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Mobile Technology Pilot: Inception Report on Mission to Tanzania

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Implemented by:

Cloudburst Consulting Group, Inc.
8400 Corporate Drive, Suite 550
Landover, MD 20785-2238

Evaluation, Research and Communication (ERC)

Mobile Technology Pilot: Inception Report on Mission to Tanzania

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ACRONYMS AND ABBREVIATIONS

BEST	Business Environment Strengthening for Tanzania
BTC	Belgian Development Agency
CBO	Community Based Organization
CCRO	Certificates of Customary Rights of Occupancy
CO	Contracts Officer
COP	Chief of Party
COR	Contracting Officer's Representative
COSTECH	Tanzania Commission for Science and Technology
CSO	Civil Society Organization
CVL	Certificates of Village Land
DFID	Department for International Development
DTBi	Dar Teknohama Business Incubator
ERC	Evaluation, Research, and Communication
IDIQ	Indefinite Delivery Indefinite Quantity Contract
LA	Land Act
LAMP	Land Management Programme
LTD	Land Tenure Division
LTPR	Land Tenure and Property Rights
MSI	Management Systems International
MLHUS	Ministry of Lands, Housing and Human Settlements Development
NGO	Non-Government Organization
NLUPC	National Land Use Planning Commission
SIDA	Swedish International Development Agency
SPILL	Strategic Plan for the Implementation of Land Laws
STARR	Strengthening Tenure and Resource Rights

TLTP	Tanzania Land Transparency Partnership
USAID	United States Agency for International Development
USG	United States Government
VLA	Village Land Act
WB	World Bank

EXECUTIVE SUMMARY

The Mobile Technology and Crowdsourcing to Strengthen Land Tenure Security Pilot (hereafter referred to as Mobile Technology Pilot) seeks to test a concept of a participatory or “crowdsourced approach” to capturing land rights information using mobile technology to efficiently and affordably create an inventory of land rights.

Under its Evaluation, Research and Communication (ERC) contract, the USAID Land Tenure and Property Rights Division¹ will implement the proposed pilot activity. Under the ERC, the Mobile Technology pilot fits into USAID’s strategic reform agenda pertaining to the use of science and technology to resolve development problems. In February, 2014, USAID mobilized its ERC implementing partner, the Cloudburst Consulting Group, to explore the applicability of utilizing mobile technology to collect property rights information in Tanzania.

An inception mission was conducted between February 3 and 14, 2014 and was intended to determine whether the proposed activities envisaged in the Mobile Technology Pilot concept could be implemented in Tanzania, and that there would be interest in the program by stakeholders. Over the course of the mission a series of meetings with stakeholders from the Government of Tanzania, the donor community and civil society organizations were held, in parallel to an assessment of the land administration system to determine the applicability of the Mobile Technology Pilot.

The Mobile Technology Pilot supports identified needs of the Government of Tanzania of improving land governance and lowering the cost of land titling programs. The Mobile Technology Pilot provides for the testing of a new approach for capturing land rights information using a participatory approach as well as a lower cost methodology for quickly building a reliable inventory of lands. The proposed intervention is particularly cogent since previous land titling campaigns in Tanzania have had limited success due to significant upfront investments in complex computer equipment, and the need for continued technical and material assistance to sustain efforts.

The Mobile Technology Pilot is also aligned with national development priorities. A key component of the government’s development policy is to attract investment in agriculture. Agricultural investment has been limited in large part due to the fact that there is little reliable information regarding information on property rights. The government has been unable to provide investors with a definitive understanding of what lands are available for investment, and there have been cases in which the government has allocated land to investors, only for the investors to encounter multiple individuals claiming rights to that land. The lack of documented property rights has placed villagers, who largely lack formal documented property rights, at risk. Villagers are vulnerable to the inappropriate loss of land, which is their primary social and economic asset, and due to insecure tenure, their ability to influence outside investments or act as stakeholders in planned investments is constrained. In short, the lack of documented property rights presents a number of risks for investors and villagers alike.

Representatives from the Government of Tanzania, along with the Department for International Development (DFID) and the Swedish International Development Agency (SIDA) were receptive to the Mobile Technology Pilot, as it aligned with Tanzania’s needs, as well as with the priorities of the

¹ USAID Land Tenure and Property Rights Division is in the Office of Land Tenure and Resource Management in the Bureau for Economic Growth, Education and Environment.

proposed Tanzania Land Transparency Partnership (TLTP). The TLTP is focused on building transparency of land tenure conditions and improving land governance in Tanzania. In regards to the Mobile technology Pilot, both government and donors are interested in verifying whether mobile technologies can be used more cost effectively capture property rights information. A key initiative on their agenda is a pilot regularization program that seeks to implement proven reduced and effective low-cost titling processes in two districts in Tanzania.

This report follows upon the USAID Mobile Crowdsourcing Project Plan, through which the line of project activities have largely remained the same with some adaptation to reflect the findings of the inception mission. The work plan is realistic and lists a number of activities for the implementation of the Mobile Technology Pilot and aims at making tangible contributions and addressing priority needs of Tanzania. The project plan includes an emphasis on community organization and education for building a deeper understanding of priority issues related to land titling and the issuance of Certificates of Customary Rights of Occupancy (CCRO). It also includes technical assistance interventions, training and building capacity for use of mobile technology in mapping as well as a range of communication, advocacy and managerial activities.

The challenges in the Tanzania's land administrative regime related to increasing pressures associated with investment in agriculture, particularly in conjunction with the implementation of land laws, necessitates approaches that navigate thorough, and are aligned with, government and existing donor-driven national land administration initiatives, so as to add value, complement activities and endeavor to implement a creative, innovative and participatory approach to capture land rights information.

The proposed innovations contemplated in the Mobile Technology Pilot do not require waiting for additional information or further analyses. In fact, the USAID Land Tenure and Property Rights Division is ready to initiate project immediately. The overall coordination of project activities will be carried out by USAID Washington, including in-country logistical and management support. Information on activities and outputs related to the execution of the Mobile Technology Pilot will be provided to the USAID Tanzania with the objective of supporting other USAID Tanzania strategies that may be focused on promoting transparency in government and enhancing the investment climate for agricultural development in Tanzania.

I.0 PROJECT SYNOPSIS

The Mobile Technology Pilot seeks to test a concept that has been on the forefront of discussion within the land tenure community by implementing a participatory or “crowdsourced approach” to capturing land rights information using mobile technology and effectively using it to create an inventory of land rights.

In 2011, Robin McLaren published a paper entitled “*Crowdsourcing Support of Land Administration a new, collaborative partnership between citizens and land professionals*”² that presented an innovative approach to the land administration conundrum, and focused on the possibility of “crowdsourcing” property information, challenging land professionals to redefine how land administration services might be managed and delivered. The paper explored how land professionals could engage citizens through crowdsourcing within a new citizen collaborative model for land administration that would be much more inclusive for the disadvantaged and vulnerable, increase access to land markets, drive down the costs of land administration, and help support poverty reduction.

The proposed pilot activity is designed to test hypotheses proposed by Mr. McLaren and to support USAID initiatives, particularly pertaining to the use of science and technology to resolve development problems. This pilot project uses a participatory mapping approach to capture land rights information using mobile technology, and as a result, a number of key questions arise and will be explored in the pilot:

1. Gain an understanding of citizens’ and communities’ reaction and engagement with the approach and its impact on perception of tenure security;
2. Test approaches to engaging the surveying profession / land professionals in the crowdsourcing approach to establish a new relationship with citizens;
3. Understand what makes a good ‘trusted intermediary’ or ‘proamateur’ to support the capture and maintenance of land rights information;
4. Gain an understanding what land rights information needs to be captured along the continuum of rights to provide a ‘fit for purpose’ level of security of tenure (this will vary across cultures and physical environments);
5. Test a range of technology tools available and identifying the most affordable and appropriate to support the approach;
6. Establish approaches for sustaining the maintenance and security of land right information after the pilot and expanding its use; and
7. Explore how the results from the pilot can be shared and the lessons and practical applications expanded, replicated and scaled for USAID and others.

² See RICS:http://www.rics.org/site/scripts/download_info.aspx?downloadID=8083&fileID=10840

As with land administration in general, it is understood that there is no single solution for improving governance of land and that a nation's legal framework, local land tenure norms, professional landscapes, etc. will vary widely thus predicating the need to adapt pilot activities to a variety of environments in order to gather as much experience as possible.

2.0 OVERVIEW OF INCEPTION MEETINGS

The inception mission lasting for two weeks (February 3 to February 14, 2014) was planned and implemented in order to:

1. investigate whether the Mobile Technology Pilot would be applicable to the land administration system in Tanzania, and
2. to gather information to better address the need and priorities of potential beneficiaries and stakeholders, and
3. identify areas of the proposed work plan could be adapted to ensure a successful implementation in Tanzania.

Below presents a list of meetings that were held with various stakeholders during the inception mission. A summary of meetings and contacts is provided in Annex B.

Donors and Development Agencies

- Department for International Development (DFID)
- World Bank
- Belgian Development Agency (BTC)
- Swedish International Development Agency (SIDA)

National Government Agencies or Organizations

- Ministry of Lands, Housing and Human Settlements Development, Mapping and Survey Division
- Ministry of Lands, Housing and Human Settlements Development(MLHUS), Registration of Titles Unit
- Ministry of Lands, Housing and Human Settlements Development (MLHUS), Land Tenure Unit
Ministry of Lands, Housing and Human Settlements Development (MLHUS), Land Commissioner
National Land Use Planning Commission (NLUPC)
- MKURABITA (Mpango wa Kurasimisha Rasilimali na Biashara za Wanyonge Tanzania)
Tanzania Commission for Science and Technology (COSTECH), Dar Teknohama Business Incubator (DTBi)

Non-Government and Community Based Organizations

- Mennonite Economic Development Associates (MEDA)
- Action Aid Tanzania
- Jane Goodall Institute

- Center for Community Initiatives (CCI)
- Concern Worldwide Tanzania
- Haki Ardhi

During the inception mission, the applicability of the Mobile Technology Pilot for Tanzania was confirmed. The project is applicable in part due to the institutional framework of decentralized governance that facilitates intervention on a local level and due to the legal framework regarding the demarcation of property boundaries and securing tenure.

