

Expert Credit Scoring Implementation for Agricultural and Business Loans at Mobilink Microfinance Bank, Pakistan

SCBF PUW 2023-01

Report Date: Dec 2025

Project Summary

Financial sector partner	Mobilink Microfinance Bank	Project duration	Feb 2023 – Dec 2025
Grantee / TA provider	Business & Finance Consulting	Targeted outreach	40,320
Country of implementation	Pakistan	Instrument type	Technical Assistance grant
Product / Solution	Credit Scoring Solution for Agricultural and MSME Lending	Co-funding partner	AGFUND
Targeted segment	Women and Rural Clients		

1. Executive Summary

The project successfully managed to strengthen Mobilink Microfinance Bank Limited’s (MMLB) credit risk management for agricultural and MSME lending in Pakistan, addressing inconsistent manual underwriting practices and limited access to finance for rural and women borrowers. Through SCBF- and AGFUND-funded technical assistance, a hybrid Credit Scoring Solution (CSS) exceeding the original expert-model Terms of Reference (ToR) requirements was successfully developed to integrate borrower, business, and repayment data into a standardized, data-driven framework.

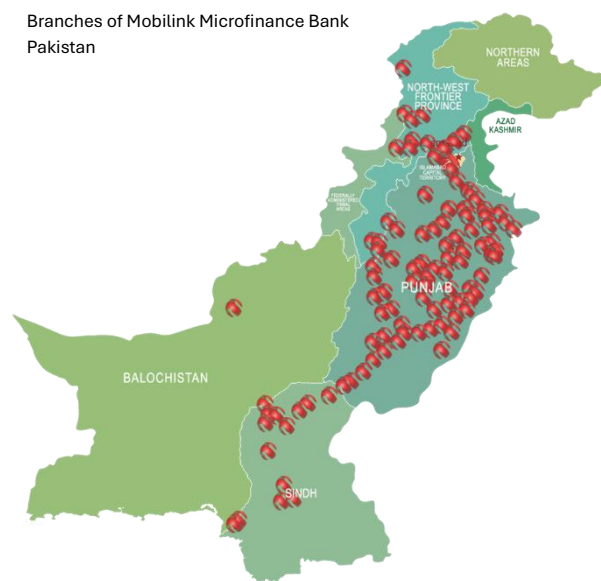
Three expert-based scoring models were designed and validated for key agricultural and microenterprise loan products. Project implementation faced several structural and operational constraints, notably limited availability of historical credit data, uneven data quality, and compressed data collection timelines. In addition, delays in system upgrades and institutional transitions affected the pace of implementation and decentralization of pilot activities. These challenges required extended piloting and adaptive project management.

Despite these constraints, the solution was successfully piloted on more than 2,000 loan applications and demonstrated meaningful predictive performance, with Area Under Curve (AUC) values in the range of 0.67–0.68. This indicates that the CSS was able to reasonably distinguish between higher- and lower-risk borrowers under real operating conditions, confirming its practical relevance for supporting credit decisions.

As a result of intensive technical training and advanced knowledge transfer, MMLB has developed the internal capacity to independently maintain, recalibrate, and upgrade the credit scoring models in line with evolving portfolio and regulatory requirements.

While the credit scoring solution is not yet fully embedded in routine lending operations, as the development of the new Loan Origination and Core Banking Systems is still ongoing, all prerequisites for implementation have been completed. Full operational deployment of the CSS in the Loan Origination System (LOS) is expected by June 2026. Once integrated, the solution is expected to support more consistent credit decisions, improved portfolio quality, and sustainable expansion of inclusive finance in Pakistan.

Branches of Mobilink Microfinance Bank Pakistan



2. Context

Pakistan's microfinance sector operates in a highly volatile economic and regulatory environment marked by repeated external shocks, institutional vulnerabilities, and rising credit risk. Following the COVID-19 pandemic, severe floods in 2022, and the prolonged economic slowdown during 2023–2024, the sector experienced deteriorating asset quality and declining capital adequacy. By mid-2024, non-performing loans had increased significantly, constraining lending activity and reducing risk appetite, particularly for agricultural and MSME finance¹.

