



MADAGASCAR – FRONT-END DIGITIZATION OF THE LOAN APPLICATION PROCESS

IMPROVING THE EFFICIENCY OF CREDIT EVALUATION PROCESSES

GFA is supporting AccesBanque Madagascar to increase efficiency of the internal loan application and evaluation processes through the development of a tablet-based application.

The development of this application is part of a larger-scale technical assistance project to AccesBanque Madagascar (ABM) with the objective to improve access to financial services adapted to the needs of the low-income population. As within most microfinance banks, the loan application processes of ABM are predominantly paper-based and require the manual data entry of customer information into the Management Information System (MIS) of the institution. This process is typically lengthy, inefficient and prone to errors.

OBJECTIVES

The key objective of this project component is to increase the efficiency of the internal loan evaluation through an acceleration of the loan application processes of ABM. Collecting and analysing client information can be a challenging and time consuming step of the loan cycle for financial institutions. This process involves the manual data collection at the client's premises through the loan officers who then manually calculate the client's cash flow before a decision is taken. However, this process may take up to several weeks and clients may drop out due to the lengthy process.

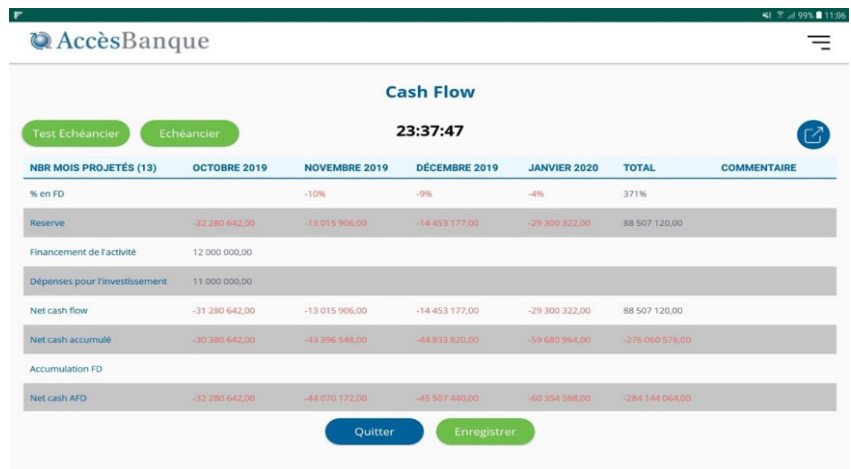
TABLET-BASED DIGITAL FIELD APPLICATION

To address the pain-points in this process, the GFA team analysed the credit process of ABM, recommended improvements, and defined the technical architecture of the software solution plus its integration to the banks' MIS. A local software company developed the tablet-based digital field application. Afterwards, the application was then piloted for agricultural and SME clients of ABM.

The solution implemented at ABM encompasses both a tablet- and a web-based interface. While the loan officer can instantly upload client information to the server, managers can monitor the progress of the application and take a decision using the web-portal. The digital field application offers various features and advantages: For instance, the time spent on each application can be tracked. Moreover, the cash-flow analysis is automated and an instant sum-

MADAGASCAR	
FINANCING INSTITUTION	KFW
PROJECT DURATION	05/2018 – 11/2020

mary is provided at the end of the data collection. A scenario analysis is also possible directly in the tablet-based application. Specific industry data can be entered into the system, thereby increasing the accuracy of the loan analysis. The integrated dashboard provides a global overview on the loan portfolio, the progress of individual loan applications can be reviewed and actions can be taken by management staff.





ALBANIA – DIGITIZING AGRICULTURAL CLIENT ASSESSMENTS



DIGITIZING AGRI-CLIENT PROFITABILITY AND RISK ASSESSMENT IN RURAL ALBANIA

GFA is supporting Albanian Microfinance Institutions and Banks to increase efficiency and accuracy in assessing agricultural clients in rural areas through mobile solutions.