The project is aligned with Tanzania's development strategy and beneficiaries were very receptive to the Mobile Technology Pilot concepts. The Government of Tanzania expressed interest in the potential application of mobile technologies for capturing property rights information as a way of lowering the cost of land titling programs. Donors expressed support as the pilot concepts are aligned with Tanzania's needs, as well as with the priorities of the proposed Tanzania Land Transparency Partnership (TLTP).

With regards to the proposed work plan, a review of the land administration system and inputs from key stakeholders informed changes to the original work-plan. A key component incorporated into the pilot design for Tanzania was community education, outreach and advocacy. As a result, these elements have been integrated into schedule and work plan outlined in Section 4.0

3.0 PRESENTATION OF THE PROJECT

3.1 BACKGROUND AND PROJECT CONTEXT

During the past decade, Tanzania has experienced high rates of economic growth, due in large part to sound economic reforms. As part of its development agenda, Tanzania has encouraged large scale investments in agriculture, both domestic and foreign, recognizing the role that investment in key sectors of the economy can play in transforming the national economy.

In 2009, a new strategy called '*Kilimo Kwanza*', meaning 'Agriculture First' or "Priority to Agriculture" was designed to attract investment agriculture and underscored the critical importance of the private sector participating actively in agricultural production; and in the provision of agricultural inputs, crop marketing and in the agricultural value chains (Tenga, W. and Kironde, L. 2012).

Investments in this sector have been stymied by a weak land administration system, in particular the uncertainty surrounding land tenure. Insecure land tenure has limited the ability of government to provide investors with a definitive understanding of what lands are available. Undocumented property rights have prevented an understanding of the overall situation of land availability in the country, making enterprises, which invest in agriculture, vulnerable to contesting a myriad of claims to land acquired with assistance from the government. Undocumented rights also increase vulnerability of smallholders to unscrupulous deals between investors and village leaders and have resulted in an environment where "land grabbing" is commonplace.

The principal legislation governing tenure and access to land are the Land Act (LA) and the Village Land Act (VLA), both adopted in 1999. The laws were devised to provide a framework for the recognition of customary land rights. Both laws have worked to improve the land management system in Tanzania; nevertheless, there are still significant gaps in the institutional and legal framework which has resulted in low levels of land registration. Cumbersome, time consuming and costly procedures, technical language, and a general lack of knowledge about the land laws and processes have worked to restrict the formal registration of land rights in the country.

Previous land registration projects, which have introduced various methodologies, have provided solid practical field experience for the formalization of property rights, particularly in regards to the established legal framework. The previous interventions, however, have had limited impact as they have required large upfront investments (i.e. GPS equipment, GIS software and computer investments) and sustained technical assistance and/or material resources.

The rationale for the Mobile Technology Pilot in Tanzania is that it will facilitate testing an approach for capturing land rights information as prescribed by law using low cost mobile technologies. In turn, this information will help citizens, communities, and investors to secure and protect property rights. The overall project objective fits within identified needs and priorities of Tanzania. It also fits well into the

decentralized land administration framework and thus presents an opportunity for implementing a more efficient and participatory registration process at the village level.

Participatory engagement throughout the pilot project will support building a knowledge base and understanding of land rights at the village level. The development of a reliable inventory of property rights will also facilitate transparency between various stakeholders – including the village land committee, district and national land officers. A definitive understanding of what lands are potentially available provides the government and prospective investors with reliable information, and at the same time, provides villagers with an understanding of the properties they occupy. More importantly, active engagement and advocacy at the village level will help build capacity to ensure land transactions are beneficial to the local community, the national government and investors alike.

Advocacy and capacity building around technologies and land rights will assist villagers in understanding how much land they possess, how much might be allocated under an investment scheme, the type of right being granted to the investor – whether lease or freehold, and the amount of compensation they should be paid for allocating any land to investors. It will also help in ensuring participation in village assembly meetings, the allocation of land and resolution of land disputes.

In short the Mobile Technology Pilot has the potential to contribute to the activities focused on promoting transparency in the administration of land, increasing tenure security and ultimately enhancing the investment climate in Tanzania.

3.2 KEY ISSUES RELATED TO SECURING PROPERTY RIGHTS

In 1995, the government adopted a national land policy that set out fundamental principles guiding land rights and management (USAID, 2011). The land policy was followed by the development and adoption of two laws: the Land Act 1999 and the Village Land Act 1999, which effectively determine land use and land tenure in Tanzania. The Land Act (LA) declares all land as “public land vested in the President as trustee on behalf of all citizens” (LA, Sec. 3). While the ultimate powers and ownership resides with the president, the laws also provide the basis for ownership of rights over the land.

The President delegates the power to designate, adjudicate, and modify land tenure status to the Commissioner of Lands. The Commissioner of Lands administrates and manages land throughout the country through District Land Offices, which have authority and oversight over village lands or appointed representatives in the village. With respect to the administration of land at the village level, the village represents the basic unit for making land use and administration decisions and the village council provides a statutory mechanism for local community decision-making and collective negotiation regarding land and resource uses. There are three categories of land that are defined in the land laws:

1. **General land** is land directly administered by the by the Commissioner of Lands. General land refers to urban land and land that is not reserved land or village land. It is estimated that approximately 2% of land in Tanzania is general land;
2. **Village land** is land declared to be village land in accordance with the Village Land Act, 1999. This land has been demarcated by the village and is managed by the Village Council. It is estimated that approximately 70% of all land in Tanzania is Village land; and
3. **Reserve land** is land that is declared to be forest, national parks and game reserves. This land is governed by number of laws and its administration comes under different statutory bodies.

The village councils are required to divide village land into three further categories: communal land, which is shared by a large number of individuals within the village, such as grazing areas, pastures, forests, or other areas with natural resources; occupied land, which is used for housing, cultivation, and businesses that are managed by individuals in single families; and future land, which is set aside for future use by individuals of the community at large. General lands are lands that are neither reserved land nor village land and, therefore, are managed by the Commissioner of Lands, on behalf of the central government.

The VLA establishes a framework for local land administration. The Village Council can establish a local land committee “to advise and make recommendations to it on exercise of any of the functions of the management of village land...” (VLA, Sec. 8). The LA and VLA recognize only one form of land ownership, which is a right of occupancy. When such a right is allocated to general land (usually in urban areas) it is known as a right of occupancy. When it is issued for village land it is known as the customary right of occupancy.

The VLA recognizes the validity of customary rights of occupancy, and the Village Council cannot allocate land or grant a customary right of occupancy without prior approval of the village assembly. A Certificate of Customary Rights of Occupancy (CCRO) is granted and registered to document such rights. A CCRO can be held perpetually and is heritable. It can be transferred within the village or to outsiders only with the permission of the village council. The village can charge a rent for land that has been granted to an individual.

The law also requires that a Village Land Register be established in order to keep all land records (VLA, Sec. 21). It makes the Village Executive Officer the person who shall be in charge of the Register. The law also provides for the establishment of an Adjudication Committee, to investigate owners and boundaries and a land council for resolve land disputes. Table 3.1 provides an overview of local land administration arrangements.

Table 3.1: Local Land Administration Arrangements

Individual/Entity	Appointment
Village Land Manager [VC]	Elected directly by the Village Assembly, usually the secretary of the Village Council
Village Land Office (Village Registrar)	Appoint by the elected Village Council, on the basis of nominations from the District Council
Village Land Committee	Appoint by the elected Village Council
Adjudication Committee	Elected by the Village Assembly
Adjudication Officer	Appointed by the elected Village Council
Village Land Council	Nominated by the elected Village Council for the Village Assembly Approval

Source: Adapted from Wily, L. A. (2003): Community-based land tenure management: Questions and answers about Tanzania's new Village Land Act, 1999, IIED, Issue Paper 120.

Despite entrusting powers to administer land to Village Councils, the effectiveness of such arrangements has been limited. The shortage of financial and human resources at the village level, along with lack of appropriate tools and/or understanding of the context within which they supposed to operate, has reduced the capacity of local governments to effectively administer and manage lands as contemplated by the law.

3.2.1 VILLAGE LAND REGISTRATION

While the Village Land Act, 1999, provides the basis for villages to allocate land and issue Certificates of Customary Rights of Occupancy (CCRO), there are several prerequisites that need to be fulfilled to facilitate this process. A village must be registered and have a Certificate of Village Land³ and the village must have an approved village land use plan, which has to be developed in accordance with the participatory land use planning procedures outlined in the Land Use Planning Act, 2007⁴

Once these prerequisites are in place, there are five (5) basic steps that must be followed to obtain a Certificate of Customary Right of Occupancy. These are:

1. The landowner submits the prescribed application for a certificate to the Village Council;
2. The Village Council reviews the application;

³ The Certificate of Village Land is issued in the name of the President by the Commissioner of Lands and registered in the Registration of Titles Unit of the Ministry of Lands, Housing and Human Settlement Development. It is held in the Village Land Register with a copy held by the District and National Registrar.

⁴ A village land use plan must be approved by the National land Use Planning Commission (NLUPC) and the Minister of Lands.

3. The Village Council issues a letter of offer which stipulates fees, development conditions, yearly rent and other conditions;
4. The landowner submits a written agreement to these conditions on a prescribed form; and
5. The Village Council issues a certificate of customary right of occupancy.

The process for recognizing and determining land holdings at the village level is not based on a rigorous system on surveying. Instead, it is based on a process of adjudication where boundaries and interests in that land are to be fully accepted and agreed to by all persons with an interest in that land and in respect of the boundaries of that land and land bordering that land. Dr. F. N. Lugoe, in a paper entitled, *Focal Issues in the Land Policy Reform Agenda in Tanzania: Inputs Based on Tanzania's Experience*⁵, explains that the that the process of village land adjudication envisages that boundaries would be demarcated in the manner traditionally accepted in the village in the presence of members of the Village Council, which does not infer the need for a rigorous surveying of boundaries (Lugoe, 2007). This would allow for non-traditional spatial data collection such as that envisioned by the Mobile Technology Pilot.