At the same time, sector-wide pressures encouraged a shift toward secured and further micro-size (a.k.a. “nano”) lending. In Pakistan, nano loans are ultra-short-term, high-cost digital products (typically ranging from PKR 2,500 to 10,000) designed to meet immediate consumption needs, while traditional microfinance loans are larger, longer-term, and primarily intended for productive purposes, often requiring manual credit assessment. Nano lending is generally based on automated decision-making using alternative data sources, such as mobile usage patterns and repayment histories, rather than conventional credit checks.

According to PACRA's April 2025 credit rating report², MMBL held approximately 18% market share in terms of Gross Loan Portfolio in Pakistan, with secured lending accounting for 48% of the portfolio. The Bank's markup income increasingly depended on nano loans, driven by rapid portfolio expansion. While this supported short-term profitability, it also reflected declining confidence in traditional agricultural and microenterprise lending and highlighted the need for a stronger risk management paradigm.

Women, rural households, and smallholder farmers remain disproportionately excluded from formal financial services due to limited documentation, irregular incomes, weak collateral availability, and high transaction costs. As a result, many low-income clients rely on informal lenders, family support, or high-cost short-term borrowing. Although government initiatives such as the National Financial Inclusion Strategy (2024–2028)³ and the “Banking on Equality”⁴ framework promote inclusive and gender-responsive finance, weaknesses in credit assessment and portfolio monitoring continue to limit sustainable outreach.

Prior to the project, MMBL relied largely on manual credit assessments and fragmented information systems. While this supported early portfolio growth, it resulted in inconsistent underwriting practices and elevated exposure to credit risk. Rising regulatory scrutiny and the implementation of IFRS-9 further increased provisioning requirements and reinforced the need for standardized, data-driven risk management tools.

Project implementation coincided with significant institutional changes at MMBL, including leadership transitions at the Chief Executive and senior management levels. These changes temporarily slowed decision-making and contributed to implementation delays. Towards the end of the project, the Bank initiated major upgrades of its Core Banking and Loan Origination Systems, which are essential for automation and data integration and are expected to enable full integration of the credit scoring model in 2026.

From a technical perspective, the development of reliable credit scoring models was constrained by limited historical data and uneven data quality. Existing datasets focused mainly on regulatory compliance rather than creditworthiness assessment. In response, BFC and MMBL jointly developed standardized data collection tools and expert-based predictive frameworks. During the piloting period from mid-2024 to March 2025, more than 2,000 loan applications were collected across selected branches, providing a foundation for the model validation.

¹ State Bank of Pakistan (2024). *Financial Stability Report – Chapter on Microfinance Banks*. SBP. <https://www.sbp.org.pk/FSR/2024/Chapter-5.pdf?utm>

² Mobilink Microfinance Bank Limited CREDIT RATING REPORT | Apr-25, <https://www.pacra.com/api/rating-report/MTQzMzU>

³ Pakistan National Financial Inclusion Strategy 2024–28 — State Bank of Pakistan (SBP) and Government of Pakistan report, <https://www.sbp.org.pk/nfis/nfis2024-28.pdf?utm>

⁴ Making Women's Financial Inclusion a Policy Priority — Banking on Equality (BoE) — Financial Alliance for Women / SBP interview and policy overview. <https://financialallianceforwomen.org/news-events/making-womens-financial-inclusion-a-policy-priority-an-interview-with-the-state-bank-of-pakistan/?utm>