In the framework of the “Albania Agribusiness Support Facility”, GFA developed and introduced the mobile application “Agro Finanza”, which allows loan officers to rapidly analyse the profitability of agribusiness loan applicants against representative benchmarks and calculate preliminary loan conditions directly in the field. Based on comprehensive databases for the most important agricultural commodities, the app represents a modular approach towards effective validation of information and, ultimately, quicker credit decisions.

OBJECTIVES

Assessing the validity of client information, can be a challenging and time consuming step of the loan cycle for financial institutions. Especially for agricultural clients, assessing the productivity, profitability and potential default risk is demanding, in particular for loan officers without much exposure to agriculture. Often, a lack of expertise about agricultural production and missing benchmark data, can lead to inadequate estimation of a client and, eventually, to loan default. Furthermore, the tedious process of validating information given by the client delays the credit decision, hence keeping the client in limbo with regard to the outcome.

ALBANIA	
FINANCING INSTITUTION	EBRD
PROJECT DURATION	03/2017 – 08/2020

The objective of the “AgroFinanza” app, is therefore to provide peer-benchmark data for automated information crosschecking and validation. Based on this, loan officers can present clients with preliminary loan conditions.













AGRO FINANZA APPLICATION

The Agro Finanza app provides loan officers with a two-step tool to assess potential agribusiness clients. Depending on production-relevant variables to be entered by the loan officers via smartphone or tablet (e.g. production area size, first and second cycle crops, number of livestock etc.), the app allows for a preliminary categorization of the client according to its production intensity and level of technology use. Benchmarking the information against peer production data and input/output market prices, firstly, allows for validation of information provided by the client, while, secondly, establishing a client profitability model. Matching the recorded and validated data with information regarding the client’s outstanding loans and the planned investment, provides a comprehensive picture of the client’s free cash-flow and debt service ratio, and calculates the preliminary loan conditions.

Applicant name
 NIPT/Farmer code

Select the investment category

Agricultural activities have different intensities of development based on the geographical position of the farm, used agro services, the method of cultivation (intensive or traditional), climate factors, etc. This platform enables you to select the farm operating level.

 <small>ASSAF MILKED SHEEP</small>	 <small>GRAZING REGIME SHEEP</small>	 <small>GOATS ALPINE MILK</small>	 <small>GRAZING REGIME GOATS</small>
 <small>OPEN FIELD</small>	 <small>HAZELNUT</small>	 <small>COW</small>	 <small>CORN AND SUNFLOWER</small>
 <small>APPLE</small>	 <small>CHERRY</small>	 <small>TABLE GRAPES</small>	 <small>GREENHOUSE</small>

FSD – DIGITAL SOLUTIONS



CÔTE D'IVOIRE – WEB-BASED FINANCIAL MONITORING OF REFINANCING LOANS TO FINANCIAL INSTITUTIONS, AGRI-SMEs AND SMALLHOLDER FARMERS



IMPROVING THE MONITORING OF REFINANCING LOANS ON THREE DIFFERENT PROJECT LEVELS

Within the technical assistance project “Fund for the Promotion of Contract Farming in Ivory Coast”, GFA has commissioned the design of a web-based monitoring tool that allows various beneficiaries (i.e. financial institutions, processing and trading value chain actors, farmers) as well as the project implementation unit to efficiently monitor individualized parameters of refinancing loan schemes along diverse agricultural value chains.

The web application sustainably facilitates the project’s strong focus on monitoring and evaluation, as well as on data-driven impact assessment of the various refinanced contract-farming schemes, and the development of the capacities and competences of collaborating financial institutions.

THEMATIC BACKGROUND

Contract farming is a production system, which is based on an agreement (i.e. contract) between the buyer of the product, normally a technical processor or operator, e.g. a mill, and the seller, typically a farmer or an agricultural producer group. Based on regulated and contractually fixed agricultural production schemes with standardized quality requirements, the contract farming system can effectively advance the development of rural areas as well as of small and medium-sized agricultural activities.