The adjudication process is important in Tanzania as it is used to help reveal what rights already exist, by whom they are held and what restrictions or limitations there are on them. The Village Land Act, 1999 makes provisions for three modes of adjudication namely: spot adjudication, village adjudication and district adjudication⁶. Villagers participate in adjudication either by being part of the adjudication procedure themselves, participating in an adjudication committee, local committees established to resolve conflicts between two persons or group of persons, or by participating in the village assembly. Villagers, by participating in the village assembly have a right to approve or refuse the recommendation for transfer made by the village council to an individual.

3.2.2 GENDER

In 1995, the Government of Tanzania acknowledged the need to address women's rights and access to land. There was a realization that women's access to land was (and remains) insecure. It outlined a mechanism that provided women with the right to acquire land through purchase and allocation. This was reflected later in both the Land Act and Village Land Act in which both acts recognize women as having the same rights and access to land as men (Tsikata, D. 2003). Women may apply for land either individually, with their spouse, or in groups. The law also provides for women to own land individually or to be joint owners of land if the ownership or occupancy certificate explicitly states their name.

The laws were devised specifically to counteract customary laws which limited women's ownership and control over land. The Village Land Act specifically states that customary laws have to be in accordance with the National Land Policy and with any other written law including the Constitution. Therefore,

⁵ CBU/CASLE/ AfRES Conference on Sustainable Human Settlements held in Livingstone, Zambia from 2 – 5 May 2007 and was presented by Dr. F. N. Lugoe for the Dar Es Salaam Institute for Land Administration and Policy Studies, DILAPS.

⁶ Spot adjudication is a parcel by parcel approach, usually initiated by the person or persons who have applied to the village council for customary rights of occupancy. The village adjudication is initiated by application to the village council's own motion and recommends to the village assembly that a process of adjudication be applied to a specific area or the entire village. District adjudication or central adjudication may be ordered by the District Council where the village assembly has so determined or where a complaint is made to the district by villagers to whom adjudication has been applied unfairly. District adjudication is usually triggered by some specific event.

customary law is void and inoperative when it denies women, children or persons with disability lawful access to ownership, occupation or use of land (VLA, 1999).

In practice, however, customary norms still prevail and work to limit women from fully enjoying their rights in regards to land, preventing them from owning and inheriting land. This is particularly the case in rural areas where it is perceived that a women's ownership of and control over land is limited once a women is married, they leave their clan and will join their husband's clan and land. Customary perceptions related to ownership favor a man or husband and due to a lack of education and awareness over rights, women are often denied rights afforded to women in the laws.

3.2.3 LAND CONFLICTS

The Courts (Land Disputes) Act 2002 provides a framework for land conflict resolution. This legislation reflects practices stemming from the Village Land Act, which makes special provisions for the establishment of a Village Land Council "to mediate between and assist parties to arrive at a mutually acceptable resolution on any matters concerning village land" (VLA, Sec. 60). The lowest level is the Village Land Council, made up of 7 members, three of whom have to be women, and approved by the Village Assembly, based on nominations by the Village Council.

It is worth noting that Act explicitly states that: "No person, or non-village organization shall be compelled or required to use the services of the Village Land Council for mediation in any dispute concerning village land." (VLA, Sec. 61). This creates weaknesses within the disputes system. As a result, land conflicts are often elevated to the Ward Tribunal, which seeks to arrive at a mutually agreeable solution. The Ward Tribunal is empowered to determine disputes of land arising out of the Land Act and the Village Land Act. If disputes cannot be reconciled at the ward level, disputes are forwarded to the District Land and Housing Tribunal and finally the High Court Land Division.

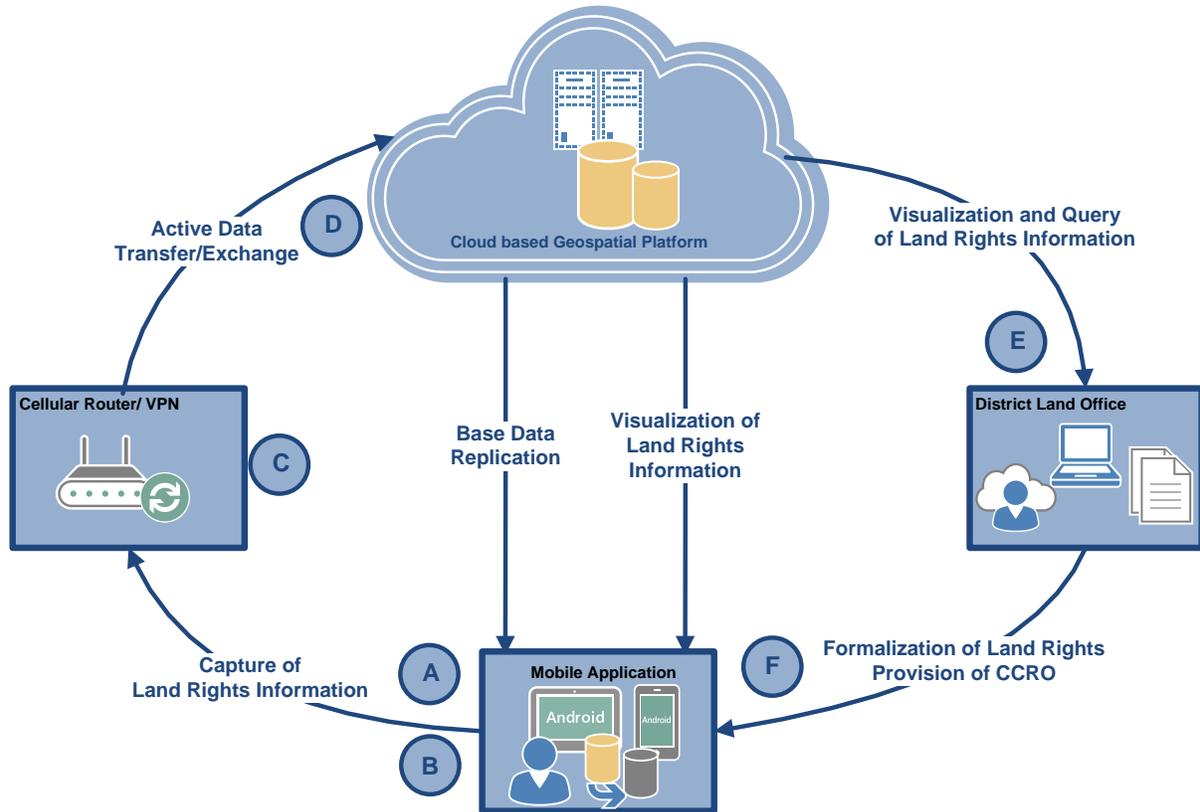
It is necessary to note that while the institutional framework is outlined in the law, the jurisdiction of Village Land Council and Ward Tribunal is limited. In the event that disputes are not resolved, they are referred to the courts (Odgaard 2006, Pedersen, 2010).

3.3 MOBILE TECHNOLOGY PILOT PROJECT IN TANZANIA

This Mobile Technology Pilot aims at developing a comprehensive land information database for a selected village in Tanzania so as to support the securing of property rights for villagers. It is envisaged that the technology, including the software applications, network and communication infrastructure as well as the database management system, will be developed and/or procured by USAID as part of the Mobile Technology Pilot and will work as follows:

- A) Mobile application will be based on open source software and will be developed to include: GIS/GPS enabled data capture tools and forms for capturing data that are based on specific identified requirements;
- B) Trained personnel will be equipped with mobile devices for field data capture, that includes the capture of alphanumeric information, photos and videos, etc.;
- C) Active data transfer occurs when a cellular connection is available, or via the web when an access point is detected. Data is automatically uploaded to a cloud-based data storage facility;

D) Cloud-based data storage facility will be based on open source software and will provide for the integration of alphanumeric and geospatial data. Real time data feeds from the field through mobile networks allows data to be updated automatically;



E) Data is then queried and exported to standard forms and documents so as to facilitate the automatic generation of documents required for land records. Land documents are processed and prepared; and

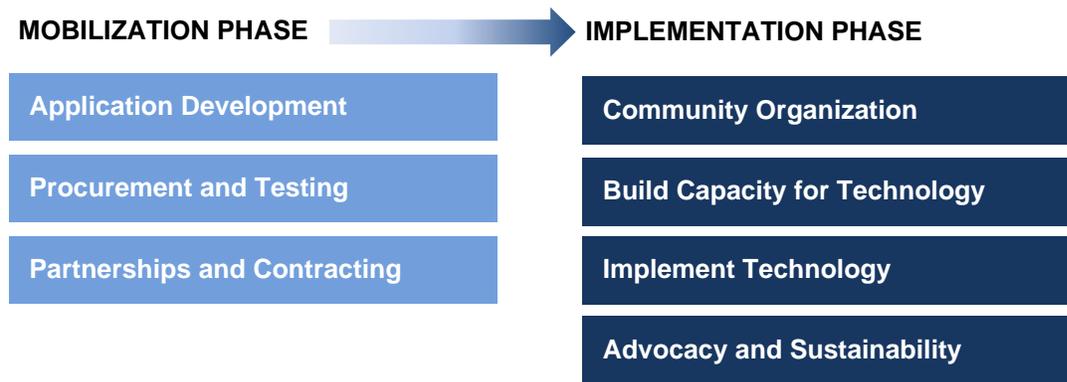
F) Land titling documents are delivered to the village for distribution and for storage at the Village Registry.

The general methodology that will be applied to develop such a land information system focuses around enabling villagers to record their knowledge of land use and occupancy by utilizing geospatially enabled mobile devices. Mobile devices will be used to record and capture property boundary information as well as to gather information concerning the characteristics of the property, persons and the variety of rights associated with the property.