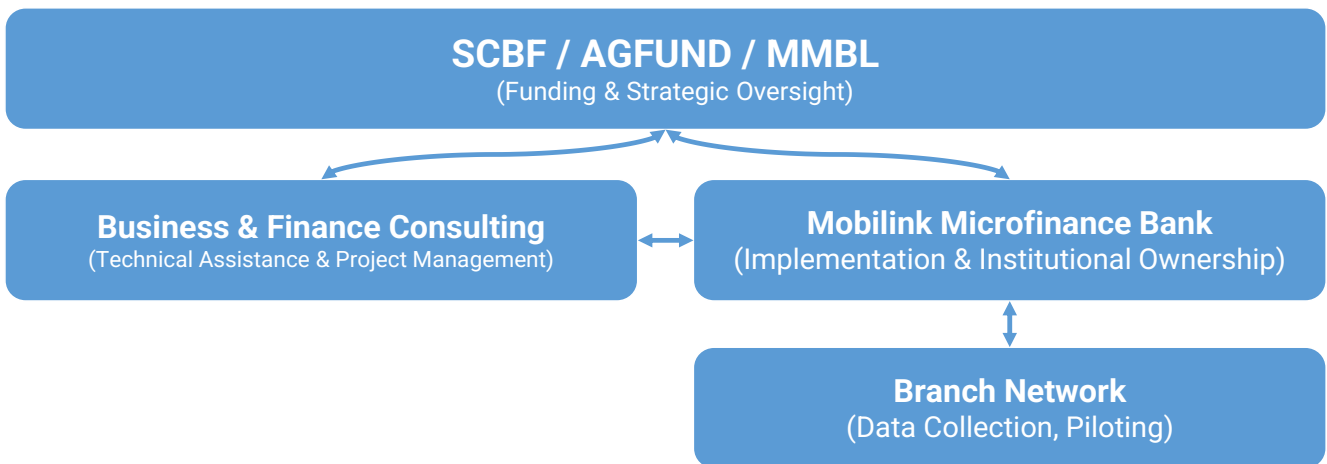
Pilot evaluations demonstrated that structured, data-driven scoring could improve portfolio quality and operational efficiency, despite remaining data limitations. Projected reductions in bad loan ratios confirmed the technical viability of risk-based lending approaches under local market conditions.

In this context, SCBF’s and AGFUND’s financial and technical support was critical. Grant funding enabled the mobilization of specialized expertise, delivery of comprehensive training, and implementation of rigorous analytical frameworks. Given the sector’s financial fragility, regulatory pressures, and MMBL’s competing operational priorities, such institutional reforms would not have been feasible without external support.

Overall, the project was successful, even though it was implemented in an environment characterized by economic volatility, regulatory tightening, institutional restructuring, management transitions, and data constraints. While these factors influenced the pace of implementation, they also reinforced the strategic relevance of the intervention. By strengthening MMBL’s internal systems and analytical capacity, the project established a solid foundation for resilient, inclusive, and data-driven lending following full system integration.

3. Partnership model

The project was successfully implemented through a structured partnership between Mobilink Microfinance Bank Limited (MMBL), Business & Finance Consulting GmbH (BFC), the Swiss Capacity Building Facility (SCBF), and the Arab Gulf Programme for Development (AGFUND), combining local market presence, technical expertise, and development financing.



MMBL served as the primary implementing partner and financial service provider, providing institutional leadership, operational data, and access to its branch network, and facilitating pilot implementation and system integration. BFC acted as the technical assistance provider and project manager, mobilizing international and local experts to conduct diagnostics, develop and validate credit scoring models, prepare operational tools, and deliver capacity-building activities.

SCBF, AGFUND and MMBL jointly provided financial support and strategic oversight, enabling the deployment of specialized expertise and financing diagnostics, training, and system development. Project implementation was governed through regular coordination meetings, structured reporting, and milestone-based monitoring.

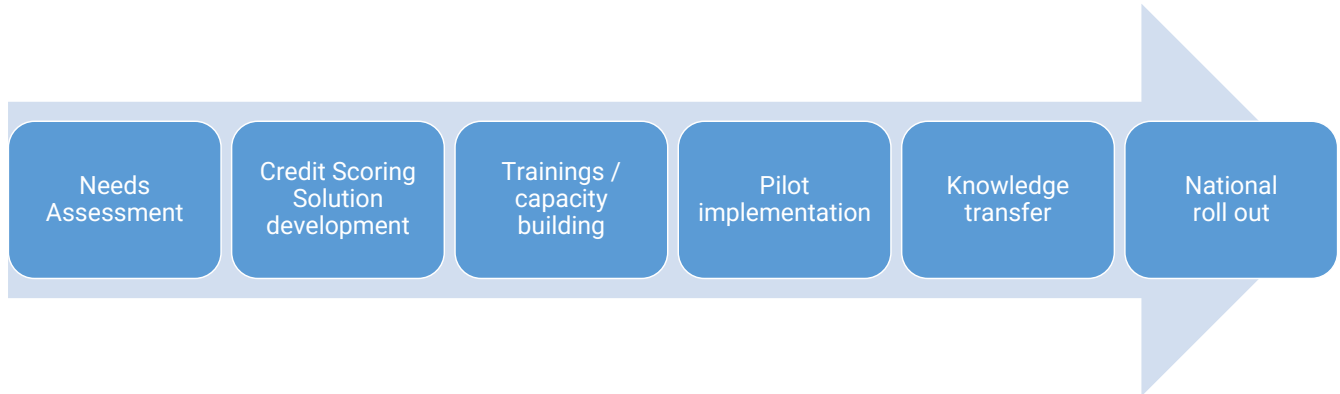
Geographically, the project was implemented across selected MMBL branches in Pakistan, with the piloting phase covering Punjab, Sindh, and Khyber Pakhtunkhwa provinces. These key agricultural and MSME lending regions are illustrated in the accompanying project map.

