FINANCIAL INCLUSION & LIVELIHOOD ANALYSIS REPORT

DataKind Farmers Data Project – Challenge 5

Using ClickHouse SQL on farmers_data_english

1. Executive Summary

This report analyzes how smallholder farmers express financial concerns including loans, savings, insurance, market prices, and livelihood issues. Using ClickHouse SQL, questions are categorized into credit_loans, savings_insurance, market_prices, livelihood_income, and non_financial. Insights include financial question proportion, seasonality, regional distribution, distress signals, and user behavior.

2. Methodology

Dataset: farmers_data_english with question text, timestamps, and user metadata.

Classification: multiSearchAnyCaseInsensitive keyword-based categorization.

Tools: ClickHouse SQL for high-speed aggregation and keyword scanning.

3. Core SQL Classification Logic

(Condensed for PDF readability)

Uses multiSearchAnyCaseInsensitive to detect keywords associated with:

- Credit & Loans

- Savings & Insurance

- Market Prices

- Livelihood & Income

4. Key Queries

- Proportion of financial questions

- Monthly seasonality analysis

- Regional (country code) trends

- Category breakdown

- Distress keyword detection

- User-level financial ratios

5. Findings Summary

Financial queries show clear seasonal patterns (loans before planting, price queries during harvest). Regions vary in financial stress. Distress keywords point to loan repayment issues, crop losses, and insurance confusion. Newer users ask foundational financial questions while experienced users focus on market-linked decisions.

6. Recommendations

- Provide targeted loan, subsidy, and insurance guidance.

- Integrate real-time market price systems.

- Enable crisis support workflows for distressed queries.

- Expand partnerships with rural financial institutions.

- Upgrade to ML-based financial topic modeling.

7. Conclusion

The analysis surfaces the economic realities of farmers and informs improved financial inclusion interventions. The SQL-driven method provides scalable, actionable insights for advisory systems, policymakers, and financial service partners.