AREAS OF APPLICATION

Smallholder farmers (SHF): The application allows SHF to make financial forecasts according to their individual production levels.

CÔTE D'IVOIRE	
FINANCING INSTITUTION	KFW
PROJECT DURATION	09/2017 – 08/2021

Processing and trading value chain actors are supported in their follow-up of the use of inputs and production levels of contractual bound SHF.

Financial institutions (FI) are capacitated to precisely monitor loan disbursements and repayments and to analyse the risks linked to the various contract-farming financing schemes.

The project implementation unit (PIU) uses the tool to follow up and monitor the set up financing scheme at FI level for the benefit of the SHFs and/or the Agro-SMEs.

WEB-BASED DATA COLLECTION AND MONITORING

Relevant sets of information can be digitally entered and subsequently monitored and controlled. Data sets include simple production-specific data (planning of production cycles), information for target/actual analyses and simple cash flow calculations as well as loan repayment plans. The tool can also be used to monitor and verify financing and refinancing flows in addition to loan repayments of the various stakeholders.



MONGOLIA – A FINANCIAL MODEL FOR ENERGY PROJECT ASSESSMENTS



GFA introduced a model to perform financial analyses of investment projects that is not only financial grade but also bankable. The assignment was part of GIZ's Energy Efficiency Project (ENEV 3+) to advise the Mongolian Energy Regulatory Commission (ERC) and the Ministry of Energy (MoE) on the transition of the Mongolian heat and power market towards a more competitive, efficient and effective market model.

OBJECTIVES

The financial evaluation of energy projects usually relies on information provided by project developers or the project's investors. As such, the provided data very often reflect idiosyncratic assumptions – often favourably – in terms of the project's profitability and the resulting debt ratio. On the one hand, this calls for a unified and standardised assessment capability of evaluating projects based on common market assumptions and techniques. On the other hand, there is the need for a comparison among projects in the sense of a portfolio approach in order to derive adequate tariffs for each project and to justify the promotion of e.g. renewable energy sources instead of other conventional energy sources. The objective of the financial model therefore was to allow for a state-of-the-art evaluation of complex project proposals, the possibility of scenario analyses and the comparison of projects.

FINANCIAL MODEL

The tool allows for the appraisal of investment projects in terms of their financial grade, bankability and for the derivation of feed-in tariffs by estimating the Levelized Cost of Energy (LCOE). The excel-based model is applicable for all sorts of energy generation (incl. coal, gas, RE, etc.) usage and business plan concepts at every phase of project development and implementation.

MONGOLIA	
FINANCING INSTITUTION	GIZ
PROJECT DURATION	05/2018 – 12/2018

Additionally, the model can handle all levels of a business case's complexity and allows for sensitivity analyses and comparison of up to 100 projects within one file. The model was developed for and adjusted to the needs of ERC and the MoE in Mongolia. It can be used as a 'shadow'-model which re-models a sponsor's proposition by using the assumptions of a business case from the original model to derive independent forecasted financial statements. This way, propositions are independently standardized. ERC can use it similarly in determining options for least cost energy supply ("LCOE") but can as well decide to turn the process around and make the model available as the standard to be filled-out by those seeking licenses for energy generation projects in Mongolia. This can potentially create a levelled ground among all stakeholders in energy supply in the country.

INPUT: ICL, TABS & COLOR ONLY	THIS COLOR: FIGURES ARE FOLLOWED-UP	CELLS FOR CURRENCY CHOICE	THIS COLOR: QUALITATIVE BANKABILITY INPUT	ICE INPUT: OFFERED BY INPUT AT OUR DISCRETION OR SUM	2: FILL: GROUPING: COLOR/LINKED TO OTHER INPUT-SH	CELLS IN: COLOR/LINKED TO OTHER INPUT-SH								
BACK TO TOP: GO TO RELATED CELL														
PROJECT BUTTION														
ACTIVE PROJECT #	1	30MW SOLAR	50MW WIND	10MW WIND	500MW COAL	15MW SOLAR	10MW SOLAR	10MW SOLAR	30MW SOLAR	52.5MW WIND	53MW CHP			
COMPANY	INVERT	MONGOLIA	MONGOLIA	MONGOLIA	MONGOLIA	MONGOLIA	MONGOLIA	MONGOLIA	MONGOLIA	MONGOLIA	MONGOLIA	MONGOLIA	MONGOLIA	MONGOLIA

