Business Case: Rural Land Administration Information Services

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Contents

Acknowledgements

Acronyms

BoA	Bureau of Agriculture
BoFED	Bureau of Finance and Economic Development
CSA	Central Statistical Agency
EEU	Economic Empowerment Unit
EMA	Ethiopian Mapping Agency
GTP-II	Growth and Transformation Plan II
INSA	Information Network Security Agency (INSA)
LA SRM	Land Administration Strategic Roadmap
LGAF	Land Governance Assessment Framework
LIFT	Land Investment for Transformation Programme
MFI	Micro Finance Institution
MII	Micro Insurance Institution
MoFED	Ministry of Finance and Economic Development
RLAS	Rural Land Administration System
RLAIS	Rural Land Administration Information Services
SLLC	Second Level Land Certification

Executive Summary

Purpose

The large scale Second Level Certification (SLLC) of rural land in Tigray, Amhara, Oromia and SNNPR introduces an improved level of land tenure security for land users and opportunities to create additional value through the implementation of rural land administration information services (RLAIS). These information services enable public and private sector institutions in particular to develop high value services which improve the economic, social, environmental and legal living conditions for individual rural land users.

The main objective of this study is a full scale, context specific and implementable "Business Case for the Rural Land Administration Information Service (RLAIS)". The results of this study should enable:

- Decision makers to understand the contribution of RLAIS to the (financial) sustainability of the Rural Land Administration System (RLAS).
- RLAUD[1] to engage donors to fund the development of these services.
- To demonstrate the value of RLAIS to the woredas and the regions, which need to ensure ongoing adequate financial support to the rural land administration system.

Key Results/Conclusions/Recommendations

1. There is a large value potential from rural land administration information services to create value for users in the public and private sector and subsequently to enable them to create value for the rural land users

2. The long-term net recurring cost recovery ratio of RLAS by RLAIS web enabled online services, excluding data services, ranges from 23% to 41%, provided the information services meet the customer requirements and RLAIS is operated professionally. Data services, if fees would be levied, could further increase the RLAS net recurring cost recovery ratio to 39% - 57% for an average LIFT woreda.

3. To effectively introduce RLAIS requires a comprehensive implementation programme that should include the development of the information services and information products, the development and implementation of the operating model with all processes, capacity building, a services introduction plan, implementation of the required regulations and directives and a sustained campaign to transform potential demand into actual demand will need to be implemented.

4. The development and implementation costs are a fraction of the costs of certification. The required budget for the development and roll out of RLAIS will be approximately GBP 2 million.

5. The annual recurring costs of RLAIS would be approximately ETB 8 million. While the recurring costs of RLAIS are a fraction (1,7%) of the recurring costs of RLAS (ETB 458 million), the contribution of RLAIS to the value generation and potential cost recovery would be significant.

6. A key critical factor to the success of the RLAIS is the long-term (institutional, operational and financial) sustainability of the RLAS.

Section 1 of this report introduces the study, provides background information and outlines the approach and methodology employed.

Section 2 of this report describes the major user groups of RLAIS, their needs, requirements[2], expected benefits, potential distribution services and information products.

This section demonstrates that there is a large value potential from rural land administration information services to create value for user groups in the public and private sector and subsequently to enable them to create value for the rural land users.

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[1] Rural Land Administration and Use Directorate, Ministry of Agriculture

[2] Requirement: Transformation of a retained needs into more concise specifications; a set of requirements related to RLAIS
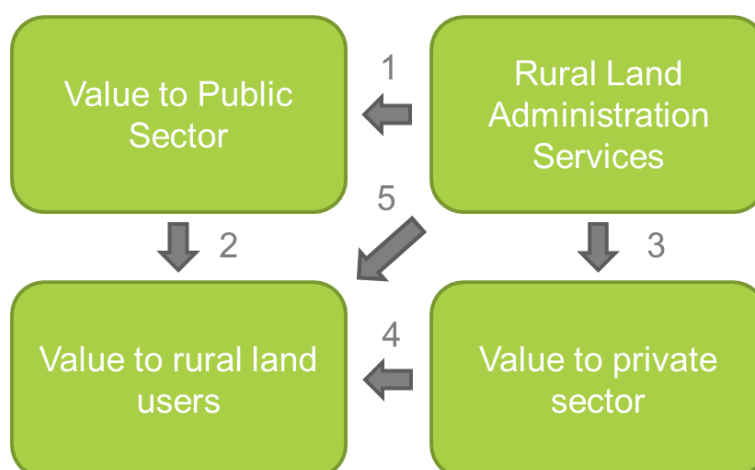
Major users of the land information services are the land users, the regional institutions supporting the rural agricultural development such as Bureaus of Agriculture, Regional Agricultural Research Institutes, Bureaux of Financial and Economic Development, the national and regional Agricultural Investment Agencies, Rural Land Administration Land Use Case Team/Land Use Planning Core Process and the Revenue authorities, Micro finance institutions, Micro insurance institutions and the parties in the rental market.

User benefits derived from the rural land administration information services are:

- Provision of certified land administration information enables land users to better enjoy the fruits of their rights on land and to better secure their rights in case of disputes arising from e.g. boundaries, sharecropping, land exchange, renting of land, divorce and expropriation.

- Provision of certified land administration information supports the farmer to acquire (individual) micro finance loans with higher limits and with no dependencies on other farmers.

- Rural land administration information services enable correct, reliable and efficient micro finance application processing.

- Land administration parcel location information enables micro-insurers to lower their transaction costs.

- The rental agreement is entered in the Land Register database as a restriction on the holding right on a parcel; Rural land information therefore provides thus for safer rental agreements.

- The provision of historical information on rental transactions enables parties to negotiate "fair" land rental prices. This supports fair land rental incomes for land holders and encourages productive land use by renters.

- Better accessible information on available land for rent exposes available land to a larger pool of potential renters. This would enable land holders in their efforts to obtain higher land rental incomes and it would encourage renters to increase land productivity.

- Commercial renters wanting to rent larger pieces of land consisting of multiple parcels could use the rural land administration information to optimize the location and size of the land they would like to rent. Additionally, the Rural Land Information Service can provide information on the extent of land occupied and 'owned" by the regional and/federal governments and therefore first-hand information on "unoccupied land" which could be used for large scale agricultural investment.

- Reliable rural land administration data enables the development, initiation and impact monitoring of regional land use planning and land use management.

- Cadastral data (parcel identification, location and size) connects and relates the agricultural study results to land holdings, their land size and eventually land holders. This enables researchers to more accurately incorporate actual land holding situation into their assessments and enables them to better target their support to farmers.

- Up to date land holding information improves tax revenues, lowers the tax collection costs and increases participation, fairness and good governance.

- Reliable rural land administration information for tax revenue assessments and equitable resource allocation and cost-effective utilization.

- Certified rural land administration information is beneficial to over 50% of the woreda civil court cases

- Rural land administration information improves the ability to plan and manage the future use of rural land. It is also important for the fringe areas around cities. It supports efforts to build transparency and trust in the government.
- Rural land administration information enables the accurate planning and management of agricultural investments.

To create these user benefits three different services are foreseen: Web enabled online information services, data services (dataset on mass storage medium, via download service or via a web feature and mapping service) and physical access points.

Section 3 translates the potential value into demand and potential revenue projections

The report shows significant potential demand and shows that part of that demand could be captured as revenues. Revenue generation by charging fees for rural land administration information services would lower the pressure on already stretched regional state budgets and could better secure continuous funding of the rural land administration activities. The potential RLAS net recurring cost recovery ratio[3] would range from 39% - 57% for an average LIFT woreda.

For data services, the majority of the future customers will be in the public domain. In case the land administration will not be allowed to charge for its' services in the public domain, a more conservative approach for the future cost recovery ratio would be to use a net cost recovery ratio excluding data services. The long-term net cost recovery ratio excluding data services, based on different demand scenario's, ranges from 23% to 41%, provided the information services meet the customer requirements and RLAIS is operated professionally.

The principle of charging fees for land administration services has already been introduced for the urban land administration services and the regions are not unwilling to consider the introduction of fees for rural land administration (information) services. At the federal level, the Planning Commissioner has stated that the principle of charging for information services, which is already implemented by Central Statistical Agency (CSA) and Ethiopian Mapping Agency (EMA), could certainly in the future be extended to the rural land administration.

The private sector is willing to pay for land administration information services, provided the services add value to their services or reduce their costs of doing business.

Section 4 describes the marketing strategy and the aligned operating model to deliver the services.

The marketing strategy is based on operational excellence; a clear emphasis on customer value by providing a limited well-defined set of services and information products. This strategy improves the financial sustainability, it makes optimal use of the limited resources and it optimises learning effects. Development and maintenance costs of the information products and services can be limited by developing a few base services and information products. Slight differentiations in product offerings introduce opportunities to target specific use requirements, which increases use while at the same time keeping costs down. Only a small number of information products are needed to satisfy most of the customer information needs and requirements[4].

The challenge will be on the capability side (being able to meet the critical success factors) to unlock the potential. Only a professionally run RLAIS operating model, can unlock the intrinsic value of RLAIS and generate value and, when fees are introduced, public revenues.

The operating model should support the marketing strategy while taking into account the Ethiopian context and critical success factors. What will be required are: Strong GoE commitment and leadership, strong governance during the development and implementation and incorporation of context relevant experience of other service providers inside Ethiopia such as the Commercial Bank of Ethiopia (operating over 1000 branches and internet services) and INSA and outside Ethiopia with regard to successful implementations of land administration information services.

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3 Net cost recovery ratio RLAIS to RLAS = Potential revenues RLAIS – Annual recurring costs RLAIS/Annual recurring costs RLAS

4 This has been a long-time experience in the Netherlands since introduction of the land administration information services in 2001.
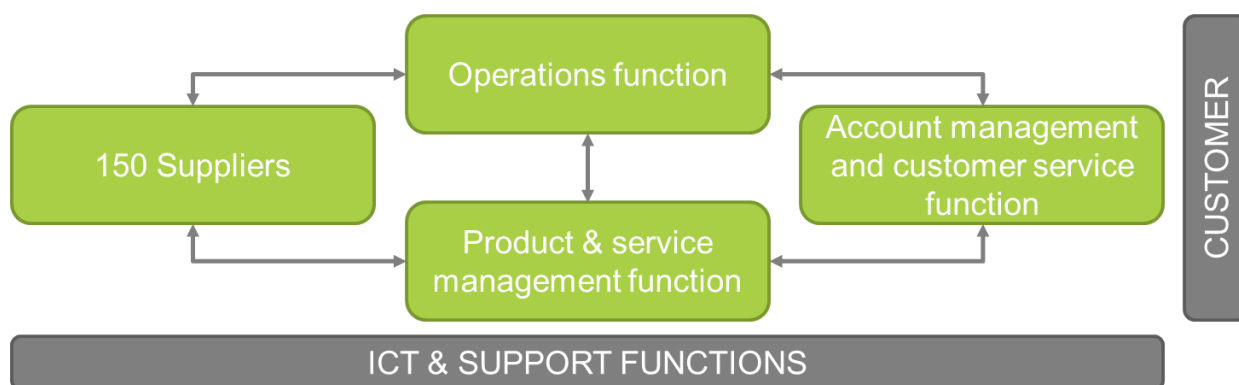
Section 5 describes the RLAIS implementation strategy.

To effectively introduce information services requires a comprehensive development and implementation programme. This programme should include the development of the information services and information products, the development and implementation of the operating model with all processes, capacity building, a services introduction plan, implementation of the required regulations and directives and a sustained campaign to transform potential demand into actual demand.

Section 6 describes the development and implementation plan and required budget for RLAIS

The roll out plan foresees a roll out of RLAIS to 150 LIFT/REILA woredas.

The development and implementation costs are a fraction of the costs of certification. The required budget for the development and roll out of RLAIS will be approximately GBP 2 million. The development (2018-2020) would cost GBP 0,87 million and the roll out (2021-2024) GBP 1,13 million. The budget calculation is detailed in Annex 4.

The annual recurring costs of RLAIS would be approximately ETB 8 million. While the recurring costs of RLAIS are a fraction (1,7%) of the recurring costs of RLAS (ETB 458 million), the contribution of RLAIS to the value generation and potential cost recovery would be significant.

The annual recurring costs include RLAIS entities at federal, regional and woreda level. The recurring costs include staff salaries for positions at federal and regional level, other staff related costs (transport, per diem, office facilities) and functional maintenance of the web and data services. No staff increase is foreseen at woreda level. The current woreda staff will be trained to execute RLAIS functions.

Section 7 provides key conclusions and the way forward.

Introduction

Objective of the Study

The main objective of this study is to design a full scale, context specific and implementable "Business Case for the Rural Land Administration Information Service (RLAIS)*". The results of this study should enable:

- Decision makers to understand the contribution of RLAIS to the (financial) sustainability of Rural Land Administration System (RLAS).
- RLAUD[5] to engage donors for funding
- To demonstrate the value of RLAIS to the woredas and the regions, which need to ensure ongoing adequate financial support to the rural land administration system.

Methodology

The study is based on desk research (See References), semi-structured interviews and meetings with potential customer groups and stakeholders in Addis Ababa as well as Tigray, Amhara, SNNP and Oromia regions.

Desk research and meetings have taken place with the following representatives of customer groups with a high potential for using land administration information services to identify their information needs, the value of rural land administration information in their processes, data and access requirements, and potential demand. The offices consulted include:

- Regional Land Bureau (four regions)
- Regional Bureau of Finance and Economic Development (BoFED-four regions)
- Regional Revenue Authorities (four regions)
- Regional Bureau of Agriculture (four regions)
- Regional Agricultural Research Institute (four regions)
- Micro Finance Institutions (one per region)
- Micro Insurance service provider
- Land renters (LIFT Economic Empowerment Unit - EEU)
- Ethiopian Agricultural Investment Land Administration Agency
- Regional and woreda administrative functions (land management functions regarding rural planning, resettlement, expropriation, issuing of building permits, valuation and compensation, infrastructure development and maintenance, renovation, communication to the public)
- Ministry of Agriculture and Natural Resources
- Information Network Security Agency (INSA)
- Commercial Bank of Ethiopia
- Addis Ababa City Government Land Holding Registration and Information Agency
- Ministry of Finance and Economic Development (MoFED)

The objectives, methodology, user groups, requirements, benefits, potential demand and revenue streams and the high-level marketing strategy were validated in a workshop held from 14th to 15th September 2017 with representatives of the six different organisations from the regional governments, micro finance institutions and RLAUD of the Ministry of Agriculture and Natural Resources. The operating model, critical success factors, risks, roll out strategy and workplan were validated in a workshop held from 30th to 31st January 2018 with representatives of the regional governments and RLAUD of the Ministry of Agriculture and Natural Resources. The draft Business Case will be validated in the next workshop.

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[5] Rural Land Administration and Use Directorate, Ministry of Agriculture

RLAIS: User Groups, User Benefits and Requirements

Introduction

This section describes the major user groups of RLAIS, their needs, requirements[6], expected benefits, potential distribution services, information products, potential demand volume and revenues. Besides land users, user groups have been selected, whom are expected to be the major users of the RLAIS in the first 5 years after introduction. Major user groups are considered from a perspective of potential value contribution to the rural agricultural sector and/or in terms of expected demand volume.

