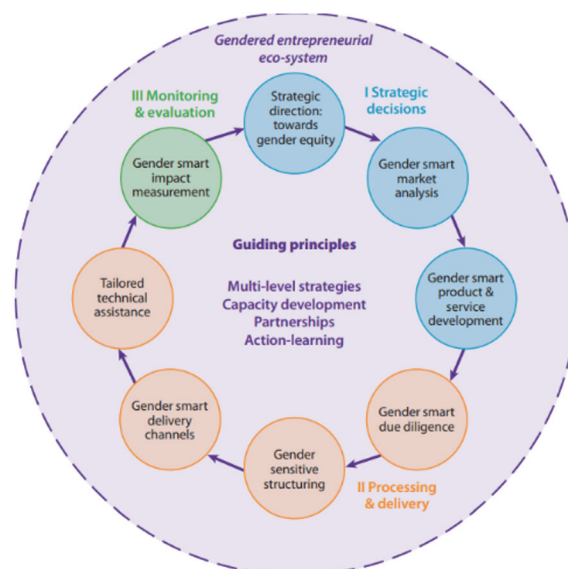


Figure: The financial inclusion life cycle (Njuki, et al., 2019).



the sustainability of women's financial inclusion, for example through norm-correction messaging, couple-based financial literacy approaches, and the use of trusted male community influencers to legitimize women's participation (Arnold et al., 2021).

Traditional leaders often hold veto power over new social practices. For example, FSD Zambia found that introducing savings groups in rural provinces was impossible without first securing the buy-in of the local chief (Arnold et al., 2021). Once a leader participates, it signals to the community that the financial activity is socially acceptable.

Men typically play the primary gatekeeping role regarding a woman's ability to work or manage money. A prevailing attitude identified in rural households is *I earn, I spend*, where men view their

accounts as family accounts but exclude women from decision-making.

Research indicates that men often enforce restrictions because they overestimate the social sanctions they will face from other men if they allow their wives to work or control money. In Saudi Arabia, men consistently underestimated other men's support for women working. When researchers corrected this information (showing that peers actually supported it), men became significantly more willing to help their wives search for jobs (Arnold et al., 2021). The evidence confirms that a gender-blind product that ignores the gatekeeper risks causing household conflict or suffering from low uptake hence should utilize local influencers to endorse the product.

2. The Financial and Digital Landscape for WFI

This chapter synthesizes the status of financial inclusion in Pakistan, supported by Karandaaz Financial Inclusion Survey (K-FIS) report (2025) particularly focusing on gender disparities, digital readiness, and loan access. This market analysis establishes the structural context for designing a relevant and effective financial product for women farmers.

Overall Financial Inclusion Trends

- The overall financial inclusion rate in Pakistan has increased substantially, rising from 7% in 2014 to 35% in 2024 (Karandaaz Pakistan, 2025).
- The overall disparity between men and women in financial inclusion is 42%, with male financial inclusion at 56% and female financial inclusion at only 14%.
- Punjab shows the highest overall financial inclusion at 40%, which is highly relevant given it is one of the target provinces of the project.

2.1. Progress and Persistent Gender Gaps in Financial Inclusion

The rapid growth of mobile money has been the primary driver of financial inclusion, but it is deeply skewed by gender, which poses a fundamental barrier for digital product delivery.

- A stark gender gap remains, with 48% of males registered for mobile money wallets compared to only 11% of females.
- The primary reason women do not register for a mobile money wallet is a reliance on a family member's wallet (77% of financially excluded

women). They also report higher concerns about making errors during transfers (51% of women vs. 28% of men) and face greater knowledge barriers on how to register or operate the wallet. A greater proportion of women (50%) also reported not needing mobile money wallets as compared to men (24%) (Karandaaz Pakistan, 2025).

2.2. Demand for Loans and Reliance on Informal Sources

- Rural residents (31%) reported a higher loan need than urban residents (21%). While the primary drivers for borrowing are living costs and healthcare, agricultural loss remains a critical trigger for credit seeking. However, success rates for securing loans for crop failure are notably low (40%), likely because climate shocks affect entire communities simultaneously, straining the liquidity of local informal lenders.
- 85% of loans are sourced from family and friends. Only 13% rely on banks and mobile money providers, while 8% turn to informal money lenders. The top deterrents for not borrowing from banks are high interest rates and complicated paperwork (Karandaaz Pakistan, 2025).

Figure: Financial Shocks and Sources of Loans

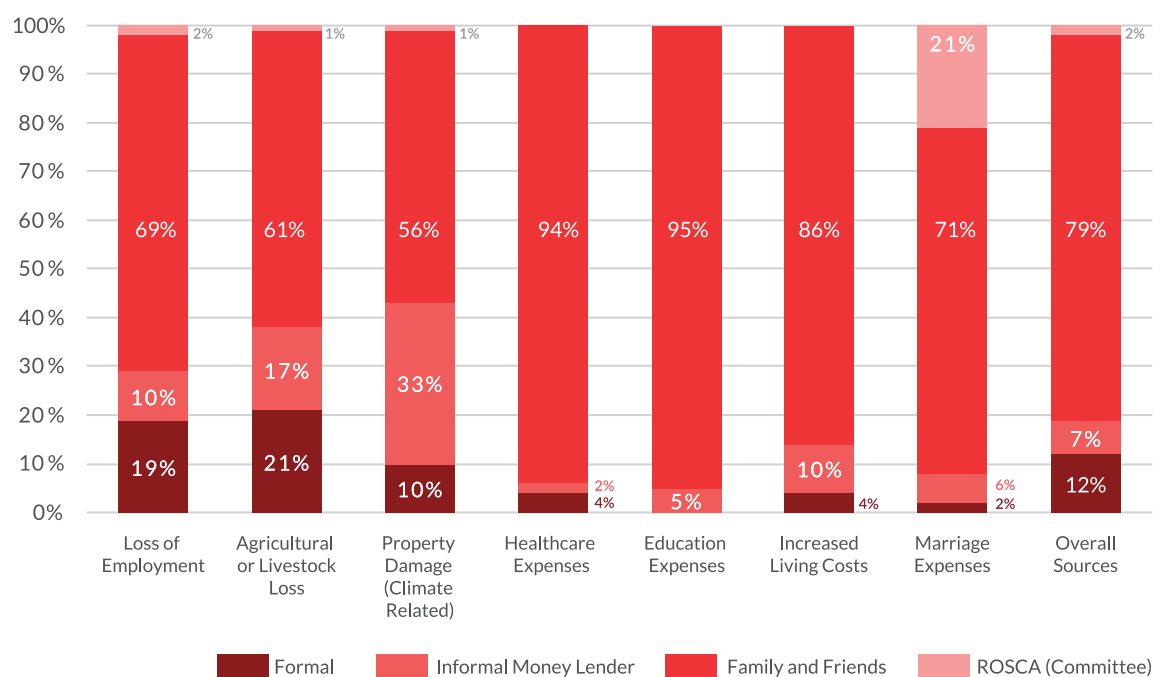
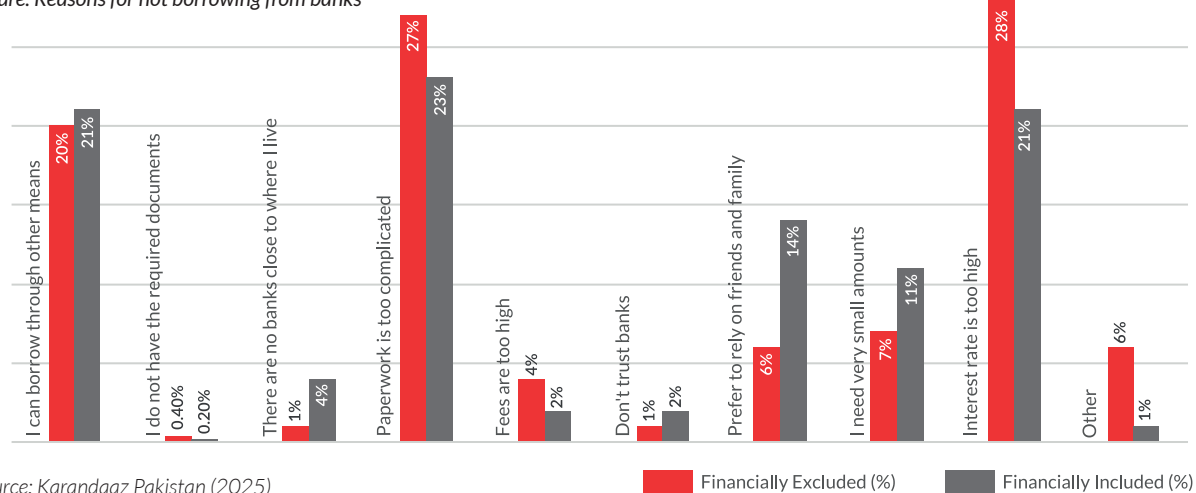


Figure: Reasons for not borrowing from banks



Source: Karandaaz Pakistan (2025)

- A very large portion of the population (up to 44%) simply does not know how much they could borrow, showing deep uncertainty about credit access.
- Roughly 1 in 3 Pakistanis believe they cannot secure any loan at all from formal sources.

These numbers emphatically underscore that any successful green financial product for women farmers must acknowledge and actively mitigate three core structural barriers:

- Low financial literacy, limited mobile phone ownership
- Low digital skills among women
- Low financial autonomy means the product must be designed to circumvent or engage male gatekeepers, as women cannot unilaterally apply for or access services.

of permission), and low digital skills among women mean a digital-only, self-service product is likely to fail.

- The strong preference for informal sources and aversion to high-interest rates, coupled with the difficulty of repaying loans, dictates a highly affordable and flexible structure.

2.3. Supply-Side Challenges and Institutional Perspective

The supply-side diagnostic reveals a critical disconnect between financial institutions (FIs) and women entrepreneurs, with women-owned SMEs representing only 2% to 3% of the total formal financing clientele. Interviews conducted by State Bank of Pakistan & The World Bank (n.d.) with 28 stakeholders indicate that while FIs claim gender neutrality, systemic barriers persist; banks prioritize larger transactions, view women's lending as small ticket, and lack the gender-sensitivity training required to navigate cultural barriers at the branch level. Furthermore, institutions cite high perceived risks, specifically the lack of collateral and the prevalence of proxy borrowing, where men use women's names to access concessions, as primary deterrents to scaling their women's portfolios.

While the survey identifies a strong demand for financing that supports growth, only 21% of women respondents have applied for formal loans, with the majority deterred by high interest rates (35%) and complex documentation requirements. While there is a demonstrated demand for business expansion capital, engagement is heavily skewed toward basic deposit accounts, and most financial service providers have not moved beyond generic products to leverage available sex-disaggregated data for tailored solutions. Consequently, a massive gender gap remains, as institutions have yet to fully utilize data insights to validate the busi-

ness case or design products that address specific needs like non-collateralized working capital (State Bank of Pakistan & The World Bank, n.d.) (See **Annex B** for a detailed breakdown of institutional barriers, perceived regulatory hurdles, and specific supply-side constraints.)

2.3.1. Institutional Engagement and Financial Product Availability

Financial institutions (FIs) have started to recognize the importance of serving women, but much remains to be done. Non-bank microfinance companies (MFIs) have the highest female borrower rates, with women comprising over 50% of their clientele, while 25% of MFB customers are women. Combined, banks and MFIs have the largest share of women customers among the financially included segment in Pakistan (Figure 10). However, among the 40-plus non-bank MFIs and 11 MFBs that operate in Pakistan, most have not developed solutions specifically tailored to meet the needs of women, with exceptions like the Kashf Foundation, which has explicitly focused on women's financial inclusion (WFI). Although 75% of the surveyed financial service providers (FSPs) have launched products targeting women, these offerings remain isolated and not part of a broader strategic focus on women's financial inclusion (Anna Gincherma et al., 2022).

Notably, some institutions, such as HBL, have developed comprehensive women-centered strategies, offering both financial products and non-financial services like financial literacy and insurance. The HBL Nisa program, which has seen significant success, is an example of such a comprehensive approach that combines financial access with education and insurance. In addition, several branchless banking operators, such as JazzCash, have launched women-friendly initiatives, achieving impressive results. For instance, JazzCash's launch of women-centered products like community savings accounts, maternity insurance, telehealth, quick loans, and financial literacy tools has resulted in a 55% increase in the number of women clients since 2016 (Anna Gincherma et al., 2022).

HBL's Holistic Women-Centered Strategy

HBL launched its women-centered initiative in 2016 to better serve women's financial needs (HBL, 2016). Through the Nisa program, HBL offers a complete suite of financial services for women, along with value-added services such as insurance, credit guarantees, and a financial literacy toolkit. Internally, the bank focused on creating an inclusive workplace culture and hiring a more gender diverse staff, particularly at branches, which has put female customers at ease. HBL also strengthened its internal female leadership pipeline, to enable gender-diverse perspectives in decision making.

Results:

- 3.3 million women customers, 650,000 of whom participate in the Nisa program
- 1.8 times more female employees in 2020 than in 2010
- 2 times more women in management since 2010 (Anna Gincherma et al., 2022)

2.3.2. Gender Disaggregated Data and Usage Gaps

Despite this progress, many FSPs have not yet leveraged the full potential of gender-disaggregated data as institutions often do not use sex-disaggregated transactional data to inform product development or customer engagement. According to Women's Financial Inclusion Data (WFID) Partnership, nearly 80 percent of commercial banks track sex for all products offered, while 60 percent of MFIs do so (Anna Gincherma et al., 2022). A minority of the banks and MFIs interviewed by Anna Gincherma et al. (2022), about 22 percent, track data on WSMEs.

Moreover, while banks and MFIs have the capability to generate sex-disaggregated reports, such as loan statistics (71%) and revenue data (43%), these insights are not consistently utilized in decision-making. Doing so would provide even greater insight into the ways in which women customers use their accounts and could contribute to more evidence-based decision making on the types of products to offer. Effective policy and product design rely heavily on data. In Chile, the supervisory institution SBIF used sex-disaggregated data to reveal that women exhibited better repayment rates than men across all products (AFI, 2017). Similarly, Habib Bank Limited (HBL) in Pakistan performed a random sampling of its female deposit portfolio in 2014, finding that actual control of accounts by women in rural areas was between 50-60%, a crucial insight for designing rural financial products (GBA, 2019). The collection and analysis of such data are prerequisites for perceiving women as a distinct, profitable market segment rather than a niche corporate social responsibility target.

Less than 40% of financial institutions integrate this data into their regular, automated management reporting, while 50 percent report the data to management only on occasion. As a result, senior decision-makers may not fully recognize the potential of the women's market or realize the strength of the business case for investing in women-focused offerings. When questioned by Anna Gincherma et al. (2022) on

the reasons why they haven't progressed further in their WFI pathway, most FSP respondents said that they needed more evidence of the business case as they do not have a sense of the size of the market opportunity.

2.3.2.1. Challenges in Data Collection and Usage

While the availability of data is a positive step forward, one significant issue is the use of proxies, where men apply for loans in women's names to access financial services, which undermines the true reflection of women's financial engagement. This proxy use presents a challenge in ensuring the data accurately represents women's financial behavior and needs.

Furthermore, many fintechs, mobile money platforms, and non-bank financial companies (NBFCs) tend to focus their services on the already banked population rather than targeting

the unbanked, where a majority of women reside. Despite producing sex-disaggregated data, these institutions do not report it to regulators such as the Securities and Exchange Commission of Pakistan (SECP), and only about 33% institutions such as Tez, Oraan, and Finca that have WFI embedded in their missions include it in their management reporting. As a result, despite having access to valuable data, these institutions do not consistently use it to refine their strategies or advocate for more inclusive financial products for women (Anna Gincherman et al., 2022). Greater use of firm- and customer-level sex-disaggregated data presents a clear opportunity to strengthen women's financial inclusion by informing the business case for targeted offerings and enabling more effective institutional and regulatory strategies.

Table: Identified Gaps and Recommended Interventions by Provider Type (MFIs, Fintechs & MFBs).
Source: Anna Gincherman et al. (2022)

Stakeholder	Identified Gaps	Recommended Interventions
MFIs / Data Producers	Limited financial solutions targeting women customers	Training on women's market modeling and business case analysis
	Women may be used as proxies for loans going to men	Enhanced Know-Your-Customer (KYC) measures to reduce proxy borrowing risk
	Lack of incentives to leverage data in designing solutions for women	Data analysis capacity building to generate and apply operational insights
Fintechs & MFBs / Data Providers	Limited awareness of the women's market	Awareness building on the business case for serving women customers
	Business focus primarily on the banked segment	Industry roundtables to promote inclusive market expansion strategies
	Lack of sex-disaggregated data in reporting	Adoption of sex-disaggregated data collection and reporting frameworks
	Sex-disaggregated data not used in product development	Capacity building and knowledge-sharing on using gender data for product design, including global best practices
	Risk of women being used as proxies	Enhanced KYC protocols to mitigate proxy usage

2.4. Institutional and policy landscape for Women's Financial Inclusion in Pakistan

Pakistan's women's financial inclusion agenda has progressed through regulatory reforms, targeted national strategies, and improved gender-data systems led by the Government and SBP. A key milestone was SBP's 2008 branchless banking policy, which expanded access through agent networks and reduced barriers for women facing mobility, distance, and documentation constraints.

A defining development for WFI policy effectiveness was SBP's move in 2017 to mandate six-monthly sex-disaggregated reporting of unique account holder data by regulated FSPs (Khan et al., 2024). This materially improved the quality and availability of gender data in Pakistan, enabling:

- More accurate tracking of progress against inclusion targets,
- Better benchmarking across providers and regions, and
- Evidence-based identification of gaps and opportunities in the women's market.

To address capability and confidence gaps, particularly among women, SBP launched the National Financial Literacy Program in 2017. By 2025, it reached 3.4 million beneficiaries (56% women) and entered Phase 2 (2023–27), positioning it as a core demand-side pillar supporting women's financial inclusion (State Bank of Pakistan, 2025). Launched in September 2021, SBP's Banking on Equality policy embeds a gender lens into financial sector development. It encourages FSPs to strengthen gender-diverse staffing, design women-centric products, use sex-disaggregated data, set KPIs and targets, and engage in policy forums to advance gender-responsive regulation.