DEBT SERVICE CAPACITY		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
NET PROFIT		1.0	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.5	3.7	4.0	4.1	4.1	4.1
INTEREST & PREFERRED DIVIDEND		1.5	2.8	2.6	2.3	2.0	1.8	1.5	1.2	0.9	0.5	0.2	0.0	0.0	0.0
DEPRECIATION		2.1	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
CHANGE IN WORKING CAPITAL (PRE-DIVIDENDS)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CHANGE IN WORKING CAPITAL (POST-DIVIDENDS)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ADDITIONAL CASH		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ANNUAL INVESTMENT		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CASHFLOW FOR DSCR CALCULATION		4.5	8.8	8.8	8.8	8.8	8.8	8.7	8.6	8.5	8.5	8.4	8.3	8.3	8.3
TERM DEBT REPAYMENT		1.5	6.0	6.2	6.5	6.7	7.0	7.3	7.6	7.9	8.2	8.6	0.0	0.0	0.0
SHORT TERM DEBT REPAYMENT		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SUB DEBT REPAYMENT / SHARE REDEMPTION		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INTEREST TERM LOAN(S)		1.5	2.8	2.6	2.3	2.0	1.8	1.5	1.2	0.9	0.5	0.2	0.0	0.0	0.0
INTEREST SUBORDINATED LOAN(S) / PREF DIVIDEND		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INTEREST SHORT TERM LOAN(S)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL DEBT SERVICE		2.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
DEBT SERVICE COVERAGE RATIO TERM DEBT		1.55	1.03	1.02	1.01	1.01	1.00	0.99	0.98	0.97	0.96	0.95			
DEBT SERVICE COVERAGE RATIO ALL DEBT		1.55	1.03	1.02	1.01	1.01	1.00	0.99	0.98	0.97	0.96	0.95			



PERU – DIGITIZING CREDIT MONITORING AND E&S RISK MANAGEMENT



PERU	
FINANCING INSTITUTION	AFD
PROJECT DURATION	03/2017 – 11/2018

DIGITAL LOAN MONITORING IN THE AMAZON

GFA is exploring the potential of innovative ICT-based tools & applications to support loan monitoring and environmental & social risk management to enhance sustainable finance in developing countries. In cooperation with the public agricultural bank AGROBANCO in Peru, GFA developed and piloted the “GeoBancoVerde” application. The app represents an innovative software solution aiming at improving gathering and monitoring of information relevant for the risk estimation of agricultural loans in the Amazon region and ensuring compliance with environmental and social eligibility criteria under donor-funded credit lines.

OBJECTIVES

Lending to agricultural and other businesses in remote, rural areas is challenging for financial institutions. Often they lack the capacities to identify and check the size and location of the production area that a potential client bases his loan application on. This can lead to fraud through “ghost lending” and poses environmental and social risks, especially in biodiversity or cultural hotspots. A lack of spatial information about farm parcels in the Amazon region, hindered AGROBANCO in effectively assessing their own environmental and social loan exclusion criteria, like deforestation or conflicts with indigenous territories.

To tackle the risks and to allow for an efficient on-site client assessment, GFA equipped AGROBANCO with the means to digitally gather and assess relevant information through geo-data.