This section demonstrates that there is a large value potential from rural land administration information services to create value for user groups in the public and private sector and subsequently to enable them to create value for the rural land users.
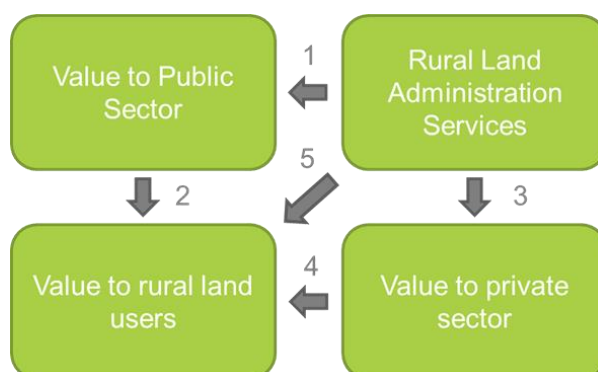
Major users of the land information services are the land users, the regional institutions supporting the rural agricultural development such as Bureaus of Agriculture, Regional Agricultural Research Institutes, Bureaus of Financial and Economic Development, the national and regional Agricultural Investment Agencies, Rural Land Administration Land Use Case Team/Land Use Planning Core Process and the Revenue authorities, Micro finance institutions, Micro insurance institutions and the parties in the rental market.

User benefits derived from the rural land administration information services are:

- Provision of certified land administration information enables land users to better enjoy the fruits of their rights on land and to better secure their rights in case of disputes arising from e.g. boundaries, sharecropping, land exchange, renting of land, divorce and expropriation.

- Provision of certified land administration information supports the farmer to acquire (individual) micro finance loans with higher limits and with no dependencies on other farmers.

- Rural land administration information services enable correct, reliable and efficient micro finance application processing.

- Land administration parcel location information enables micro-insurers to lower their transaction costs.

- The rental agreement is entered in the Land Register database as a restriction on the holding right on a parcel; Rural land information provides thus for safer rental agreements.

- The provision of historical information on rental transactions enables parties to negotiate "fair" land rental prices. This supports fair land rental incomes for land holders and encourages productive land use by renters.

- Better accessible information on available land for rent exposes available land to a larger pool of potential renters. This would enable land holders in their efforts to obtain higher land rental incomes and it would encourage renters to increase land productivity.

- Commercial renters wanting to rent larger pieces of land consisting of multiple parcels could use the rural land administration information to optimize the location and size of the land they would like to rent. Additionally, the Rural Land Information Service can provide information on the extent of land occupied and 'owned" by the regional and/federal governments and therefore first-hand information on "unoccupied land" which could be used for large scale agricultural investment.

- Reliable rural land administration data enables the development, initiation and impact monitoring of regional land use planning and land use management.

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[6] Requirements: transformation of retained needs into more concise specifications; a set of requirements related to RLAIS

- Cadastral data (parcel identification, location and size) connects and relates the agricultural study results to land holdings, their land size and eventually land holders. This enables researchers to more accurately incorporate actual land holding situation into their assessments and enables them to better target their support to farmers.
- Up to date land holding information improves tax revenues, lowers the tax collection costs and increases participation, fairness and good governance.
- Reliable rural land administration information for tax revenue assessments and equitable resource allocation and cost-effective utilization.
- Certified rural land administration information is beneficial to over 50% of the woreda civil court cases
- Rural land administration information improves the ability to plan and manage the future use of rural land. It is also important for the fringe areas around cities. It supports efforts to build transparency and trust in the government.
- Rural land administration information enables the accurate planning and management of agricultural investments.

Table 1 – Overview of benefits of the rural land administration information services per user group

Benefits	Land User	Micro Finance	Micro Insurance	Investment Agency	Rental Broker	Bureau of Agriculture	Agricultural Research Institute	BOFED	Revenue Authority	Land Use Planning	Courts
Land Tenure Security	■										
Individual and Group Loans	■	■									
Rents	■				■						
Micro Insurance	■		■								
Better Assessment Inputs/technology	■					■	■				
Crop Productivity Improvement	■					■	■				
Fair Transparent Predictable Tax	■							■	■		
Investments	■			■		■					
Improved Land Planning	■			■		■		■		■	
Handling Land Related Cases	■										■

To create these user benefits three different services are foreseen (table 2): Web enabled online information services, data services (dataset on mass storage medium, via download service or via a web feature and mapping service) and physical access points .

Table 2 - Overview of services per user group

Service	Land User	Micro Finance	Micro Insurance	Investment Agency	Rental Broker	Bureau of Agriculture	Agricultural Research Institute	BOFED	Revenue Authority	Land Use Planning	Courts
Web Enabled Information Services		■		■		■			■	■	
Data Services			■	■		■	■	■	■	■	
Access Points (hard copies)	■	■				■		■	■		■

(Semi) Private Sector

Land users

Introduction

There are over 16.6 million rural agricultural households in the regions of Tigray, Amhara, Oromia and SNNP[7]. These households have a relationship with rural land, either as a land holder or as a holder of a right such as right based on a rental agreement, or as a person affected by the rights of a land right holder. The success of a land administration depends on whether it protects land rights adequately and permits those rights to be

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[7] CSA Agricultural Sample Survey Land Utilization 2015_2016

exercised efficiently, simply, quickly, securely and at low cost. The rural land administration information services enable individuals to access certified information with regard to the status of land rights. A request for information can be triggered in many ways, for instance in case of:

- Transfer of landholding rights through inheritance (succession) to member(s) of the family (heirs) of the land right holder.
- Transfer of rural land holding rights through divorce; depending on if both spouses where holding the land right on the parcel or only one (and on the size of the parcel), the parcel might have to be sub-divided.
- Transfer of rural land holding rights through gift of (part of) the parcel to one or more family members; in the case of gift to more than one family members (and depending on the size of the parcel), the parcel might have to be sub-divided.
- Transfer of rural land holding rights through exchange, between two land holders, of parcels located in the same woreda. Rationales for exchange can be reducing the distance from home to the land or regrouping small parcels (land consolidation) to make them more convenient to improve the use of the land.
- Transfer of rural land holding rights through expropriation by the woreda administration. The woreda administration, in accordance with Proclamation 455/2005, has the power to expropriate rural landholdings for public interest (e.g. irrigation).

Needs

- Land tenure security and ways to improve the income of the land holders.

Requirements

- The land administration information should be reliable, affordable, accessible and easy to use.
- The registered rights and restrictions need to be effectively enforced.
- The land administration information should support land users in their efforts to improve their income.
- The development of the cadastral map for non-LIFT woredas should be considered.

Value Propositions

Land administration information enables land users to better enjoy and secure their rights related to land

Provision of certified land administration information enables land users to better enjoy the fruits of their rights on land and to better secure their rights in case of disputes arising from e.g. boundaries, sharecropping, land exchange, renting of land, divorce and expropriation.

Individual loans only possible with certified land administration information

Provision of certified land administration information supports the farmer in acquiring (individual) micro finance loans with higher limits and with no dependencies on other farmers.

Insurance of crop with certified land administration information

Provision of cadastral information about location and size of the parcel makes it easier to offer insurances for inputs and crops to farmers.

Providing historical information on rental transactions for fair rental prices

The provisions of historical information on rental transactions enables parties to negotiate "fair" land rental prices. This service would support fair land rental incomes for land holders and it would encourage renters to increase land productivity.

Market information on available rural land for rent

Better accessible information on available land for rent exposes available land to a larger pool of potential renters. This would enable land holders in their efforts to obtain higher land rental incomes and it would encourage renters to increase land productivity.

Product

The following information products should be provided at the Woreda land administration office (hard copies) and in the future through web enabled online information services:

- (Certified) Excerpt rural administrative land administration information of a parcel belonging to a natural or a legal entity (Includes unique parcel identification, right holders, user rights, restrictions)

- (Certified) Excerpt rural cadastral land administration information of a parcel belonging to a natural or a legal entity (Includes unique parcel identification, parcel size, parcel location).
- Market information on available rural land for rent (should be developed by private sector)
- Historical overview rural land rental transactions (one should be able to filter the data on land size, fertility and specified area).

Demand

The demand for rural land administration information by land users would mostly be related to:

- Ownership rights
- Renting in or out
- Bequeath/Inheritance
- Divorce
- Gift
- Exchange
- Expropriation
- Reallocation

Micro Finance Institutions (MFI)

Introduction

Microfinance institutions (MFI) provide a broad range of financial services such as deposits, loans, payment services, money transfers, and insurance to poor and low-income households. Currently about 35 micro finance institutions are registered with the National Bank of Ethiopia. The Ethiopian market for microfinance is dominated by a few large MFIs, all of which are partly owned by the Regional State Government. These are for Amhara Credit and Saving Institute (ACSI), for Tigray Dedebit Credit and Savings Institute (DECSI) and the Oromia Credit and Savings (OCSSCO) (Deribe et al., 2013)[8].

Process

Micro finance institutions issue group loans and currently, as a pilot[9], individual loans. Group loans are secured through collective farmers' liability and in the end guaranteed by the Government. Individual loans are guaranteed by factors related to the borrowers' capabilities to repay and by cession of collateral (the land use right). The loan product uses the SLLC as a guarantee against which individual loans can be disbursed.

The rural land administration information is especially required during the application phase (assessment and final approval before disbursement).

Evaluation of the Application

Due to lack of adequate information about the client's financial management and absence of recorded evidence, MFIs often rely on information from the kebele level.

The following aspects are checked during the loan application:

- Character (Client reputation).
- Capacity (Ability to repay: Business plan, other income generation capabilities, debts).
- Capital (Any capital of the client that s/he can put in).
- Collateral (Guarantee for loan) (land use right based for example on a second level land certificate stating land use right, right holder, land size, location, fertility).
- Condition (Purpose/intended use of the money).

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[8] The same study indicates that total number of active borrowing clients of the microfinance institutions in Ethiopia reached over 2,4 million customers in 2011 whereas the total credit extended by all microfinance institutions amounted to ETB 6,9 billion. Of the total credit granted, the share of the three largest Microfinance institutions is ETB 5,1 billion. The market shares based on the number of borrowing clients are 28,1%, 16,1% and 20,4% for Amhara Credit and Saving Inst (ACSI), Dedebit Credit and Savings Inst (DECSI) and Oromia Credit and Savings (OCSSCO), respectively.

[9] LIFT is currently partnering with 6 MFI's to pilot and introduce this new lending product. The 6 partner MFI's include three large government-participated institutions (Amhara Credit and Saving Institution - ACSI, Oromia Credit and Savings Share Company - OCSSCO, Omo Microfinance Institutions – OMFI), and three small NGO/private partners (Wasasa, Aggar, PEACE).

The maximum amount of credit is based on the farmer's requirements and the Valuation of Produce of the Land. The Valuation of Produce of the Land (VPOL) indicates all costs and estimated cash sales proceeds for a specific crop per hectare per annum. Once VPOL is calculated, MFIs can have three options as a basis to approve loan size:

- Cost of production including interest and service charge.
- Net profit (Sales – Cost of production).
- Rental cost (seasonal rental price/hectare).

Disbursement

Before disbursement can be made clearance must be obtained from:

- Other MFIs working in the region. This clearance letter assures that clients are free from other unpaid loans.
- Kebele administration steering committee. This gives assurance that the land registered for the loan is free from any informal community level deals, informal loans, etc.

The MFI will register land held as a guarantee at the woreda land administration office. The MFI sends a request to record the loan and restrict the land holder's rights to the woreda land office[10]. The woreda land administration office in return blocks the land holder's right of the SLLC pledged against loan and sends a letter to the MFI. Subsequently, the loan sum will be disbursed.

Needs

The MFI wishes

- to expand their product line for borrowers
- to ensure that borrowers can access higher loans
- to further develop confidence in appraising and approving individual loans
- to make a proper evaluation and decision for a healthy loan repayment system
- to ascertain that the borrower will repay the loan
- to avoid over-indebtedness of the borrower
- to protect the quality of the loan portfolio.

Requirements

The MFI requires accurate information on:

- Right holders and rights on land (including limitations on these rights)
- The existence of other loans
- Parcel size to calculate the Valuation of Produce of the Land (VOIP)
- Unique parcel identification, location, parcel size and soil fertility to identify and determine the required collateral
- Existing restrictions on land use.

The development of the cadastral map for non-LIFT woredas should be considered.

MFI's would also like to receive legal support on the implementation of the blocked SLLC.

Value Proposition

Rural land administration information services enable correct, reliable and efficient micro finance application processing

Rural land administration information enables MFIs to:

- tailor loans to the needs and capabilities of the borrower
- facilitate easy access to loans
- ensure that borrowers can access higher loans with which farmers can generate higher incomes

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[10] In some woredas, the woreda land administration offices also require support letters from the kebele land administration expert and the kebele land administration committee before issuing a blocking letter.

- further develop confidence in appraising and approving individual loans
- make a proper evaluation and decision for a healthy loan repayment system
- avoid over-indebtedness of the borrower
- protect the quality of the loan portfolio
- expand their product line for borrowers.

The value for the region is increased Land-based tax base, reduction of unemployment and increase of the market value of the land.

Rural land administration information services support market performance assessments

The rural land administration could provide information on the market development of individual loans. This could also be extended to groups loans, if MFI's would decide to register these loans.

Products

The following information products should be accessible through the woreda land administration office and through web enabled online information services:

- (Certified) Excerpt rural administrative land administration information of all parcels belonging to a natural or a legal entity (Includes unique parcel identification, right holders, user rights, restrictions)
- (Certified) Excerpt rural cadastral land administration information of all parcels belonging to a natural or a legal entity (Includes unique parcel identification, parcel size, parcel location)
- Historical overview rural land rental transactions (data can be filtered on land size, fertility, specified area such as for a kebele)
- Market information about micro finance transactions backed by a Land Certificate (individual loans)
- Signal function of changes on blocked parcels

Potential Demand

The potential demand for especially the rural land administration information products 1 and 2 could be substantial, but it requires that the rural land administration is able to provide the micro finance institution with accurate and reliable information. The MFIs (and their competitors) require land administration information to assess whether the borrower would be able to repay the loan based on its' value of produce of land derived from the land the borrower holds. The addition of the attribute Value of Produce of Land would further strengthen the value proposition of RLAIS.

The potential annual demand for the products 1 and 2 is directly linked to the annual number of loans provided by the MFIs and other financial institutions (competitors). The MFI's state that about 50% of the rural agricultural households would be interested and eligible for a loan. Due to supply side restrictions and competition, MFIs will only be able to service 50% of the interested and eligible market. Table 3 provides the calculation of the potential market size for rural land administration information products based on the potential annual market size for rural agricultural loans (group and individual loans.

Table 3 - Calculation of potential market size in rural agricultural loans (group and individual loans)

Number of rural households (Source: CSA Agricultural Sample Survey Land Utilization 2015_2016)

Tigray	Total number of agricultural households 0,9 million
Amhara	Total number of agricultural households 4,6million
Oromia	Total number of agricultural households 6,1million
SNNPR	Total number of agricultural households 4,8 million

Market size
According to the 4 big MFI's about 50% of the households are interested and eligible for a group or individual loan.

Potential market share (considering supply restrictions and competition):
The potential market share of the MFI's could be 50% of the interested and eligible market (Tigray 100%). This would result in the following annual number of transactions:

Tigray	450.000 loans
Amhara	1.150.000 loans
Oromia	1.525.000 loans
SNNP	1.200.000 loans
Total	4.325.000 loans

Potential market share (without supply restrictions and including competition):

Tigray	450.000 loans
Amhara	2.300.000 loans
Oromia	3.050.000 loans
SNNP	2.400.000 loans
Total	8.200.000 loans

Based on 1 inquiry/information product per transaction the potential market for information products would be between 4.325.000 and 8.200.000 inquiries/information products via web enabled online land administration information services.

Micro Insurance Institutions (MII)

Introduction

Micro Insurance Institutions are offering insurances to farmers to insure their inputs/crops. To be successful, the micro insurance product needs to be affordable and understandable for the farmer while at the same time providing an attractive risk/reward ratio for the micro insurer.

Needs

- Micro insurance companies need to reduce transaction costs to be able to offer attractive services.

- Micro insurance companies need market information to improve their market performance.

Requirements

- The micro insurer needs to verify the land size and location of the parcel to be insured and match the location of the parcel with the right grid in their spatial insurance grid.

- The development of the cadastral map for non-LIFT woredas should be considered.