2.4.1. Agricultural Loan Market and the MSME Sector

The Pakistani economy in the 2024–2025 fiscal period has navigated a complex path toward stabilization, primarily driven by aggressive

monetary easing and a robust recovery in industrial and services sectors. The SBP implemented a historic reduction in the policy rate, which was cut by 1,100 basis points between June 2024 and June 2025 as inflationary pressures began to recede (State Bank of Pakistan, 2025). This transition from a 22% policy rate to significantly lower levels has fundamentally altered the cost-benefit analysis for financial institutions engaged in private sector lending (Shabaz, 2026). While the broader GDP grew by 3.0%, the agriculture sector, which contributes 23% to the national GDP, faced a marked slowdown, growing by only 1.5% compared to 6.4% in the previous year (SBP, 2025). This deceleration was not merely a result of seasonal variance but reflected a deepening vulnerability to climate-induced shocks, including high temperatures, erratic rainfalls during *Kharif* FY25 and chronic shortages of certified seeds, canal and irrigation water (SBP, 2025).

For financial institutions, the potential of the agricultural market lies in its underserved demand. During Jul–Mar FY25, credit to the private sector rose sharply to 767.6 billion PKR, with the manufacturing sector absorbing a significant portion of this growth (Bhatti, 2025). However, the agricultural credit market reached a total disbursement of 2,577.3 billion PKR in FY25, representing a significant expansion from the previous year's 2,215.7 billion PKR (Profit by Pakistan Today, 2025).

Furthermore, the shift from important crops (which saw a decline due to policy uncertainty and weather) to other crops like oilseeds and vegetables, which grew by 19.6% in FY25, indicates a dynamic market where farmers are increasingly responsive to profitability and market deregulation (SBP, 2025). The deregulation of the wheat market, in particular, is a pivot point that allows financial institutions to move away from government-supported procurement towards competing crops.

Table: Agricultural Credit Disbursement Statistics by Sub-Sector (FY2024–2025)

Loan Category	FY24 (Billion PKR)	FY25 (P) (Billion PKR)	Variance (%)
Farm Sector - Production	1,076.7	1,307.5	+21.43%
Farm Sector - Development	133.9	136.4	+1.86%
Non-Farm Sector - Working Capital	931.6	1,051.6	+12.9%
Non-Farm Sector - Fixed Investment	73.5	81.8	+11.29%
Grand Total	2,215.7	2,577.3	+16.3%

Source: (SBP, 2025)

The data suggests that sharp increase in output of other crops and growth in livestock (albeit slower compared to the previous year), supported by higher milk and poultry output, more than offset the decline in output of important crops (SBP, 2025).

MFBs experienced a significant growth in asset size, primarily driven by substantial increase in investments in government securities in CY24. Sector-wise breakdown of advances reveals that barring agriculture and housing, all other sectors received more funds from MFBs than the previous year. Livestock financing reached Rs 142 billion during CY24, which is Rs 11 billion more than the previous year. Higher livestock financing can be partly attributed to the issuance of interest-free loans to farmers under the Livestock Card Scheme by the Government of Punjab (State Bank of Pakistan, 2024).

The livestock sector remained the largest contributor to MFBs' GLP at 30.5% in 2024 supported by the Punjab government's interest-free Livestock Card Scheme. Despite the sector's overall growth slowed to 1.5%, the agriculture

segment ranked second at 26.3, with its GLP largely stable at PKR 121.8 Billion (M. A. R. Khan & Azeem, 2025).

Livestock and agriculture remained the major contributors to NPLs as well at 35.5% and 31.4%, respectively, reflecting persistent stress in rural lending (M. A. R. Khan & Azeem, 2025). The uptick in livestock NPLs stems from rapid credit expansion under government schemes, while enterprise and housing segments maintained relatively stable asset quality owing to stronger collateral structures and prudent lending practices.

The sharp increase in livestock and agriculture delinquencies during 2024, reflects stress from rapid portfolio growth, climatic shocks, and general economic slowdown. This has led to several MFBs focusing on secured lending (gold and other products) to curb high infection levels. The pressure on asset quality persists but is expected to moderate to an extent due to relatively better economic environment and prudent lending practices.

Table: Sector-Wise Infection Ratio of MFBs

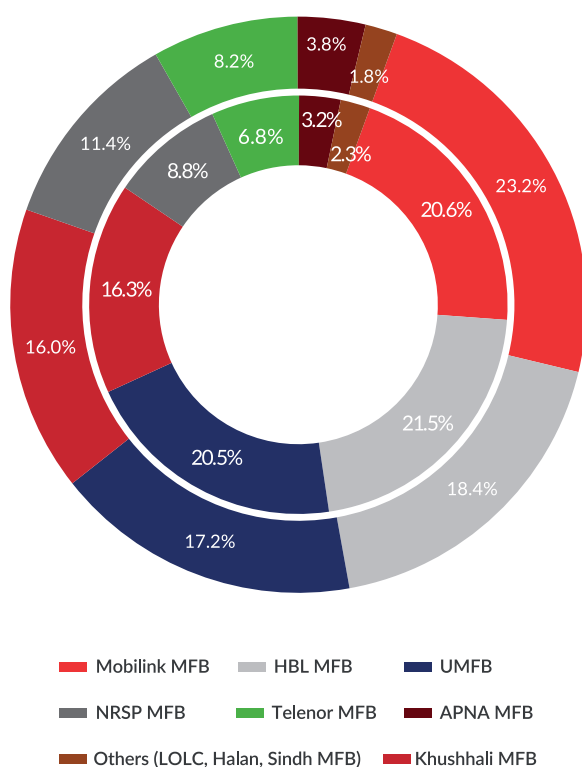
Particulars	CY23	CY24	6MCY25
Livestock	6.0%	11.3%	8.7%
Agriculture	7.9%	11.6%	10.2%
Enterprises	7.2%	5.8%	3.6%
Housing Finance	1.3%	1.5%	1.5%
Total Sector	6.7%	9.7%	8.3%

Source: M. A. R. Khan and Azeem (2025)

2.4.1.1 Major Players in the Surveyed Market

The market remains highly concentrated, with the top four MFBs, Mobilink, HBL, U MFB, and Khushhali, collectively holding nearly 80% of total GLP and 75% of sector deposits (M. A. R. Khan & Azeem, 2025).

Figure: MFB's Market Share, GLP (inner circle) and deposits (outer circle) (2024)



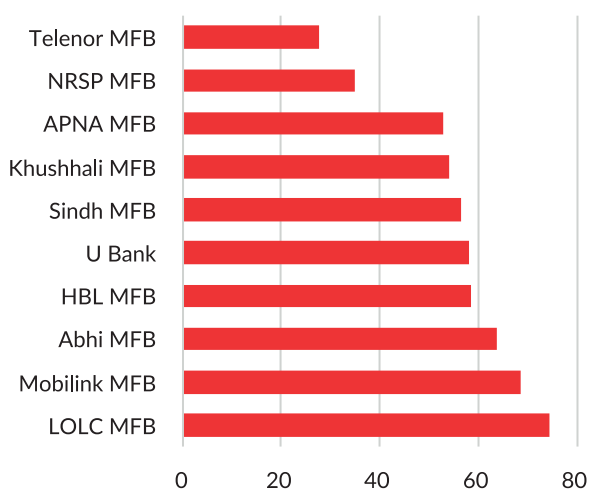
Source: M. A. R. Khan and Azeem (2025)

Mobilink Bank

Mobilink Bank holds a significant position within the digital financial services sector, capturing a 16% market share in terms of Gross Loan Portfolio (GLP) during 2025 (Fatima, 2025). The institution also maintains a dominant market share in the branchless banking domain (PACRA, 2025). Operationally, the bank has integrated Diversity, Equity, and Inclusion (DEI) into its corporate strategy. Its Women Inspirational Network (WIN) program reports having trained over 31,000 female entrepreneurs in digital and business skills, while its Change to Sustain portfolio indicates an institutional shift toward green financing and climate resilience.

Regulatory assessments reflect this positioning; Mobilink Bank topped the State Bank of Pakistan's (SBP) Banking on Equality scorecard for three consecutive years and ranked second among microfinance banks in agricultural credit performance according to SBP's Agriculture Credit Scoring Model (State Bank of Pakistan, 2025). The bank's existing asset portfolio includes agricultural facilities (Khushhal Kissan, Tractor, and Livestock loans) and women-centric products such as the Bint-e-Hawwa Business Loan, which offers working capital credit between PKR 50,000 and PKR 500,000. A notable operational strength is its integration with its telecommunications partner, Jazz, allowing the bank to bundle smartphones and pre-installed digital banking applications with loans to help bridge the digital divide for female borrowers.

Figure: SBP Agriculture Credit Scoring



Source: Agriculture Credit Scoring (2025)

However, despite this strong positioning, several structural constraints are relevant from a product viability perspective. Like much of the microfinance sector, Mobilink Bank operates under a relatively high cost of funds, which can limit pricing flexibility for smallholder and climate-vulnerable segments. Its exposure to agriculture and livestock portfolios also increases sensitivity to climate shocks, contributing to elevated non-performing loan (NPL) risks in periods of environmental or market stress. Furthermore, while the Bank has made notable progress in women's financial inclusion, the depth of penetration among rural, asset-poor women, particularly those outside formal or digitally connected ecosystems, remains limited, suggesting a gap between product availability and sustained uptake.

Habib Bank Limited (HBL)

One of the most transformative initiatives in the current market is HBL MfB's collaboration with the Pakistan Space & Upper Atmosphere Research Commission (SUPARCO) to launch satellite-driven agri-loans. This pilot in Okara uses remote-sensing analytics to monitor crop health and land use, enabling faster, data-driven credit decisions and real-time climate risk assessment. Additionally, HBL participates in the "National

Subsistence Farmers Support Initiative" (NSFSI), which provides collateral-free, digital financing to smallholders cultivating up to 12.5 acres, ensuring that even those without traditional land titles can access capital for seasonal production (National Subsistence Farmers Support Initiative, n.d.). During 2025, HBL MfB reported a deposit share of 21% and a GLP share of 16% (PACRA, 2025).

To navigate the impacts of the 2024 credit crunch in South Punjab, amid the wheat price crash crisis, and to strengthen risk resilience amid higher NPLs (due to strained borrower repayment capacity, particularly in agriculture and livestock), the bank adopted a cautious lending approach by entering multiple risk-sharing arrangements. This includes a USD 80 million, 50% credit risk-sharing facility with the International Finance Corporation (IFC) and specialized arrangements with the Economic Transformation Initiative Gilgit Baltistan (ETIGB) (PACRA, 2025).

National Rural Support Programme (NRSP)

It is unique in its accreditation by the Green Climate Fund (GCF), which has enabled it to launch *Climaventures*, a late-2024 initiative designed to promote private sector investment in climate action (Business Recorder, 2024). NRSP's model is built on community organization, organizing over 3.8 million poor households into a network of 254,749 community organizations to provide not only microfinance but also environmental and natural resource management training (NRSP, 2025). It operates a nationwide network of **133 branches**, including 37 Islamic branches, providing micro-insurance and microlending to financially excluded individuals. Their agricultural loans are often 3x cheaper than informal sector rates, specifically targeting the 120 million Pakistanis who depend directly on agriculture for survival (Acumen, 2024). In 2024, the Bank captured a 6% share of the market based on its Gross Loan Portfolio, while the markup income of the Bank increased to PKR 6.4 billion during 2025 primarily due to increased earnings from investments (PACRA, 2025).

Akhuwat Foundation

Akhuwat has revolutionized the sector by applying the Islamic principle of *Muakhaat* (solidarity) through interest-free loans (*Qard-e-Hasan*) (Rafay et al., 2020). With a recovery rate of 99.9%, Akhuwat uses religious infrastructure (mosques and churches) as centers for loan disbursement, which drastically reduces operational costs and builds communal accountability (M. Khan, 2025). Their Family Enterprise Loan represents 91% of their portfolio, where the entire family unit participates in the lending process, with the aim to make it a family venture rather than an individual exertion (Rafay et al., 2020). These advances are given for establishing a new business or growing an existing one. For agriculture, it provides interest-free credit for inputs, irrigation and water management. Recently, Akhuwat Islamic Microfinance recently partnered with Faysal Bank Limited and The Citizens Foundation for interest-free solar financing (Business Recorder, 2025).

Khushhali Microfinance Bank (KMBL)

KMBL, founded as a pillar of the government's Microfinance Sector Development Program, remains a dominant player with a 15.9% deposit market share in the microfinance segment (M. Khan, 2025). Recently, KMBL has focused on *portfolio rationalization*, supported by a strategic shift from unsecured bullet lending in the agriculture sector which has encountered significant challenges, including elevated levels of willful default, the absence of an industry-wide recovery framework, and constrained legal enforceability toward higher ticket, secured, and EMI-based lending. Proactive portfolio realignment toward better-quality, secured lending translated into lower credit-impairment pressures, while cost management and modest balance-sheet expansion have supported a return to profitability. Its *Khushhali Zamindar Loan* is a comprehensive product covering seeds, fertilizers, pesticides, and farm machinery, including solar-powered irrigation systems. In 2024, 67.2% of

its portfolio was concentrated in agriculture and livestock, with a strategic shift toward individual lending models over group-based lending (M. Khan, 2025). Individual lending rose by 15.5% to PKR 455.41 billion, while group lending declined by 35.8%, indicating a structural shift toward personalized credit products. In terms of product segmentation, the Agriculture loans provided as an individual offering remained the largest contributor to the overall loan portfolio (M. Khan, 2025).

FINCA Microfinance Bank and ASA Microfinance Bank

FINCA (previously Kashf Microfinance Bank Limited; now ABHI Microfinance Bank) and ASA focus heavily on the female entrepreneurship niche within the rural economy (Qasim, 2022; VIS, 2025). FINCA's *Niswan Karza* and *Kashtkar Karza* meet the working capital needs of female-led agricultural enterprises, offering products like *Sunheri Karza* (gold-backed loans) to help farmers unlock the value of their personal assets during sowing season. FINCA's loan book is primarily concentrated in non-collateralized loans while representing a fairly diversified product segmentation in Micro-Enterprise loans (35%), followed by Livestock loans (32%), and Agri-Input loans (32%). The Bank's funding is majorly fueled through deposits constituting 83.1% of the funding of the bank. The bank catered to around 2.5% of the borrowers of the industry (including MFIs, RSPs, and other projects), grabbing a 4.5% market share in terms of GLP as of 2022 (The Pakistan Credit Rating Agency Limited, 2024). ASA Pakistan, licensed for nationwide microfinance lending operations in late 2023, provide low-income female business owners small loans to grow businesses at a market competitive interest rate (External Communications Department, 2023). Their lending approach is based on individual lending via client groups, without joint liability. ASA constitutes a ~3.7% market share in gross loan portfolio among microfinance banks and institutions of the country (PACRA, 2025).

Damen Support Programme (DSP)

DSP is a prominent NBMFC in Punjab with an over 32-year history of focusing on women's economic participation. DSP's core focus is the social and economic upliftment of marginalized communities, particularly women, achieved through microcredit, vocational training, and capacity building. Its strategy includes micro

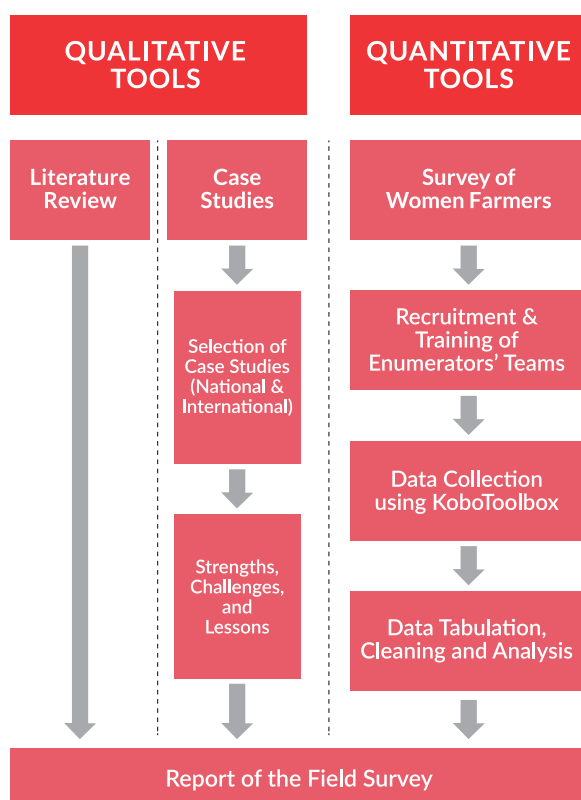
credit services, health and life insurance, community group training, and research for holistic development. As of 2024, its gross loan portfolio reached 4.5 billion PKR, and it has expanded its reach to 17 districts. Over the past decade, DSP's OLP has increased nearly 300% and its loan disbursements saw an increase of 347% over the decade (DSP, 2024).

3. Methodology of the Study

The study utilized both qualitative and quantitative tools to design a climate-smart financial product for women farmers. This comprehensive approach was adopted to gather both in-depth qualitative insights and wide-ranging quantitative data to inform product development.

A structured review of relevant secondary literature was conducted to understand the barriers women farmers face in accessing formal financial services, the impacts of climate change on their livelihoods, and the existing climate-smart finance models. This review helped identify key areas for the design of the survey tool and the conceptual framework of the study. Case studies were examined, both at the national and international levels, to provide insights into strategies that have worked in overcoming financial barriers.

Figure 12: Methodology of the study.



3.1. Design of the Survey Questionnaire

The primary tool for data collection was a structured questionnaire survey, designed to capture key insights about the financial behaviors, climate risks, adaptation strategies, and barriers faced by women farmers in Punjab and Sindh.