The Mobile Technology Pilot will systematically map all village lands and occupants in the selected pilot sites. Mobile devices will be used to capture information and send it via a mobile network to a cloud-based database storage facility so as to ensure that the compiled information can be used to formalize tenure and secure property rights. Mobile devices, connected to a mobile network, will allow villagers to access this information.

The cloud-based database storage facility will provide a low cost and low maintenance storage facility for village property rights information. Security protocols will be developed and integrated to protect data and ensure integrity for years to come.

The Mobile Technology Pilot is envisaged to be implemented in two (2) phases as follows:



3.3.1 MOBILIZATION PHASE

The mobilization phase is concerned with the development of the technologies, procurement and testing of technologies in country and the development of partnerships and contracting.

The development of technology involves two components: the development of a mobile mapping application for the collection of property rights information, and cloud-based data storage and management application.

The Cloudburst Program Manager will be responsible for the development of the required applications, which includes a design stage that is concerned with the development of technical specifications, a development stage that is concerned with the actual programming and configuration of the applications, as well as the testing and deployment stage, which is concerned with ensuring that the system is fully operational for deployment.

The mobilization phase is also focused on establishing an appropriate management framework for the implementation of the Mobile Technology Pilot in Tanzania. This entails further meetings with key stakeholders and beneficiaries, including facilitating dialogue, building relationships and trust, as well as procuring services of local partners for implementation.

3.3.2 IMPLEMENTATION

The implementation stage is concerned with mobilizing resources, organization of communities, building capacity, implementing an appropriate infrastructure for the use of mobile technology, providing support for the use of mobile technology and building advocacy for the sustainability of the project.

Community organization is concerned with the logistics of working at the village level (i.e. traveling to villages, initiating communication through the appropriate government structure such as District Land Offices and the Village Councils). This will involve establishing a local land advocacy group in the village

to participate and oversee project activities in the community. The project advocacy group shall include women to address gender equality as well as include other marginalized groups (i.e. pastoralists or minority groups). An extensive outreach and public awareness campaign will build awareness of property rights and the potential impacts of the expected outputs of the pilot. The establishment of a realistic timeline is important so as not to build false expectations as to the timing of the mapping and adjudication (i.e. the implementation of the mobile technology in demarcating parcel boundaries). It is also vital to establish realistic timeline for issuance of CCROs, which will be dependent upon support from the district land officer for registration⁷.

The development of capacity for use of the technology is necessary both at the district and village levels. Training at the district level will be concerned with processing of mapping information and reporting. District personnel will access information from the cloud-based data storage facility so as to extract data for the automation of applications that are required for the processing of CCROs, as well as for the development of CCROs themselves. The training at the local level will be concerned with the use of mobile technologies for the capture and visualization of property rights information.

Implementation of the technology will ensure that the appropriate infrastructure is in-place, data capture (i.e. mapping of properties and associated rights) is thorough and complete, and that data is being transferred according to specifications through a mobile network. Implementation will also involve ensuring that data is being processed and committed appropriately at the district level, which is vital for the development and issuance of CCROs.

3.4 IMPLEMENTATION ARRANGEMENTS

The implementation of the Mobile Technology Pilot in Tanzania requires three tiers of management.

1. Tier 1: The first tier is concerned with technical and operational support and oversight of all of the project activities. This tier will be managed by USAID Land Tenure and Property Rights Division in Washington, D.C.;
2. Tier 2: The second tier is concerned with the management of costs, schedules, scopes, contracts, and the development of the technology tools and applications. This tier will be managed directly by USAID's implementing partner, the Cloudburst Consulting Group; and
3. Tier 3: The third tier is concerned with the management of local project logistics and the execution of technical tasks and will be implemented by an in-country project manager⁸ or partner.

3.4.1 TECHNICAL AND OPERATIONAL SUPPORT

Technical and operational support for the implementation of the Mobile Technology Pilot in Tanzania will be provided by the USAID Land Tenure and Property Rights Division in Washington D.C. It is not envisioned that the USAID Mission in Tanzania will need to provide management or fiscal support to the program, however all reports, etc. will be shared with the Mission.

⁷ The Certificate will be signed by the Chairman and Secretary of the Village Council and will also be signed, sealed and registered by the District Land Officer.

⁸ Please note that an outline of requirements for an in-country project manager is also provided in Annex A

The USAID Land Tenure and Property Rights Division utilizes formal progress reports to convey the progress of principal activities as well as to report on the achievement of key milestones. Progress reports note actual percent of work completed, monthly reports are used to identify problems that may impede the execution of project tasks, (if any) and present solutions (if needed). In addition, there will be active monitoring for any unintended harms at the community level resulting from proposed activities in order to appropriately mitigate risks that arise.

In addition, USAID Land Tenure and Property Rights Division staff may visit Tanzania to provide further oversight and lend expertise for the execution of certain tasks. Direct involvement by USAID Land Tenure and Property Rights staff ensures that project efforts fit within the USAID mission and the country's institutional framework.

3.4.2 PROGRAM MANAGEMENT

The Cloudburst Consulting Group will act as the management team for the daily management of the Mobile Technology Pilot.

The Cloudburst Program Manager will be responsible for the overall management of the Mobile Technology Pilot, which involves day-to-day management of all resources in order to safe-guard the delivery of outcomes and meeting the purposes of the project.

Cloudburst Consulting Group home office will assist its Program Manager throughout the development, procurement and implementation of the required technologies. The Cloudburst Consulting Group will also assist with travel and logistical arrangements for the input of Short Term Technical Assistance experts, as needed.

3.4.3 LOCAL IMPLEMENTATION

Local implementation will entail the day-to-day management of activities by a local project manager, who will either be an independent professional or be provided through an implementing NGO. The Project Manager will be responsible for the management of all project activities in-country, which includes oversight of the execution of all technical aspects of the project, including capacity development, mapping and ensuring that data captured and processed in an efficient manner.

It is envisaged that the project will be implemented by one lead NGO, with responsibility for the overall implementation of the project, in collaboration with the Project Manager. Additionally, it is envisaged that a supporting NGO will assist the lead NGO and will focus on community organization and work to help to promote an understanding of property rights, laws pertaining to land as well as to establish support structures for the project execution and project sustainability.

Potential Implementing Partners

During the inception mission several NGOs were identified as possible implementing partners based on initial meetings, a cursory review of their administrative capacity to manage the projects, track and report as well as general capabilities related to use of geospatial technologies, mobile technologies and/or direct work experience in land administration. It is envisioned that as an implementing partner, the NGO will manage and execute the bulk of project inputs with oversight from the Program Manager.

Mennonite Economic Development Associates (MEDA)

MEDA Economic Development Associates of Tanzania (MEDA Tanzania) is well organized non-

profit organization whose main purpose is to alleviate poverty through sustainable economic development. MEDA has direct experience in economic development and has utilized mobile technologies its development activities, most recently for a national mosquito net voucher program.

Concern Worldwide Tanzania

Concern Worldwide Tanzania is a well-organized non-profit organization that is focused on supporting and developing food markets and income generation mechanisms for small farmers, water and sanitation programs, nutrition and promoting gender rights. It has direct experience in land administration, mapping of lands using GIS and GPS technologies. It has successfully implemented land tenure formalization programs in central Tanzania.

MKURABITA

MKURABITA is a government program meant to formalize all small businesses and properties of the poor people. The program aims at empowering the majority of poor people in the country by increasing business opportunities towards development of a strong expand market economy. It has utilized GIS and GPS technologies in its work and has initiated formalization projects in over forty-eight (48) districts.

Supporting Partners

The inception mission emphasized that it may be necessary to contract a supporting partner, for specific tasks such as community education or building advocacy among community groups.

Haki Ardhi

Haki Ardhi is a NGO, which translates from Kiswahili to mean Land Rights. Haki Ardhi was formed to sustain a public debate and participation, particularly on issues of land tenure. Haki Ardhi works at the grassroots level and helps to promote an understanding of property rights, laws pertaining to land.

Tanzania Women Lawyers Association (TAWLA)

TAWLA is an NGO founded in 1989 and officially registered in 1990. The founding members comprised a professional group of women lawyers who promote an environment guaranteeing equal rights and access to all by focusing on vulnerable and marginalized groups especially women and children. The inception team was unable to meet with TAWLA during the inception mission.

MVIWATA

MVIWATA is a national farmer's organization that was founded in 1993 to empower smallholder economically and socially farmers through capacity building and undertake lobbying and advocacy especially by strengthening their groups and networks, facilitating communication and learning so that they are capable of defending their interests. MVIWATA is based in Morogoro, and was not visited during the inception mission.

Community Research and Development Services (CORDS)

CORDS emerged out of a research project carried out in 1997. The research covered the four traditional Maasai pastoralist districts of Kiteto, Monduli, Ngorongoro and Simanjiro in Northern Tanzania. Some of the core targets for which CORDS was created were to address the security of tenure for key pastoral resources such as land, grazing, water and mineral

resources; improved animal health and inclusion of pastoral communities in social development processes. CORDS is based in Arusha, and was not visited during the inception mission.

Tanzania Network for Indigenous Pastoralists (TANIPE)

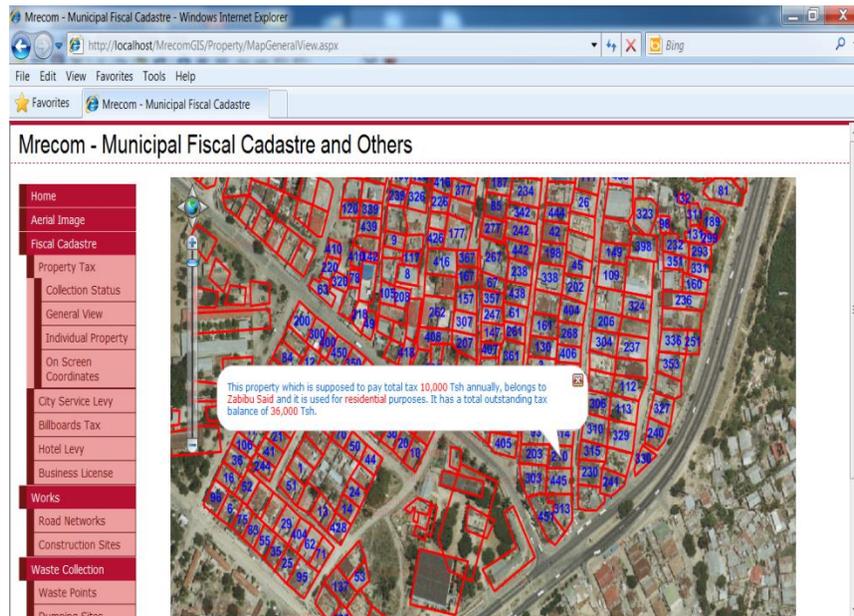
TANIPE is the Tanzania Network for Indigenous Pastoralists. This is a voluntary organization of indigenous pastoralists organized at the grassroots level in order to enhance the legitimate economic social and cultural development of its beneficiaries, TANIPE seeks to sustain the pastoral system of livelihood through: education, seminars, training workshops & conferences on national lands policies & land acts; conflict resolutions, environmental management, good governance, transparency & accountability, and crosscutting issues like HIV/AIDS & other communicable diseases.