Value Proposition

Land administration parcel location information enables micro-insurers to lower their transaction costs

Currently the location of the parcel is determined by visiting the parcel. These transaction costs could be avoided by using rural land administration parcel information which is geo-referenced, and the geographic location of each parcel identified using geographic coordinates.

Products

Data services (dataset on mass storage medium, via download service or via web feature and mapping service) containing:

1. Identification of the parcel to be insured (unique parcel identifier), parcel location, parcel size, right holders and rights.
2. Market information on micro insurance transactions.

Potential Demand

The future demand for the rural land information products in this sector is uncertain. The viability of the micro insurance market for input and crop insurance is not yet established. Insurance penetration in Ethiopia is very low. Even in neighbouring countries such as Kenya where financial inclusion is higher, crop insurance take-up is low. Crop insurance penetration in Kenya, according to the FinAccess household survey, is just 0,13%. It has been found in pilots to be extremely difficult to stimulate demand for insurance because of up-front premiums, the need for trust in the insurance provider, and the knowledge of how products work[11].

It is assumed that any take-up of micro-insurance based on the experience cited above is likely to be very low, unless the product is tied to other delivery mechanisms – micro-finance, seeds purchasing or mobile money. As such, a future intervention is envisaged which would link crop insurance directly to the SLLC loan, as a tie-in to that product.

The LIFT/ Economic Empowerment Unit demand projections for the 140 LIFT woredas in 2020 vary from a low 20,133 to a high 79,000 insurance policies. The number of rural land administration enquiries (1 per insurance transaction) would therefore range between approximately 20,000 and 79,000. Further increases are not expected in the short term as long as woredas outside the LIFT project do not have up to date cadastral data to provide the exact location and size of the to be insured parcels. This is required as the micro insurance service provider is using specifically this data to determine the insured value and whether parcels are eligible for payment of damages based on damage reports and geographical insurance grids they use.

When MFI's do start to offer micro insurance for input/crop and bundle this specific micro insurance with micro finance, which would boost demand, it is expected that the demand from MFIs of land administration information products will not increase because of this bundling. MFIs will use the required land administration information for both services. The demand for land administration information is then already included in the projected demand for land administration information of the MFIs.

Land Renters, Rental Market Service Providers

Introduction

The CSA Agricultural Sample Survey Land Utilization 2015-16 results show that of the over 16,6 million agricultural households in Tigray, Amhara, Oromia and SNNP and that about 24% of these households have rented land.

According to data collected by Deininger et al. (2012), 66% of land rental is between relatives or in-laws, 11% is among friends or neighbours, and only 23% among unrelated individuals. More than 95% of the 2,083 (1,135 for the restricted sample) leased plots are sharecropped (12% under input sharing and 88% using a simple output sharing) and less than 5% use fixed rent.

The demand for renting land transcends the land available for renting. Currently, the rental market is mainly a local market. The exposure of the available land for rent to a larger pool of potential renters would improve rental incomes and encourage attempts to improve land productivity.

Needs

Rental parties need:

- Information on available land
- Assurance of tenure
- Information to set the rental price

Requirements

- Access to market information on available rural land for rent: Parties require accurate market information on offerings such as parcel location, parcel size, contract duration, soil fertility, irrigation/rain fed.
- Assurance: Parties require accurate rural land administration information to identify parcels, right holders, rights, restrictions, parcel location and size

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[11] Ntukamazina et al. (2017) state "current gap between high promise and low uptake calls for farmer-driven product design "The main driver is the loan," Ms Goslinga of Pula Advisors, an insurance advisory service for African farmers. "If there's not going to be loans, there's not going to be any insurance. There's no inherent demand [for insurance]."

- Information to set the rental price: Parties require historical information on rental transactions
- The development of the cadastral map for non-LIFT woredas should be considered.

Value Proposition

Rural land information for safer rental agreements

Information on parcels, right holders, rights, restrictions on rights, parcel location and size, fertility and potential for irrigation and access to land. The rental agreement is entered in the Land Register database as a restriction on the right on the parcel (incl. annotation [rented], date of start rental, length of rental) with the possibility to extend this information to e.g. price for rent, etc.

Providing historical information on rental transactions for fair rental prices

Historical information on rental transactions enables parties to negotiate "fair" land rental prices. This supports fair land rental incomes for land holders and encourages productive land use by renters.

Market information on available rural land for rent

Accessible information on available land for rent exposes the available land to a larger pool of potential renters including entrepreneurs and better-off farm households. This supports better land rental incomes for land holders and encourages productive land use by renters.

Optimize productivity through better rental land planning

Commercial renters wanting to rent larger pieces of land consisting out of multiple parcels could use the rural land administration information to optimize the location and size of the land they would like to rent. Additionally, the Rural Land Information service provide information on the extent of land occupied and 'owned" by the regional and/or federal governments and therefore first-hand information on "unoccupied land" which could be used for large scale agricultural investment.

Products

The following information products should be provided at the woreda land administration office (hard copies and data services) and through web enabled online information services:

- (Certified) excerpt rural administrative land administration information of a parcel belonging to a natural or a legal entity (Includes unique parcel identification, right holders, user rights, restrictions)
- (Certified) excerpt rural cadastral land administration information of a parcel belonging to a natural or a legal entity (Includes unique parcel identification, parcel size, parcel location)
- Market information on available rural land for rent (in cooperation with private sector)
- First-hand information on extent of "unoccupied land "which could be used for medium and large scale agricultural investments
- Historical overview rural land renting transactions (data can be filtered on land size, fertility, specified area)

Potential Demand[12]

Based on the information above, an LIFT/EEU instigated study "Developing realistic projections for EEU interventions using a scenario-based approach 18.09.2017" has developed projections for formalised rental transactions for the LIFT woredas. Table 4 shows the results of the projection and the expected annual demand for land administration information products (60.000 enquiries/info products).

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[12] Demand is conditioned by legislation which excludes short term renting from registration and is putting limits to the term of rent and the partition a house hold can rent out.

Table 4 – Projection number of formalised rental transactions / Demand for land information products

Projection annual number of formalised rental transactions (for 140 SLLC woredas):	
Amhara	10.618 transactions
Oromia	4.484 transactions
SNNP	1.941 transactions
Tigray	3.224 transactions
Total	20.267 transactions

Extrapolation annual number of formalised rental transactions for all rural woredas (559):

It is expected that the rental related requests for land administration information will be concentrated around formalised transactions. In that case, the number of inquiries (1 per transaction), based on linear extrapolation of the SLLC woredas would be just over 60.000 inquiries for all agricultural woredas of the 4 regions per year. This number could increase if the land rental market would develop into a more regional or inter-regional market.

Public Sector

Bureau of Agriculture

Introduction

In GTP-II, agriculture is envisaged as the main driver of rapid and inclusive economic growth and development. Rural development in the region is largely associated with agricultural development and natural resource management. The Bureau of Agriculture has been given the responsibility to coordinate public organizations, NGO's, the private sector, farmers, and input suppliers, that are all involved in different rural development activities of the region. With other parties, the bureau is involved in providing up-to-date market information, in improving of the livelihood of farmers through need-based technology generation, adaptation and dissemination and in increasing agricultural production and productivity through timely input supply (seed, fertilizer, chemicals).

Needs

The bureau of agriculture needs to:

- Effectively develop, initiate and monitor the impact of measures to increase productivity and production yield.
- Plan and evaluate agricultural input and production levels.
- Develop land use planning and land use management. The current lack of binding land use directives leads to sub-optimal use of land, spilling of inputs, illegal building activities.[13]
- Prepare arable land for investments.
- Delineate boundaries, watershed and irrigated areas.

Requirements

- Geo-referenced rural land administration information (parcel identification, location, parcel size, land use) will be required

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[13] Eucalyptus is planted on productive soils and to receive higher compensations in case of urbanization. Technologies to support production cannot be properly estimated, for instance the required amount of fertilizer, which is bought by the Government, distributed to the woredas and then bought by farmer, turns out to be in the wrong places in the wrong quantities and degrades. Just the regional state of Amhara purchases ETB 6 Billion of fertilizer and seeds per year, which is distributed to woredas and then bought by farmers. This amount does not include woreda, zone and ngo procurements. Irrigation schemes are implemented but by the time they are finished they are not used because the actual land use has in the meanwhile changed. Besides the economic aspects there is also a social issue. Because of lack of land use directives illegally build houses are sold to buyers, who then are removed. This leads to social unrest, especially around the cities.

- to calculate agricultural input – and production levels
- to develop, initiate and monitor the impact of measures to increase productivity and production yield. Currently the bureau has no data on the actual number and size of land holdings and their parcels, parcel sizes, locations and land use. This data needs to be combined with data on land characteristics (soil type, soil fertility, elevation/slope gradients, irrigation/rain fed), agricultural systems and on local institutions and infrastructure.
- To develop an effective land use plans and directives
- To prepare arable land for investments
- To delineate boundaries, watershed and irrigated areas.

- Rural land administration information should become available for the whole region.
- Data will be used in GIS environment and should be provided on data storage media, as a download service or as a web feature and mapping service.
- The development of the cadastral map for non-LIFT woredas should be considered.

Value proposition

Reliable rural land administration information is the basis for effective development of the agricultural sector.

Reliable rural land administration data enables the development, initiation and impact monitoring of regional land use planning and land use management.

Products

Data services (dataset on mass storage medium, via download service or via web feature and mapping service) containing:

- Rural administrative land administration information of selected rural parcels (Includes unique parcel identification, right holders, user rights, restrictions)
- Rural cadastral land administration information of selected rural parcels (Includes unique parcel identification, parcel size, parcel location)

Potential Demand

Annual subscription for data access to specific area. All four regional Bureaux of Agriculture have a GIS unit. Usage will depend on the extent of their GIS capabilities (which is more than having a unit).

Regional Agricultural Research Institute

Introduction

The Regional Agricultural Research Institute generates, improves, adapts and popularises agricultural technologies and multiplies and disseminates starter technologies. Furthermore, by coordinating, supporting and leading the regional agricultural research endeavours and consulting on policy issues; the institute contributes to the improvement of the life of the region's population.

Needs - "We need to understand the plot level"

- Research results have certain domain and there is a big variety in the specifics of land (soil type, rain fall, altitude, high – low land) even within the kebele. Technology inputs need to be adapted to the specifics of the land and targeted to the parcel of the farmer. Geographic data is required to connect the results of agricultural studies to the parcels of the land holders. Parcel size/land holding size is an important factor in determining the appropriate technology to be applied by the farmer.
- For soil and disease and pest surveys.
- To prepare a soil fertility map.
- Data, even if it only covers a limited number of woredas, will be valuable. The Agricultural research institute will use this data for data exploration and calibration, validation, modelling and prediction, extrapolation.

Requirements

- Geo-referenced rural land administration information (parcel identification, location, parcel size, land use) is required to connect and relate the agricultural study results to land holdings, their land size and eventually land holders.

- Rural land administration information can be used even if in the beginning this is only available for a limited number of woredas. The Regional Agricultural Research Institute also requires data of the rural kebeles in urban woredas.

- Data will be used in GIS environment and should be provided as dataset on mass storage medium, via download service or via web feature and mapping service.

- The development of spatially/geo-referenced land information for non-LIFT woredas should be considered.

Value Proposition

Rural land administration information transforms regional research into targeted support of individual farmers

Rural land administration information (parcel identification, location and size) connects and relates the agricultural study results to land holdings, their land size and eventually land holders. This enables researchers to more accurately incorporate actual land holding situation into their assessments and enables them to better target their support to farmers.

Products

Data services (dataset on mass storage medium, via download service or via web feature and mapping service) containing:

- Rural administrative land administration information of selected rural parcels (Includes unique parcel identification, right holders, user rights, restrictions)

- Rural cadastral land administration information of selected rural parcels (Includes unique parcel identification, parcel size, parcel location)

Potential Demand

Annual subscription for data access to specific area. Extent of usage will depend on the availability of GIS capabilities.

Revenue Authorities

Introduction

Rural land administration information is vital for land tax collection. Accurate and complete parcel information of a whole woreda with parcel size, parcel location and parcel boundaries and information on the right holders enables the revenue authorities to collect tax more efficiently and effectively. Due to poor data quality of woreda land administration information in the past, kebele administrations are often obliged to reconstruct the data for tax collection. This absence of spatially/geo-referenced information hinders verification whether all parcels and with the correct parcel size are taxed. The collection of land use tax and land income tax is delegated to the local administrator at kebele level. Collected revenues are transferred to the account of the revenues authorities. Based on data provided by the woreda revenue authorities, the kebeles start the tax collection process. SLLC data is however often not maintained by the woreda land administration after SLLC and kebeles are obliged to make corrections before and after issuing the tax assessments. Up-to-date land information will not only save time but also will increase tax revenues. An annual moderate 3% mutation rate would result in 24% of the provided data to be incorrect after 10 years. In Meskan, it was estimated that due to the poor quality of the (SLLC) data only 85% of the revenue is collected, 13% is not collected due to data quality issues and 2% for other reasons (such as non-ability to pay).

The regional revenue authorities expect an increase of land use and land income tax revenues through registration of unregistered land, transforming bare land into use, updating inaccurate parcel sizes and introducing criteria for income. However, the increase of the tax rates in the next five years, if considered at all, will be limited (max. 15%).

Needs

The revenue authorities need to:

- Lower tax evasion by farmers

- Increase participation
- Avoid fraud
- Ensure fairness
- Show good governance
- Improve trust in the government

Requirements

- Reliable and accurate land holding information to support the ability to improve tax revenues and lower the tax collection costs. For land use tax purposes: Land holder, land user, holding size, cadastral map. For land income tax purposes: Land holder, land user, holding size, Valuation of Produce of Land[14], cadastral map.
- The revenue authorities require to occasionally access to registry to verify on a case by case basis land holder use rights, restrictions and parcel location and size.
- The development of the cadastral map for non-LIFT woredas should be considered.

Value Proposition

Up to date land holding information improves tax revenues, lowers the tax collection costs and increases participation, fairness and good governance.

Reliable information on land holdings, the land holders and the parcels (location and size) enables all parcels to be counted and land size is calculated and not estimated.

Products

Data services (Dataset on mass storage device) containing:

- Rural administrative land administration information of selected rural parcels (Includes unique parcel identification, right holders, user rights, restrictions)
- Rural cadastral land administration information of selected rural parcels (Includes unique parcel identification, parcel size, parcel location)

Web enabled online rural land administration information services:

- (Certified) Excerpt administrative rural land administration information on a selected rural parcel (Includes unique parcel identification, right holders, user rights, restrictions)
- (Certified) Excerpt cadastral rural land administration information on a selected rural parcel (Includes unique parcel identification, parcel size, parcel location)

Potential Demand

Annual subscription for data access to specific area. Extent of usage will depend on the availability of GIS capabilities.

Bureau of Finance and Economic Development

Introduction

The mission of BoFED is to enhance maximum development of the region through generation of policy ideas based on reliable data and research undertakings, setting development priorities for the region, and preparing development plans and monitoring its implementation, creating reliable development finance through continuously broadening the tax base, and ensuring equitable resource allocation and cost-effective utilization.

Needs

BoFED needs rural land administration information:

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[14] Several institutions require the attribute Valuation of Produce of land. The micro finance institution is interested in the capability of the land holder to repay the loan based on income derived from the land, Income of the land is also required if the revenue authorities want to implement land income tax, income of the land is also an important attribute for the agricultural sector to assess to what extent the farmers incomes are improving. The development of Valuation of Produce of land could be a joined effort between the agricultural agencies, land administration, revenue authorities and micro finance institutions.

- To assess future land use tax - and land income tax rates[15]
- To determine the tax potential of woredas. Assessments to broaden the tax base (data on to register unregistered land, to transform bare land into land used with a purpose, data on inaccurate parcel sizes, productivity)[16].
- For equitable resource allocation and cost-effective utilization (such as agricultural inputs, schools, security, health centres etc.).
- For conflict resolution regarding holding rights and administrative boundaries.