- **Farmer Profile:** Information on the socio-economic background of women farmers, including their age, education, household income, and decision-making power.
- **Climate Impact:** Understand the local impacts of climate change, including changing rainfall and temperature patterns and how these affect farming practices.
- **Adaptation Strategies:** Insights into the coping mechanisms employed by women farmers, including any obstacles to adopting climate-smart farming techniques.
- **Access to Finance:** Understanding of how women currently access finance, why they avoid formal financial institutions, and what barriers they face in securing loans.
- **Product Preferences:** Data on the desired features of climate-smart financial products, including preferred repayment structures (e.g., crop-to-crop loans) and the need for financial products that align with seasonal cashflows.

3.2. Sample Frame

The study surveyed 348 farmers, including over 300 women, across various districts in Punjab and Sindh, representing a diverse range of agricultural practices and geographic locations. The selected areas include Multan, Bahawalpur, Sargodha,

Bahawalnagar, and Khushab in Punjab, and District Malir (Tehsil Murad Memon and Tehsil Gadap) in Karachi, and Districts Tando Allahyar (Tehsil Tando Jam) and Tando Muhammad Khan (Tehsil Matli and Tehsil Sheikh Berqyo) in Sindh.

Table 3: Survey Sites in Punjab.

District	Tehsil	Women	Men	Total
Bahawalpur	Khairpur	38	-	38
	Bahawalpur Sadar	40	-	40
Multan	Jalalpur	40	-	40
	Shujabad	32	-	32
Sargodha	Sargodha (87 SB Chokera)	14	10	24
Bahawalnagar	Chishtian (Sodha Basti)	16	8	24
Khushab	Noorpur Thal (Adhikot)	16	8	24
Total		199	26	225

Table 4: Survey Sites in Sindh.

Site Name		Total Per Site
Karachi	District Malir	70
Hyderabad	District Hyderabad	53
	District Tando Allahyar	
Total		123

3.3. Data Collection Process

To ensure data accuracy and real-time monitoring, the survey was digitized using the KoboToolbox application.

1. A team of over 20 enumerators (3 male) was engaged for the survey at different locations. Training sessions were conducted for each district's teams. The training covered survey protocols, ethical guidelines, and mock exercises to familiarize the team with the survey instrument and ensure the proper administration of the questionnaire.
2. Survey was administered in the local languages (Urdu, Sindhi, and Punjabi) to build rapport and ensure nuanced comprehension. Data was entered directly into the application in the enumerator's language to prevent information loss during translation.
3. Special attention was given to ensuring informed consent from all participants, and enumerators were trained to ensure confidentiality. Women farmers were informed that participation was voluntary and that they could withdraw at any time without consequence.
4. Once the surveys were completed, they were reviewed for completeness and accuracy. The data collected via KoboToolbox was cleaned and analyzed to identify key behavioral and financial patterns and to draw meaningful insights.

3.4. Challenges and Adaptive Methodologies

Low literacy levels and lack of exposure to formal banking concepts meant that many respondents struggled with long, complex questionnaires. There were frequent instances of respondent fatigue, where women would disengage or request others to finish the interview. The questionnaire was streamlined during the pilot phase to maintain engagement without compromising critical data points.

The sample sizes vary significantly across the target districts. While Bahawalpur, Sindh, and Multan offer a robust dataset for analysis, the sample sizes for Sargodha, Bahawalnagar and Khushab are relatively small. Due to the asymmetry in sample sizes, direct statistical comparison between districts faces challenges. Another significant limitation of the dataset is the uneven distribution of respondents by gender. In Sindh, Multan, and Bahawalpur, the survey respondents were exclusively female, which prevents a direct Gender Gap Analysis within these specific territories. Even in districts where male respondents were included (Sargodha, Khushab, Bahawalnagar), the ratio of

female to male respondents is heavily skewed and insufficient to form a statistically significant control group.

The inclusion of male respondents in the latter phase of data collection was a triangulation strategy given the central role of male household members as gatekeepers, often controlling financial decisions and possessing greater visibility over farm economics. Their perspectives were critical to validating and contextualizing women's responses. Incorporating male enumerators alongside female teams in Punjab enabled the study to capture a more accurate picture of farm-level financial realities, particularly in cases where women deferred to male relatives for specific economic details. Despite women being actively involved in farming, they often lacked detailed knowledge about financial matters, farm economics, and adaptive farming practices, as they typically deferred to their male family members for such information or even when they possess such knowledge, they are generally hesitant to actively participate due to cultural

restraints. Furthermore, engaging with male respondents provided valuable insights into their attitudes towards women. Understanding the broader socio-cultural context was essential, as it shapes not only the design of the financial product but also how the product could be implemented and scaled in these communities.

Despite these efforts, the dataset may not fully capture the experiences of the most marginalized

women such as widows who lack male household members to act as financial conduits; they are less likely to be represented in survey-based approaches of this nature. Their absence suggests that while the proposed products address significant barriers, additional design considerations may be required to reach women at the extreme margins of financial and social exclusion.

3.5. Design Workshop

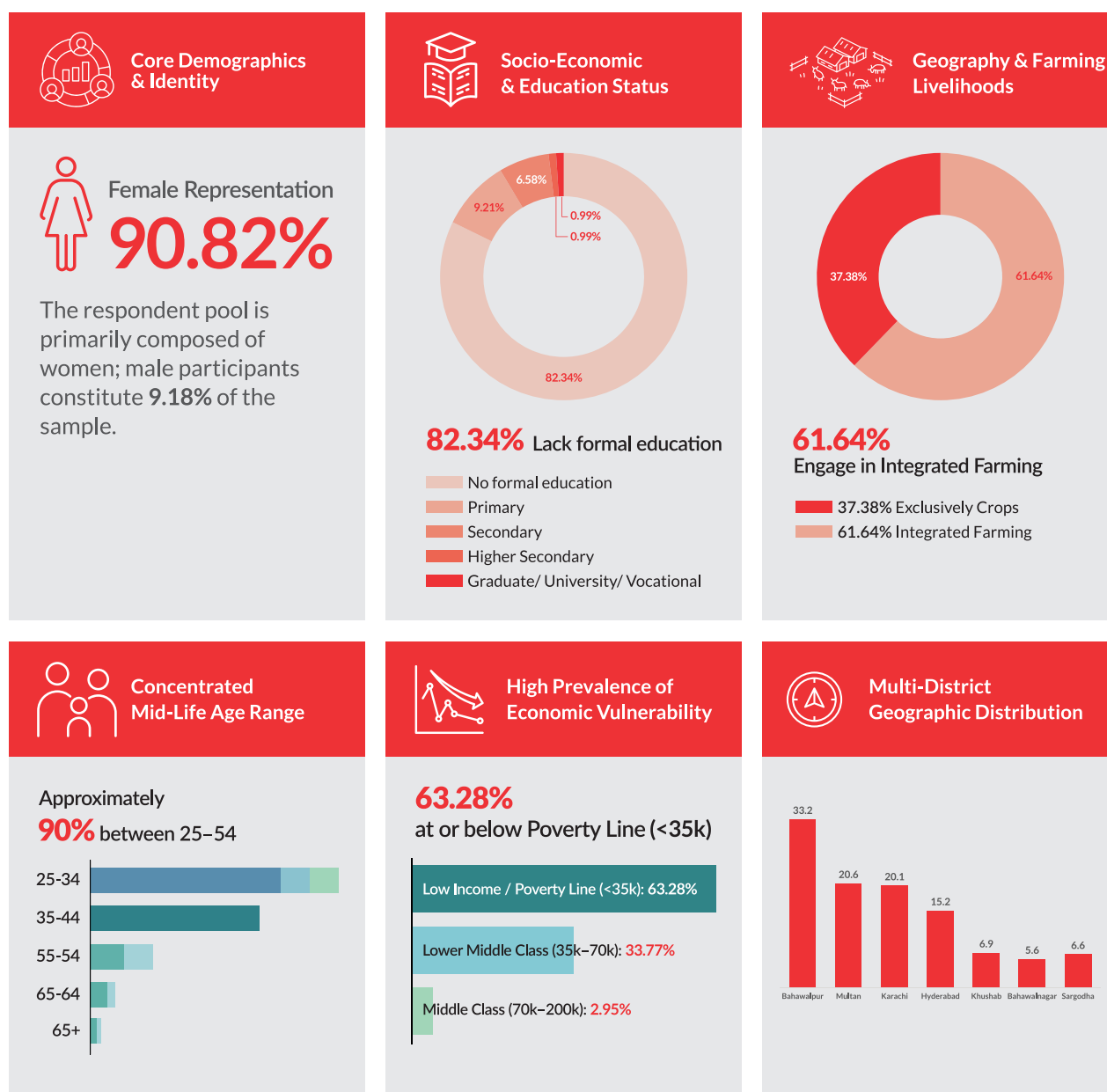
Following the data collection phase, design workshop was held to convert the research findings into a bankable product design. It aimed

to align the needs of women farmers with the operational constraints of Mobilink Bank and the broader financial ecosystem.

GTF Framework	To ensure methodological rigor, the ideation process was guided by the Gender-Transformative Financing (GTF) framework and complemented by a human-centered design lens, ensuring that product features addressed not only access constraints but also the underlying socio-cultural and behavioral barriers identified in the field. The objective was to systematically align women farmers' needs with Mobilink Bank's operational, regulatory, and risk management parameters.
Commercial Viability	A central focus was resolving the inherent trade-offs between deep social impact and commercial viability. Because the target demographic is highly climate-vulnerable and resource-deficient, traditional lending models present an elevated credit risk. Furthermore, structural realities such as specifically Mobilink Bank's relatively high Cost of Funds (CoF), dictated the pricing strategy so that viability is achieved structurally.
Risk Mitigation	Tailored loan structures that mitigate risk through alternative means were assessed including aligning repayment cycles with actual crop yields, integrating delivery mechanisms to lower operational costs, and utilizing non-traditional collateral (such as bundled input provisions and mandatory technical training). These strategies ensure that the final product designs, detailed in Chapter 5, are culturally sensitive and impactful for the women, while remaining financially feasible and operationally scalable within Mobilink Bank's existing digital and risk management ecosystems.

4. Data Analysis and Key Findings

4.1. Respondent Profile and Socio-Economic Context



Note: As outlined in the methodology, findings from Sargodha, Khushab, and Bahawalnagar are drawn from smaller, mixed-gender sample pools (n=24 respectively). Therefore, data points from these three districts are presented as indicative trends to inform product design, carrying a lower statistical confidence.

4.1.1 The Education Barrier

Across all study zones, the literacy gap is profound and acts as the primary design constraint.

- In Bahawalpur and Multan, the rate of “No Formal Education” is staggering at 94% and 86% respectively. Even in the relatively better-off districts of Sargodha and Khushab (data from the limited sample n=24), 58% of respondents lack formal education. This,

however, is skewed by the inclusion of male respondents as only 15% of women in Sargodha have any formal education as compared to 72% of men. In Khushab, 91% of women own land, only 13% of women have any formal education as compared to 88% of men.

- In Sindh, the situation mirrors Southern Punjab, with 87% of respondents having no formal education.

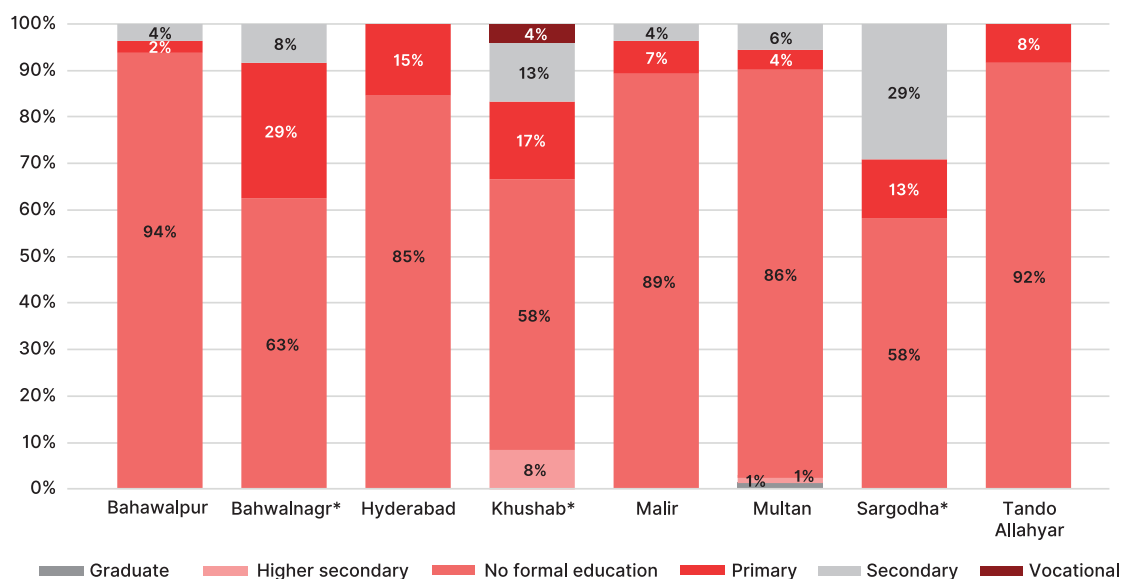


Figure: Education Levels by District (male and female)

* Based on smaller, mixed-gender sample pools (n=24 respectively).

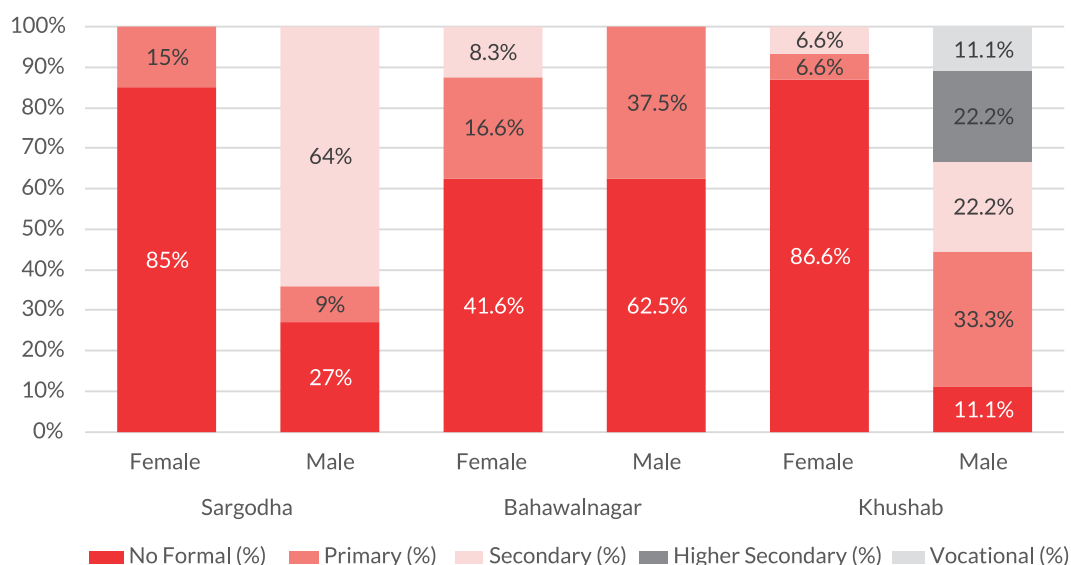


Figure: Educational levels of mixed-gender districts

4.1.2 Land Ownership

- In Khushab and Sargodha (based on the limited sample pool of n=24), over 90% of respondents reported owning land. However, field insights suggest this is household ownership rather than exclusive title deeds in the woman's name. In Tando Allahyar and Malir (Sindh), less than 10% of women own land, the lowest in the entire study.
- While some female respondents self-reported land ownership during qualitative surveys, demographic data exposes a profound gender gap in agricultural decision-making and household headship. District-level analysis from the Seventh Agricultural Census indicates exceptionally low proportions of female-headed agricultural households in the surveyed regions:
- Sindh Districts: Malir (2.88%), Hyderabad (1.69%), Tando Allahyar (0.83%)
- Punjab Districts: Sargodha (1.36%), Bahawalnagar (1.24%), Multan (1.09%), Khushab (0.84%), Bahawalpur (0.48%) (Pakistan Bureau of Statistics, 2024).
- These figures contextualize a critical field observation: because the vast majority of these farming households are male-headed, women working the land frequently lacked detailed knowledge regarding farm economics, inputs, and adaptive strategies due to their systemic exclusion from agricultural management
- In Bahawalpur and Multan, land tenure is highly fragmented. In Bahawalpur, nearly 40% are sharecroppers or tenants. In Multan, over 50% do not own the land they till. In Sindh, less than 30% own land.