4. Intervention approach

The core intervention consisted of a hybrid credit scoring model combining expert judgment and statistical techniques for AgriPlus Khushal Kissan and Livestock loan products. Borrower, business, income, and repayment data were

integrated into standardized Excel-based scorecards, enabling transparent and automated risk scoring and supporting gradual digital integration.

The intervention was implemented through a structured, phased approach, covering assessment, model development, capacity building, piloting, and preparation for the national rollout of the Credit Scoring Solution.



The intervention focused on improving internal efficiency, reducing processing time, and strengthening the consistency and objectivity of credit decisions.

During the piloting phase, application processing was centralized at the head office level, with branch-level data entered into scoring tools by trained staff. The pilot covered selected branches in Punjab, Sindh, and Khyber Pakhtunkhwa. Following system integration, the solution is intended to be embedded in the Loan Origination System for decentralized, real-time use.

SCBF/AGFUND funding supported technical expertise, model development and calibration, diagnostics, data analysis, documentation, training, and project management. Key innovations included the application of Weight of Evidence and Information Value methodologies, standardized borrower profiling, and evidence-based calibration of approval thresholds, providing a low-risk transition toward full digitalization. Gender inclusion was addressed through gender-neutral scoring models, bias-aware assessment criteria, and targeted staff training.

The assignment included the development and delivery of comprehensive training materials covering finalized loan products and operational guidelines, including clearly defined roles and responsibilities. These materials comprised PowerPoint presentations, six Excel-based credit scoring models (three for Head Office and three for branch use), step-by-step user manuals, and structured feedback forms.

An in-person training session was conducted on September 14, 2023 for 31 risk management and business staff, followed by two online sessions on September 15, 2023 for 107 branch staff involved in commercial vehicle and Agri Plus lending. The trainings emphasized hands-on use of the scoring tools, data verification, simulations, and clarification of workflows and responsibilities.

In addition to initial training activities, advanced knowledge-transfer sessions were conducted in December 2025 to strengthen MMBL's internal capacity in credit scoring development and management. These sessions covered the full methodological framework for operating and fine-tuning the credit scoring models, including data cleaning and consistency checks, Weight of Evidence and Information Value analysis, variable selection and binning, model construction, AUC-based validation, and portfolio bad rates' simulation techniques. Participants were trained in interpreting model outputs, setting approval and rejection thresholds, and monitoring portfolio performance, enabling gradual automation and internal ownership of the system. As a result, MMBL demonstrated strong readiness to independently maintain, recalibrate, and expand the credit scoring framework in line with its risk appetite and operational needs.

5. Results, outcomes and impact

<i>Indicator</i>	<i>Baseline</i>	<i>Target</i>	<i>Achieved</i>	<i>Remarks</i>
Credit scoring models developed	0	2 models	2 models	Crop and livestock scorecards completed
Loan applications analyzed	0	≥1,500	2,080	Pilot dataset from 14 branches
Branches participating in the pilot	0	12	21	Exceeded target
Staff trained on the scoring system	0	≥40	140	Head office and branch staff
AUC (model performance)	N/A	≥0.60	0.67–0.68	Demonstrates predictive capacity
Reduction in expected bad rate (crop loans)	~26%	≤15%	<11%	Based on back-testing
Reduction in expected bad rate (livestock loans)	>50%	≤35%	<23%	Based on back-testing
Women borrowers assessed using scorecards	Not tracked	System enabled	Enabled	CSS is gender-neutral
Rural branches covered	Limited	≥10	21	Focus on agricultural regions
System readiness for integration	Low	High	High	All deliverables completed

A hybrid credit scoring system for agricultural and MSME lending was fully designed, tested, and transferred to Mobilink Microfinance Bank Limited (MMBL). Customized scorecards for crop and livestock loans were developed, validated through piloting, and supported by comprehensive documentation and operational tools. All project deliverables were completed and formally accepted by the Bank.