Requirements

- Reliable land holding information (land holder, land user, holding size, land productivity and the cadastral map) to support the need to broaden the tax base and to ensure equitable resource allocation and cost-effective utilization.
- Regional coverage. Data covering woredas can be used for assessments and extrapolation.
- The development of the cadastral map for non-LIFT woredas should be considered.

Value Proposition

Reliable data for tax revenue assessments and equitable resource allocation and cost-effective utilization.

Products

Data services (dataset on mass storage medium, via download service or via web feature and mapping service) containing:

- Rural administrative land administration information of selected rural parcels (Includes unique parcel identification, right holders, user rights, restrictions)
- Rural cadastral land administration information of selected rural parcels (Includes unique parcel identification, parcel size, parcel location)

Potential Demand

Annual subscription for data access to specific area. Extent of usage will depend on the availability of GIS capabilities.

Justice (Woreda Courts) and Mediators

Introduction

According to study[17] in Tigray, Amhara, Oromia and SNNP over 50% of the woreda civil court cases in 2012/2013/2014 were land related cases. The courts had on average an influx of over 300 land related cases per year. According to another study in Tigray, 15.7% of the land related cases that were mediated by local conflict mediators went to a woreda court[18]. A study in Tigray of 175 rural farming households found that farmers involved in land disputes saw a decline in agricultural productivity of about 20 percent[19].

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[15] There is no plan to increase land use and land income tax rates during GTP-II. Main revenue generators are income tax, and future also profit tax, vat and other taxes. Tax experts, currently working on improvement of the Ethiopian tax system, suggest that the future land use and income tax revenues could, compared to current revenues, be 4 times higher. The increase in tax revenues, by doubling of the land tax revenue, would more than cover the total recurring costs of an up to date rural land administration in the 4 regions. The regions, however, do not have plans to further differentiate or increase the land tax rates. Land tax is considered sensitive and the focus on revenue increase lies with other taxes. The land related tax revenues as a share of the total tax revenues is decreasing. The revenue share from land use and land income tax is small compared to profit, vat and individual tax revenues.

[16] Main revenue generators are income tax, and future also profit tax and vat and other taxes. Land related tax is sensitive. There is no plan to increase land use and land income tax rates during GTP-II.

[17] Classification and Monitoring of Land Disputes in Ethiopia, Daniel W Ambaye, Bahir Dar University, World Bank Land and Poverty Conference, March 14, 2016 Washington DC

[18] Impact of land registration and certification on land border conflicts in Ethiopia, By Stein T. Holden1, Klaus Deininger and Hosaena Ghebru

[19] Land, Confict and Sustainable Development, By Caleb Stevens, Land and Resource Governance Advisor, USAID

Needs

- For efficient handling of cases, mediators and courts need clear information on the right holders, rights, restrictions, parcels.

Requirements

- Reliable and certified rural land information (parcels, land holders, rights and restrictions on rights).

Value Proposition

Certified rural land administration information is beneficial to over 50% of the woreda civil court cases

Certified rural land administration information could help to lower the number of land related court cases and lower the process time of a case.

Products

The products should be accessible through the woreda land administration office and through web enabled online rural land administration information services.

- (Certified) Excerpt administrative rural land administration information on a selected rural parcel (Includes unique parcel identification, right holders, user rights, restrictions)
- (Certified) Excerpt cadastral rural land administration information on a selected rural parcel (Includes unique parcel identification, parcel size, parcel location)

Potential Demand

According to CSA data 2007 the total number of rural woredas in Tigray, Amhara, Oromia and SNNPR is about 559. This would indicate that the woreda courts deal with about 168.000 cases a year. The court will send a request for information for every case to the woreda rural land administration bureau. The number of cases dealt with by mediators at the kebele level is much higher (The 300 court cases represent only 8,2% of the land related cases dealt with by mediators, according to a study executed in Tigray). The availability of reliable land administration information could lead to a large number of information requests from mediators.

Rural Land Administration and Land Use Case Team/Land Use Planning Core [20]

Introduction

Land-use planning seeks to order and regulate land use in an efficient and ethical way, thus preventing land-use conflicts and optimizing the use of land on sustainable basis. The regional land use bureau plans for the needs of the community while safeguarding natural resources. To this end, it is the systematic assessment of land and water potential, alternatives for land use, and economic and social conditions to select and adopt the best land-use options. The land-use plan (capability plan) provides a vision for the future possibilities of development in kebeles, woredas and the region, or any defined planning area.

Needs

The case team and /or core process needs data which enables them to systematically assess the conditions and select the best land-use options to prepare and implement plan at different level and scope. It needs data to balance needs of the community while safeguarding natural resources. It needs a data layer to ascertain that future approved land use plans can be effectively implemented.

Requirements

- Rural land administration information (administrative data) provides information per parcel on right holders, rights, restrictions, parcel location, parcel size, land use and soil fertility.
- The extent and use of land under different tenure niches which is one of the critical data sets for natural resources management: Individual holding; Communal holding and government holdings.
- Data will be used in GIS environment and should be provided on data storage media, as a download service or as a web feature and mapping service.
- The development of the cadastral map for non-LIFT woredas should be considered.

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[20] Process under the Bureau of Agriculture and Natural Resources and /or Bureau of Rural Land Administration and Use

Value Proposition

Reliable rural land administration information for effective rural land use planning and management.

Rural land administration information provides the spatial link between the area with its capabilities and the location of land of the community members (land holdings and the location and size of their parcels.

Rural land administration information enables the Bureau of Agriculture and Natural Resources and the Rural and administration and use bureau to systematically assess the conditions and select the best land-use options. It helps to balance needs of the community while safeguarding natural resources. It also provides a data layer to enable that accepted land use plans can be effectively implemented and managed.

Rural land administration information improves the ability to plan and manage the future use of rural land. It is also important for the fringe areas around cities. It supports efforts to build transparency and trust in the government.

Products

Data services (dataset on mass storage medium, via download service or in the future via web feature and mapping service) containing:

- Rural administrative land administration information of selected rural parcels (Includes unique parcel identification, right holders, user rights, restrictions)
- Rural cadastral land administration information of selected rural parcels (Includes unique parcel identification, parcel size, parcel location)

Potential Demand

Data services: Annual subscription for data access to specific area. Extent of usage will depend on the availability of IS capabilities.

Ethiopian Agricultural Investment Land Administration Agency

Introduction

The agency has powers and duties to, with the cooperation of the regional states identify and survey agricultural investments land, make sure that this land is free of farmers or pastoralists possession and requirements by the regional state, develop a land bank system and collect data on agro-ecology, soil topography and socio-economy, take possession and demarcate borders and prepare side plans, develop crop suitability documents, enter into contracts with investors, transfer agricultural investment land, issue site plans, monitor and ensure that investors are implementing their business plans, collect data on lands transferred, create an agricultural investments information system, facilitate efficient supply of inputs.

Needs

Investors and their facilitators (Regional investment agencies) are looking for suitable areas to lease land. The agency needs reliable rural land administration information which supports them to identify and assess potential areas, to communicate with the right holders and to perform daily management of the investment portfolio.

Requirements

Data requirements related to land are:

- Unique parcel identification number (source: land administration)
- Geographic coordinates (source: land administration)
- Average elevation above mean sea level
- Area in hectares (source: land administration)
- Average annual rainfall
- Moisture sources (rain fed / irrigation)
- Suitable crops (cotton, coffee, tea, sesame, soya bean, maize, sorghum, haricot bean, wheat, rice, teff, barley)
- Other functions (dairy, fattening, poultry, apiculture, timber, etc.)
- Land use

- Status of the infrastructure (road, telephone, electricity, bank, insurance, water supply)
- Accessibility

The development of the cadastral map in non-LIFT woredas should be considered.

Value Proposition

Rural land administration information enables the accurate planning and management of agricultural investments

Rural land administration information (parcel location, sizes, right owners and use rights and restrictions) enables the investment agency to identify and assess potential areas for investment, to efficiently communicate with the right holders and to the investment portfolio.

Product

For planning purposes: Data services (dataset on mass storage medium, via download service or via web feature and mapping service) containing:

- Rural administrative land administration information of selected rural parcels (Includes unique parcel identification, right holders, user rights, restrictions)
- Rural cadastral land administration information of selected rural parcels (Includes unique parcel identification, parcel size, parcel location)

For specific investment and portfolio management purposes: Web enabled online rural land administration information services.

- (Certified) Excerpt administrative rural land administration information on a selected rural parcel (Includes unique parcel identification, right holders, user rights, restrictions)
- (Certified) Excerpt cadastral rural land administration information on a selected rural parcel (Includes unique parcel identification, parcel size, parcel location)

Potential Demand

- Data services: Annual subscription for data access to specific area
- Web enabled online rural land administration information services.

Potential Demand and Revenues RLAIS

Introduction

This section contains an assessment of the potential of RLAIS to recover recurring costs of RLAS and RLAIS by generating public revenues. The potential cost recovery strategies as shown in figure 1, are besides budget allocation, registration fees, land tax revenue sharing and revenues from fees for web enabled online information services/data services.

Figure 1 - Potential cost recovery strategies for RLAS and RLAIS

Potential Revenues Web Enabled Online Rural Land Administration Information Services

In the report "Strategies towards financial sustainability RLAS" a growth scenario (towards 5% transaction level and 3 enquiries per transaction) for the web enabled online rural land administration information services has been used to estimate the revenues (Table 5). At ETB 20 per enquiry/information product and considering the recurring costs of the rural land administration system, the gross recurring cost coverage ratio of web enabled online rural land administration information services was estimated at 36%.

Table 5 - Revenue levels at 5% transaction levels and 1 up to 3 enquiries/information products per transaction. Transaction fee ETB 20 per enquiry

Region	Potential revenues at ETB 20 per inquiry at regional coverage			
	1 enquiry per transaction	2 enquiries per transaction	3 enquiries per transaction	Number of parcels
Oromia	ETB 23	ETB 46	ETB 69	23.000.000
Tigray	ETB 4	ETB 8	ETB 12	4.000.000
Amhara	ETB 16	ETB 32	ETB 48	16.000.000
SNNP	ETB 12	ETB 24	ETB 36	12.000.000
Total	ETB 55	ETB 110	ETB 165	55.000.000

Revenue estimates in ETB million. Number of parcels = Total number of parcels to be registered & titled from 2013 to 2015. Source LA SRM.

Potential demand and revenues top 5 customer groups for web enabled online rural land administration information services

The net recurring cost recovery ratio for RLAS by generating revenues from web enabled online rural land administration information services ranges between 23% and 41%[21]. Table 6 lists the 5 top customer groups with potential demand and potential revenues.

Table 6 - Potential demand and revenues top 5 customer groups web enabled online information services

Customer group (top 5)	Potential demand (inquiries)	Potential revenue at ETB 20 per Inquiry
Micro finance institution/competitors	4,1 – 8,2 million	ETB 82 – 164 million
Micro insurance institution service provider	0,02 – 0,079 million	ETB 0,4 – 1,58 million
Rental broker/land user (formalised transactions)	0,063 million	ETB 1,26 million
Courts	0,168 million	ETB 3,36 million
Rural land administration bureau	1,485 million	ETB 29,7 million
Total	5,8 – 10 million	ETB 116,7 – 199,9 million
Net cost recovery ratio RLAIS web services to RLAS[22]		23% - 41% (mid and high scenario Annex 4)

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[21] **The potential demand is only viable when the rural land administration information system is legally acknowledged as the single source for certified (and guaranteed) rural land administration information.**

[22] Net cost recovery ratio RLAIS to RLAS = Potential revenues RLAIS – Annual recurring costs RLAIS/Annual recurring costs RLAS

A more detailed assessment of the potential demand for web services is provided in annex 1.

Potential Demand and Revenues for Data Services

As for the public sector, a subscription fee for data services to recover at least a part of the recurring costs of the RLAIS and RLAS should be considered. This would further improve the financial sustainability of RLAS and RLAIS. The potential demand will be the equivalent of at least 36 subscriptions (recalculated to regional coverage) with a further growth potential towards other institutions on the regional and federal level. As shown in table 7, the majority of the potential customer groups are in the public domain. The GoE needs to decide what kind of cost recovery mechanism it wishes to introduce for data services. Clearly a well-functioning RLAS and RLAIS provide crucial data for public institutions such as the revenue authorities and BoFED. They rely for their land tax policy development, land tax assessment and tax collection of land related tax on the availability of complete and accurate rural land administration information. The land administration should assess the possibility of cooperation with the revenue authorities[23] to achieve these synergies and subsequently share a part of the recurring costs of RLAS. In the study "Strategies towards financial sustainability of RLAS", it was calculated that about 16% of the cost recovery of RLAS should come from data services.

Table 7 - Potential demand data services

Customer group	Potential demand (recalculated to regional coverage)
Regional Bureau of Agriculture	Subscription (4)
Regional Agricultural Research Institute	Subscription (4)
Regional and Woreda Rural Land Administration and Use	Subscription (4 + 4) - 1 subscription per regional bureau and 1 subscription for all woreda bureaus of the region
Regional and Woreda Revenue Authorities	Subscription (4 + 4) - 1 subscription per regional bureau and 1 subscription for all woreda bureaus of the region
Regional Bureau of Finance and Economic Development	Subscription (4)
Regional and federal Investment Agency	Subscription (4 + 4) 1 subscription per regional bureau and 1 subscriptions for every region (4) or the federal level
Total	**36**

RLAIS Marketing Strategy and Operating Model

High Level Marketing Strategy

This section describes, as a part of the implementation strategy, the main building blocks of the marketing strategy for rural land administration information services.

Product Differentiation Strategy

The product strategy is to focus on the customer value of the rural land administration information services while keeping costs down by providing a limited set of services and information products.

Focus on customer value

The value components of the rural land administration information services are:

- Information from the rural land administration has a legal (enforceable) status
- It provides reliable information on rights, restrictions and right holders to land
- It provides reliable information on the location, size and boundaries of the parcel
- It accounts for the coverage of all parcels at the kebele level
- The data is normalised and can therefore efficiently used and integrated in digital user environments
- Digital information can be easily and instantly accessed over large distances
- The data can easily be enhanced with or connected to other land related data

Focus on limited number of services and information products while using product differentiation

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[23] The kebele administration receives 2 -3% of the tax revenues to cover their tax collection costs. A further increase of this percentage (share of the land tax) to recover a part of the recurring costs of RLAS/RLAIS is not seen as a viable option by BoFED and the revenue authorities.

Development - and maintenance costs of the information products can be limited by developing a few base services and information products. Slight differentiations in product offerings introduce opportunities to target the specific use requirements, increasing use while at the same time keeping costs down. Only a small number of information products are required to satisfy most of the customer information needs and requirements[24].

- Provision of hard copies or information via web enabled online rural land administration information services

  o Rural land administration information per parcel

  o Rural land administration information per land holder

  o Right information per parcel

  o Right information per land holder

- Data services (dataset on mass storage medium, via download service or via web feature and mapping service) containing:

  o Administrative land administration information of selected rural parcels

  o Cadastral information of selected rural parcels

- Market information for rental, micro finance and micro insurance market
- Market information on available rural land for rent

Pricing Strategy/Willingness-to-Pay

Currently the public sector allocates budgets to public functions based on submitted and accepted activity plans. Due to limited financial resources, activity plans become underfunded, postponed or dismissed. This practice could seriously affect the sustainability of the rural land administration and its' future information services.

Revenue generation by charging fees for rural land administration services could lower the pressure on already stretched regional state budgets and better secure continuous funding of the rural land administration activities. The principle of charging fees for land administration services has already been introduced for the urban land administration services and the regions are not unwilling to consider the introduction of fees for rural land administration (information) services. Amhara is charging for registration services and is currently drafting a directive to charge for specific rural land administration information products. At the federal level, the Planning Commissioner has stated that the principle of charging for information services, which is already implemented by CSA and EMA, could certainly in the future be extended to the rural land administration.