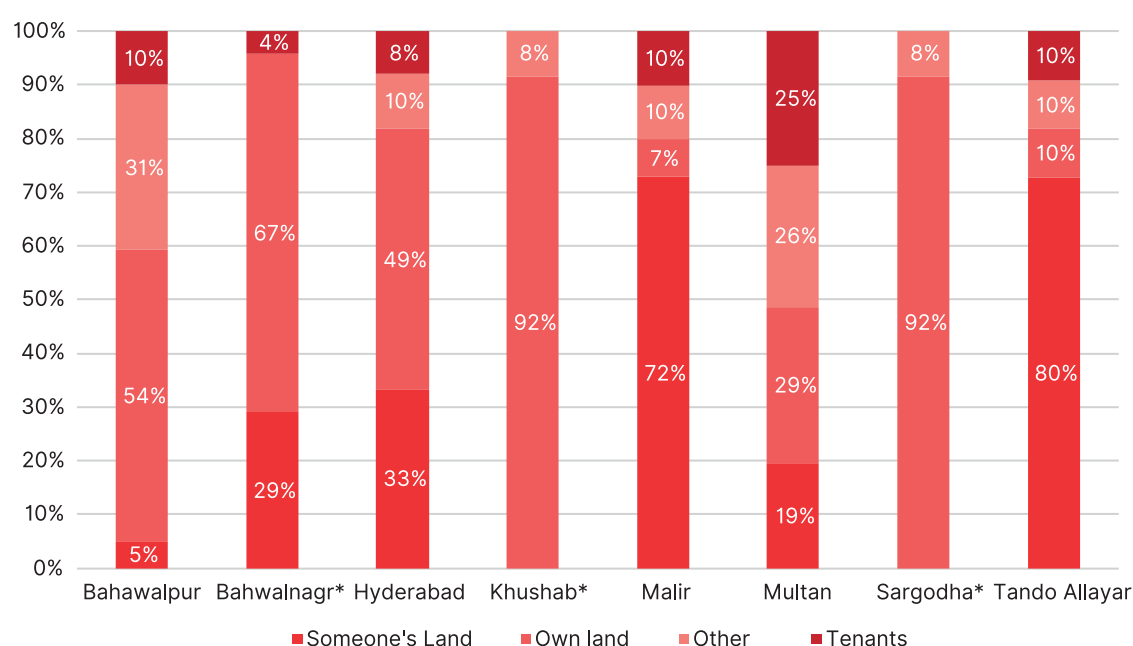


Figure: Land Ownership by District

* Based on smaller, mixed-gender sample pools (n=24 respectively)

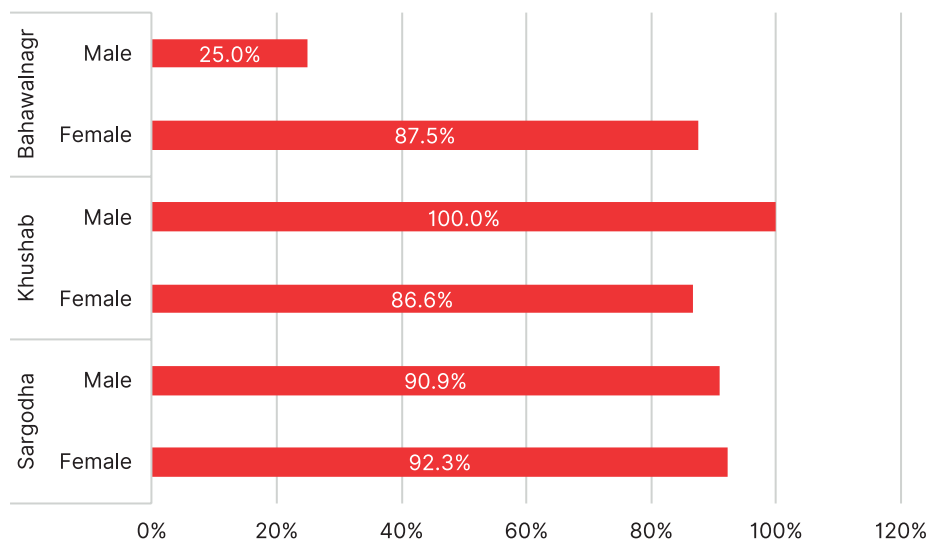


Figure: Gender Divide for Respondents with their Own Land

- The data showing higher female ownership reflects women reporting family land as own. Qualitative data confirms that even when women inherit land, customary practices often compel them to transfer titles to brothers or husbands, leaving them without any land ownership and hence collateral for formal loans. A study supported by International

Growth Centre (2025) confirms that around 70% of working women are engaged in agriculture, yet only 2% of women own land due to such inheritance transfers that sideline female heirs. A land-collateralized loan product will automatically exclude the most vulnerable the majority of respondents live at the precipice of poverty.

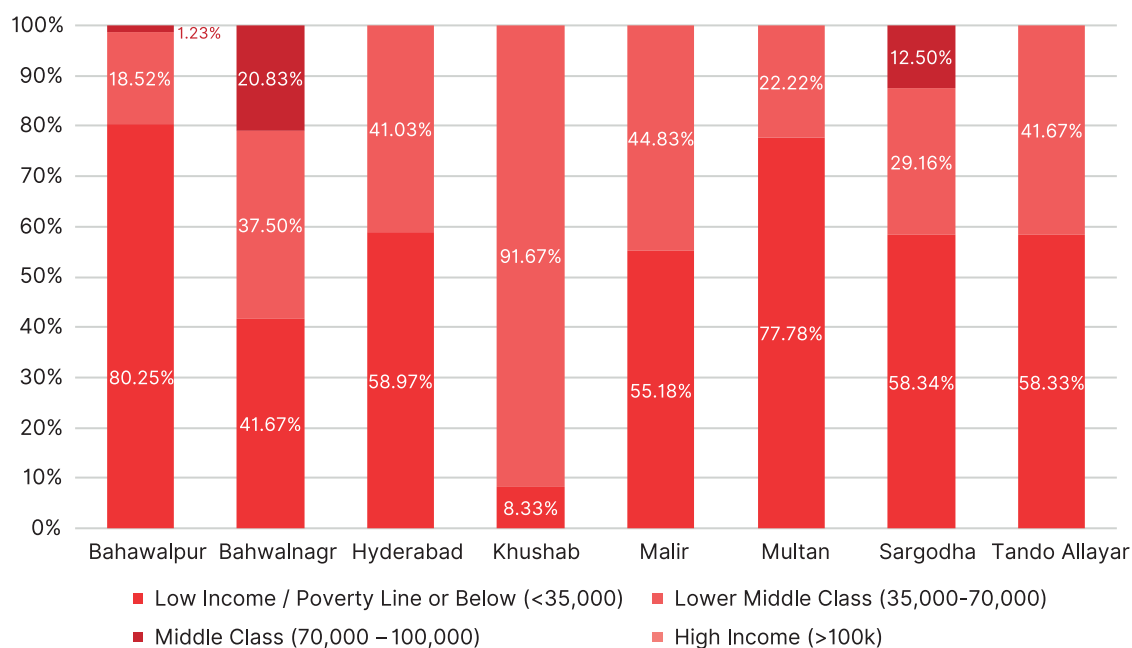


Figure: Socio-Economic Status by District

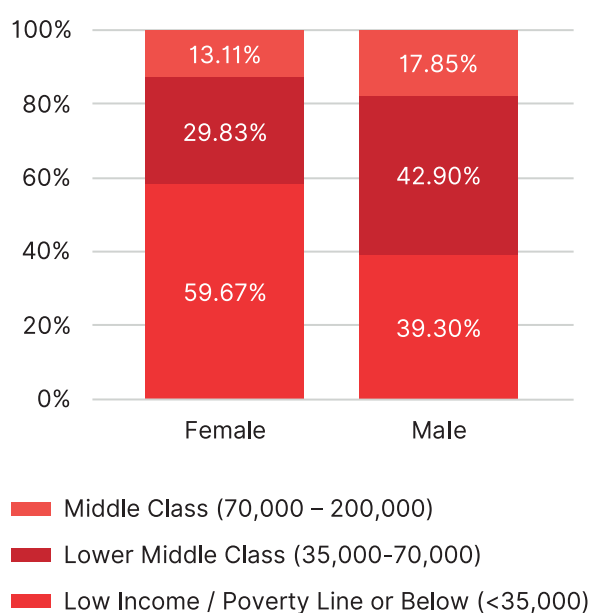


Figure: Socio Economic Status by Gender

- In Sargodha and Multan, over 50% of respondents earn less than PKR 35,000 per month. Sindh shows high vulnerability, with over half of the respondents from all districts falling into the lowest income bracket.

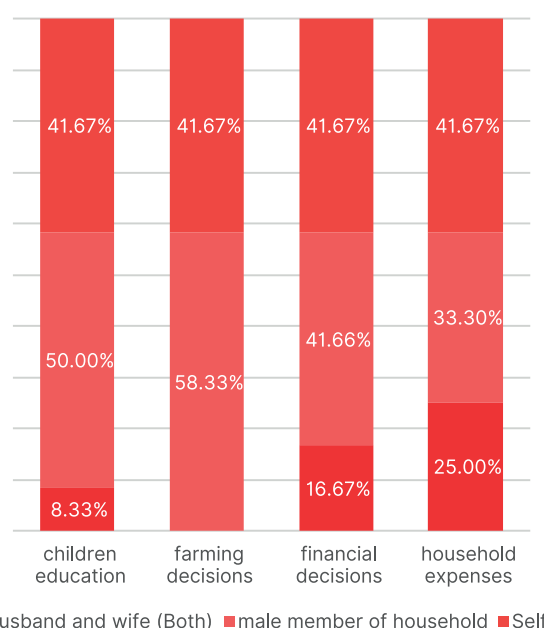
4.2. The Autonomy Gap

- In Sindh, 75% of respondents reported that their husbands hold sole authority over financial decisions. Only 20% make decisions themselves.
- Similarly, in Bahawalpur, 57% defer to their husbands.
- In these zones, marketing the product as Women's Independence may backfire by triggering the gatekeeper's veto. The product must be positioned as Family Prosperity to gain the husband's endorsement. However, while implementing

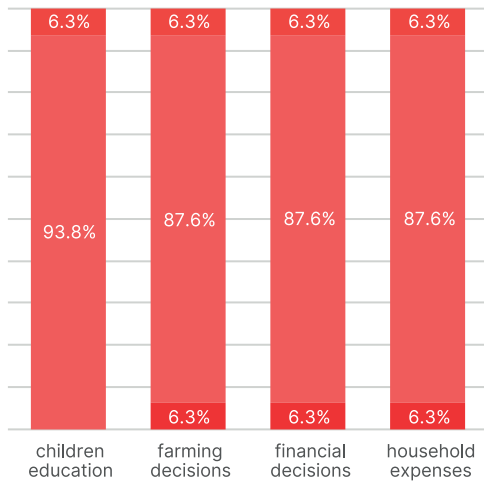
this, a mandatory private intake interview by a female relationship officer must precede the onboarding process to ensure the woman is participating voluntarily and not being coerced for the husband's interest.

- In Sargodha, 42% of women make their own financial decisions, the highest rate in the study.
- In Multan, while mixed, a significant 26% decide for themselves, and another 22% decide jointly.
- These localized survey findings align with the national demographic reality documented in the Seventh Agricultural Census, which indicates that 98.5% of all agricultural households in Pakistan are male-headed (Pakistan Bureau of Statistics, 2024). This corroborates the observation that economic agency is heavily mediated by patriarchal norms, resulting in systemic financial subordination to male household members.

Sargodha

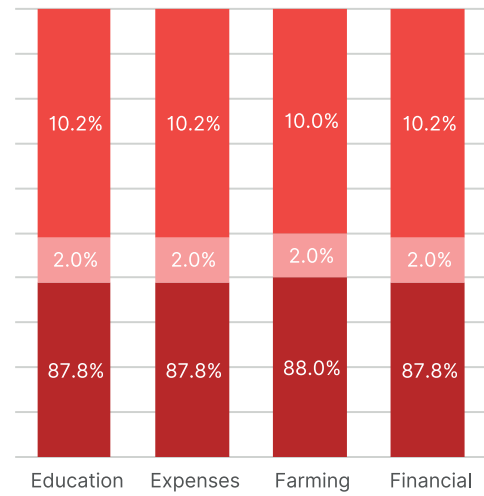


Khushab



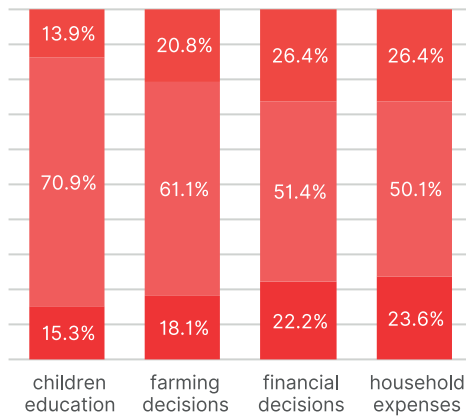
■ Husband and wife (Both) ■ Male member of household ■ Self

Hyderabad



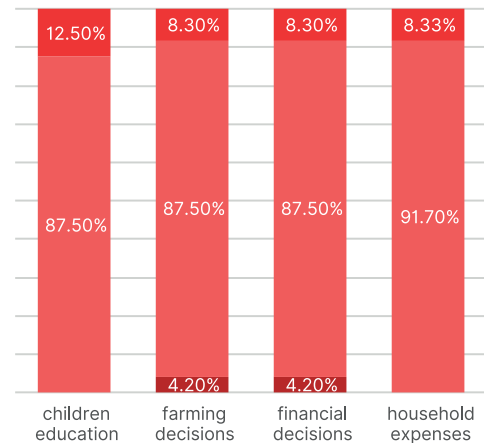
■ Husband and wife (Both) ■ male member of household ■ Self

Multan



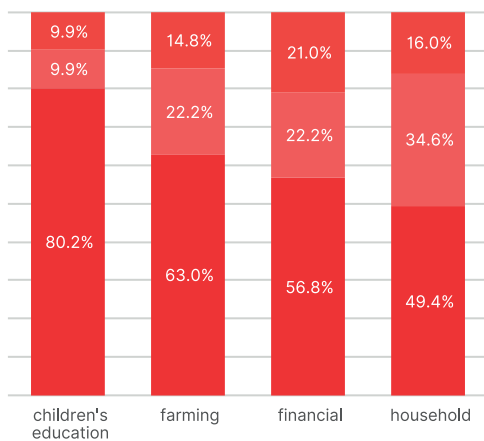
■ Husband and wife (Both) ■ Male member of household ■ Self

Bahawalnagar



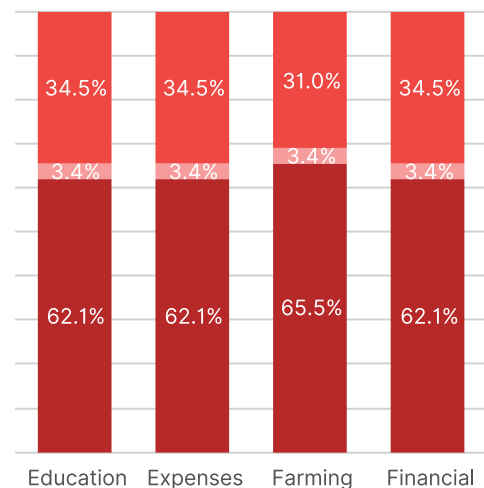
■ Husband and wife (Both) ■ male member of household ■ Self

Bahawalpur



■ Husband and wife (Both) ■ male member of household ■ Self

Malir



■ Husband and wife (Both) ■ male member of household ■ Self

Figure: Female respondents' decision making authority

4.3. Climate Vulnerability

Over 90% of the respondents reported having experienced extreme climate-related events such as heatwaves, flooding or drought-like conditions in the last 5 years. The climate risk profile is divided by geography, dictating the need for location-specific designs.

- About 50% of respondents reported experiencing both floods, heatwaves, and heavy rains; this convergence destroys crops at multiple stages. Khushab experiences drought (experienced by 100% of respondents) and heatwaves. Dryness has noticeably increased over the past 5 to 6 years, yet this is punctuated by erratic, untimely rainfall. The situation is such that if crops are not destroyed by the extended drought, they are often ruined by sudden, intense rains that occur at the wrong time in the crop cycle.

Region/District	Primary Climate Hazard
Malir	Heavy Rain (93%), Heatwave (86%), Flood (85%), Drought (17%)
Hyderabad	Heavy Rain (96%), Heatwave (82%), Flood (39%), Drought (7%)
Bahawalpur	Flood (93%) Heatwave (43%) Heavy Rain (74%) Drought (11%)
Khushab	Drought (100%) Heatwave (62.5%) Heavy rain (33%)
Sargodha	Heavy Rain (79%) Flood (8%) Heatwave (8%)
Multan	Heavy rain (72%) Flood (54%) Heatwave (35%)
Bahawalnagar	Heavy Rain (71%), Heatwave (62.5%), Drought (33%), Flood (8%)

- Due to a lack of resources, expensive electricity and artificial irrigation systems, male respondents in Khushab reported severely rationing water. Instead of the required watering frequency of 3 to 4 times, farmers are forced to water fields only once or twice. Despite the clear need for irrigation, there is a specific barrier to technology adoption. Field insights from these male farmers indicate that some farmers prioritize electricity connections over solar solutions as there is a perception that solar pumps are not as efficient as grid electricity for their specific water extraction needs, calling for a need of more awareness.
- To survive the intensifying dryness, male respondents also detailed their attempts at crop diversification. Specifically, farmers have shifted to cultivating Guar, selected specifically for its feasibility and resilience in these arid conditions. This indicates that while financial barriers prevent infrastructure adaptation (solar), farmers are willing to adapt to survive.
- More than 80% of respondents across the surveyed districts reported a loss of crops and negative impacts on their farming activities, resulting in financial uncertainty. About 80% of crop-loss victims classified the loss as Very High. About 80% of respondents reported a Major Decrease in household income as a direct result of these climate impacts. 96% of respondents in Sindh reported a Major Decrease in income.
- The data confirms that for these farmers, climate shocks are not merely operational challenges; they are solvency events. The resulting uncertainty in income forces women farmers into negative coping strategies, such as selling livestock or taking high-interest loans, creating a cycle of debt that the proposed financial product must aim to break.