Local Technology Partners

The following group was identified through Dar Teknohama Business Incubator (DTBi) and may support the development and/or implementation of geospatial and mobile technologies as part of the Mobile Technology Pilot.

Day One Softcom Technologies

Day One Softcom Technologies provides software engineering services specifically on web, desktop, and mobile devices. It also develops custom GIS based applications. Its flagship product, the Mrecom system, is used for managing and collecting tax revenue in the local government authorities in Tanzania.



The system has custom developed interfaces for rendering GIS features which are linked with the billing database in real time. The Mrecom allows for on-screen digitization of buildings and other features as well as allows users to view and/or enter the key attributes such as taxpayer ID.

3.4.4 IMPACT EVALUATION

The USAID Land Tenure Division is currently examining options for evaluating the impact of the Mobile Technology Pilot. In this context, a USAID impact evaluation team will determine the most appropriate evaluation approach and methodologies. The figure below provides several conceptual examples of criteria that may be used to evaluate the program. For instance, is it appropriate to validate the viability of the use of technology itself and/or is it appropriate to focus on the socio-economic impacts of introducing new technology to villagers? This may involve the evaluation of how locally trained individuals used mobile devices to collect property rights data and what changes occurred (if any) in the community as a result of deploying this technology. Another possible hypothesis could be focused on outcomes related to perceptions of land tenure security- even in the absence of official registration – and the relation of changing perceptions and/or changing official recognition via documentation and if and how these changes lead to changes in investments in land and farming inputs or other land management practices.

USAID, with its impact evaluation team, is currently exploring the possibilities of various approaches that can be used for the Mobile Technology Pilot so that a thorough Impact Evaluation can be conducted as part of this pilot initiative.

3.5 POTENTIAL AREAS FOR INTERVENTION IN TANZANIA

This section provides a more focused listing of potential areas and communities for implementation of the Mobile Technology Pilot.

To ensure that interventions are targeted and harmonized with USAID programs, consideration should be given to implement the Mobile Technology Pilot so as to integrate land tenure and property rights concerns into existing USAID programs and areas of focus. We look forward to working with the USAID mission to further identify intervention locations. Two possible regions that have been targeted by USAID for agricultural or irrigation programs are listed below:

Region	Target District/ Village	Issues Creating Demand for Mobile Technology Pilot
Kilombero Valley	Ifakara, Kisege, and Udagaji	Land tenure security and land transactions challenges have emerged and will continue to impede investment and economic development as envisioned by the USAID Feed the Future (FTF) strategy
Southern Agricultural Growth Corridor of Tanzania (SAGCOT)	Morogoro, Iringa, Mbozi, Mbeya and Sumbawanga	The lack of an inventory of lands and formal land ownership puts small farmers at greater risk of land grabs by investors, foreign and domestic.

In order to align the Mobile Technology Pilot with other land administration initiatives that sought to implement the Village Land Act. A summary of recent and ongoing main land projects is provided in the matrix below:

Donor/Government Initiative	District	Description of Land Administration Intervention
Mbozi Pilot	Iringa 40 Villages; Handeni 6 Villages; Kilindi 10 Villages; Babati 5 Villages; Monduli 49 Villages; Kiteto 6 Villages, Kilolo 9 Villages, Namtumbo Villages, Ngorongoro 1 Village, and Muleba 2 Villages.	As part of Strategic Plan for the Implementation of Land Laws (SPILL), the Mbozi district in the Mbeya region was selected as a pilot area for the implementation of land administration activities. It was selected due to its commercial farming potential. Initial activities focused on the surveying of parcels using aerial photographs. Surveys were used as part of the adjudication process for provision of CCROs. Public awareness campaign was delivered that focused on relevance of CCROs. All these Villages have been issued with Certificates of Village Land (CVL), and by June 2006, only 1,088 CCROs had been issued in these Villages (Pederson, 2010).
EU financed initiative	Mbarali, Urambo, Maswa, Kasulu, Babati, Kilosa, Sumbawanga Rural, Songea Rural, Nantumbo, Hai, Lushoto, Bariadi, Handeni, Liwale, and Tunduru.	EU funded project was a follow-on of the Mbozi pilot and covered 15 districts which were selected for their agricultural and livestock potential. The initiative focused on titling of lands. Villages in designated districts were asked to identify plots for demarcation and surveying. As a result of spot adjudication at the village level, over 5000 CCROs were issued. Program built registries and provided equipment (GPS and computers) at district level.
Business Environment Strengthening for Tanzania (BEST)	Babati and Bariadi districts.	BEST was carried out by the Ministry of Lands, Housing and Human Settlements and was sponsored by World Bank, DFID, SIDA and Danida and the Government of Netherlands. It focused on systematic adjudication of all parcels within the targeted villages. Over 70,000 parcels were targeted for CCROs. Besides registration and titling, the project focused on building capacity for land administration, improving infrastructure for surveying, mapping and registration and decentralizing land administration services.
MKURABITA	Handeni and Bagamoyo; Rufiji, Nachingwea, Makete, Njombe, Manyoni, Serengeti, Musoma, Mpwapwa, Mvomero and Wete (Pemba Island). Note that an additional 14 districts have been designated: Meru, Moshi Rural, Mwanga, Maasai, Mbinga, Sikonge, Sumbawanga, Mbarali,	MKURABITA is a government program meant to formalize all small businesses and properties of the poor people. Initially, MKURABITA carried out two pilots in Handeni and Bagamoyo to test innovations in land use planning and registration of rights. MKURABITA's intervention in Handeni was chosen due to the fact of existing investments in land administration infrastructure (i.e. land use plans, village registration, registries, etc.) and was focused on surveying and issuance of CCROs. Systematic adjudication was implemented in Bagamoyo, but villages were left to issue CCROs. In Handeni, 617 CCROs were issued, but none have been issued in Bagamoyo. MKURABITA has since stopped carrying out full

	Kasulu, Kahama, Geita, Muleba, Mkoani (Pemba) and Kaskazini 'A' (Zanzibar).	implementation and instead has focused its attention on technical assistance, provision of equipment and training. It has been active in many districts, but its impact has been limited.
Land Management Programme (LAMP)	Babati, Kiteto, Singida	Land Management Programme (LAMP) has been sponsored by SIDA and is a broad program, concerned with bringing land management to villages. The LAMP activities have focused on land use planning and natural resource conservation, and as a result, have supported sporadic land titling.

In addition to previous and on-going land administrative initiatives, the Ministry of Lands, Housing and Human Settlements, has identified target areas where land conflicts have been increasing, and as a consequence, demand for the testing on innovations for land titling may be high:

- Rufiji River Basin - Investment in this region have been hampered by conflict between customary forms of land tenure and rights to use natural resources;
- Kigoma Region - Conflict between customary forms of land uses and use of natural resources, particularly forest reserves (area of interest: Kigoma, Kasulu and Kibondo);
- Katavi Region - Investments in minerals as well as a number of conflicts between pastoralists and game wardens have occurred in this district (area of interest: Mlele and Mpanda District);
- Arusha Region - There is a growing number of land conflicts in this region due to pressures associated with tourism, wildlife conservation and land grabs. Growing conflicts between rural farmers and pastoralists who depend on land, water and other natural resources (area of interest: Arusha, Monduli and Arumeru); and
- Manyara Region - Frequent conflicts between Kiteto Bantu farmers and Maasai pastoralist who use land for grazing (Kiteto district).

4.0 PROJECT IMPLEMENTATION

4.1 ASSUMPTION AND CHALLENGES

This section presents external factors that include assumptions and risk that should be considered for the successful implementation of the project.

4.1.1 ASSUMPTIONS

- Extensive community organization and advocacy will enable the establishment of effective participatory mechanisms that will facilitate project implementation.
- Villagers, specifically individuals that possess a secondary education, can easily be trained to use geospatially-enabled mobile devices for the capture of land information
- Introducing the technology associated with this project to villagers will have more benefits for local people than costs.
- The selected village shall be in possession of a Village Land Certificate, so as to eliminate the need for mapping or village boundaries and resolving village boundary disputes.
- The selected village shall be in possession of an approved village land use plan that has been developed in accordance to the procedures set forth by the NLUPC.
- The selected village shall have a constructed land registry or have identified an appropriate location for the storage of local land records.
- The use of existing spatial data, satellite imagery, and other GIS data shall be made available by the government or USAID to help streamline the survey and mapping process.
- The use of mobile devices, and especially cloud-based data storage facility, will facilitate the secure storage of property rights information and allow for villagers to have meaningful access to the data at low cost.

4.1.2 CHALLENGES

- The placement of land information in the public sphere may actually increase risk for the community by providing government and prospective investors with information on “available” lands that may facilitate quicker investments without regard to villager’s rights.
- Lack of understanding of land laws, procedures and rights at the village level necessitates the need for extensive public education.
- The lack of an adequate functional and coordinated land information administration system restricts coordination and reduces effective oversight by central and district governments.