The decision to introduce fees, their introduction moment and their fee rates requires the submission of a proposal to the regional government and after a positive decision, development of a corresponding legislation and a carefully designed fee introduction strategy[25] (which should consider affordability and consequences to access to vital services and usage).

The private sector is willing to pay for service if this enables them to add value to their services or reduce their costs of doing business.

The use of rural land administration information services within the public domain should be promoted. There could be many positive synergetic effects from "combined/integrated" development, maintenance and usage of data and services. This is currently not exploited. The National Spatial Information and Technology Policy of October 2016 states "the utilization of spatial information and technology inputs for national development in Ethiopia is still at rudimentary level. Consequently, the country is not reaping the full potential benefits from the sector. These is mainly due to challenges associated with quality and maintaining consistency; resource scarcity and wastages; lack of accessible spatial information; lack of adequate awareness on the potential

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[24] This has been a long-time experience in the Netherlands since introduction of the land administration information services in 2001.

[25] Not being able to charge will seriously limit demand driven provision of information services and customer support according to the needs, requirements and capabilities of the users. This could lead to over-use of public sector resources. On the other hand, charges could also prevent public functions to use information services, especially data services.

impact of spatial information on national security; absence of developed operational system and legal frameworks in the sector; lack of awareness, and of coordination and cooperation among stakeholders".

The introduction of the concept of a service level agreement for the public-sector data-services should be considered. A service level agreement between the public-sector users and the rural land administration describes the standard services/information products and customer support to be provided by the rural land administration to specified users within the public sector. To provide these services, an annual budget should be allocated to cover the costs of the rural land administration for the data use and the provision of the services. Additional services could be provided against additional charges.

Pricing of rural land administration information services requires the development of a legal framework[26]. Until the legal framework has been decided, internal cost calculation could be introduced to calculate the additional budget allocation required to recover the costs of the data and rural land administration information services.

The external value of RLAIS is substantial and the report shows that a part of that value can be captured as revenues. However, introducing fees to capture revenues should not be the first step after the introduction of the services. The first step would be to make users aware and comfortable with the way they can use the services and products to their advantage. Based on these experiences the optimal pricing strategy can be decided upon to maximize usage and cost recovery.

Distribution Strategy

Multi-channel approach

- In an optimal situation, the rural land administration information services should be made available at as many as possible points where civilians need to have access to rural land administration information services.
- The short term minimum service should offering be hard copies of products and data on mass media at the woreda land administration office. This should be extended to the kebele level when technology allows this.
- The next stage should be offering web enabled rural land administration information and data services to private and public customers who have access to internet and telecom networks.
- In cooperation with certain private and public sector users of web enabled online information services, additional physical access points for civilians to receive rural land administration could be implemented.
- Consider to directly offer access to web enabled online rural land information services to civilians when their internet use makes it attractive to develop these services and the required customer support.
- Offer access to only a limited set of data services at the woreda level and web feature and web mapping services including data manipulation services at the regional level.

Table 8 - A multi-channel approach

Service	Target group	Service point
Hard copies	Civilians	Kebele, woreda land administration office, selected private and public-sector access points
Web enabled online rural land administration information services	Public and private sector. Future also civilians.	Regional and federal office
Data services	Public and private sector.	Federal, regional and woreda land administration office

Operating Model

Introduction

The operating model describes the (product and service) fulfilment system for the rural land administration information services. The operating model is a part of the business model of the rural land administration information services.

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[26] Only Amhara has fees for land administration transactions. The Amhara land administration is developing a directive to be able to charge fees for information products.

The future operating model should be aligned with the marketing strategy which is defined in section 4.1. In other words, the processes and required resources should be aligned with the selected products, services and distribution channels.

Figure 2 - Business model development (phases)

PHASE 2 OPERATING MODEL	PHASE 1: BUSINESS & MARKETING STRATEGY
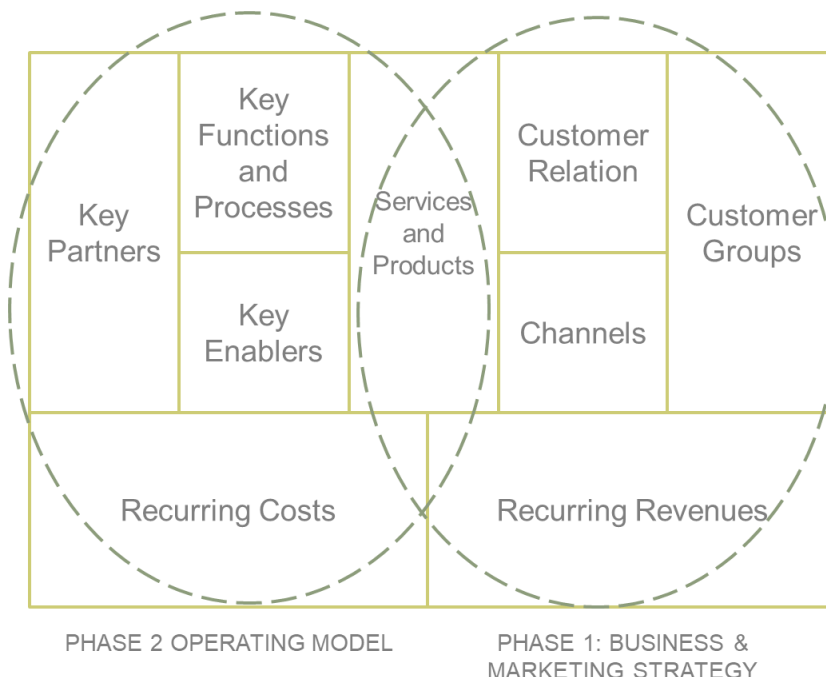
With the definition of the operating model, the recurring costs of the information services can be determined and subsequently the potential net contribution of the rural land administration information services to the recurring costs of the rural land administration (the registration function).

The development of the operating model is a programme in itself and needs to be defined, planned, funded and governed. This development programme needs to close the gap between the required and the current capabilities (at the federal, regional, woreda and kebele level) to run the rural land administration information services.

Design Principles

- Need to support the marketing strategy
  - o Rural land administration information products and services (web services, data services, front offices).
  - o Customer oriented service provision.
    - o Access should not prohibit usage[27]
    - o Professional handling / reliable service levels
    - o Error free
  - o Meet marketing targets (high penetration among targeted customer groups and high usage by customer groups)
- Operating model needs to be effective.
  - o Responsive to customer needs and requirements

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[27] The kebele and woreda should function as access points for land users for requests and over-the-counter information products related to the kebele. The woreda should function as access point for other local customer groups for requests, over-the-counter information products and standardized datasets related to the woreda. The region should function as access point for customized and standardized datasets at the regional level and all requests for subscriptions within the region for web enabled services. At the federal level there should be an access point for customized and standardized datasets on the federal level and federal requests for subscriptions for web enabled services

o   Leverage scale and expertise

o   Develop expertise, consistency and collaboration

o   Avoid unnecessary duplication of tasks

o   Need to be Ethiopian context specific and robust

• Needs to mitigate related risks.

Operating Model

Figure 3 - Outline of the future operating model
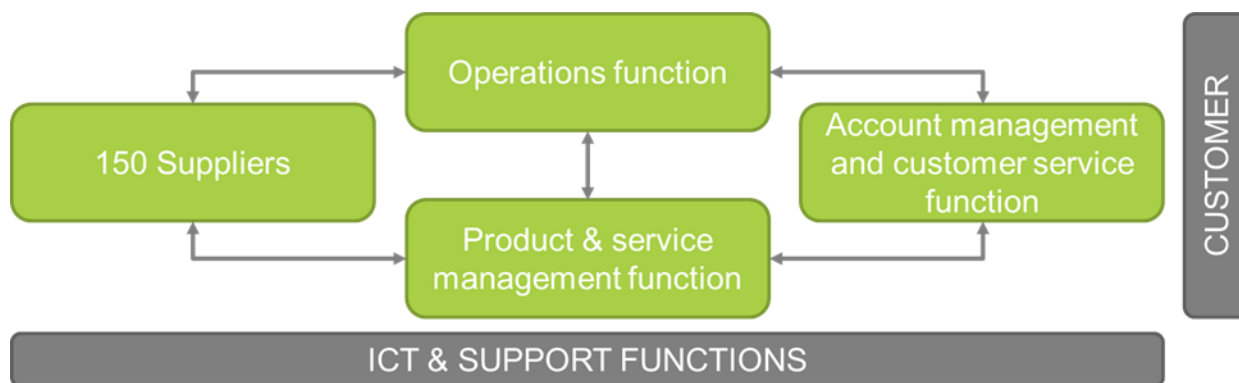
To be able to deliver the services and products an effective and efficient operating model for information services needs to be defined and implemented. The core functions are:

• The account management function – which is responsible for communicating the organization's services and products to its markets in order to generate customer demand

• The customer service function – which is responsible for handling customer requests and complaints. The customer service function is the primary access point for all customers.

• The operations function – which is responsible for the production and delivery of services and products based on customer requests.

• The product and service management function – which is responsible for developing new and modified services and products in order to generate future customer requests. This function should also consider market, technical, legal and financial aspects related to product and service development.

• The support functions to the operating model are ICT-[28], human resources- and finance and control function. The development of the ICT function is within the scope of the NRLAIS implementation and is therefore outside the scope of this business case.

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[28] The ICT function is responsible for meeting the infrastructure requirements and the requirements for applications and procedures. The requirements are related to

• Network architecture
• Electrical design
• File storage, backup and archiving
• System redundancy
• Network access control and security
• Database management
• Web hosting
• Application hosting
• Content distribution
• Environmental control
• Protection against physical hazards (fire, flood, windstorm)
• Power management
Capacity building of and budget allocation for the ICT infrastructure will be covered by project NRLAIS.

Account Management Function

The account management function should be positioned at the federal and regional level[29].

The account management function is responsible for achieving the following objectives and activities:

Objectives

- High awareness of benefits from rural land administration information services and products among target customer groups
- High penetration[30] within the target customer groups
- High usage among the target customer groups

Activities

- Developing an annual account management plan, which should at least include an assessment of the market size (potential number of annual rural land administration information product requests for every woreda, for every target customer group and for every key account), value propositions for every target customer groups and key accounts, an action plan with targets and required means). This plan needs to be developed in cooperation with customer service, product and service management and operations.
- Executing the action plan in cooperation with customer service, product and service management and operations.
- Monitoring and evaluation of the results in cooperation with customer service, product and service management and operations.

Enablers

- 2 account management positions at federal level + training
- 2 account management positions at regional level + training
- Transport facility to visit customers
- Adequate facilities, furniture's and equipment
- Annual budget to support the function

Customer Service Function

The customer service function needs to be available at the kebele-, woreda- regional and federal level. The customer service function is responsible for the following objectives and activities:

Objectives

- Achieving high levels of customer satisfaction
- Handling of all customer requests in accordance with service levels

Activities

- Taking in, distributing to the right function and keeping track of all customer requests including complaints
- Handling of all over the counter information products
- Support of account management activities for their area
- Providing input for process-, customer service-, product improvements

Enablers

- 2 customer service positions at federal level + training
- 2 customer service positions at regional level + training
- 4 current land administration experts at the woreda level and 1 in every Kebele need to be trained

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[29] SNNP and Oromia would like to introduce account management and production function at the zonal level. This would bring the account management and production function closer to zonal customers (public institutions) and would introduce production support for the operations function. This suggestion needs further investigation during the development phase of the project.

[30] Market penetration: Number of customers within a specific customer group using the product or service/total number of potential customer within a specific customer groups using the product or service.

- Workflow management system
- Adequate facilities, furniture's and equipment
- Web enabled online rural land administration information services
- Procedures and work instructions
- FAQ
- Annual budget to support the function

Product and Service Management Function

The product and service management function should be positioned at the federal level with the support of representatives from the regions. Coordination of the product management should be done at the federal level, in coordination with the Regions.

The product and service management function are responsible for:

Objectives

- Development and maintenance of fit-for-purpose information services, products and processes
- Management of operational, legal, financial, market aspects
- Product marketing and channel marketing management
- Management of the roll out to the regions in close cooperation with ICT, account management, customer service and operations
- Support to capacity building of account management, customer service and operations
- Knowledge management[31]

Enablers

- 2-3 product, service and process management positions at federal level + training
- 1 product, service and process management position at regional level + training
- Adequate facilities, furniture's and equipment
- Procedures and work instructions
- Annual budget to support the function

Operations Function

Operations is responsible for three processes:

1. Developing and maintaining data supplier relationships
2. Producing information products and providing information services
3. Distributing and delivering information products and providing services to customers

Developing and Maintaining Data Supplier Relationships

The main supplier relationship will be the data supply by the woreda land administration. Telecom relationships are to be managed by the ICT function.

Objectives

- Lower the total "cost of ownership", the total cost of acquiring the inputs.

Activities

- Ordering of data and services
- Receiving data and services
- Validating quality of data and services
- Handling of issues concerning supplied data and services
- Informing production about issues and measures taken

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[31] The ultimate purpose of knowledge management is to create value for the customers/society by improving products, services and processes.

- 2 GIS data experts at federal level + training
- 2 GIS data experts at regional level + training
- Adequate facilities, furniture's and equipment
- Procedures and work instructions
- Annual budget to support the function

Production of Information Products and Services[32]

Objectives

- Guarantee continuous daily production against defined service levels.

Activities

1. Production of over-the-counter information products. This will be done by the customer service function at the Woreda level.
2. Production runs of standardized datasets. This will be done by the appropriate production function.
3. Production run of customized datasets. This is executed by production function at the regional of federal level.

Enablers

- 2 GIS data experts at federal level + training (customized solutions and standardized datasets)
- 2 GIS data experts at regional level + training (customized solutions and standardized datasets)
- Training 2 current staff members at Woreda level (standardized datasets)
- Adequate facilities, furniture's and equipment
- Procedures and work instructions
- Annual budget to support the function

Delivering Information Services and Products to the Customer

Objectives

The delivery of information services and information products to the customers comprises of making sure that customer request is orderly dealt with in accordance with certain product specification, quality, response time and during certain opening hours. Customer service and production are responsible for meeting the requirements.

Enablers

- 2 GIS data experts at federal level + training (customized solutions and standardized datasets)
- 2 GIS data experts at regional level + training (customized solutions and standardized datasets)
- Training 2 current staff members at woreda level (standardized datasets)
- Adequate facilities, furniture's and equipment
- Procedures and work instructions
- Annual budget to support function

Support Functions to the Operating Model

- Accounting and finance function at regional and federal level
- Legal function at regional or federal level (handling privacy, freedom of information, intellectual property issues)
- HR function at regional and federal level
- ICT function at the woreda, regional and federal level (to be implemented by project NRLAIS)

Recurring Costs Operating Model RLAIS

The marketing strategy focusses on operational excellence, a clear focus on customer value by providing a limited well-defined set of services and information products. This strategy increases the financial sustainability, makes optimal use of the limited resources and optimises learning effects.

The operating model should support the marketing strategy while taking into account the Ethiopian context and critical success factors.

The constraints are not so much in the value potential, but in the capability (being able to meet the critical success factors) to unlock the potential. The long-term cost recovery ratio of just the web enabled online services, excluding data services, ranges from 23% to 41%, provided the information services meet the customer requirements and RLAIS is operated professionally. Only a professionally run RLAIS operating model, can unlock the intrinsic value of RLAIS and generate value and, when fees are introduced, public revenues.

The annual recurring costs of the, still to be developed, RLAIS function would be approximately ETB 8 million. While the recurring costs if RLAIS is a fraction (1,7%) of the recurring costs of RLAS (ETB 458 million), the contribution of RLAIS to the value generation and potential cost recovery would be significant.