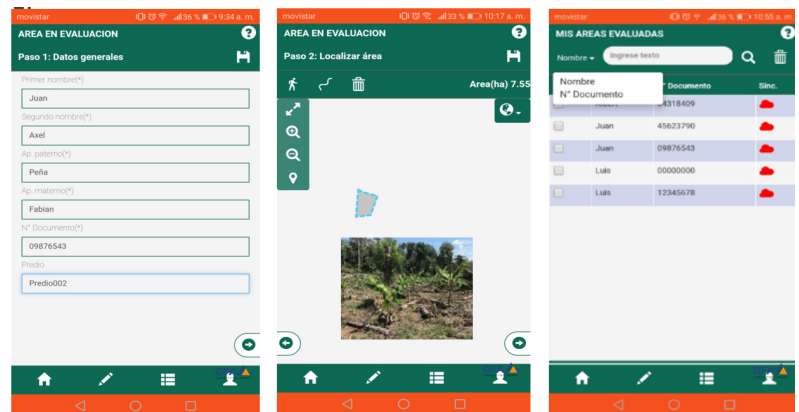
GEOBANCOVERDE APPLICATION

The app combines on- and offline geo-referencing of land plots with multi-layer mapping and is since its introduction a mandatory tool for AGROBANCO loan officers in the Amazon. Conducting on-site client assessments loan offic-

ers can directly mark the land plots on their mobile phones, in case they are connected to mobile internet. If there is no internet available, land plots must be assessed physically, while loan officers take GPS points. Both ways lead to the creation of spatial geo-data polygons. Besides providing factual data on the size and location of land plots, these polygons are then matched with up-to-date forest cover satellite images and indigenous territories maps. The app conducts an eligibility quick check, which allows the loan officer to proceed with the loan appraisal or directly stop the process, if a client is not eligible.

The app transmits data directly into AGROBANCO’s core banking system where it is stored as part of the client information. In a modular further extension, the spatial geo-data provides the basis for “Remote Sensing” based crop yield monitoring and forecasting using vegetation cover satellite images. This continuous agricultural productivity monitoring can become an integral part of the bank’s risk management, since it allows detecting yield, and eventually loan default risks early on.

The functionality of the application is easily replicable and adaptable to meet the particularities of sustainable and green finance in remote areas. The multi-layer approach allows crossing the spatial data with any relevant maps or satellite images.

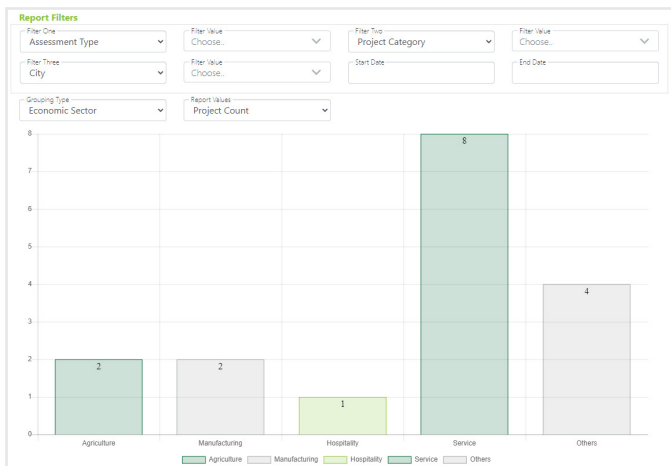




LEBANON – PROJECT MONITORING AND REPORTING DATABASE WEB TOOL

DIGITIZING LOAN MONITORING AND REPORTING PROCESSES OF LEBANESE

The Lebanon Energy Efficiency & Renewable Energy Finance Facility Banks (LEEREFF) concerns a EUR 80m global loan supported small-scale investments in energy efficiency (EE) and renewable energies (RE) by private companies in Lebanon. GFA is supporting the Lebanese central bank Banque du Liban (BDL) and local Lebanese commercial banks in the implementation of the credit line. In this frame, GFA developed a web tool database that allows for the monitoring and reporting of disbursed EE/RE loans.



OBJECTIVES

Lebanon has an advanced banking sector but the financing of sustainable investments in terms of EE/RE remains mostly unknown territory for Lebanese banks. Consequently, the processes of evaluating sustainable energy projects and establishing related monitoring and reporting procedures also remain in a nascent state.