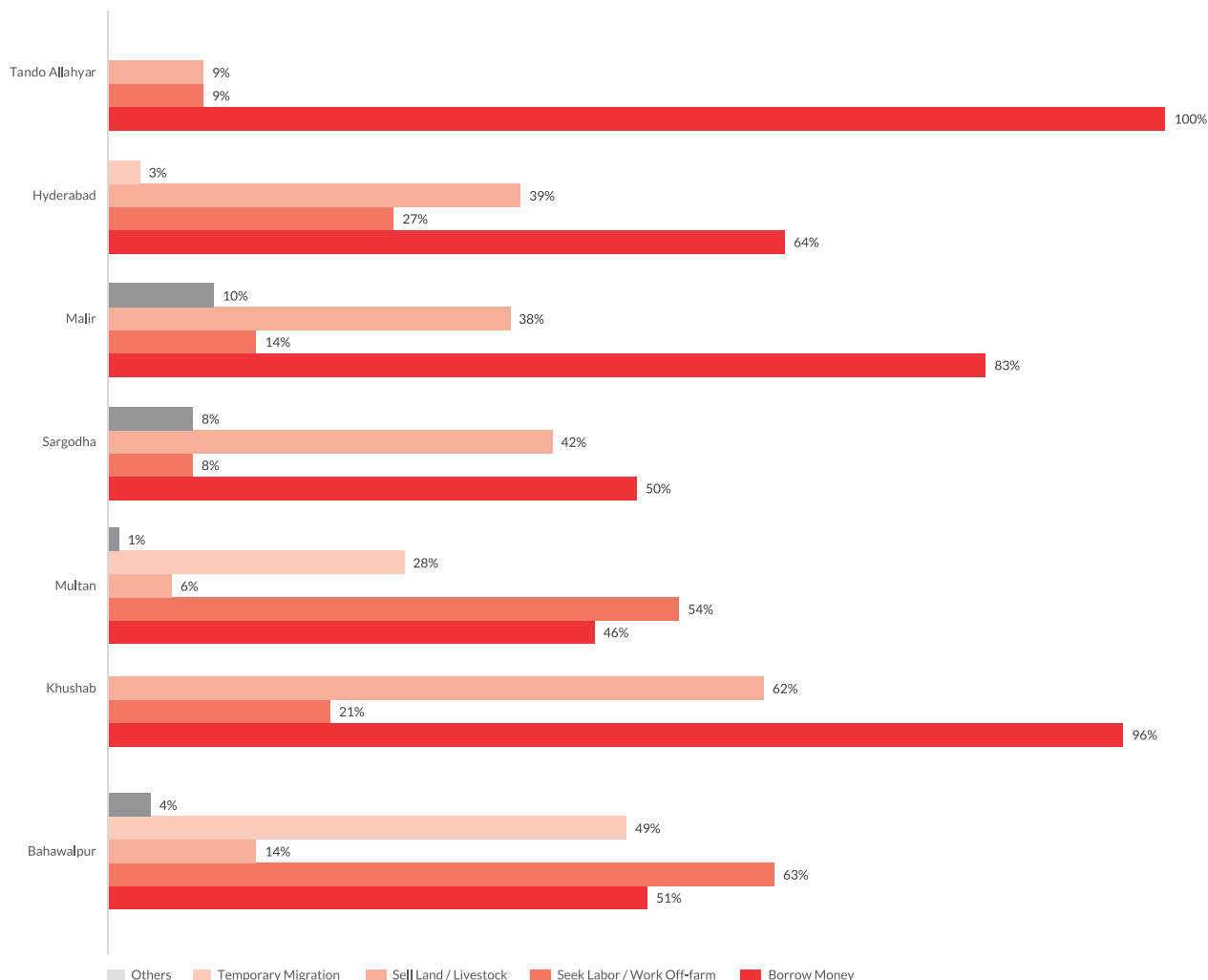


Figure: Responses During Climate Disasters

4.3.1 Adaptation Strategies

In several districts, there's multi-strategy usage. This means, for example, in Bahawalpur, on average, every respondent is using nearly 2 different strategies at the same time (e.g., Borrowing Money and Seeking Labor).

- Borrowing and labor is the most common combination in Bahawalpur and Multan. Households borrow money for immediate relief and seek alternative labor to pay back debts or sustain income.
- In Sindh and Khushab, we see high rates of both borrowing and selling livestock/land. Every single woman in Khushab who reported a coping strategy relied on borrowing money, and more than half of

them stacked this directly with selling their livestock. This is a critical combination because selling productive assets (like livestock) reduces future income, making the household more dependent on loans, creating a debt trap. Furthermore, unlike the men in Khushab, absolutely zero women reported seeking off-farm labor as a coping mechanism, indicating a complete reliance on debt and asset depletion. Tando Allahyar women farmers are almost exclusively reliant on debt.

- Sargodha shows the least amount of stacking, with 50% borrowing and 42% selling assets. However, looking strictly at the women in Sargodha reveals a higher vulnerability. The

female respondents stacked strategies much more frequently than the district average, primarily relying on selling livestock and borrowing money simultaneously. High rates of selling land/livestock in Khushab and Sargodha can be related to their reported high ownership of land.

- Across every surveyed district, borrowing money consistently appears as either the first (across Sindh, Khushab, Sargodha) or second coping strategy in response to climate shocks. The data confirms active financial behavior as they are already taking loans to survive. The green financing

product does not need to create the habit of borrowing; it needs to displace the current inefficient informal borrowing with a structured, climate-resilient alternative.

- As the Karandaaz survey (2025) notes that 85% of current loans in the general landscape are sourced from family and friends, with only 13% from banks. The fact that they successfully borrow from informal sources proves they have the social capital and repayment intent to follow through on financial obligations. They are active participants in a credit market, but an informal one.

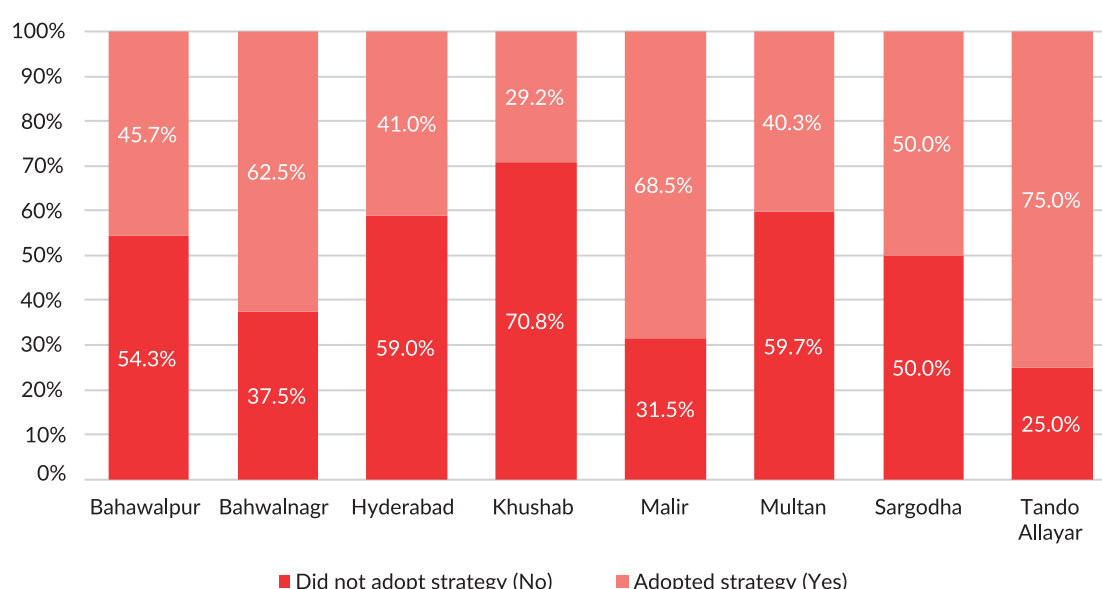


Figure: Adoption of Adaptation Strategies

- Despite being the poorest, Sindh shows the highest rate of adaptation with Malir and Tando Allahyar. Khushab has the lowest adaptation rate (29%), despite facing 100%

drought conditions and faring the best in terms of economic status among other locations, linked to high Lack of Awareness barriers.

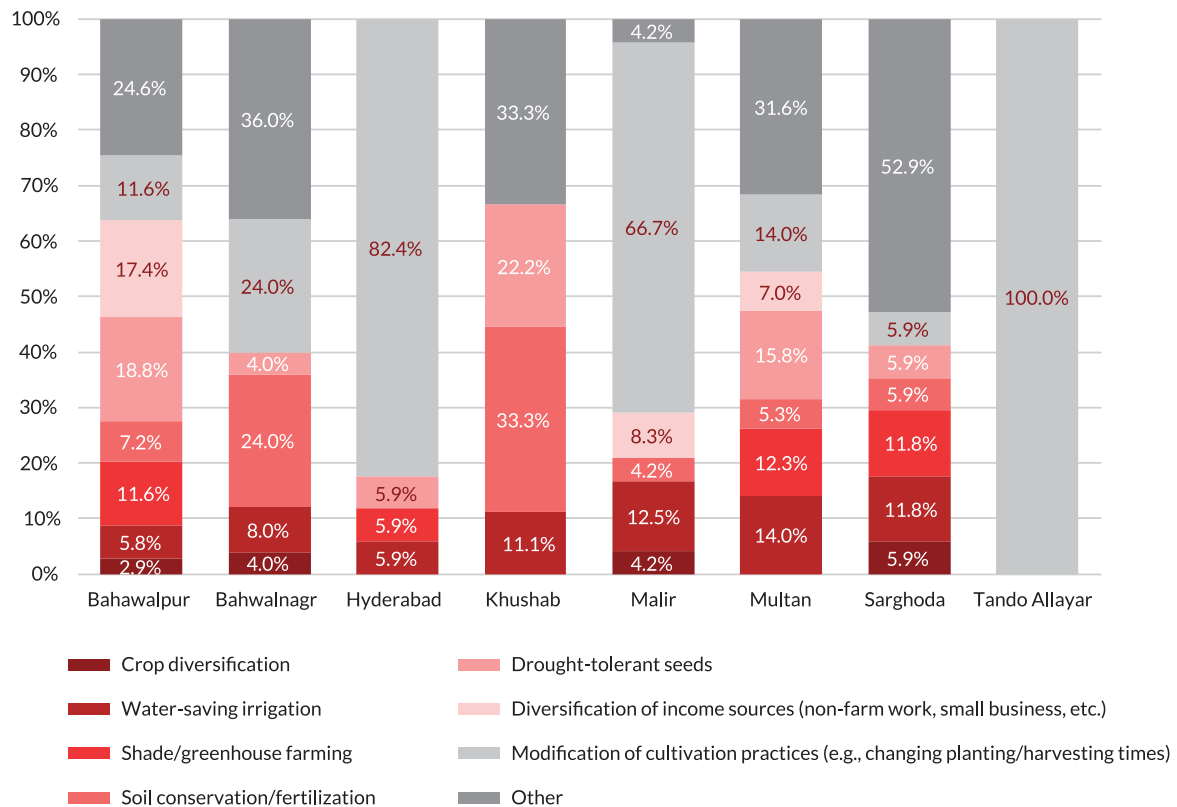


Figure: If yes, what adaptation strategies are they using?

- While other districts focus on changing what they plant (Diversification), Sindh is almost exclusively focused on how they water. This

aligns with the heavy water stress/flood duality they face.

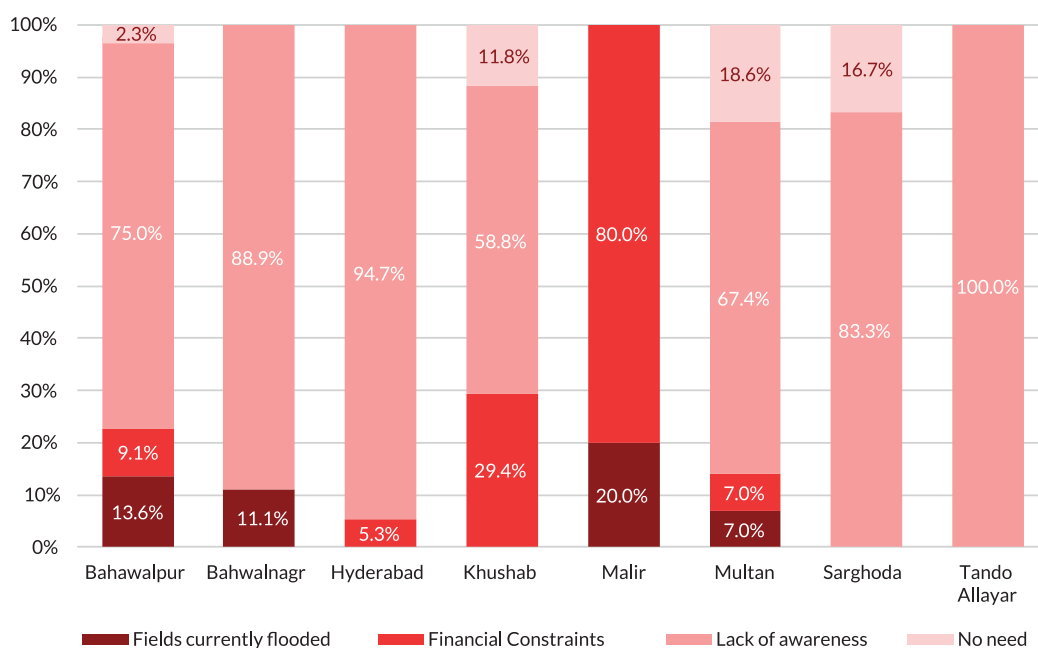


Figure: Reasons for Not Adopting Strategies

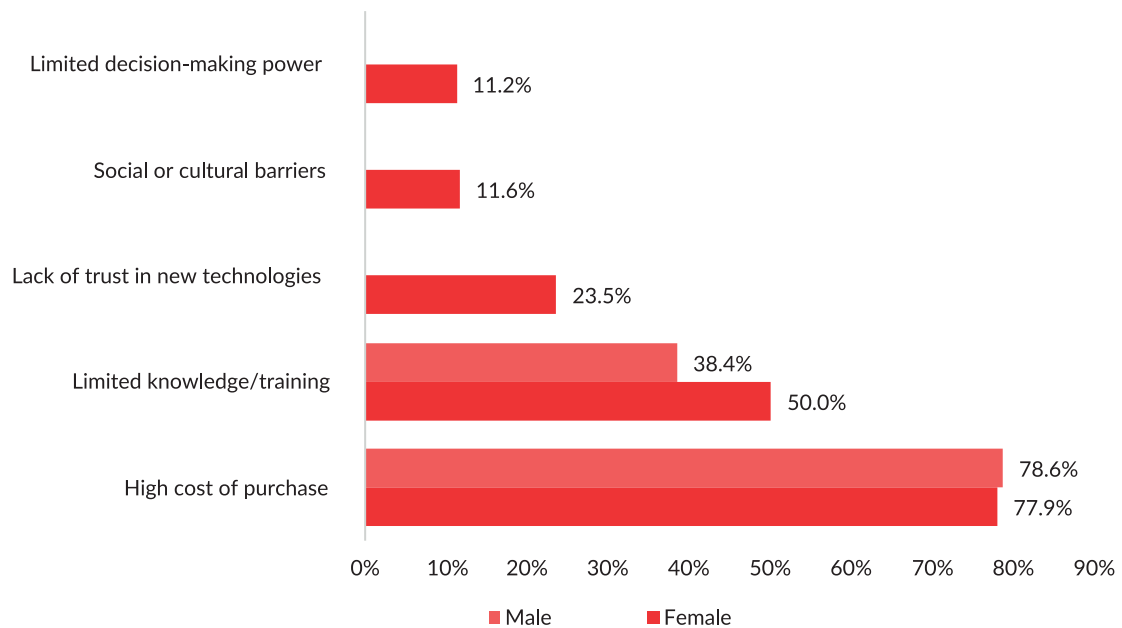


Figure: Adoption Barriers Reported

- In Bahawalpur (59.3%) and Multan (48.5%), nearly half of the women were unable to identify any technology that could help them, indicating a severe lack of exposure to modern farming tools. Women know they are struggling and want solutions to ease their workload but are unaware of any. Some showed eagerness for a solution saying whatever you tell us, we will do while some said they don't need any such

technology because they believed that once deployed, these technologies might replace the physical labor of women farmers. In contrast, women in Sindh and Khushab responded about what they need.

- For the respondents who did identify a need, they asked for Cotton Harvesters, Solar Systems, Thresher, Lightweight Farm Tools or Agriculture Machinery.

Gendered Adaptation Needs

There is a stark contrast in baseline awareness between genders. Roughly 50% of women farmers could not identify a specific adaptation technology, frequently citing a lack of awareness. Their primary, immediate need is basic exposure and training. Conversely, men demonstrated a much higher baseline awareness of available agricultural technologies and rarely lacked a specific adaptation strategy. Other than solar, which was a common priority among both, the women who responded were focused on labor-saving devices. Specifically requested threshers, cotton harvesters, and general new machines to replace the grueling manual labor of cutting, picking, and processing, and to ease their physical daily workload. Men were more likely to request new seeds for better production, and better fertilizers/pesticides as a primary adaptation strategy.

As the traditional division of labour often relegates women to manual, time-consuming operations with high degrees of drudgery and limits their access to mechanization due to restrictive beliefs such as mechanization is exclusively for men or that women should spend their time on housework and childcare instead of using technology, it is important to introduce equipment and machinery that responds to women's needs such as that of Women friendly Improved Farm Tools and Equipment highlighted during the survey (Justice et al., 2022).

A pioneering example of this approach is Green Heron Tools, an organization that scientifically engineers agricultural equipment specifically for women's bodies to account for differences in grip size, upper body strength, and center of gravity and minimize physical strain. Translating this concept directly to the South Asian context, institutions such as India's Central Institute of Agricultural Engineering have successfully developed and validated a suite of ergonomically modified tools, including the Naveen sickle for harvesting, specifically calibrated for women's anthropometric data, such as grip size, standing posture, and aerobic capacity.

4.4. The Digital Divide

Sindh is almost entirely disconnected digitally (only 6% personal ownership), forcing reliance on male family members for any digital

finance intervention. Sargodha, Khushab, and Bahawalnagar show better connectivity due to involvement of male respondents.