The annual recurring costs include establishment of RLAIS entities at federal, regional and woreda level. The recurring costs include staff salaries for positions at federal and regional level, other staff related costs (transport, per diem, office facilities) and functional maintenance of the web and data services. No staff increase is foreseen at woreda level, as the current woreda staff will be trained to execute RLAIS functions. The recurring staff and other costs of the woredas and kebeles are already included in the RLAS recurring costs calculations.

The introduction of a RLAIS function at zonal level (50 zones) would significantly increase annual recurring costs with ETB 28 million. Considering the present still minimal demand and considering economies of scale and learning effects, the service provision of zonal customers (mainly public sector) should preferably be executed by the regional RLAIS function.

The external value of RLAIS is substantial and the report shows that a part of that value can be captured as revenues. However, introducing fees to capture revenues should not be the first step after the introduction of the services. The first step should be to make users aware of the value and comfortable with the way they can use the services and products to their advantage. Based on these experiences the optimal pricing strategy can be decided upon to maximize usage and cost recovery.

The breakdown of the annual recurring costs and of the potential net revenues of RLAIS are shown in annex 3 and 4.

RLAIS Implementation Strategy

RLAIS Roadmap

The development and implementation of RLAIS is one of the recommended value strategies as described in the report "Strategies towards financial sustainability of RLAS". Figure 2 shows the roadmap for development of the rural land administration information services. The first step would be the design and implementation of the required legal, institutional and operational conditions for the establishment and operationalisation of RLAIS.

The next step (overlapping in time) would be the development of RLAIS consisting of the development of the information services and information products, the development of the operating model, the development of the pricing mechanism, the development of the capacity building programme and the development of the services introduction campaign.

The operational phase starts with a roll out of RLAIS on the federal and regional level and will be continued with a roll out to 8 model woredas, who will be piloting RLAIS. After this pilot a further roll out is planned for to 142 woredas.

Figure 2 - Roadmap for the development of the rural land administration information services

RLAIS - Critical Success Factors[33] and Risks

Critical Success Factors

Fit-for-Purpose[34]

The rural land administration information services can only create value if the data residing in the Land Register database can be converted into information which is reliable, easy accessible and of value to the user (fit-for-purpose).

A critical factor will be the data quality of the woreda land administration (data in the Land Register database). To what extent information products based on data of a specific woreda can be made available to customer groups and through which services will depend on the data quality provided by that specific woreda.

The full value of the rural land administration information services can only be accomplished when the registration captures all land transactions in the real world timely and accurately.

Generally, the land administration data of a specific woreda should only be widely used if the data is accurate and complete (level 3 figure 4).

Figure 4 shows a representation of the stages towards a sustainable rural land administration. After the SLLC, the first stage to accomplish would be to develop an effective service provision, which includes correct and reliable services and service levels. The next stage would be to get the land holders to use the land administration for all the relevant transactions (engaged landholders). This is a challenging stage. It is about land holders having trust in the land administration, realising the benefits and perceiving a positive benefits/cost ratio. The use of RLAIS depends on accurate and complete data from the Rural Land Administration System. The sustainability of RLAS depends on an effective RLAIS, because RLAIS will be the way for RLAS to generate value and when fees are introduced will also contribute to its' financial sustainability.

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[33] Critical success factors are elements that are vital for the RLAIS strategy to be successful.
[34] Fit-for-purpose: Information product or service meeting the needs and requirements of the customer

Figure 4 - Towards a sustainable rural land administration system
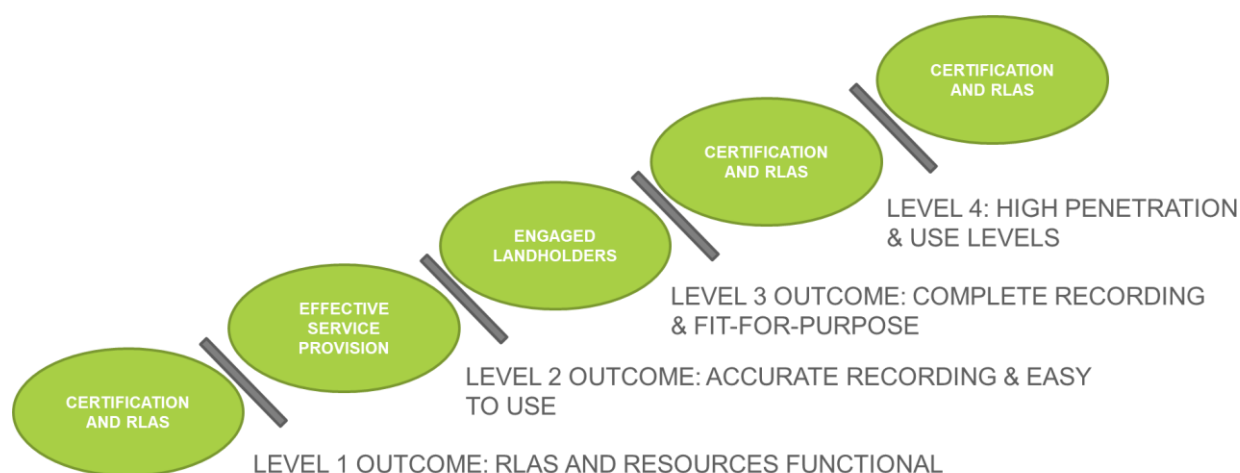
Robust Operating Model

The operating model needs to function within the Ethiopian context by incorporating of context relevant experience of other service providers in Ethiopia such as the Commercial Bank of Ethiopia (operating over 1000 branches and internet services) and INSA.

Organisational Capacity and Culture

RLAIS requires a specific institutional set up and leadership to adequately provide information services.

Technical Conditions

Critical for the success are capacity and continuity assurances regarding the

- Data centre
- ICT networks
- Information systems and network access available at the customer end
- NRLAIS[35]

A great deal of the use of RLAIS depends on the achievement of GTP-II objectives regarding internet and telecommunication[36]. The adoption of the web enabled services will depend on access to internet. The adoption of more advanced forms of data services will depend on GIS capabilities of the users.

Political Conditions

The commitment of the woreda and regional cabinets to introduce and sustain reliable land administration information services is a critical success factor for RLAIS and the success of RLAS.

Legal Conditions

- Freedom of information (national security clearance)
- Privacy (clearance of use of the information)
- Pricing and Intellectual property
- Legal liability RLAS data
- Data standards and exchange

Policies, regulation and directives on intellectual property rights, data sharing, privacy, pricing and licensing to support the rural land administration information services need to be developed and implemented.

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[35] ICT capacity building for RLAIS and the related budgets will be covered by project NRLAIS.
[36] However, the probability that several woredas and kebeles will not be connected at the end of the GTP-II planning horizon is there (SNNPR expects 60-70% of Woredas and 40% of kebeles will be connected).

Risks[37]

Apart from ensuring that Critical Success Factors are achieved, a large number of risks will have to be mitigated to enable the successful use of the RLAIS. Most important risks are:

- Failure to meet capacity - and competence requirements due to substantial staff turnover and unfulfilled positions.

- Network availability and performance. Challenging telecom network: Bandwidth and availability (Woreda network).

- NRLAIS capability: Operational performance and stability not tested yet

- Fit-for-purpose (from a customer perspective) does not become top priority.

- Land Register database not up-to-date due to limited/non-registration of land transactions. Lacking data quality in relation to customer requirements which would undermine customer trust.

- Legal and security clearance issues related to rural land administration information services could undermine data accessibility and subsequently wide use.

- Decision makers may not fully appreciate the value of the rural land administration and the necessity to investment with a long term perspective. This would lead to insufficient budget allocation to cover development and recurring costs, critical for the success of the rural land administration information services.

- No effective commitment of the GoE (region/woreda/kebele).

The risks and risk mitigation measures are detailed and linked to RLAIS workplan measures in Annex 5.

RLAIS Development and Implementation Workplan and Budget

RLAIS Development and implementation Workplan

The time span for the execution of the workplan will be 5-6 years. The establishment phase of RLAIS will take 3 years. The operational phase (roll out for the pilot and further roll out to at the end 150 woredas) another 3 years. This under the provision that the woredas are ready to deliver land administration data of the required quality for online RLAIS services. To provide online information services, the RLAS data needs to be accurate and complete (level 3 figure 5). If this is not the case information can only be provided if the correctness and completeness of the woreda rural land administration information is manually certified by the woreda land administration office before it is distributed to external customers. The use case studies planned during the design and development of the legal, institutional and in this case operational conditions will substantiate the need for data enhancement necessary to have data which Is fit-for-purpose and complete. An investment of 3 months enhancement per woreda has been budgeted.

Careful attention needs to be paid to the introduction of fees (especially moment and level). Although the capability of fees will already be established under the development of the legal framework, it is the value creation through promoting usage which should have priority over generating revenues (which should be a consequence of usage by users).

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[37] A probability or threat of damage, liability, loss, or any other negative occurrence that is caused by external or internal vulnerabilities, and that may be avoided through pre-emptive measures.

Figure 5 - Path towards a fully operational and sustainable woreda RLAS
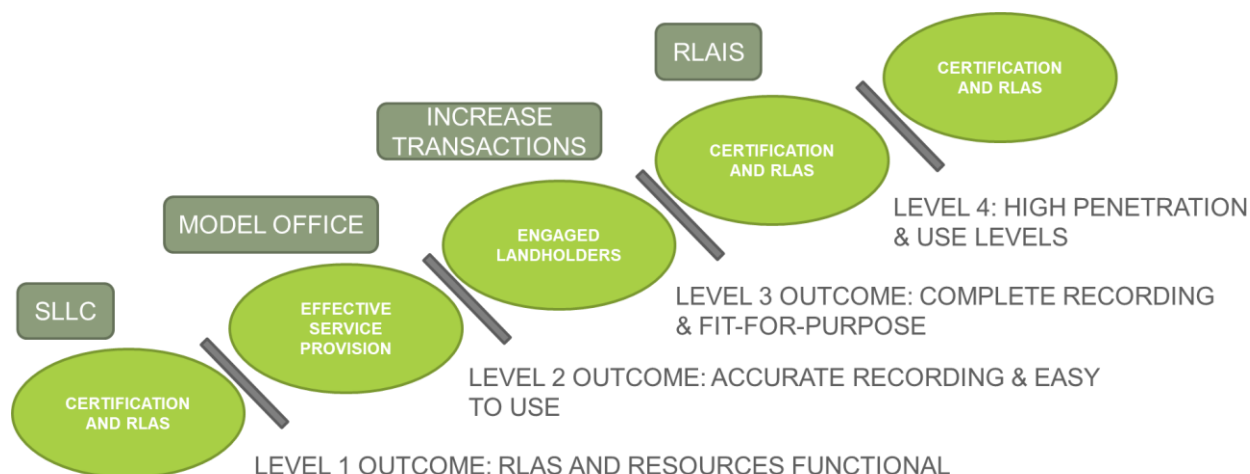
Figure 6 - RLAIS development and implementation workplan

		2018	2019	2020	2021	2022	2023	2024
Legal, Institutional, Operational Conditions for RLAIS	Develop legal framework (intellectual property, freedom of information pricing, privacy, licensing, revenue generation, cost recovery)	▓	▓					
	Security clearance RLAIS by INSA	▓						
	Commitment on operating model RLAIS and relevant institutional aspects and governance framework during establishment and operational phase of RLAIS	▓						
	Use case studies process and information requirements. Key customers & assessment data sourcing	▓						
	Assessment fit-for-purpose data	▓						
Develop RLAIS	Project plan		▓					
	Develop web enabled online rural land administration information services and data services		▓					
	Develop operational model: business rules, standard operating procedures, work instructions, service levels		▓					
	Amend ICT helpdesk issue management system for workflow management of customer requests		▓					
	Develop marketing plan and service introduction campaign		▓	▓				
Developing capacity building programme operating model	Pricing (develop fee structurs, changes, regulation, working guidelines, communication strategy)		▓	▓				
	Develop job profiles and selection criteria for new roles			▓				
	Staff hiring (federal and regional level)			▓				
Operational roll out of RLAIS to 8 woreda model offices	Design training programme			▓				
	Roll out systems to regional and federal offices					▓		
	Staff training (federal and regional offices)					▓		
	Roll out to woreda model offices (8 woredas and 160 kebeles)					▓		
	Roll out systems to woreda model offices (8 woredas)					▓		
	Staff training (8 woredas and 160 kebeles)					▓		
	Fit-for-purpose data (potential data enhancement RLAS 8 woredas)				▓			
	Execute introduction campaign for RLAIS (8 woredas)					▓		
PSP innovation planning, results evaluation, change management	Incorporation of PPS expert into product, service and process innovation planning, results evaluation and change management					▓		
	Evaluation of RLAIS results and subsequent adjustments of RLAIS and/or the roll out strategy to remaining woredas					▓	▓	
Further operational roll out of RLAIS to 148 woredas							▓	▓

Budget

The required budget for the development and roll out strategy would be approximately GBP 2 million. Establishment phase (2018-2020) GBP 0,87 million and operational phase (2021-2024) GBP 1,13 million. The investment in RLAIS is a fraction of the costs of certification.

The budget calculation is detailed in Annex 6.

Conclusions and The Way Forward

This report demonstrates significant potential of RLAIS to create value for user groups in the public and private sector and subsequently to enable them to create value for the rural land users.

Three different distribution services are foreseen in the near future: Web enabled online information services, data services (dataset on mass storage medium, via download service or via a web feature and mapping service) and physical access points.

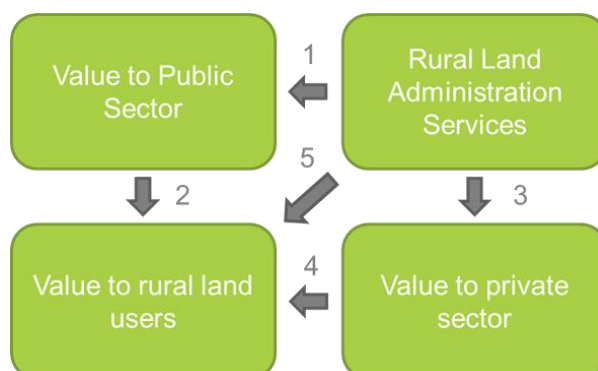Development - and maintenance costs of the information products can be limited by developing a few base services and information products. Slight differentiations in product offerings introduce opportunities to target the specific use requirements, increasing use while at the same time keeping costs down. Only a small number of information products are required to satisfy most of the customer information needs and requirements[38].

Current revenue potential is concentrated in the micro finance, micro insurance and rental market. Micro finance manifests itself as the largest and most interesting market. The rental market is still young with few actors, has growth potential, but to turn it to a substantial revenue stream will need people to register their rental agreements. This practice is not well established. Micro insurance for inputs and crops is a wild card option. Product success could lead to high demand for rural land administration information services and products. Bundling of micro insurance with micro finance could largely eliminate the micro insurance demand for land administration information products.

The use of rural land administration information services within the public domain should be promoted. There could be many positive synergetic effects from "combined/integrated" development, maintenance and usage of data and services. This is currently not exploited.

The introduction of the concept of a service level agreement for the public-sector data-services should be considered. A service level agreement between the public-sector users and the rural land administration describes the standard services/information products and customer support to be provided by the rural land administration to specified users within the public sector. To provide these services, an annual budget should be allocated to cover the costs of the rural land administration for the data use and the provision of the services. Additional services could be provided against additional charges.

Revenue generation by charging fees for rural land administration services could lower the pressure on already stretched regional state budgets and better secure continuous funding of the rural land administration activities. The principle of charging fees for land administration services has already been introduced for the urban land administration services and the regions are not unwilling to consider the introduction of fees for rural land administration (information) services.

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[38] This has been a long-time experience in the Netherlands since introduction of the land administration information services in 2001.

The private sector is willing to pay for service if this enables them to add value to their services or reduce their costs of doing business.