- Limited administrative, technical and financial capacity at district and village level lessens administrative capacity to facilitate the pilot, especially in regards to the issuance and registration of the CCRO.
- Weak governance in land administration at all levels limits protection of land rights and may give rise to behavior that attempts to circumvent established procedures (i.e. corrupt activities).
- Land disputes are commonplace and mechanisms for dealing with disputes at the village level are weak.

4.2 ACTIVITIES

Based on the finding of the inception mission, the structuring of the project has been slightly revised (project plan) to better reflect insights gained during the inception mission in Tanzania.

Phase	Activity
PROJECT INITIATION	
Project Initiation	Hire Cloudburst Program Manager to provide project management oversight for the implementation of the pilot
	Initiation project, review of work program and approach
	Review pilot shortlist and perform desk study for mobilization
Mobilize Country One - check suitability	Site Visit Tanzania
	Develop in-country inception report
	Develop monitoring and evaluation framework
	Develop a conceptual approach for ITC development and a detailed work plan

Phase	Activity
MOBILIZATION	
Develop Specifications	Develop Specifications for Mobile Field Applications
	Develop Specifications for Cloud-based Database Management Application
Procurement of Development Services	Procurement of infrastructure development services
	Procurement of mobile field application development services
Application Development and Testing	Initiate development and testing of Infrastructure
	Initiate development and testing of mobile field applications
Establish Partnership/ Project Management	Initiate Partnerships/ Project Management relationships for implementation in Pilot Country, develop scope of work, work plan and budget
	Establish and formalize Partnership/ Project Management by executing contract
	Country One - Second Field Visit
IMPLEMENTATION	
Community Organization and Governance Arrangements	Coordinate initial project mobilization with GoT and stakeholders
	Create local project governance arrangements at village level
	Capacity building all local stakeholders/ establish local land committee
	Outreach and public awareness campaign related to land rights, and CCRO
	Engage community and agree pilot scope for surveying and mapping and adjudication using mobile devices
Implement Infrastructure & Test Technologies	Procure supporting Information Infrastructure for Tanzania
	Assemble and implement supporting information Infrastructure at appropriate levels
	Test field applications for data capture, test data storage infrastructure and reporting in TZ
Mapping of Property Rights	Initiate land rights information capture at village level

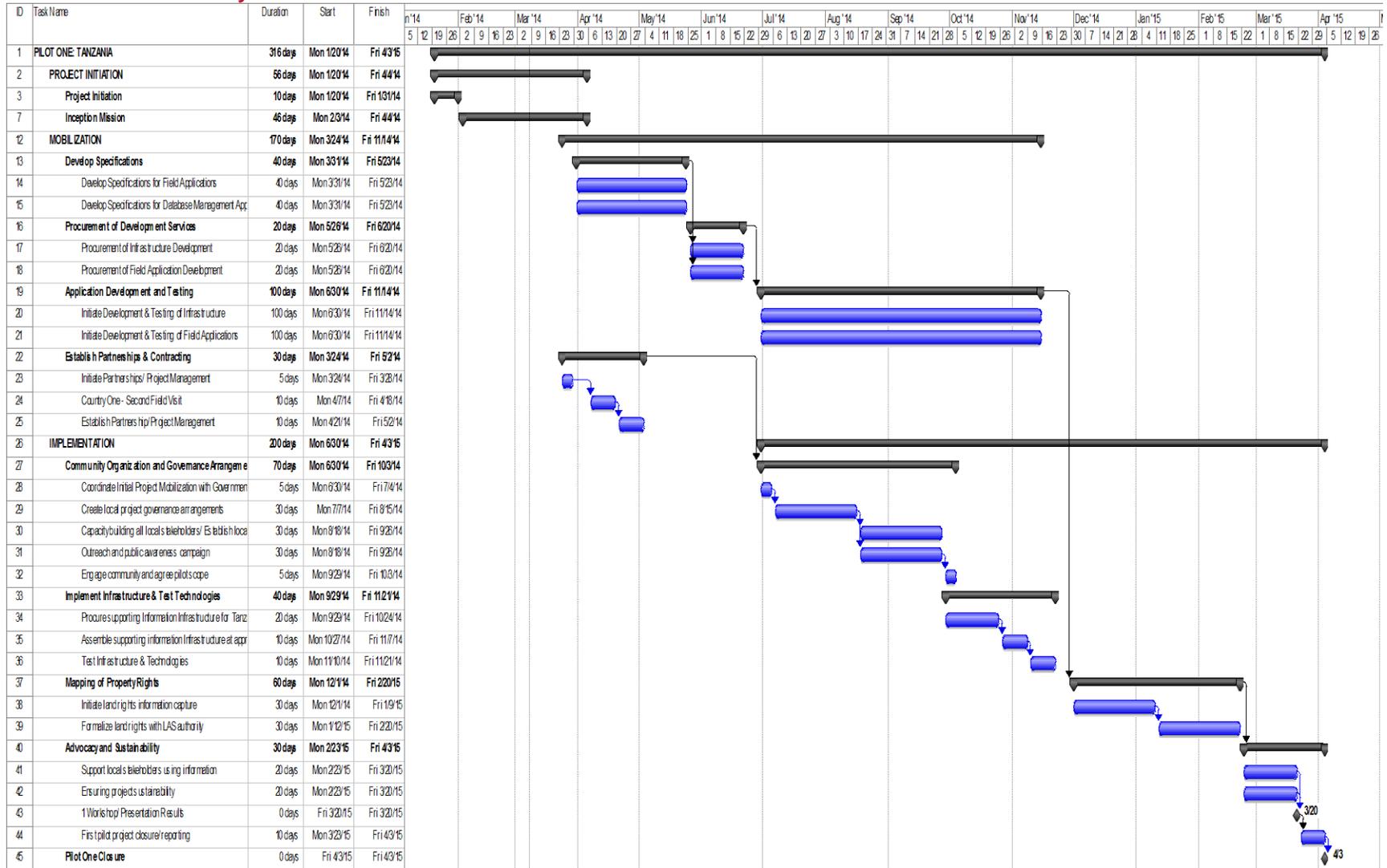
	Formalize land rights with Ministry of Land, Housing, Human Settlements Development, District Land Office
Advocacy and Sustainability	Support local stakeholders using land information
	Ensuring project sustainability by building a mechanism for the advocacy of land rights in the village
Project Closure	Workshop/ Presentation Results to local, district and national stakeholders
	First pilot project closure/ reporting
	Pilot One Closure

4.3 PROJECT PLAN UPDATE

4.3.1 SUMMARY PLAN

	Program Stage	2014				2015				2016			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1.	Initiate project												
2.	Implementation of supporting technical solutions												
3.	Pilot Project No. 1												
4.	Review Pilot Project No. 1												
5.	Pilot Project No. 2												
6.	Review Pilot Project No. 2												
7.	Pilot Project No. 3												
8.	Review Pilot Project No. 3												
9.	Share experiences and lessons learned												
10.	Project Closure												

4.3.2 DETAILED PROJECT PLAN



5.0 EXPECTED BENEFITS

While the scope of the inception mission was to explore the institutional and legal framework for the implementation of the Mobile Technology Pilot, the inception mission was also used as a mechanism to inform government ministries, departments/directorates, development partners and international and national NGOs about the overall objectives of Mobile Technology Pilot. The section below summarizes the appropriateness of the Mobile Technology Pilot and outlines some of the expected benefits that may accrue to key stakeholders and beneficiaries.

The Government of Tanzania is receptive to the implementation of a Mobile Technology Pilot so as to verify if mobile technologies can be used more efficiently for the capture of property and rights information. Mr. Christian Mwalugaya, Acting Commissioner of Lands, Mr. David Mushendwa, Assistant Commissioner for Lands, Mr. Steven Shirima, Director of Survey and Mapping Unit, and Mr. Adam Nyaruhuma, Director of the newly established Land Tenure Unit expressed their support for the Mobile Technology Pilot. **Development partners also are receptive to the implementation of a Mobile Technology Pilot.** Development partners, specifically DFID and SIDA, also desired to verify the applicability of mobile technologies in capturing property information and securing tenure. They also identified specific areas where the Mobile Technology Pilot fit within future programming that is being contemplated as part of the Tanzania Land Transparency Partnership (TLTP) (i.e. regularization of land tenure in pilot areas).

The Mobile Technology Pilot offers a framework to **develop new types of partnerships** and coordinate efforts between the central, district and village governments. The Commissioner of Lands administrates and manages land by way of District Land Offices, which have authority and oversight over village lands or appointed representatives in the village. Previous interventions have resulted in limited application or penetration of these technologies at the local level. These top-down approaches have not been sustainable as they require large upfront investments and sustained technical and material resources.

While the development of new partnerships and coordination may result from the project, **the decentralized institutional framework in Tanzania offers an opportunity to focus interventions at the village level.** The technical assistance will be focused at the local level so as to facilitate data capture by individuals directly affected by the securing of property rights (i.e. villagers). The cloud-based management of information will allow for the review, and if needed processing, of data at the district level. This will facilitate the processing of applications and/or the Certificates of Customary Rights of Occupancy (CCRO).

Mobile technology will also help to build transparency and an understanding of rights so as to improve land governance. While the cloud-based storage of land information will facilitate access to land information at the district and central level, the use of mobile technologies to capture and visualize land information will facilitate a better understanding of land holdings at the village level. Access to information will facilitate active community engagement and advocacy and may help build capacity for land governance at the village level.

The high penetration of mobile use in Tanzania, expanding network coverage⁹ and the increasing use of the mobile applications in rural areas provide an appropriate setting to explore whether mobile technologies can fundamentally change practices in mapping and the capture of property rights. The use of mobile technologies represents a shift in such interventions as it is a lower cost solution and the implementation is more centered at the village level. The use and implementation of these technologies is not without a need for training and support, but represents the possibility of requiring far less direct financial and technical assistance.