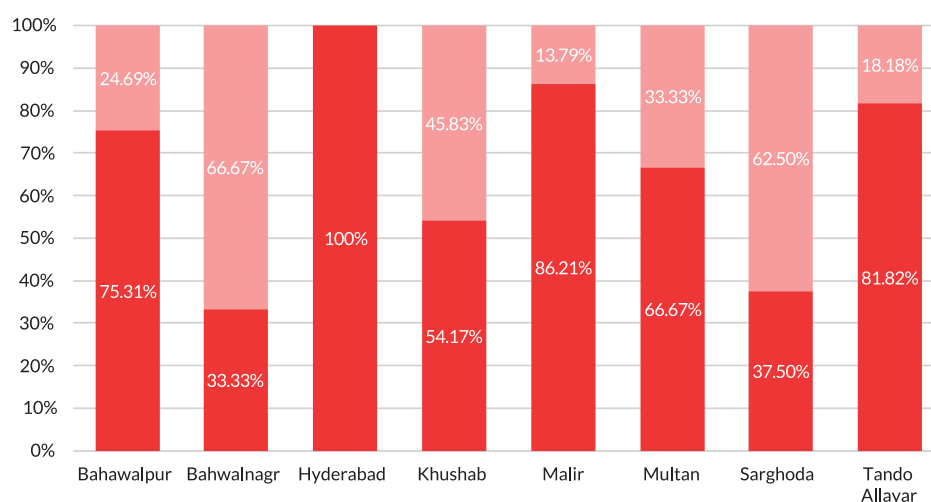


Figure: Phone Ownership

■ No ■ Yes

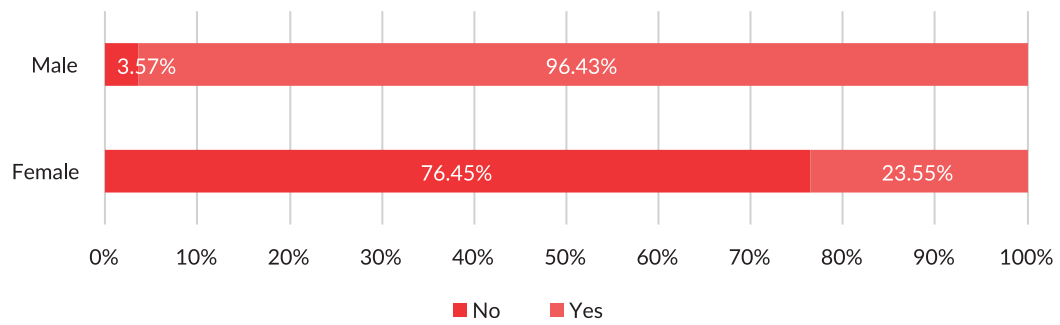


Figure: Phone Ownership

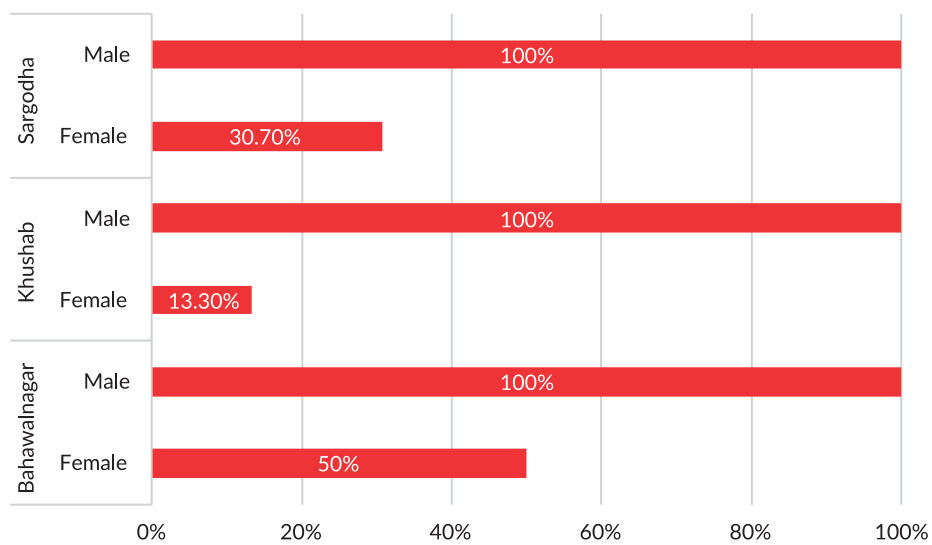


Figure: Phone ownership by gender and district

4.5. Financial Behavior

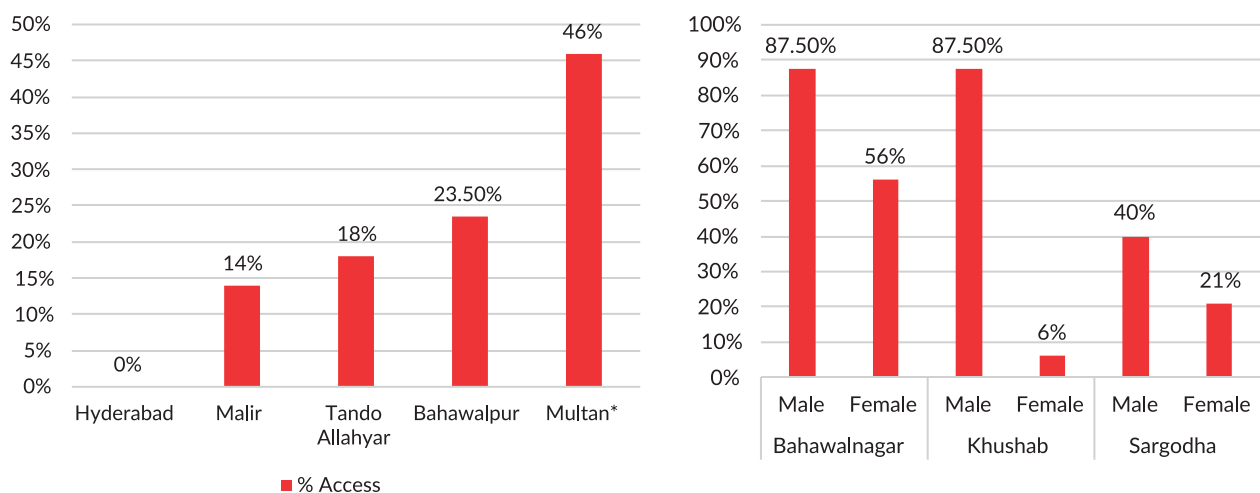
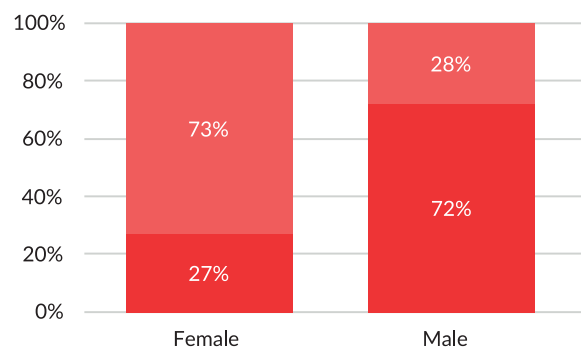


Figure: Mobile Wallet Access

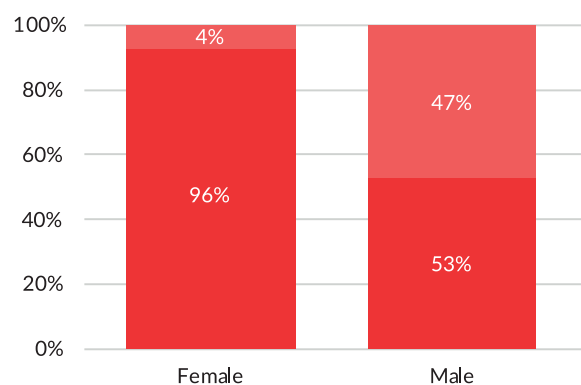
*In Multan, respondents mostly (63%) have shared wallet without personal ownership

- 75% of women without mobile wallets report having no need of them while 18% cite lack of digital literacy as the reason. Women perceiving no need of mobile wallets has also been reported by Karandaaz FIS (2025).
- The data reveals a significant gap between borrowing behavior (which is high during disasters, mostly informal) and formal loan application history which is low and deeply gendered. A stark disparity is evident in Bahawalnagar, where 62.5% of male respondents have applied for farming loans, whereas 0% of female respondents in the same district have ever done so. The primary reasons cited were No need and Difficulty in returning. While men leverage credit for inputs, women, despite working the land, do not view themselves as eligible applicants or fear they cannot generate the cash flow to repay.
- In Multan, around 15% of women had previously applied for loans. Fear of repayment and preference for self-sufficiency prevents the majority from accessing credit
- In Bahawalpur, 7% had experience applying for bank loans, financial anxiety (returning the loan) and procedural illiteracy (don't know how) were the primary barriers for not applying. In Sindh, less than 5% of women had ever applied for loans from formal banks. The barriers to application reveal a mix of risk aversion and procedural illiteracy.

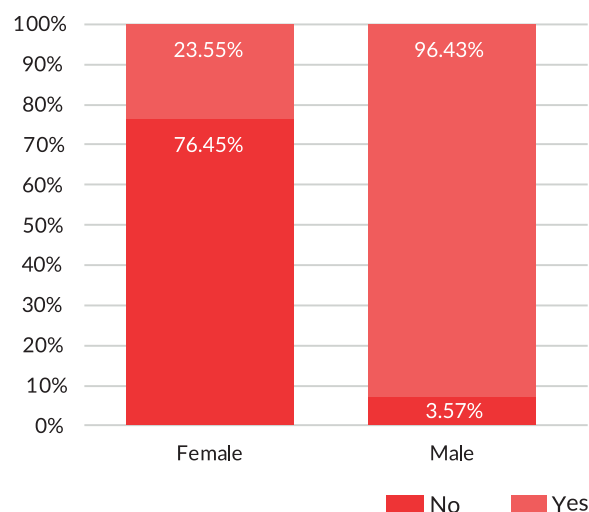
Cultural barriers in accessing markets, extension services, or financial products



Do you receive any visits from agricultural extension services?



Do these household responsibilities affect your ability to engage in farming or adopt new agricultural practices?



- 80.6% of women in Multan, 75% of respondents in Sargodha, and 70.8% in Khushab expressed explicit interest in taking loans to work on their own crops. Similarly, within the limited mixed-gender Bahawalnagar sample, interest was at over 85% for both men and women, driven by high input costs. In contrast, Bahawalpur reveals a divided market where only 48.1% of women are interested, with the majority deterred by risk aversion and fear of repayment difficulties. In Sindh, interest is negligible (<5.2%), as the vast majority of respondents are wage laborers who do not view farming loans as relevant to their status due to affordability.
- When respondents interested in independent farming were asked what prevents them from doing so, Lack of Resources (capital/inputs) emerged as the universal primary

barrier except for Bahawalpur, where Lack of Knowledge or Training emerged as the primary barrier cited by 63.4% of women, which slightly outranks Lack of Resources at 61.0%. This confirms that for these specific farmers, capital provision alone will be ineffective without deeply embedded technical education. Similarly in Bahawalnagar, while Lack of Resources is the most cited barrier, 43.8% simultaneously cited Lack of Knowledge/Training.

- It was found during the survey that women are not involved in any training provided by agricultural departments during annual visits despite being an integral part of the workforce in these areas. (See Section 5.1.3 for details on the Input Market Loan's mandatory training conditionality, which specifies a curriculum tailored to women's actual agricultural knowledge baseline)

4.6. Design Matrix

The findings indicate that educational barriers and land ownership constraints constitute the most significant structural impediments, necessitating financial instruments that are low-literacy and calibrated to prioritize household stability over individual financial autonomy in the initial stages. Moreover, as climate shocks precipitate reliance on high-interest informal borrowing, the provision of financial capital

alone is insufficient. Instead, the product must be structured as a bundled offering, wherein mandatory training is embedded as a precondition for loan disbursement, simultaneously mitigating institutional risk and equipping borrowers with the procedural literacy and technical capacity currently absent in the system.

Table: Design Implication Matrix reflecting key socio-economic, climate, and behavioural constraints and their translation into product design features.

Key Finding	Data Summary	Impacted Product / Feature	Design Implication (The "How")
The Autonomy Gap	Economic agency is heavily mediated by patriarchal norms, with women exhibiting systemic financial subordination to their spouses.	Marketing & Branding Strategy	Avoid women empowerment branding, which may trigger gatekeeper vetos. Position products as family prosperity to secure the husband's endorsement.
Gatekeeper Phenomenon	Men hold primary decision-making authority and have higher baseline tech awareness.	Inclusive Engagement Model	Integrate male-inclusive training modules. Engaging men as partners ensures they support the adoption of new technologies rather than blocking them.
Land Ownership Constraint	Women frequently lack exclusive title deeds or transfer inherited land to male relatives.	Input Market Loan & Risk Mitigation Framework	Traditional land-collateral requirements are waived. Risk is mitigated structurally through bundled insurance, and mandatory technical training rather than through physical land titles.
The Digital Divide	A profound gendered digital divide persists, particularly in Sindh, where the scarcity of personal phone ownership serves as a fundamental barrier to individual platform engagement.	Disbursement Channel	Rely on human-in-the-loop models or local female agents to facilitate digital transactions, rather than relying purely on a direct-to-app model.
Training as Loan Guarantee	Significant lack of awareness regarding adaptation technologies and agricultural training.	Conditional Loan Approval	Implement mandatory technical training. The completion of a training module acts as a guarantee or prerequisite for loan disbursement, ensuring the borrower is equipped to succeed.

5. Design Recommendations and Product Design

The primary research and diagnostic analysis in the preceding chapters establish a clear narrative: women farmers face an acute intersection of climate vulnerability, financial exclusion, and restrictive gender norms. However, translating these vulnerabilities into scalable financial products requires moving beyond abstract policy goals. Because financial institutions operate on commercial sustainability, product designs must carefully balance profound social impact with rigorous risk management to effectively serve this segment.

To capture this massive, untapped market, we must transition from a traditional gender-neutral approach to a Gender-Transformative Design. Traditional financial systems inadvertently cater to male realities by demanding formal land titles or assuming independent mobility. By adopting a gender-transformative framework, the objective shifts from trying to make women bankable to making the financial system women-able. This entails designing products that actively navigate intra-household power dynamics, strategically engage the male

gatekeeper, and bypass the structural barriers that disproportionately exclude women.

The following product recommendations are engineered to satisfy two opposing forces: the urgent liquidity needs of the female farmer and the bank's operational limits. By embedding risk mitigation directly into the product mechanics, through asset-backing, cash-flow-aligned repayment cycles, and integrated climate insurance, the portfolio is designed to shield both the borrower and the bank from agricultural shocks.

5.1. The Input Market Loan

Field surveys reveal that a lack of resources is the primary barrier to independent farming for over 75% of respondents across all districts, compounded by a lack of knowledge and training cited by roughly 40%. To directly address these gaps, the Input Market Loan is designed as a short-term, crop-cycle-specific working capital facility that bundles credit, insurance, and advisory services.

5.1.1. Loan Structure and Disbursement Mechanics

The Input Market Loan (ticket size: PKR 50,000 to PKR 500,000) is structured around a **2-year tenure spanning two crop cycles**. This multi-cycle

approach is critical: if a woman's first crop fails, she is not immediately pushed into default but has the capital runway to recover in the second cycle. Repayment operates on a structured seasonal EMI framework, featuring monthly markup payments paired with quarterly principal repayments. Utilizing a step-up model, this ensures that installments remain lower during the sowing and growth phases, and increase during the harvest months to perfectly match the borrower's liquidity peaks.

To mitigate the risk of fund diversion, a common issue where cash loans are repurposed for household consumption, this product utilizes a split disbursement model. The loan shall be

disbursed in a ratio of **40% In-Kind** and **60% Cash Credit**. This structured approach strongly aligns with recent national precedents, most notably the State Bank of Pakistan's (SBP) Zarkhez-e scheme. Launched as a collateral-free digital financing initiative, Zarkhez-e successfully utilizes a similar split-disbursement model (75% in-kind via input vouchers, 25% cash) bundled with mandatory insurance.

This specific 40/60 split is not arbitrary but is derived from the actual cost structures of major crops in the target districts. An analysis of current input prices reveals that while hard inputs are expensive, the operational cash required for labor, fuel, and machinery is significantly higher.

- **The In-Kind Component (40%):** Taking Rice cultivation as the baseline, the cost of **Fertilizer and Pesticides** is recorded at PKR 36,000 per acre. These are static, purchasable goods that can be financed directly through network of registered merchants, ensuring the loan is used for farming. The static hard inputs required per acre for wheat include seeds (PKR 7,000), Urea (PKR 9,000), DAP (PKR 18,500), and pesticides (PKR 10,000).
- **The Cash Component (60%):** Pricing analysis shows that Operational Costs are dynamic and cash-intensive. For Rice, the combined costs of Ploughing (PKR 16,000), Sowing/Labor (PKR 21,000), and Harvesting (PKR 8,000) total PKR 45,000 per acre. Furthermore, water costs (PKR 4,000 for Wheat) and fuel for pumps are daily cash expenditures. For wheat, dynamic operational expenses require significant liquid cash: ploughing (PKR 16,000), water extraction (PKR 4,000), and harvesting labor (PKR 8,000), bring baseline operational cash needs to PKR 28,000 per acre (excluding daily variable fuel).

Consequently, roughly 55-60% of the farmer's expense is service-based and labor-intensive, requiring liquid cash. Restricting cash to less than 60% would force the borrower to turn to informal money lenders to cover labor costs, re-introducing the debt trap we aim to eliminate. Evidence shows

that gender-blind microcredit often fails to increase women's incomes because funds are co-opted by male household members; in Bangladesh, for example, an estimated 90% of loans distributed to women were actually controlled by men (Arnold et al., 2021). By restricting 40% of the disbursement to in-kind agricultural inputs, the bank effectively labels the capital, protecting it from being diverted to the husband's enterprises or non-productive household expenses.

5.1.2. Navigating the Male Gatekeeper

A central finding from the field is the pervasive lack of autonomy; men as primary decision makers and male gatekeeper dynamic prevent women from engaging with the formal market. To counter this, the product employs a behavioral pricing incentive rooted in the Gender Transformative Finance (GTF) framework, which seeks to change relational dynamics and expectations between the home and the market (Njuki et al., 2019). Men often act as gatekeepers to women's mobility, largely driven by descriptive norms, the fear of social sanctions or community gossip if their wives are seen in public markets (Arnold et al., 2021).