However, introducing fees to capture revenues should not be the first step after the introduction of the services. The first step should be to make users aware of the value and comfortable with the way they can use the services and products to their advantage. Based on these experiences the optimal pricing strategy can be decided upon to maximize usage and cost recovery.

The Business Case

The report demonstrates that there is a large value potential from rural land information services to create value for user groups in the public and private sector and subsequently to enable them to create value for the rural land users.

The long-term net recurring cost recovery ratio of RLAS by RLAIS web enabled online services, excluding data services, ranges from 23% to 41%, provided the information services meet the customer requirements and RLAIS is operated professionally. Data services, if fees would be levied, could further increase the RLAS net recurring cost recovery ratio to 39% - 57% for an average LIFT woreda[39]

The challenge will be not so much in the value potential, but in the capability (being able to meet the critical success factors) to unlock the potential. Only a professionally run RLAIS operating model, can unlock the intrinsic value of RLAIS and generate value and, when fees are introduced, public revenues.

The annual recurring costs of the, still to be developed, RLAIS function would be approximately ETB 8 million. While the recurring costs of RLAIS is a fraction (1,7%) of the recurring costs of RLAS (ETB 458 million), the contribution of RLAIS to the value generation and potential cost recovery would be significant.

To effectively introduce information services requires a comprehensive implementation programme. This should include the development of the information services and information products, the development and implementation of the operating model with all processes, capacity building, a services introduction plan, implementation of the required regulations and directives and a sustained campaign to transform potential demand into actual demand will need to be implemented.

The development and implementation costs are a fraction of the costs of certification. The required budget for the development and roll out strategy would be approximately GBP 2,0 million. Development (2018-2020) GBP 0,87 million and roll out (2021-2024) GBP 1,13 million.

RLAIS needs to work in the Ethiopian context. What will be required are: Strong GoE commitment and leadership, strong governance during the development and implementation and incorporation of context relevant experience of other service providers in Ethiopia such as of the Commercial Bank of Ethiopia (operating over 1000 branches and internet services) and INSA.

The Way Forward

The proposed way forward is to present the business case to DFID and the G7 and based on a positive outcome transform the business case into a project proposal for funding.

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[39] The non-availability of digital cadastral map in non-LIFT woredas limits demand for rural land information products of the non-LIFT woredas.

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Annex 1. Potential demand rural land administration information excerpts

Activity	Calculation market size	Rural land administration information product	Customer group and use purpose	Potential # of information products per transaction	Potential annual demand volume information products
Micro finance	MFIs assess that the market size for finance is around 50% of the 16,6 million agricultural households. Because of supply restrictions and non-MFI competition MFI's assess that the effective market for MFI's is about 25% (4,1 million) of the total number of households.	(Certified) excerpts consisting of administrative and cadastral information	MFI wants to prevent over-indebtedness of the borrower and to assure the borrowers' ability to repay the loan.	1	4,1 – 8,2 million
Rental	24% of 16,6 million households have rented land. Currently only a small portion is expected to formalise the agreement. Of the 3,98 million households with rented land only 63.500 of the households (1,6%) is expected to formalise the rental agreement via a rental broker or directly[1].	(Certified) excerpts consisting of administrative and cadastral information	Brokers/large scale renters want to verify unique parcel identification, right holder, rights, parcel size and location, restrictions.	1	63.500
Micro insurance	The demand for land administration information depends on availability of the cadastral map. The cadastral map will only be available in 140 LIFT woredas. This will restrict market demand. Annual micro insurance volume forecast 20.000 – 79.000 policies.	Unique parcel identifier, parcel location, parcel size, land holder, rights	Micro insurer needs to identify the unique parcel identification, size and location of the "to be" insured parcel.	1	20.000 to 79.000
Land users	Given the current economic, social and economic environment land user demand for land administration information is expected to be low and related to the current transaction levels for inheritance, marriage, divorce, gift, exchange (2,7% of 55 million parcels)	(Certified) excerpts consisting of administrative and cadastral information	Land users and parties with an interest (heirs, divorcees, people affected by a gift, those involved in exchange or rent) may want to verify the land holders, the parcels involved, land use rights and land use restrictions.	1 out of 10	148.500

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[1] Source: EEU study "Developing realistic projections for EEU interventions using a scenario-based approach 18.09.2017"

Activity	Calculation market size	Rural land administration information product	Customer group and use purpose	Potential # of information products per transaction	Potential annual demand volume information products
Expropriation /re-allocation	<0,04% of 55 million parcels (Percentage from study in 24 LIFT woredas[1])	(Certified) excerpts consisting of administrative and cadastral information	The woreda administration needs to identify involved parcels (location and unique parcel identification) and land holders, restrictions and land size.	1	< 22.000
Tax inquiry	n.a.	(Certified) excerpts consisting of administrative and cadastral information	The revenue authorities will need to occasionally verify land holder use rights, restrictions and parcel location and size on to case basis.	1	n.a.
Disputes on land related matters	300 land related court cases per woreda which represent 8,2% of the land related mediation cases.	(Certified) excerpts consisting of administrative and cadastral information	Mediators and woreda courts need to verify the land rights and restrictions of land holders. The number of land related mediation cases is multiple of the court cases. However, it is not clear to what extent mediators would request rural land administration information.	1	Court: 168.000 Mediators: low – very high
Registration of land transactions	2,7% (Percentage from study in 24 LIFT woreda) of total # parcels in 4 regions (55 Million)	(Certified) excerpts consisting of administrative and cadastral information	As a part of the registration process, the kebele land administration committee needs to verify the land rights of the holders and the land use restrictions.	1	1.485.000

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[1] Source: Strategies towards financial sustainability RLAS 30 January 2017

Annex 2. Recurring costs RLAS all regions (normative model from report Strategies towards a financial sustainable RLAS, 2017)

Region	Number of Woredas (Source CSA Census 2007)	Number of Kebele (Source CSA Census 2007) #	Deputy Woreda Head/ Land registrar LACT 47.882	Land administration expert LACT 41.100	PS 6 Surveyor/ GIS LACT 31.536	DB/ICT LACT 27.576	Spare	Spare	Spare	Kebele LA expert level 4 LACT 20.916	Kebele LA Expert level 3 LACT 18.132	Kebele LA Expert level 2 LACT 13.746	Kebele LA Expert level 1 LACT 11.532	Scenario 1. (Without Kebele staff) Total staff costs LACT	Scenario 2. (With Kebele staff) Total staff costs Woreda LACT 40%	Total other recurrent costs Woreda LACT	Recurrent costs ICT and equipment Woreda LACT ETB 93.000	Scenario 1. (Without Kebele staff) Total recurrent costs	Scenario 2. (With Kebele staff) Total recurrent costs Woreda LACT
Oromia	6 LIFT Woredas Oromia	117	6,0	12,0	12,0	3,0	0,0	0,0	0,0	39,0	24,0	10,0	44,0	ETB 1.241.652	ETB 3.137.412	ETB 1.254.965	ETB 558.000	ETB 3.054.617	ETB 4.950.377
Tigray	6 LIFT Woredas Tigray	83	6,0	12,0	12,0	3,0	0,0	0,0	0,0	0,0	83,0	0,0	0,0	ETB 1.241.652	ETB 2.746.608	ETB 1.098.643	ETB 558.000	ETB 2.898.295	ETB 4.403.251
Amhara	6 LIFT Woredas Amhara	161	6,0	12,0	12,0	3,0	0,0	0,0	0,0	0,0	161,0	0,0	0,0	ETB 1.241.652	ETB 4.160.904	ETB 1.664.362	ETB 558.000	ETB 3.464.014	ETB 6.383.266
SNNP	6 LIFT Woredas SNNP	116	6,0	12,0	12,0	3,0	0,0	0,0	0,0	0,0	116,0	0,0	0,0	ETB 1.241.652	ETB 3.344.964	ETB 1.337.986	ETB 558.000	ETB 3.137.638	ETB 5.240.950
Total	**24 LIFT Woredas**	477,0	24,0	48,0	48,0	12,0	0,0	0,0	0,0	39,0	384,0	10,0	44,0	ETB 4.966.608	ETB 13.389.888	ETB 5.355.955	ETB 2.232.000	ETB 12.554.563	ETB 20.977.843
Oromia	248	6121	248	496	496	124	0	0	0	2.040	1.256	523	2.302	ETB 51.321.616	ETB 150.500.650	ETB 60.200.260	ETB 23.064.000	ETB 134.585.876	ETB 233.764.910
Tigray	34	595	34	68	68	17	0	0	0	0	595	0	0	ETB 10.788.540	ETB 17.824.568	ETB 7.129.827	ETB 3.162.000	ETB 21.080.367	ETB 28.116.395
Amhara	129	3003	129	258	258	65	0	0	0	0	3.003	0	0	ETB 54.450.396	ETB 81.145.914	ETB 32.458.366	ETB 11.997.000	ETB 98.905.762	ETB 125.601.280
SNNP	69	1777	69	138	138	35	0	0	0	0	1.777	0	0	ETB 32.220.564	ETB 46.499.562	ETB 18.599.825	ETB 6.417.000	ETB 57.237.389	ETB 71.516.387
Total region	480,0	11496,0	480	960	960	240	0	0	0	2040	6631	523	2302	ETB 148.781.116	ETB 295.970.694	ETB 118.388.278	ETB 44.640.000	ETB 311.809.394	ETB 458.998.971

Annex 3. Recurring costs RLAIS

Location	Cost type	Position	Number of positions	Salary costs per position	Capital costs	Annual costs
Federal level	**Staff**	RLAIS manager	1	ETB 100.000		ETB 100.000
		Account management	2	ETB 82.000		ETB 164.000
		Customer service	2	ETB 72.000		ETB 144.000
		GIS Data experts	2	ETB 82.000		ETB 164.000
		Product and process management	3	ETB 82.000		ETB 246.000
	Total staff salaries federal level					ETB 818.000
	Total other costs (40% of staff costs)					ETB 327.200
	Annual software maintenance costs			25%	ETB 6.600.000	ETB 1.650.000
	Total recurring costs federal level					ETB 2.795.200
	Margin of error 20%					ETB 559.040
	Total recurring costs federal level including margin					ETB 3.354.240
Regional level	**Staff**	RLAIS manager	1	ETB 100.000		ETB 100.000
		Account management	2	ETB 82.000		ETB 164.000
		Customer service	2	ETB 72.000		ETB 144.000
		GIS Data experts	2	ETB 82.000		ETB 164.000
		Product and process management	1	ETB 82.000		ETB 82.000
		Woreda capacity building support	1	ETB 72.000		ETB 72.000
	Total staff salaries regional level					ETB 726.000
	Total other costs (40% of staff costs)					ETB 290.400
	Total costs regional level (per region)					ETB 1.016.400
	Margin of error 20%					ETB 203.280
	Total recurring costs regional level including margin (per region)					ETB 1.219.680
Federal and regional level	**Total recurring costs regional (4 regions) and federal level (1)**					ETB 8.232.960
Zonal level	**Staff**	RLAIS manager	1	ETB 100.000		ETB 100.000
		Account management	1	ETB 82.000		ETB 82.000
		Customer service	1	ETB 72.000		ETB 72.000
		GIS Data experts	1	ETB 82.000		ETB 82.000
	Total staff salaries zonal level					ETB 336.000
	Total other costs (40% of staff costs)					ETB 134.400
	Total recurring costs RLAIS per zone					ETB 470.400
	Total recurring costs RLAIS (50 zones)					ETB 23.520.000
	Margin of error 20%					ETB 4.704.000
	Total recurring costs RLAIS zones including margin of error (50 zones)					**ETB 28.224.000**

Annex 4. Recurring net revenues projections RLAIS during roll out to 150 woredas

Scenario	Information service	Key customer group	Information product	Number of rural households	Market demand (# HH with a loan)	Potential demand information products	Market penetration result Account Management	Potential annual revenues at ETB 20 fee and 100% roll out in 4 regions	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
		ASSUMED ANNUAL NUMBER OF RURAL WOREDAS ROLLED OUT (% OF 480 in 4 regions)							10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
		ASSUMED FEE PER INFORMATION PRODUCT						ETB 20										
LOW	WEB ENABLED	MFI	Certified object information	16.200.000	25%	4.050.000	50%	ETB 40.500.000										
	ONLINE	Rental	Certified object information			63.452	50%	ETB 634.520										
		Courts	Certified object information			168.000	50%	ETB 1.680.000										
		Rural LA	Certified object information			1.485.000	50%	ETB 14.850.000										
	DATASERVICE	Revenue authorities	Dataservice	pm		0	0%	ETB 0										
		Others	Dataservice	pm														
		Total gross revenues				5.766.452		ETB 57.664.540	ETB 5.766.454	ETB 11.532.908	ETB 17.299.362	ETB 23.065.816	ETB 28.832.270	ETB 34.598.724	ETB 40.365.178	ETB 46.131.632	ETB 51.898.086	ETB 57.664.540
		Recurring costs RLAIS						-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000
		Net contribution RLAIS to RLAS						ETB 49.664.540	-ETB 2.233.546	ETB 3.532.908	ETB 9.299.362	ETB 15.065.816	ETB 20.832.270	ETB 26.598.724	ETB 32.365.178	ETB 38.131.632	ETB 43.898.086	ETB 49.664.540
		Net cost recovery contribution RLAIS as % of total recurring costs RLAS 4 regions				11%		ETB 458.998.971										
		Total recurring costs RLAS in rolled out woredas							ETB 45.899.897	ETB 91.799.794	ETB 137.699.691	ETB 183.599.588	ETB 229.499.486	ETB 275.399.383	ETB 321.299.280	ETB 367.199.177	ETB 413.099.074	ETB 458.998.971
		Net cost recovery contribution RLAIS as % to recurring costs RLAS of number of rolled out Woredas							-5%	4%	7%	8%	9%	10%	10%	10%	11%	11%
MEDIUM	WEB ENABLED	MFI	Certified object information	16.200.000	25%	4.050.000	100%	ETB 81.000.000										
	ONLINE	Rental	Certified object information			63.452	100%	ETB 1.269.040										
		Courts	Certified object information			168.000	100%	ETB 3.360.000										
		Rural LA	Certified object information			1.485.000	100%	ETB 29.700.000										
	DATASERVICE	Revenue authorities	Dataservice	pm		0	0%	ETB 0										
		Others	Dataservice	pm														
		Total revenues				11.533.384		ETB 115.329.040	ETB 11.532.904	ETB 23.065.808	ETB 34.598.712	ETB 46.131.616	ETB 57.664.520	ETB 69.197.424	ETB 80.730.328	ETB 92.263.232	ETB 103.796.136	ETB 115.329.040
		Recurring costs RLAIS						-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000
		Net contribution RLAIS						ETB 107.329.040	ETB 3.532.904	ETB 15.065.808	ETB 26.598.712	ETB 38.131.616	ETB 49.664.520	ETB 61.197.424	ETB 72.730.328	ETB 84.263.232	ETB 95.796.136	ETB 107.329.040
		Net cost recovery contribution RLAIS as % of total recurring costs RLAS 4 regions				23%		ETB 458.998.971										
		Total recurring costs RLAS in rolled out woredas							ETB 45.899.897	ETB 91.799.794	ETB 137.699.691	ETB 183.599.589	ETB 229.499.486	ETB 275.399.383	ETB 321.299.280	ETB 367.199.177	ETB 413.099.074	ETB 458.998.971
		Net cost recovery contribution RLAIS as % to recurring costs RLAS of number of rolled out Woredas							8%	16%	19%	21%	22%	22%	23%	23%	23%	23%
HIGH	WEB ENABLED	MFI	Certified object information	16.200.000	50%	8.100.000	100%	ETB 162.000.000										
	ONLINE	Rental	Certified object information			63.452	100%	ETB 1.269.040										
		Courts	Certified object information			168.000	100%	ETB 3.360.000										
		Rural LA	Certified object information			1.485.000	100%	ETB 29.700.000										
	DATASERVICE	Revenue authorities	Dataservice	pm			0%	ETB 0										
		Others	Dataservice	pm														
		Total revenues				9.816.452		ETB 196.329.040	ETB 19.632.904	ETB 39.265.808	ETB 58.898.712	ETB 78.531.616	ETB 98.164.520	ETB 117.797.424	ETB 137.430.328	ETB 157.063.232	ETB 176.696.136	ETB 196.329.040
		Recurring costs RLAIS						-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000	-ETB 8.000.000
		Net contribution RLAIS						ETB 188.329.040	ETB 11.632.904	ETB 31.265.808	ETB 50.898.712	ETB 70.531.616	ETB 90.164.520	ETB 109.797.424	ETB 129.430.328	ETB 149.063.232	ETB 168.696.136	ETB 188.329.040
		Net cost recovery contribution RLAIS as % of total recurring costs RLAS 4 regions				41%		ETB 458.998.971										
		Total recurring costs RLAS in rolled out woredas				480		ETB 956.248	ETB 45.899.897	ETB 91.799.794	ETB 137.699.691	ETB 183.599.589	ETB 229.499.486	ETB 275.399.383	ETB 321.299.280	ETB 367.199.177	ETB 413.099.074	ETB 458.998.971
		Net cost recovery contribution RLAIS as % to recurring costs RLAS of number of rolled out Woredas							25%	34%	37%	38%	39%	40%	40%	41%	41%	41%