LEEREFF-ID	Region	Project Status	Project Category	Technology Type	Assessment Type	Verification Status	Tech. Invest 1	CAPEX (USD)	Disbursed Loan Amount (USD)	Electrical Energy Saving (kWh/year)	Thermal Energy Saving (kWh/year)	Primary Energy Saving (kWh/year)	Renewable Electrical Installed Capacity (kW)	Renewable Thermal Installed Capacity (kW)	CO2-eq Emission Reduction (tons/year)	Green Building Category
LEEREFF-1199	Beirut	Approved	RE	Multi Measure	Project Assessment	Not Verified	1617030	1617030	0	1846627	0	5281553	0	0	1440	N/A
LEEREFF-1200	Beqaa	Approved	EE	PV Solar	Project Assessment	Not Verified	446968	446968	1	464275	0	1327826	398	0	362	N/A
LEEREFF-1202	Beqaa	Approved	RE	PV Solar	LET	Not Verified	58500	58500	1	64092	0	183943	53	0	43	
LEEREFF-1212	South	Under Assessment	RE	PV Solar	LET	Not Verified	85000	85000	1	59112	0	169650	60	0	40	
LEEREFF-1213	Mount Lebanon	Under Assessment	EE	Multi Measure	Project Assessment	Not Verified	2646539	2646539	0	577000	2695000	4344000	0	0	1183	N/A
LEEREFF-1214	Beqaa	Under Assessment	RE	PV Solar	Project Assessment	Not Verified	180000	180000	0	302132	0	864099	235	0	236	N/A
LEEREFF-1215	Beqaa	Under Assessment	RE	PV Solar	Project Assessment	Not Verified	646403	646403	0	680240	0	1945485	529	0	531	N/A
LEEREFF-1216	Beqaa	Under Assessment	EE	Heat pumps	LET	Not Verified	65895	65895	52716	7638	0	21920	0	0	5	
LEEREFF-1217	Beqaa	Under Assessment	EE	Multi Measure	Project Assessment	Not Verified	251000	251000	0	217971	3792326	4376489	0	0	1267	N/A
LEEREFF-1218	Beqaa	Under Assessment	RE	PV Solar	Project Assessment	Not Verified	982613	982613	0	1502169	0	4694279	1200	0	1172	N/A
LEEREFF-1219	Mount Lebanon	Under Assessment	RE	PV Solar	LET	Not Verified	50000	50000	37321	78248	0	224573	40	0	53	
LEEREFF-1220	North	Under Assessment	RE	PV Solar	Project Assessment	Not Verified	523549	523549	0	330917	0	945423	193	0	258	N/A
LEEREFF-1222	Mount Lebanon	Under Assessment	EE	Monitoring and Control Systems	Project Assessment	Not Verified	101010	101010	0	164493	0	470449	0	0	128	N/A

Lebanon	
FINANCING INSTITUTION	EIB / AFD
PROJECT DURATION	03/2017 – 12/2020

For the sake of facilitating the loan disbursement and mitigating the above-mentioned problems, GFA developed a web tool for the project's main stakeholders such as local commercial banks, BDL and EIB/AFD. This web tool on the one hand provides an intuitive monitoring and reporting interface for the sustainable energy projects financed through LEEREFF loans. On the other hand, the web tool integrates an energy savings calculator, which automatically enumerates associated energy cost savings/generation based on the input data.

LEEREFF PROJECT WEB TOOL

The LEEREFF project web tool allows for monitoring of both, the implementation progress of individual sub-projects as well as their technical, energy related and financial performance, but also results and impacts of the LEEREFF facility as a whole.

Furthermore, the web tool provides the relevant information for an in-depth analysis of the sustainable energy loan portfolio and offers insights into the portfolio's composition in terms of region, financial institution, project type, loan size, technologies and other relevant parameters. The web tool lists all key performance indicators to LEEREFF stakeholders and allows for the direct online approval of standard investments as well as serves as a one-stop solution for keeping track of the LEEREFF programme's progress.