During the piloting phase, structured datasets were established, cleaned, and analyzed, enabling systematic back-testing and model refinement. A total of 2,080 loan applications from 14 branches were processed, resulting in analytical samples of 1,266 livestock loans and 316 crop loans. Despite data limitations, the piloting process confirmed the operational feasibility and institutional relevance of the scoring tools.

Back-testing and evaluation exercises demonstrated tangible improvements in predictive capacity and portfolio risk management. The developed models achieved AUC values in the range of 0.67–0.68. For crop loans, bad rates (in terms of number of applications, not share of portfolio) could be reduced from around 26% to approximately 11% at selected thresholds, while for livestock loans, expected bad rates could decline from over 50% to approximately 23%. These results confirmed the potential of the solution to improve credit quality and reduce loan losses when applied at scale.

The project also contributed to improved operational efficiency and governance of credit decisions. Standardized risk assessment procedures reduced reliance on subjective judgment and enhanced consistency across branches, while centralized monitoring strengthened management oversight and supported evidence-based decision-making.

With respect to financial inclusion, the project enhanced MMBL's capacity to expand outreach to women and rural borrowers by improving risk differentiation and monitoring approval patterns. Although large-scale outreach effects will materialize following system integration, the pilot confirmed that structured risk assessment can support more equitable access to finance.

Due to delays in the deployment of the Loan Origination System, the project's full impact has not yet been realized. However, all technical and institutional prerequisites for scale-up have been established. Following system integration, the scoring solution is expected to support improved turnaround times, better risk-adjusted growth, and sustainable expansion of agricultural and MSME finance.

The table below presents the main project KPIs and achieved results based on pilot implementation and back-testing. The indicators demonstrate progress in model development, capacity building, and risk management. Performance outcomes are indicative and reflect pilot conditions prior to full system integration.

6. Way ahead: Future scaling and sustainability plans

The Bank plans to roll out the system in line with the deployment of its new Loan Origination System and Core Banking System, expected by June 2026. To support effective implementation, scale-up, and long-term sustainability, MMBL will undertake the following actions:

- Gradually embed the credit scoring framework into routine lending operations following system integration.
- Extend the application of the scoring framework to selected additional loan products.
- Apply lessons learned from piloting and knowledge transfer sessions to refine approval thresholds, strengthen internal workflows, and enhance model calibration.
- Ensure ongoing model maintenance, periodic recalibration, and regulatory compliance through dedicated teams within the Risk, Credit, and IT departments.
- Improve credit decision efficiency to generate long-term cost savings and strengthen portfolio quality.
- Support the continued development of inclusive, resilient, and sustainable lending operations through institutionalized risk management practices.

7. Lessons learnt and recommendations

Lessons learnt

1. **Data readiness and quality are critical success factors:** Credit scoring initiatives require early investment in standardized data collection and validation systems to avoid delays in model development and validation.
2. **Extended piloting improves model reliability:** Extended and iterative piloting allows progressive model refinement and reduces operational and analytical risks.
3. **Product design directly affects model quality:** Clearly defined, simple and standardized loan products are essential for reliable risk modelling and portfolio monitoring.
4. **Institutional stability influences project timelines:** Leadership continuity and early governance alignment are important to maintain implementation momentum.
5. **Knowledge Transfer Must Go Beyond Initial Training:** Sustained, post-piloting knowledge transfer is necessary to build lasting internal capacity and reduce dependence on external experts.
6. **System Integration Is Key to Real Impact:** The full operational impact of credit scoring tools depends on timely integration into core banking and loan origination systems.

Recommendations for Future Initiatives

1. **Prioritize data readiness early** by investing in standardized data capture and validation mechanisms before model deployment begins.
2. **Align digital transformation timelines** with technical assistance activities to avoid delays in system integration.
3. **Strengthen internal governance frameworks** for model validation, recalibration, and regulatory compliance.
4. **Integrate gender and inclusion objectives systematically** by embedding monitoring indicators and staff incentives into risk management processes.
5. **Substitute the current generic lending products with simple, specialized lending products** for the targeted communities, which have standard features with little room for manoeuvring
6. **Keep upgrading and matching the CSS** to the new products