Annex 5. Critical success factors, risks, impact, risk mitigation measures / project measures matrix

CRITICAL SUCCESS FACTOR	RISK	IMPACT	RISK MITIGATION MEASURES	PROJECT
ROBUST OPERATING MODEL RLAIS	Substantial staff turnover, unfulfilled positions, staff assigned to other tasks. Failure to meet capacity - and competence requirements.	Ineffective operations undermines achieving the RLAIS objectives. Will lead to loss of effectiveness and ongoing high capacity building costs.	Develop awareness of the impact among land administration leadership. Position RLAIS as a separate entity within land administration with clear mandates. Appoint dedicated leadership to the RLAIS federal and regional entities. Introduce clear objectives on federal. regional and woreda level. Implement governance and advisory framework during the implementation and operational phase. Procedures, work instructions and product specifications should be easy to understand. Production should work with as much as possible standardized and validated queries for data selections. Continuity in expertise and service provision	RLAIS WORK PLAN: DEVELOPMENT OPERATING MODEL
TECHNICAL CONDITIONS	Network availability and performance. Challenging telecom network: Bandwidth and availability (Woreda network).	Hampering service levels could seriously undermine achievement of RLAIS demand projections Customers may decide to not use web services which will result in lower demand levels. The need for manual handling of the demand for information products could result in higher staff recurring costs in the woredas.	Use experiences from other service providers in Ethiopia, such as Commercial Bank of Ethiopia and INSA. Perform RLAIS relevant tests during NRLAIS roll out. Introduce performance monitoring system. Measure impact at the customer end.	SCOPE PROJECT NRLAIS
TECHNICAL CONDITIONS	Operational performance and stability of NRLAIS	Hampering service levels could seriously undermine achievement of RLAIS demand projections.	Make use of practical experiences from other service providers in Ethiopia, such as Commercial Bank of Ethiopia and INSA. Perform RLAIS relevant tests during NRLAIS roll out. Introduce performance monitoring system (Measure impact from customer perspective).	SCOPE PROJECT NRLAIS
FIT-FOR-PURPOSE	Fit-for-purpose (providing valuable information and service levels from a customer perspective) is not implemented.	Hampering services would seriously undermine achievement of RLAIS demand projections. MFI's will stick to their current processes and subsequently demand for information products will be significantly lower.	Perform user case and product definition studies for MFI's, courts, revenue authorities and rental market in advance of the start project RLAIS. Introduce go-no go decision before an information product or service is developed to make sure that offered services will meet the customer group fit-for-purpose requirements.	RLAIS WORKPLAN: ASSESSMENT FIT-FOR-PURPOSE DATA
FIT-FOR-PURPOSE	Unreliable data quality (accuracy and completeness) in relation to customer requirements. Land Register database not up-to-date due to limited/non-registration of land transactions.	Undermines customer trust and sustainability of RLAS and RLAIS. This would seriously undermine achievement of RLAIS demand projections.	Execute project "Increase formal registration land transactions". Execute use case studies to determine detailed customer requirements for data and processes. Take samples of received applications at Woreda level and investigate type of transaction, delivery time, accuracy registration. Implement corrective measures. Implement governance framework. Introduce certification for Woreda data quality.	PROJECT INCREASE FORMAL REGISTRATION LAND TRANSACTIONS, PROJECT RLAS EFFECTIVE SERVICE PROVISION RLAIS WORKPLAN: IUSE CASE STUDIES PROCESS AND INFORMATION REQUIREMENTS KEY CUSTOMERS + ASSESSMENT DATA SOURCING.
LEGAL CONDITIONS	Security clearance of rural land administration data to be used by RLAIS still needs to be provided.	Undermines short term sustainability RLAIS and subsequently sustainability RLAS.	Start data grading and clearance procedure together with INSA. Embed position of land administration information in proclamation.	RLAIS WORKPLAN: SECURITY CLEARANCE DATA BY INSA
LEGAL CONDITIONS	Delays to embed the use of RLAS data in legislation.	Delays and limitations could delay or limit achievement of potential demand projection. Could eventually undermine sustainability RLAIS and RLAS.	Federal proclamation needs to be approved and transformed into regional proclamations, regulation and directives. A task force should be installed supported by experts to develop and implement uniform proclamations, regulation and directives.	RLAIS WORK PLAN: DEVELOPMENT LEGAL FRAMEWORK IN 2018
LEGAL CONDITIONS	Legislation is not amended to charge for information services and products.	The financial impact of the RLAS can not be lowered through revenues derived from RLAIS. Could eventually undermine sustainability RLAIS and RLAS.	Federal proclamation needs to be approved and transformed into regional proclamations, regulation and directives. A task force should be installed supported by experts to develop and implement uniform proclamations, regulation and directives.	RLAIS WORK PLAN: DEVELOPMENT LEGAL FRAMEWORK IN 2018
INSTITUTIONAL AND OPERATIONAL CONDITIONS	Lack of "ownership" of the system by the regional leaders. Leaders may not fully appreciate the value of the rural land administration and the necessity to invest with a long term perspective.	Could lead to inadequate budget allocation, which would quickly undermine the data quality of RLAS and the RLAS and RLAIS service provision. Would eventually undermine sustainability RLAIS and RLAS.	Develop awareness of the impact among the regional leadership . The GoE needs to facilitate RLAIS by providing continuous political support to land administration and regular monitoring of the RLAS implementation/operation process.	RLAIS WORKPLAN: GETTING EARLY COMMITMENT ON OPERATING MODEL RLAIS AND ALL RELEVANT INSTITUTIONAL ASPECTS AND GOVERNANCE FRAMEWORK DURING THE ESTABLISHMENT AND OPERATIONAL PHASE OF RLAIS.
ROBUST OPERATING MODEL RLAIS	The required Institutional structure, culture and governance are not implemented.	Professional customer service, operations and account management will not be implemented. Potential demand will not be achieved. Would eventually undermine sustainability RLAIS and RLAS.	Leaders need to agree upon a professional design and implementation of the operating model and the institutional and governance framework. The federal and regional organisation should be embedded within federal and regional land administration departments, but as a separate entity. The federal, regional and woreda RLAIS entities should be held responsible for meeting their targets on awareness, customer satisfaction, service provision, customer penetration and usage levels. The structure ane culture needs to support a demand, target and process oriented RLAIS. Staff selection should be based on criteria. Capable leaders should be selected to develop and run the federal and regional RLAIS entity. in order to avoid underfunding and as a consequence under performance because of lack of required financial means, required resources should be allocated based on a five-year plan.	RLAIS WORKPLAN: GETTING EARLY COMMITMENT ON OPERATING MODEL RLAIS AND ALL RELEVANT INSTITUTIONAL ASPECTS AND GOVERNANCE FRAMEWORK DURING THE ESTABLISHMENT AND OPERATIONAL PHASE OF RLAIS. USE CASE STUDIES PROCESS AND INFORMATION REQUIREMENTS KEY CUSTOMERS + ASSESSMENT DATA SOURCING.

Annex 6. Development and roll out costs RLAIS (Page 1)

PHASE	STAGE	STAGE DESCRIPTION	MEA SURE NO	MEASURE	RESOURCES	UNIT	# UNITS	DAILY RATE	COSTS	2018	2019	2020	2021	2022	2023	2024
	1 STAGE	LEGAL, INSTITUTIONAL AND OPERATIONAL CONDITIONS RLAIS														
ESTABLISHMENT PHASE	1	LEGAL, INSTITUTIONAL AND OPERATIONAL CONDITIONS RLAIS	1	LEGAL CONDITIONS Development legal framework (intellectual property, freedom of information pricing, privacy, licensing, revenue generation, cost recovery)	Local legal expert	day	50	£500	£25.000	£20.000	£5.000					
			2	Support to 1	International RLAIS expert	day	10	£800	£8.000	£8.000						
			3	Security clearance RLAIS data by INSA	RLAUD	day										
			4	Support to 3	International RLAIS expert	day	5	£800	£4.000	£4.000						
			5	PREPARATION OPERATIONAL AND INSTITUTIONAL CONDITIONS Commitment on operating model RLAIS, relevant institutional aspects, governance framework and consequences for GOE budgets during establishment and operational phase RLAIS. Commitment institutional aspects as revenue allocation.	Regional heads, RLAUD	day										
			6	Support to 5	International RLAIS expert	day	40	£800	£32.000	£32.000						
			7	FIT FOR PURPOSE 1 Use case studies process and information requirements of key customer groups	International RLAIS expert	day	40	£800	£32.000	£32.000						
			8	FIT FOR PURPOSE 2 Assessment sourcing of required additional data	sourcing expert	day	40	£500	£20.000	£20.000						
			9	FIT FOR PURPOSE 3 Functional assessment fit-for-purpose NRLAIS data LIFT and other SLLC programs	Data quality experts	day	40	£500	£20.000	£20.000						
			10	Support to 9	International RLAIS expert	day	20	£800	£16.000	£16.000						
			11	Raising political awareness importance implementation RLAIS	Regional heads	day										
			12	Support to 11	International RLAIS expert	day	12	£800	£9.600	£9.600						
	2	DEVELOPMENT RLAIS	13	Projectplan	Project mngt	day	40	£800	£32.000		£32.000					
			14	RLAIS project management	National RLAIS project manager	month	72	£4.000	£288.000		£48.000	£48.000	£48.000	£48.000	£48.000	£48.000
			15	Development Web enabled online rural land administration information services + data services	Local company	lump sum			£200.000		£200.000					
			16	Support functional development Web enabled online rural land administration information services + data services	International RLAIS expert	day	30	£800	£24.000		£24.000					
			17	Development operating model: Business rules, standard operating procedures and work instructions, service levels	International RLAIS expert	day	85	£800	£68.000		£68.000					
			18	Software amendment customer service helpdesk issue and request workflow management system	Local company	lump sum			£20.000			£20.000				
			19	Functional support work flow management system development	International expert	day	20	£800	£16.000			£16.000				
			20	Development marketing plan	International RLAIS expert	day	30	£800	£24.000			£24.000				
			21	Development service introduction campaign	Local company	lump sum			£40.000			£40.000				
			22	Support to 23	International RLAIS expert	day	10	£800	£8.000			£8.000				
			23	Future amendments service introduction campaign	Local company	lump sum			£10.000					£5.000	£5.000	
			24	Pricing (fee structure, changes regulation, working guide lines, communication strategy)	International RLAIS expert	day	50	£800	£40.000			£40.000				

PHASE	STAGE	STAGE DESCRIPTION	MEA SURE NO	MEASURE	RESOURCES	UNIT	# UNITS	DAILY RATE	COSTS	2018	2019	2020	2021	2022	2023	2024
	3	DEVELOPMENT CAPACITY BUILDING PROGRAM OPERATING MODEL	25	Support development job profiles + selection criteria for new roles: Head unit, Customer service, Account management, GIS Data and customer solutions expert, Product and process management	International RLAIS expert	day	20	£800	£16.000			£16.000				
			26	Staff hiring (federal and regional level)												
			27	Head RLAIS unit	Support Local company	day	10	£500	£5.000			£5.000				
			28	Customer service	Support Local company	day	20	£500	£10.000			£10.000				
			29	Account management	Support Local company	day	26	£500	£13.000			£13.000				
			30	GIS Data and customer solutions expert	Support Local company	day	20	£500	£10.000			£10.000				
			31	Product and process management	Support Local company	day	14	£500	£7.000			£7.000				
			32	Design Courses/training program												
			33	Customer service	Local company	day	20	£500	£10.000			£10.000				
			34	Support to 30	International RLAIS expert	day	10	£800	£8.000			£8.000				
			35	Account management	Local company	day	20	£500	£10.000			£10.000				
			36	Support to 37	International RLAIS expert	day	10	£800	£8.000			£8.000				
			37	GIS Data and customer solutions expert	Local company	day	20	£500	£10.000			£10.000				
			38	Support 39	International RLAIS expert	day	10	£800	£8.000			£8.000				
			39	Product and process management	Local company	day	20	£500	£10.000			£10.000				
			40	Support 42	International RLAIS expert	day	10	£800	£8.000			£8.000				
OPERATIONAL PHASE	4	ROLL OUT RLAIS TO 8 WOREDA MODEL OFFICES	41	Roll out systems to regional and federal offices	Local company	lump sum			£25.000				£25.000			
			42	Support to 43	Local expert	day	20	£200	£4.000				£4.000			
			43	Staff training (1 federal and 4 regional offices)	Local company	day	100	£200	£20.000				£20.000			
			44	Train the trainers for woreda and kebele courses	Local company	day	25	£200	£5.000				£5.000			
			45	Roll out systems to woreda model offices (8 woredas)	Local company	day	16	£200	£3.200				£3.200			
			46	Staff training (8 woredas and 160 Kebele)	Local company	day	40	£200	£8.000				£8.000			
			47	Fit-for-purpose data (potentially; data enhancement in 8 woredas)	Local capacity	month	24	£300	£7.200			£7.200				
			48	Execution service introduction campaign RLAIS by account management and customer service (8 woredas)	Account management Customer service	day										
			49	Support to 50	Local company	lump sum			£4.000				£4.000			

PHASE	STAGE	STAGE DESCRIPTION	MEA SURE NO	MEASURE	RESOURCES	UNIT	# UNITS	DAILY RATE	COSTS	2018	2019	2020	2021	2022	2023	2024
		6 FURTHER ROLL OUT RLAIS TO 142 WOREDAS														
			61	Roll out systems to woredas	Local company	day	284	£200	£56.800					£18.933	£18.933	£18.933
			62	Staff training (142 woreda and 2840 kebeles)	Local company	day	710	£200	£142.000					£47.333	£47.333	£47.333
			63	Fit-for-purpose data (potentially; data enhancement in 142 woredas)	Local capacity	month	426	£300	£127.800				£42.600	£42.600	£42.600	
			64	Execution service introduction campaign RLAIS by account management and customer service (8 woredas)	Account managementCustomer service	day										
			65	Support to 66	Local company	day	142	£200	£28.400					£9.467	£9.467	£9.467
			66	Monitoring and evaluation	Local M&E expert	day	160	£200	£32.000				£8.000	£8.000	£8.000	£8.000
				TOTAL COSTS					£1.831.000	£161.600	£377.000	£336.200	£289.300	£247.833	£230.833	£188.233
				OTHER COSTS 10%					£183.100	£16.160	£37.700	£33.620	£28.930	£24.783	£23.083	£18.823
				TOTAL COSTS WITH 10%					£2.014.100	£177.760	£414.700	£369.820	£318.230	£272.617	£253.917	£207.057