The Land Act of 1999 and the Village Land Act of 1999 together provide the basic law in relation to the management and administration of land, settlement of disputes and related matters. In Tanzania, cadastral surveys are required for urban lands and general lands. For registration of rural lands, however, the Certificates of Customary Rights of Occupancy (CCRO) can be granted through a process of adjudication which does not require a formal cadastral survey. The adjudication process requires that boundaries of land be determined through a participatory process in which land holdings are uniquely defined through a good system of referencing. **Therefore, the legal framework for use of mobile technology is appropriate for the securing of tenure and for the formal registration of property rights.**

The reliance of the Mapping and Survey Division of the Ministry of Lands, Housing and Human Settlements Development (MLHUS) on low-accuracy hand held GPS units for the mapping of general boundaries provides further opportunities for the capture information using technologies that do not require the expertise of professional surveyors and/or expensive equipment. Therefore, a **participatory and crowd-sourcing approach implemented by individuals directly affected by the securing of property rights (i.e. villagers) is appropriate** in Tanzania as it has a more flexible land administration regimen.

⁹ In Tanzania, initially the mobile phone service was confined to large cities, however, since 1994 mobile phone technology coverage has improved and has been expanded. Growing population in rural areas as well as activities such as tourism, mining and other types of commerce have facilitated the facilitated an expansion of coverage throughout the country. There are six (6) mobile cellular network providers in Tanzania. In 2009, there were six (6) mobile cellular network operators in Tanzania: tiGo, Zain, Vodacom, Zantel- Mobile (Airtel), TTCL-Mobile and Benson Ltd. Vodacom, Zantel (commonly known as Airtel) and Tigo are the largest providers in the country

6.0 CONCLUSIONS AND NEXT STEPS

This report provides the basis on which the project can move forward with implementation based on a revised project schedule.

As mentioned throughout this report, the land administration framework in Tanzania is appropriate for the application of the Mobile Technology Pilot. Its implementation is important at this rapid time of change related to the interest in investing in agriculture. Land is a key resource in development and shall remain at the forefront of the discussions until all stakeholders rise to the challenge of promoting transparency in the administration of land, increasing tenure security and develop a reliable inventory of land. The Mobile Technology Pilot can make a contribution of substance by providing tools and methodologies for the capture of land at the local level and sharing the experiences at the district and national levels.

USAID has already devoted a considerable amount of time and resources in orienting the stakeholders to the project; raising their awareness and understanding of project's rationale, objectives and activities.

The next steps of the Mobile Technology Pilot are launching the mobilization phase. Key activities are related to building specifications for the mobile mapping application and a cloud-based storage facility. The specifications will be used to initiate development of the required software applications.

A follow-up trip to Tanzania is also envisaged. It has been tentatively scheduled to occur in mid-April, 2014. The trip will be focused on gathering more details on data requirements for the software applications as well as to initiate dialogue and formalize partnerships with NGOS for the implementation of the Mobile Technology Pilot in Tanzania.

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The Land Use Planning Action No. 6, 2007

The Land Survey Ordinance (CAP 390)

The Surveyors Registration Act No 2 of 1977

Land Registration Ordinance (CAP 334).

ANNEX A: PROJECT MANAGEMENT POSITION

Job Title: Project Manager Mobile Technology Pilot

Location: Tanzania

Reports To: Cloudburst Project Manager

Length of Assignment: 1 Year

Primary Responsibility:

- Develop and supervise the implementation of the “Mobile Technology Pilot in a selected Village in Tanzania to ensure highest level outcomes, including direct management of staff and partners.

Specific Job Responsibilities:

- Directly supervise the implementing partner and advise on staffing needs and technical for project implementation.

Management:

- Create village profile (provide written description of current land issues/ conflicts) by working through the local land committee.
- Provide leadership and management of implementing partners for the following processes, that is not limited to:
 - Community organization - participate in social mobilization activities of the land committee to facilitate mapping and capture of land rights
 - Technology testing and verification - develop, plan and implement community mapping with implementing partner, including testing and use of GIS and GPS applications on mobile devices
 - Capacity Building – place a major emphasis on and develop a plan for building the capacity of village council, village assembly and mapping personnel at the village level through formal and informal training programs/ opportunities.
 - Participatory mapping - Implements and provides support in the utilization of mobile devices for data capture assisting in the collection, and collation and validation of land information data into the GIS database to ensure that the required data has been captured; and
 - Liaison – Liaise with relevant bodies/councils at the district level to ensure that the information is being processed for the formalization of tenure and the issuance of CCROs

Coordination and representation:

- Ensure coordination with the Ministry of Lands, Housing and Human Settlements Development (MLHUS) at the central government level;
- Ensure coordination with the district land office;
- Ensure coordination with the village council, land committee and village assembly;
- Represent Mobile Technology Pilot Project, Cloudburst and USAID in discussions or meetings with government, non-government and relevant local community based organizations; and
- Prepare project reports as required by Cloudburst and USAID

Requirements:

- Diploma in Cartography / Surveying/ Geography with a minimum of 5 years' experience in land administration, including technical, institutional and policy aspects of land administration and management.
- Knowledge of ICT and system development and maintenance procedures
- Managerial and technical competencies: project management principals and processes, project planning, monitoring and control.

ANNEX B: LIST OF MEETINGS AND CONTACTS

MEETINGS

This section below presents a series matrices that provide a summary of meetings held with various stakeholders:

Donors and Development Agencies

Donor/ Development Partner	Discussion Points
Department for International Development (DFID)	Discussions focused around the Tanzania Land Transparency Partnership (TLTP) that is focused building transparency of land tenure conditions and procedures and improving land governance in Tanzania. The initiative is being led by DFID and the Embassy of Sweden in Tanzania and is an initial two to three-year support program with three areas of intervention including: 1) transparency and benefits of land deals, 2) policy and institutional development and 3) regularization program that seeks to implement proven reduced and effective low cost titling processes in two districts in Tanzania. The total targeted investment is \$14M US for the TLTP, of which DFID will close to 50% of the entire program.
World Bank	Discussions initially focused on World Bank interventions in the land sector in Tanzania, which include the design and development of the Integrated Land Information Management System, modernization of the geodetic network, and building capacity for the mapping of government land. While the World Bank has significant concerns related to land tenure security in Tanzania, it has recently approved additional credit of \$60M for a period of about two years, which will close on November 30, 2015. The credit will build upon the original project and enable the scaling up of work on a number of critical activities: (i) advance land administration reform; (ii) complete business registration reform; and (iii) support the BRN President’s Delivery Bureau (PDB).

Donor/ Development Partner	Discussion Points
Belgian Development Agency (BTC)	Discussions focused on BTC's work in natural resource management and conservation. BTC has also been involved in land use planning as a consequence of work in the above mention sectors. BTC is currently providing technical assistance for the development of land use plans in the Kilombero Valley. BTC has supported the completion of over 200 Village Land Use Plans in the Kilombero Valley. It is necessary to note that only one (1) out of the two hundred (200) plans has been approved by the NLUPC and the Ministry of Lands, Housing, Human Settlements Development.
Swedish International Development Agency (SIDA)	SIDA has played an important and supportive role in water resource management, wildlife and forestry conservation and land administration. Since 1996, SIDA has supported the land sector through the LAMP. Discussions focused on SIDA's participation in the Tanzania Land Transparency Partnership (TLTP), particularly its focus on building a better understanding of land administration, laws and procedures at the local level.

National Government Agencies or Organizations

National Government Agencies or Organizations	Discussion Points
Ministry of Lands, Housing and Human Settlements Development, Mapping and Survey Division	Discussions focused on the processes related to mapping of village lands, and other types of land including general and reserve land and the associated tenure of such holdings. The mapping of villages has been quite extensive. The mapping of village boundaries has taken place using various technologies, but most prominent being hand-held GPS systems. There is a desire to obtain an accuracy of 1-3 meters, which is often not attainable with hand-held GPS devices. Mapping of villages has followed natural features in the landscape where possible and captured a series of boundary points to delineate village boundaries. A description of the pilot project confirmed that the capture of data, particularly individual parcel boundaries, with the proposed technology is adequate for purposes of registering the occupancy of residents through a process that culminates with the registration and the granting of a Certificate of Customary Rights of Occupancy (CCRO).

National Government Agencies or Organizations	Discussion Points
Ministry of Lands, Housing and Human Settlements Development (MLHUS), Registration of Titles Unit	Discussions focused on the processes related to the Village Certification process and the certification of general land. The certification of customary rights of occupancy was not discussed as the Registration of Titles Unit is concerned with the registration of lands defined under the Land Act.
Ministry of Lands, Housing and Human Settlements Development (MLHUS), Land Tenure Unit	The Land Tenure Unit was established by the Ministry to manage the implementation of the TLTP initiatives. Discussions focused on the land tenure regularization efforts as defined under the TLTP and the importance of the land use planning process. There is general support for the Mobile Technology Pilot project, especially if it incorporates the land use planning process or land use plan and promotes greater transparency so as to protect the land held by Tanzanians, so as to promote more equitable development.
Ministry of Lands, Housing and Human Settlements Development (MLHUS), Land Commissioner	Discussions focused on many issues related to the administration of lands in the country: The cost for registration of lands is unattainable for most villagers and is usually subsidized by implementing agency/NGO; there is lack of adequate storage facilities for land records at the local level; land use planning process, while well defined, is seen as restrictive in that the legal framework is confined to village boundaries, without regard to existing district wide or regional land uses (i.e. pastoralists) or potential land uses (i.e. investments). A national land use planning framework that is currently being drafted to facilitate a broader land use planning process. There is general support for the Mobile Technology Pilot project.
National Land Use Planning Commission (NLUPC)	The National Land Use Planning Commission is the executing agency under the MLHUS, for the Land Use Planning Act, 2007 which governs land use planning in the rural areas. The Village Land Use plan is a prerequisite for the allocation and registration of village land. The NLUPC has developed a set of guidelines for land use planning to facilitate land use planning both at the district and village level. There have only been approximately 50 district land use plans developed in Tanzania. It is estimated that only 1400 out of approximately 11,000 villages have an approved village land use plan. The mapping of village lands has been conducted utilizing a wide array of techniques and technologies; however, most of the mapping of lands is performed using handheld GPS units. There is general support for the Mobile Technology Pilot project.