While the standard pricing is set at KIBOR + 3% + 2% (insurance premium), Mobilink Bank will offer a 100 basis point (1%) discount exclusively to women who physically procure their inputs at the registered dealer's market. Because economic rationality can override cultural and patriarchal norms (Russell & Yang, 2024; Stern et al., 2017; Timsina et al., 2023), this direct financial discount fundamentally alters the household's cost-benefit analysis. It financially incentivizes the male gatekeeper to facilitate her travel, transforming her mobility from a social risk into an economic asset. Based on field insights regarding the autonomy gap, the pilot assumes an initial behavioral uptake rate of 25–30% for this incentive. Once at the market, women gain direct visibility of input varieties, pricing, and new agricultural technologies, breaking the information asymmetry where she relies entirely on male relatives. At the institutional level, bringing women into pre-approved agricultural vendor spaces

disrupts the norm that markets are exclusively male domains. This physical exposure builds women's horizontal networks, increases their ability to negotiate with traders, and provides direct access to market information (International Development Research Centre, 2018)

Building on this shift in intra-household dynamics, the behavioral pricing incentive alone does not fully address the structural exclusion faced by younger women (18–25), who often lack land titles, mobility, and formal credit histories and are therefore more vulnerable to harmful coping practices such as early marriage. To bridge this gap, a targeted young women farmer pathway can be introduced within the existing incentive structure, enabling access through alternative mechanisms such as group liability or a household guarantor. This allows first-time female borrowers to bypass traditional collateral requirements, directly responding to identified gendered constraints while strengthening the gender-transformative objective by expanding women's entry into formal agricultural markets at an earlier stage in the life cycle.

5.1.3. Risk Mitigation

- **Area Yield Index Insurance (AYII):** With over 90% of respondents experiencing climate shocks, and 89% of victims reporting a *major decrease* in income, unsecured agricultural lending carries an unacceptably high default risk. Therefore, the loan is bundled with AYII, priced at approximately 2% of the loan amount. Recommended by the Government of Pakistan's crop insurance task force, AYII offers protection against all natural catastrophes and biological perils that could influence the reduction of crop yields without the requisite requirement of declaration of calamity by the government. Unlike traditional indemnity insurance which requires expensive field assessments, AYII triggers payouts automatically when the average yield in a district falls below a historical threshold due to *any* peril, flood, heatwave, or pest.

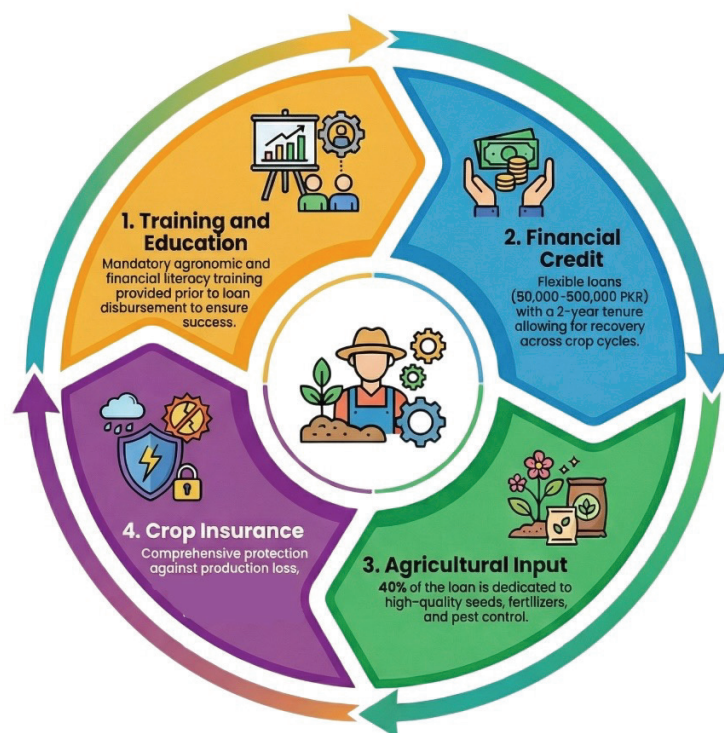
For the execution of the proposed pilots, the risk mitigation architecture is anchored by

TPL Insurance, which currently provides AYII at scale in Pakistan. TPL has already demonstrated the model's operational success by delivering automatic payouts to rice and wheat farmers in the Punjab region—specifically in districts like Sheikhpura and Pakpattan—following the 2022 heatwaves and 2023 floods. This established geographic coverage in four districts of Punjab in partnership with Bank of Punjab (BoP) and HBL can extend to the proposed pilot districts of Multan and Okara.

The product is more advanced than standard Crop loan insurance scheme (CLIS) as it is yield based, no government declaration notification required, and more comprehensive perils included. Pakpattan farmers under AYII expressed high satisfaction as the same claim due to Sutlej river flooding was not applicable, had these been covered under CLIS insurance (TPL Insurance, 2023).

- **Mandatory Training:** Moving beyond basic financial access, the GTF approach requires addressing lower human capability and informational exclusion (Njuki et al., 2019). Survey data indicates that lack of knowledge is a primary barrier to adaptation and independent farming, outranking even financial resources in some segments. Field insights also show that agri extension services are largely absent for male farmers while women are systematically excluded entirely.

To bridge this critical gap, the product design mandates Climate-Smart Agriculture (CSA) and Financial Literacy Training as a core condition of the loan. Crucially, to accommodate the target demographic, this curriculum cannot be a generic corporate financial literacy module but must be rigorously calibrated to the women's actual knowledge baseline, utilizing low-literacy instructional methods that account for their lack of prior formal exposure. A female farmer equipped with this tailored, baseline-appropriate knowledge to optimally deploy heat-resistant seeds and fertilizers not only achieves greater climate resilience but also represents a significantly lower credit risk to the institution.



Bangladesh – Insurance Case Study

What Happened

Bangladesh's agriculture faces severe climate shocks. In 2021, BRAC partnered with insurers to offer weather index-based crop insurance. While initial processing was quick (Haq, 2023), critical gaps known as basis risk emerged: farmers lost crops to localized pest swarms or cross-border flooding (e.g., rivers flowing from India) that did not register on local weather stations.

In response, BRAC pivoted to Area Yield Index Insurance, which is triggered by an indicator closer to the farmers' lived reality: their actual yield. The results have been highly effective. Within two and a half years, nearly 80,000 farmers and 10,000 acres were insured, with 9,000 farmers receiving payouts totaling BDT 3.7 million.

Learnings

Uptake of insurance by farmers was quite slow when the first product was launched as the premium was not subsidised and the insurance was not embedded in loans or savings unlike previous attempts by other initiatives. But it has been increasing quickly.

Many people tend to underestimate smallholder farmers' capacity to pay the premium. But they found if the farmers got to know of the value it brought to them – they were more than willing to be part of the crop insurance initiative. That's why investing in raising awareness of crop insurance is vital.

Renewal rates have also been increasing, (sitting at 57% in 2023). These numbers are the result of an intensive effort to raise awareness by a dedicated in-house team of agronomists, meteorologists and insurance experts.

BRAC has also been looking at complementary services, such as agri-advisory calls, so that insured farmers receive hands-on farming advice as well as free weekly weather forecast information over mobile phone calls. This is showing impressive early results in terms of supporting farmers to make better decisions and saving input costs.

Lastly, they've been working on establishing forward-backward market linkages so farmers can buy inputs and sell produce at fair prices. They are currently working with organisations to enable insured farmers to sell their produce at their farms, rather than having to travel to markets or negotiate with middlemen (Haq, 2023).

5.1.4. Proposed Rollout and Implementation Plan

To ensure operational viability and test the core assumptions of the loan, a phased rollout is critical.

- **Punjab (Multan and Okara):** Okara has established Mobilink Bank networks while Multan shows severe exposure to heavy rains/floods, and strong baseline interest in independent farming (around 80% in Multan).
- **Sindh (Tando Allahyar and Matiari):** Despite low autonomy, these districts require urgent interventions for water-saving and input access, offering an ideal testing ground. In Tando Allahyar, all respondents experienced climate events (heatwaves and heavy rain) resulting in very high crop loss and major income decreases. Consequently, all resorted to borrowing money or selling livestock, with 75% citing lack of awareness as the reason for not having adopted adaptation strategies.

The rollout will be governed by four operational mechanics

1. **Vendor Onboarding:** Drawing on international best practices (such as Safaricom's DigiFarm) as well as highly successful domestic models like the Bank of Punjab's Kissan Card, the bank will pre-approve a network of local agricultural dealers. This architecture is further supported by recent industry developments, such as the SBP's approval of HBL Zarai Services Limited as an Agricultural Services Provider (ASP) under the Zarkhez-e scheme to facilitate structured in-kind financing. The 40% in-kind disbursement can be issued via a closed-loop digital voucher (e.g., a physical QR card). This ensures funds can only be redeemed for pre-approved, high-yield seeds and fertilizers at partner shops.
2. **Deployment of Female Staff:** To bypass cultural friction, dedicated Female Relationship Officers should lead the community mobilization. They will supervise the mandatory financial/CSA literacy training with best agronomic practices, management leadership, and financial literacy in localized group settings (leveraging NGO partners to gain community access)

and transition these training sessions into onboarding opportunities. As validated by Mobilink Bank's learnings partner-led community access and female facilitation significantly improve participation and onboarding outcomes, it is imperative to involve household or community gatekeepers within training sessions to improve women's decision-making, reduce drop-offs after the sessions, and create stronger engagement, as women are less constrained by the need to seek post-session permission.

Female recovery officers must also be deployed as loans by female borrowers and borrowers screened and monitored by female loan officers are less likely to turn problematic. Controlling for the interaction between borrower and loan officer gender, it is found that female loan officers experience a lower share of problem loans both in the case of male and of female borrowers, with the effect being economically stronger and more robust for female than for male borrowers (Behr et al., 2009). Another study by Otit et al. (2021) finds that the most favorable microfinance loan officer-client pairs in terms of repayment are those with female loan officers.

3. **Marketing Campaign Execution:** A localized Family Prosperity narrative will feature male and female actors collaborating on the farm, emphasizing that a loan in the wife's name can lead to subsidized insurance, better seeds, and a stronger harvest for the whole family.
4. **Monitoring:** The pilot will evaluate commercial viability (keeping PAR30 within tolerances) and gender-transformative outcomes. While utilizing the bank's gender-tagging capabilities to monitor post-training product uptake, transaction velocity, and repayment behavior is necessary, quantitative metrics alone are insufficient. To measure true transformative impact, the monitoring framework must integrate qualitative assessments of agency and resource control. This includes conducting post-disbursement surveys to track whether the female borrower retained actual control over the loan capital or surrendered it to

male relatives, documenting any shifts in her influence over broader agricultural and household decisions, and assessing changes in her self-efficacy and confidence. Measuring changes in intra-household relationships, specifically the negotiation dynamics between husbands and wives, will also be crucial. A

critical metric here will be the uptake rate of the lower interest incentive, quantifying how many women physically travel to the input market or bank branch to claim the interest rate reduction. This will explicitly test if financial incentives can successfully persuade male gatekeepers to facilitate women's mobility.

Table: Features of the Climate-Smart Input Market Loan

Category	Metric	Details
Eligibility Criteria	Age of Borrowers	18–64 years
	Purpose / Activity	Agricultural inputs (Seeds, fertilizer, pesticides) and operational costs (Labor, fuel, water)
	Financial Status	Average income of Quintile 1 (per HIES alignment)
	Experience & Training	1–2 years stable income; must complete Mandatory CSA & Financial Literacy training
	Maximum Debt Burden	50% of borrower's net income, as per SBP Prudential Regulations
Loan Parameters	Loan Amount	PKR 50,000 to PKR 500,000
	Disbursement	40% In-Kind / 60% Cash
	Tenure	2 Years (Spanning 2 crop cycles; extendable to 3–4 cycles)
	Repayment Structure	Structured Seasonal EMI: Monthly markup payments with Quarterly Principal Repayments .
	Cash Flow Alignment	Step-Up Model: Installments are lower during sowing/growth and increase during harvest months to match liquidity peaks.
	Pricing (Markup + Fee)	KIBOR + 3% + 2% (Insurance) Processing Fee: 0.5% of loan amount
Insurance	Embedded Insurance	2% Insurance Premium included in pricing
	Insurance	Area Yield Index Insurance – AYII
	Insurance Coverage	Automatic triggers based on district yield data
Security & Collateral	Collateral Type	Unsecured / Personal Guarantee / Hypothecation of procured inputs
	Guarantor Required	Required (Subject to credit scoring)
	Documentation	CNIC, Proof of Training Completion, Income Proxy
Execution	Mode of Delivery	Agent-based (Assisted model) / Branch

5.2. The Solar Asset-Backed Facility

Field insights reveal that agricultural water management has become a severe financial burden, creating a critical energy-water nexus. Farmers report that high grid electricity and diesel-powered tube wells costs consume a massive portion of their revenue, and in places such as Khushab where they face acute drought conditions, farmers are forced to water fields only once or twice where required frequency is 3 to 4 times. Solar, hence, was identified as the most requested technology among respondents. However, high cost of purchase was the most cited barrier to adopting new technologies.

Furthermore, literature indicates that women are generally more risk-averse than men and prioritize maintaining liquid savings to protect the household from unexpected health or economic shocks (Njuki et al., 2019). Field insights confirm that women in rural Punjab view their animals and dowry for daughters (gold etc.) as their primary emergency savings and women are reportedly selling their gold assets to finance solar systems informally to escape these energy costs (Alcoba, 2025; Naeem, 2025). When this happens, a woman is stripped of her only independent financial safety net. This facility is designed not just to finance equipment, but to preserve women's individual economic wellbeing by allowing households to acquire solar assets without liquidating her personal wealth and resilience against future shocks. The solar powered pump's provision of free and prompt access to water also empowers farmers to allocate more resources towards crop nutrition, leading to significantly increased yields compared to those who rely on diesel pumps for irrigation.

5.2.1. Asset-Backed Security and Risk Mitigation

Structured as a direct equipment-financing product (with a range of PKR 50,000 to PKR 500,000 and a 50% Debt Burden Ratio), this facility fundamentally limits fund misuse. Capital

is never disbursed as liquid cash to the borrower or her male gatekeeper; instead, the bank pays pre-approved solar vendors directly for the equipment and installation. By requiring a 20% down payment (adjusted in the final installment) and utilizing strict hypothecation of the solar equipment, the bank secures its capital. Because the asset itself acts as collateral, the bank prices in less uncertainty, allowing for a lower flat rate.

Because these assets are deployed in climate-volatile regions with climate events universally reported across all districts, a 2% insurance premium is included directly into the asset price for a comprehensive Solar Panel All Risks Insurance. Indexed to specific weather triggers like severe storms or flooding, this covers damage, defects, and theft. The solar pump provides free, prompt access to water, which stabilizes yields and allows farmers to reallocate resources toward crop nutrition. This improved cash flow ensures strong repayment capacity, keeping Portfolio at Risk (PAR30) within strict limits. Should a flood destroy the panel, the insurance payout covers the institutional risk, keeps the borrower's record clean, and prevents negative coping strategies (like taking on high-interest debt from informal loan sharks).

5.2.2. Behavioral Incentive

To push this product from gender-aware to truly gender-transformative, the loan includes a specific behavioral incentive. While standard pricing operates at KIBOR + 1% + 2% premium, the product will offer lower rates to female borrowers who register the loan against land formally inherited or titled in their name.

The GTF framework identifies the Relational sphere, specifically intra-household bargaining power, as a critical arena for empowerment (Njuki et al., 2019). Data shows that while some women reported owning land, qualitative findings confirm they often identify land as theirs but in reality it belongs to the man of the house, as

customary norms frequently compel women to surrender their inherited land rights to brothers or husbands. By attaching a premium financial discount to formal female land ownership, the product fundamentally alters the household's economic calculus. It provides male gatekeepers (husbands/fathers) with a powerful, culturally acceptable economic excuse to formalize land

titles in the woman's name. As literature on normative constraints suggests, men significantly overestimate the true level of disapproval in the community and providing a clear economic rationale gives families a socially acceptable reason to bypass restrictive norms without fear of community backlash (Arnold et al., 2021).

The Solar Trolley Micro-Enterprise Model

Mobilink Bank can expand the solar portfolio to include the Portable Solar Pumping System (PSPS), commonly known as the "Solar Trolley." Introduced by the Pakistan Agricultural Research Council (PARC), this system features foldable solar panels and a high-capacity motor (up to 10HP) mounted on a towable trolley. Farmers can easily connect the motor to their boreholes and use the solar trolley for irrigation, powering high efficiency systems such as drip or sprinklers. It has proven highly successful in arid zones like the Thal region, where farmers utilizing this technology for sugarcane irrigation reported 40 to 45% higher yields per unit area due to prompt, free access to water (Jamil et al., 2023).

Financing the Solar Trolley can also transition the product from a basic agricultural loan into a women's micro-enterprise model. A female borrower (or a joint-liability group) can purchase the trolley and operate it as a mobile business, renting out irrigation services to neighboring farms. This secondary revenue stream drastically improves loan repayment capacity even if her personal crop fails. Visibly operating this machinery elevates her socio-economic status and disrupts the normative constraint that women cannot manage agricultural technology. From a risk perspective, this mobile asset guarantees absolute hypothecation; in the event of default, the bank can easily repossess the trolley without uprooting fixed infrastructure, keeping Expected Credit Loss (ECL) exceptionally low.

5.2.3. Implementation and Rollout Strategy

To monitor the critical PAR30 metric, the product can undergo a phased pilot in Khushab (100% drought impact reported), with farmers forced to ration water drastically due to high pumping costs. Bahawalnagar similarly struggles with severe electricity costs. In both districts, landownership reporting is higher, making them ideal for testing the solar model and the Inherited Land pricing incentive. Multan can also be selected due to Mobilink Bank's high operational readiness and existing branch network in the belt, coupled with strong baseline interest from women in taking loans to manage their own crops (around 80%).

- **Vendor Integration & Maintenance:** Direct vendor disbursement eliminates fund diversion. Drawing on the bank's previous learnings regarding poor after-sales service, it can restrict partnerships to a closed network of tier-1 vendors mandated to provide a 2-year maintenance and Service Level Agreement (SLA). As a key challenge of solar loan intervention under Mobilink Bank's portfolio is the lack of maintenance knowledge, prior to handover, the borrower and a companion or male household member (as literature suggests that training's impact can be more evident for participating women who are accompanied by a friend) must attend

a mandatory, localized demonstration on how to maintain the solar panels (e.g., cleaning dust, managing the inverter) to ensure the asset continues to function at peak capacity, guaranteeing the borrower's cash flow and protecting the bank's repayment pipeline (Arnold et al., 2021).

- **Culturally Safe Deployment:** With low digital access of women, Mobilink Bank must deploy its female relationship officers directly into the communities. Field insights show that women harbor a deep fear of doorstep humiliation from recovery agents. Using female staff for both onboarding and localized, soft-recovery relationship management can create a culturally safe environment, driving higher conversion rates. Evidence from MiBank in Papua New Guinea demonstrates that replacing male agents with female agents and establishing female-friendly communication channels (like dedicated WhatsApp groups) significantly sustains women's account activity and reduces cultural friction (Arnold et al., 2021).
- **Gender-Transformative Marketing:** The marketing strategy can position women's empowerment within the acceptable framework of household survival.
 - Marketing materials must frame the Solar Loan as a Family Support Tool. The tangible asset is installed on the family farm, directly benefiting household prosperity, which neutralizes the gatekeeper's resistance. As literature emphasizes, couples can be brought together to create a joint effort such as MiBank's Family Farm Team Training (Arnold et al., 2021). This disarms men's fear of community gossip because the narrative is about the family's survival against climate shocks, not a disruption of his authority.
 - As there are reports of desperate coping mechanism with women selling their gold to afford solar panels. Mobilink Bank can launch a targeted marketing campaign around the message of Don't sell gold to buy solar. Let Mobilink Bank finance it. This message resonates powerfully with both men (who want the solar panel) and women (who want to keep their emergency safety net). It positions the bank as a protector of household wealth, immediately elevating trust.
 - Mobilink Bank can recruit local male leaders (e.g., progressive village elders or successful farmers) to publicly endorse the product. In line with the learnings of FSD Zambia and BRAC microfinance, when a local leader participates, it signals to the broader community of men that allowing their wives to take this loan is socially acceptable and smart, neutralizing the fear of social stigma (Arnold et al., 2021).
 - To normalize the sight of women managing high-value machinery (like the Solar Trolley), Mobilink Bank should leverage short-video platforms like TikTok, which are increasingly popular in rural areas. Following the successful models used by institutions like TEB Bank (which ran the "What will people say?" campaign for gatekeeper engagement), Mobilink Bank can create short, engaging videos (edutainment) featuring local female actors or real pilot-clients successfully operating a Solar Trolley and renting water to neighbors (The Level One Project, n.d.). Seeing a peer succeed builds self-efficacy among women and accelerates the normalization of the behavior within the broader community.

Table: Features of the Solar Asset-Backed Facility

Category	Metric	Details
Eligibility Criteria	Age of Borrowers	18–64 years
	Purpose / Activity	Purchase of Solar Energy Systems (Equipment & Installation)
	Ownership Status	Must demonstrate ownership/legal possession of site for installation
	Experience & Training	1–2 years stable income; must complete Mandatory CSA & Financial Literacy training
	Maximum Debt Burden	50% DBR (Based on the reported rural income of PKR 35,000/month, a 50% DBR, aligned with SBP Prudential Regulations for microfinance, allows for a maximum monthly installment of approx. PKR 17, 500.)
Loan Parameters	Loan Amount	Up to the cost of a 5kW Solar System (range specifically targets smaller-scale, modular solar solutions (such as solar pumps) rather than the high-end systems.
	Tenure	2 Years (Even at the upper ticket size of PKR 500,000, the 2-year tenure (extendable to 3–4 cycles) ensures that the repayment remains manageable when the markup is paid quarterly and the principal is cleared following the harvest, matching the borrower's actual cash flow)
	Repayment Structure	Structured Seasonal EMI: Monthly markup with Quarterly principal repayments (Step-Up model)
	Pricing (Markup + Fee)	KIBOR + 1% + 2% (Insurance) Processing Fee: 1% of loan amount
Insurance	Embedded Insurance	2% of asset price (All-risk coverage)
	Coverage Scope	Damage, defect, theft, and weather-indexed loss
Security & Collateral	Down Payment	20% upfront (Acts as immediate equity)
	Collateral Type	Absolute Hypothecation / Mobilink Bank ownership of equipment until full repayment
	Documentation	CNIC, Proof of Income, Asset Quotation, Site Verification
Execution	Mode of Delivery	Digital / Agent-based (Assisted model)

5.3. High-Value Saffron Farming Entrepreneurship Loan

To expand the portfolio into high-yield, low-water agricultural entrepreneurship, particularly in the cooler, arid regions of Khyber Pakhtunkhwa (KPK) and Balochistan, a specialized Saffron Farming Loan is recommended. Saffron is globally recognized as a high-value cash crop that requires minimal water, making it exceptionally climate-resilient for drought-prone regions. Recent provincial initiatives, including the KPK Chief Minister's three-year Saffron initiative and a 23-acre World Bank-financed collaboration between the KP Forest and Agriculture Departments, have proven the crop's viability and extraordinary return on investment in these terrains (Ashfaq, 2023). Crucially, this crop pivot is highly gender-sensitive; reports from the Directorate General Information and Public Relations KP highlight that female farmers in Upper Chitral (Mastuj Valley) are actively and successfully transitioning from traditional wheat and maize to saffron (Shah, 2025).

5.3.1. Product Mechanics and Feasibility

Because saffron cultivation and the delicate harvesting of its stigmas are labor-intensive and culturally suited to female agricultural workers, this product perfectly aligns with female entrepreneurship goals. However, the initial input cost for high-quality saffron corms (bulbs) is prohibitive for rural women. To address this, the loan offers a ticket size of PKR 500,000 to PKR 1,000,000, which covers the approximate PKR 800,000 input cost for 20 marlas of corms.

The loan offers PKR 500,000 to 1,000,000 (covering the approximate PKR 800,000 input cost for 20 marlas of corms). Because saffron corms multiply annually and reach peak yield over several years, the loan tenure is set across 3 crop cycles. Repayment of the principal begins only at the end of the first harvest cycle, aligning perfectly with the delayed but highly lucrative cash flow of the crop. Gender-blind financial products often fail because rigid, immediate

repayment schedules do not match the realities of agricultural gestation periods, pushing women to borrow from informal money lenders (at high interest) just to service the bank loan. By aligning the repayment schedule with the delayed, multi-year cash flow of saffron crops, Mobilink Bank exercises institutional transformation, adapting its structures to the biological reality of the crop and the financial reality of the female borrower, ensuring she does not fall into a debt trap during the first year of cultivation.

5.3.2. Disrupting Normative Constraints Through Pricing

The standard product is priced at KIBOR + 1% + 2% (insurance premium). However, Mobilink Bank will offer the lowest possible interest rates under two specific conditions: if the female borrower utilizes inherited land as a guarantee, or if she is an Agriculture/Botany graduate. The GTF framework identifies normative constraints as the deepest barriers to women's economic empowerment. In rural Pakistan, two major constraints are the frequent denial of legal inheritance rights (where land is surrendered to brothers) and the undervaluing of female education because it is not viewed as an economic asset. By attaching a premium financial discount to female land ownership and agricultural degrees, Mobilink Bank actively disrupts these norms. It provides families with a highly lucrative, socially acceptable economic rationale to formalize land titles in the woman's name and to actively support female higher education.

5.3.3. Risk Control

Saffron is considered a highly technical crop because its value depends heavily on delicate, labor-intensive, and time-sensitive post-harvest processing, specifically drying. Improper drying techniques can destroy up to 70% of the crop's market value by ruining its color, aroma, and flavor profile.

Therefore, loan eligibility and disbursement are strictly conditional upon the borrower participating in module-based training throughout the crop cycle, from soil preparation to post-harvest processing. The GTF approach requires moving beyond simple credit provision to actively building human capability. Literature warns that when women transition to high-value farming, their husbands may capture the increased benefits (Njuki et al., 2019). A case study from Rwanda illustrates that as crops fetch higher market prices, men traditionally take over the disposition and sale of the crop due to their role as breadwinners (Njuki et al., 2019). If a bank simply hands a woman a loan without building her technical authority, male gatekeepers often co-opt the enterprise. By embedding continuous, mandatory training, Mobilink Bank ensures the woman becomes the undisputed technical expert, building her individual self-efficacy, preventing male co-optation, and de-risking the bank's investment by preserving the yield's maximum value.

Furthermore, a 2% insurance premium is included directly into the loan amount. This covers damage to the high-value corms and production loss due to climate perils through AYII. As suggested by literature, women possess thinner financial safety nets than men, making them highly risk-averse. The fear of failure prevents them from

taking entrepreneurial leaps (Njuki et al., 2019). By embedding comprehensive insurance into the product pricing, Mobilink Bank removes the paralyzing risk of total financial ruin. If a climate shock destroys the saffron yield, the insurance payout covers the institutional risk, preserving the woman's financial standing and allowing her to confidently engage in high-value entrepreneurship.

5.3.4. Rollout Mechanics

Because saffron is a non-traditional crop, Mobilink Bank must partner with organizations like PARC or local agricultural NGOs to provide the specialized technical assistance required. Crucially, women in rural KPK face severe mobility constraints dictating they remain close to the home. Saffron cultivation disrupts the traditional assumption that farming requires distant fields; it brings a high-value cash crop directly into the domestic space, such as kitchen gardens, courtyards, or vertical indoor trays. This allows women to generate significant income without violating the descriptive norms restricting their mobility, effectively creating a safe, highly profitable micro-enterprise within culturally accepted boundaries. The rollout's marketing narrative can heavily focus on this domestic compatibility to ensure positive gatekeeper engagement.

Table: Features of the Saffron Entrepreneurship Loan

Category	Metric	Details
Eligibility Criteria	Age of Borrowers	18–64 years
	Purpose / Activity	Saffron cultivation (Corm purchase and input costs for ~20 Marlas)
	Target Segment	Women borrowers and Botany/Agriculture graduates
	Min. Experience	Mandatory Saffron farming training (integrated throughout crop cycle)
	Maximum Debt Burden	50% of borrower's net income, as per SBP Prudential Regulations
Loan Parameters	Loan Amount	PKR 500,000 to PKR 1,000,000 (Avg. PKR 800,000)
	Tenure	3 Crop Cycles
	Repayment Structure	Grace period (no principal repayment during the 1st cycle); Structured EMI starts post-1st harvest.
	Cash Flow Alignment	Seasonal Step-Up - Monthly markup with Quarterly principal repayments aligned to peak harvest/sale windows.
	Pricing (Markup + Fee)	KIBOR + 1% + 2% (Insurance) Processing Fee: 0.5%
Insurance	Embedded Insurance	2% Insurance Premium included in pricing
	Coverage Scope	Crop failure, corm rot, and weather-indexed yield protection
Security & Collateral	Collateral Type	Unsecured / Personal Guarantee / Hypothecation of Saffron Crop
	Guarantor Required	No (Based on professional/graduate profile)
	Documentation	CNIC, Degree/Certification (for graduates), Training Enrollment

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Annex A: Key empirical and global evidence

This annex presents selected empirical evidence and illustrative examples that support the analysis and conclusions presented in the main report.

Normative Constraints and Women's Financial Inclusion: Why access matters only when women can exercise control

The Center for Financial Inclusion's research (Arnold, El-Zoghbi, & Kessler, 2021) on normative constraints argues that financial services can meaningfully contribute to women's economic empowerment, helping women control earnings, finance personal and productive spending, and expand autonomy over life choices, but these gains depend heavily on whether women can actually retain control over resources within households and communities. Therefore, product design alone is not enough; understanding and addressing social and gender norms that shape roles, behaviors, and control over household resources is critical to whether financial inclusion translates into empowerment.

Two illustrative studies reinforce this point. In rural Bangladesh, a survey-based study of 120 women used OLS regression across five empowerment dimensions (economic decision-making, household decision-making, mobility, property ownership, political/social awareness) and reported that microcredit participation was positively associated with each dimension and overall empowerment (Islam, Ahmed, & Alam, 2014). In Niger, a randomized experiment comparing mobile money transfers vs. manual cash transfers found that mobile transfers were linked to higher household diet diversity (9–16%) and about one-third more meals per day for children, with results partly explained by time savings and associated with increased bargaining power for women (Aker, Boumnijel, McClelland, & Tierney, 2016).

India: direct deposits increased women's control, mobility, and norm "pushback"

Delivering payments through direct deposits to women's accounts or mobile transfers can strengthen women's control over financial resources and, in turn, improve economic empowerment. In India, depositing wages from a federal workfare program directly into women's bank accounts, paired with training on account use and benefits, increased women's participation in paid work. Greater control over income appeared to strengthen women's bargaining power within the household and enabled them to challenge restrictive gender norms. The intervention also contributed to more liberal attitudes toward women's employment and increased women's mobility, reflected in more frequent visits to public spaces such as markets and health centers. Impacts were strongest among women from households with more restrictive views about women's work, and among women who had not previously participated in the program (Field E. M., Pande, Rigol, Schaner, & Moore, 2021).

Niger & Uganda: digital payments reduced frictions and shifted bargaining power

Mobile payments, compared to cash, can offer greater privacy and help women protect resources from competing household claims, strengthening their financial control. In Niger, delivering cash transfers through mobile money rather than cash increased women's participation in economic activities, including visiting markets (74%) and selling grains for the household (40%) (Aker, Boumnijel, McClelland, & Tierney, 2016). In Uganda, distributing microfinance loans to women via mobile money instead of cash raised business profits by 15%, with the largest gains among women who faced pressure to share money with their spouse. Where the necessary mobile money infrastructure is in place, digital delivery therefore appears to be a particularly promising channel for advancing women's economic empowerment (Riley, 2024).

Annex B: Institutional Barriers to Women's Lending

The following stakeholder profile and thematic findings are derived from the State Bank of Pakistan's (SBP) Diagnostic Survey Report of Women-SMEs. This data was utilized to establish a credible baseline for the supply-side analysis in this report.

To ensure a comprehensive understanding of the supply-side constraints and institutional barriers, SBP and World Bank conducted 28 KIIs with highly

relevant stakeholders across various financial, regulatory, and support networks. The interviews focused on identifying supply-side and demand-side challenges restricting credit access, product design & perception, provision and impact of required training, advisory, and capacity-building support and socio-cultural context.

Stakeholder Category	Count	Organizations Consulted
Commercial & Specialized Banks	8	First Women Bank, NBP, Bank of Khyber, Soneri Bank, UBL, SME Bank, Meezan Bank, BankIslami
Microfinance & Cooperative Banks	3	NRSP Microfinance Bank, Karakoram Cooperative Bank Ltd., Pakistan Microfinance Network
SME & Multilateral Institutions	3	World Bank (FIIP), USAID (SMEA), SMEDA
Chambers of Commerce & Industry	4	Women Chambers of Commerce (Islamabad & Lahore), Chamber of Commerce (Hunza)
Community Development Programs	3	Aga Khan Rural Support Program (AKRSPN), Karakoram Area Development Organization
Vocational & Incubation Centres	2	NAVTTTC, National Incubation Centre (Islamabad)
Mentorship Programs	2	Concern Krafters (Peshawar), Inspire Mill Consultancy
Regulators (Banks/Companies)	2	SBP (Development Finance & Support Dept.), SECP
Non-Bank Finance Company	1	Taaleem Finance

The supply-side diagnostic indicates that women-owned SMEs (W-SMEs) currently represent a marginal segment of the formal financial market, accounting for only 2% to 3% of the total clientele financed by banks and Development Finance Institutions (DFIs) (State Bank of Pakistan & The World Bank, n.d.). Several systemic factors contribute to this low penetration:

- Banks generally prioritize larger transactions, perceiving women lending as small tickets, hence were not inclined to finance them.
- Most FIs offer generic SME products that do not account for the specific operational environments or cash flow cycles of women-led businesses.

- There is a notable lack of engagement with women's credit guarantee schemes and long-term refinance facilities.
- While FIs claim not to discriminate between genders, there is an institutional denial regarding the need for specialized gender-sensitivity training for staff. This is despite the acknowledgement that male-concentrated staffing at most branches acts as a significant deterrent, making women uncomfortable when approaching FIs.

FIs cite several documentation and legal challenges as primary risks when considering loan requests from women:

- Challenges include undocumented business profiles, inadequate financial records, and reliance on off-the-book transactions.
- Inadequate collateral remains a premier barrier. Furthermore, the legal system's perceived "soft corners" for women make FIs hesitant, as they fear the inability to effect foreclosure or take legal action in cases of default.
- A critical institutional concern is that many W-SMEs are operated by men using women as a "proxy" to access concessions, which FIs identify as a leading cause of defaults.

Demand-Side Financial Preferences and Barriers

The demand-side analysis reveals a diverse landscape of women-led businesses, where they are involved mostly in beauty parlors, boutiques, on-line sale of apparel, home based catering, agricultural production, etc. These businesses exhibit unique behaviors regarding seasonality and cash flow, necessitating clustered financial packages rather than one-size-fits-all solutions (State Bank of Pakistan & The World Bank, n.d.).

The survey identified a strong demand for financing that supports growth: 42% of women prioritize business expansion, followed by working capital (15%) and machinery acquisition (8%). Across all regions, saving accounts are the most demanded liability product, while personal and running finance (working capital) dominate the demand for credit (State Bank of Pakistan & The World Bank, n.d.).



Plot # 10, Taimur Chambers,
Fazl-ul-Haq Rd, G-6/2 Blue Area,
Islamabad



Mobilink Bank DHQ-II, 1-B
Kohistan Rd, F-8 Markaz F-8,
Islamabad