National Government Agencies or Organizations	Discussion Points
MKURABITA (Mpango wa Kurasimisha Rasilimali na Biashara za Wanyonge Tanzania)	The Property and Business Formalization Program popularly known as MKURABITA in Swahili acronym is a Government of Tanzania initiative which is managed by the Office of the President that is facilitate a cost effective regularization of informal of property rights in Tanzania. The program is based on the ideas of Hernando de Soto and was initiated by the Tanzanian Government and DeSoto's Institute of Liberty and Democracy. It is implemented under the Office of the President. MKURABITA's intervention is focused on establishing a GIS unit within district councils to facilitate the mapping of village lands for the development of land use plan and the issuance of CCROs. MKURABITA has initiated its work in forty-eight (48) districts.
Tanzania Commission for Science and Technology (COSTECH), Dar Teknohama Business Incubator (DTBi)	DTBi is an independent autonomous entity of COSTECH with its own Board that promotes the growth of ICT-based emerging companies contributing to job creation and enhanced economic health of the nation. Discussions with DTBi focused on incubator role on promoting ICT in both the private and government sectors. The pros and cons of utilizing mobile technology over radio frequencies versus 3G or internet based solutions were discussed. Tanzania is drafting an information bill that largely follows the US Information of Freedom Act. DayOne Comsoft is a DTBi incubate, which has developed a web enabled GIS platform for tax revenue collection.

Non-Government and Community Based Organizations

National Government Agencies or Organizations	Discussion Points
Mennonite Economic Development Associates (MEDA)	MEDA Tanzania is part of a global NGO called Mennonite Economic Development Associates (MEDA) headquartered in Waterloo, Ontario, Canada. General capabilities include GIS mapping, mobile applications used in private sector development programs, market based solutions for health, gender-based initiatives and agriculture and rural finance

National Government Agencies or Organizations	Discussion Points
	services. Discussions focused on MEDA implementation activities with mobile applications for a mosquito net voucher scheme.
Action Aid Tanzania	ActionAid is a NGO working together to further human rights for all and defeat poverty. Interventions are community based to help communities and individuals recognize, promote and secure basic rights. Its primary areas of intervention are in governance, women rights, education, HIV and AIDS and food rights. In Tanzania, Action Aid has worked in communities to promote land rights, including the development of village land use plans, construction of local registry offices and policy and advocacy. Action Aid is involved in a land accountability project in Kiteto, which is sponsored by SIDA.
Jane Goodall Institute	The Jane Goodall Institute (JGI) works in western Tanzania to reduce human population pressures and protect chimpanzees and their forest habitat. JGI's work in the development of village land use plans have been innovative and have utilized GIS, GPS, and smart phone technologies. Smartphone technologies have been used specifically for monitoring and mapping of conflict areas in the communities. JGI does not have direct experience in land administration.
Center for Community Initiatives (CCI)	CCI is a non-profit organization that is focused on helping poor urban and peri-urban communities improve their quality of life by providing support to community driven approaches focused on organization, micro finance, land and shelter, and urban infrastructure upgrading. Discussions focused around CCI's methodologies for implementing community based projects through the development of community advocacy committees, which focus on harvesting the power of the people for infrastructure upgrades in low income urban areas. CCI does not have direct experience in land administration.
Concern Worldwide Tanzania	Concern Worldwide Tanzania is a non-profit organization that is focused on supporting and developing food markets and income generation mechanisms for small farmers, water and sanitation programs, nutrition and promoting gender rights. Discussions focused on Concern's work in the land administration sector, particularly its successful implementation of a land titling pilot program (2005-2009).
Haki Ardhi	Haki Ardhi is a non-profit organization, which translates from Kiswahili to mean Land Rights. Haki Ardhi was formed to sustain a public debate and participation, particularly on issues of land tenure. Haki Ardhi works at the grassroots

National Government Agencies or Organizations	Discussion Points
	level and helps to promote an understanding of property rights, laws pertaining to land. Haki Ardhi promotes advocacy by focusing on building a power base around land and associated rights.

CONTACTS

National Government Agencies and Organizations

Ministry of Lands, Housing and Human Settlements/Land Administration Division/ Commissioner of Lands

Location: Kivukoni Front, Ardhi House P. O. Box 9132, Dar es Salaam, Tanzania

Phone Numbers:+255 22 2113165/ 2121241-9 Extension 2434; +255 22 2118303

Contacts: Acting Commissioner of Lands: Mr. Christian Mwalugaya +255 0765 718282;

Assistant Commissioner for Lands: Mr. David Mushendwa +255 0787 972399

Ministry of Lands, Housing and Human Settlements/ Registration of Titles Unit

Location: Kivukoni Front, Ardhi House P. O. Box 9132, Dar es Salaam, Tanzania

Phone Numbers:+255 22 2113165/ 2121241-9 Extension 2226; +255 22 2118303

Contacts: Mr. Apollo Laizer, Deputy Registrar of Titles, +255 0713509066

Ministry of Lands, Housing and Human Settlements/ Survey and Mapping Unit

Location: Kivukoni Front, Ardhi House P. O. Box 9132, Dar es Salaam, Tanzania

Phone Numbers:+255 22 2113165/ 2121241-9 Extension 2226; +255 22 2118303

Contacts: Mr. Steven Shirima, Director of Survey and Mapping Unit, +255 22 2121894

Ministry of Lands, Housing and Human Settlements/ Land Tenure Unit

Location: Kivukoni Front, Ardhi House P. O. Box 9132, Dar es Salaam, Tanzania

Phone Numbers:+255 22 2113165/ 2121241-9 Extension 2226; +255 22 2118303

Contacts: Mr. Adam Nyaruhuma, Director of Land Tenure Unit, +255 0754292468

Prime Minister’s Office Regional Administration and Local Government (PMORALG)

Location: Prime Minister's Office, Regional Administration and Local Government, P.O. Box 1923
Dodoma – Tanzania, ps@pmoralg.go.tz
Phone Numbers: +255-26-2322848 Or +255-26-2321234

The National Land Use Planning Commission – Tanzania

Location: P.O. Box 76550, Dar es Salaam, Tanzania. dg@nlupc.org, dgnlupc@ardhi.go.tz
Phone Numbers: +255 22 2115573
Contacts: Mr. Kachubo Modesty, Director of Physical Planning, +255 0715 119180

MKURABITA (Mpango wa Kurasimisha Rasilimali na Biashara za Wanyonge Tanzania)

Location: Plot No. 20, Ocean Road/Sea View, S.L.P. 7975, Dar es Salaam
Phone Numbers: +255-22-2126250/3;
Contacts: Japhet Werema, Urban Property Formalization Manager, +255 754 0288 185, jwerema@mkurabita.go.tz

Tanzanian Commission of Science and Technology (COSTECH)

Location: P.O. Box 4302, Ali Hassan Mwinyi Road, Kijitonyama (Sayansi) COSTECH Building,
Dar es Salaam, Tanzania, info@costech.or.tz
Contacts: George Mulamula, Senior Government Advisor ICT and Director of Dar Teknohama Business Incubator(DTBi), +255 0773 805 380

Civil and Non-Government Organizations

Land Rights and Research and Resources Institute (LARRRI/HAKIADHI)

Location: Plot 236 Block 47 Kijitonyama Area Sinza Mori Street
Contacts: Yefred Myzeni, Director +255 784 646752 <http://www.hakiardhi.org>

Centre for Community Initiatives (CCI)

Location: Dar es Salaam Main Branch, Inter House Building, 3rd Floor, Ali Hassan Mwinyi Road, P.O Box 31515 Dar es Salaam Tanzania: +255 222 701 390
Contacts: Tim Ndezi, Director, +255 755 657573

Concern Worldwide, Tanzania

Location: Regent Estates, P.O. Box 6370, Dar es Salaam
Contacts: Tilaye Nigussie, Director, +255 22 270 0327

MEDA Economic Development Associates

Location: 386 Toure Drive – Masaki, P.O Box 10817, Dar es Salaam, Tanzania

Phone Numbers: +255 22 260 1822 or +255 22 260 1830; Email: medatz@meda.org

Contact: Kenneth Nchimbi, Manager – Operations & IT | MEDA Tanzania|+255 782 444 314 | knchimbi@meda.org | www.meda.org

ActionAid International Tanzania

Location: Plot No. 115 Ngorongoro Street, Mikocheni B Area, P.O. Box 21496, Dar es Salaam, Tanzania

Phone Numbers: +255 (0)22 2700596/694/699; admin.tanzania@actionaid.org

Contact: Elias Mtinda, Project Manager, Elias.Mtinda@actionaid.org

Ardhi University

University College of Lands & Architectural Studies

Location: P. O. Box 35176, Dar Es Salaam, Tanzania;

Phone Numbers: (255-22) - 2771272, (255-22) - 2775004,(255-22) - 2772291/2; aru@aru.ac.tz

Contact: Dr. Felician J. Komu, Acting Head of Department of Real Estate, Finance and Investment (REFI) and Department of Property and Facilities Management (PFM): , +255 713 332165

Tanzania Women Lawyers Association (TAWLA)

Location: Ilala Sharif Shamba, Plot 33 TAWLA House- Ilala; PO Box 9460 Dar Es Salaam,

Phone Numbers: 255 (0) 222 862865 or +255 (0) 732 929650, tawla.information@gmail.com

Contact: Nasieku Kisambu, Head - Research and Publicity Department nasvelt@yahoo.co.uk,+255712573410

MVIWATA (Morogoro)

Location: P.O. Box 3220 Morogoro

Phone Numbers: +255 023 261 41 84, info@mviwata.org

Community Research and Development Services, CORDS

Location: Kwa Iddi, Sakina, P.O.BOX 11141, Arusha.

Phone Numbers: + 255 - 732- 972 340., E-mail: cords@habari.co.tz.

**U.S. Agency for International Development
1300 Pennsylvania Avenue, NW
Washington, DC 20523
Tel: (202) 712-0000
Fax: (202) 216-3524
www.usaid.gov**