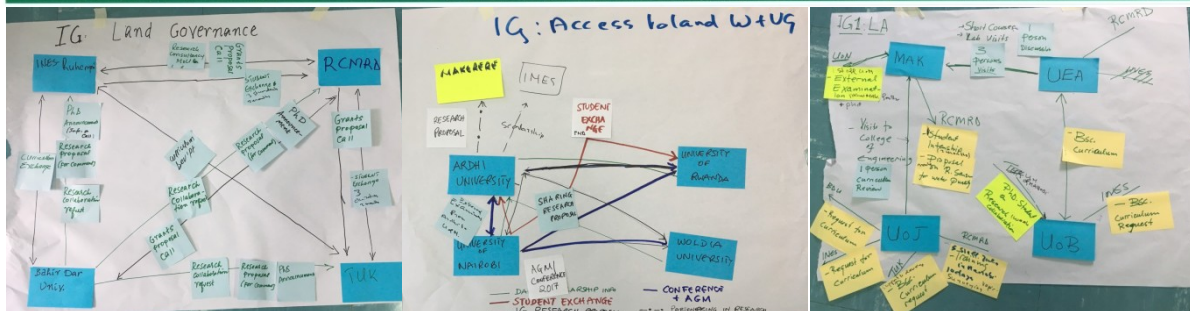




Promoting Land Administration and Governance for Sustainable Development in Eastern Africa



Proceedings of the EALAN 2017 Conference hosted by the Department of Geospatial and Space Technology, University of Nairobi, at the Kenya School of Monetary Studies, Nairobi, Kenya, July 26-27, 2017



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FOREWORD AND ACKNOWLEDGEMENTS

Land administration arrangements and practices in any country influence the pace and outcomes of social and economic developments. Since the United Nations adopted the Sustainable Development Goals (SDGs), nations have been encouraged to take initiatives to attain the SDG targets. As a key factor in development therefore, how land administration arrangements and governance practices contribute to the attainment of the SDG goals becomes an important national, regional and global question.

The 9th EALAN AGM and Conference was hosted by the Department of Geospatial and Space Technology of the University of Nairobi at the Kenya School of Monetary Studies (KSMS), Nairobi. The theme of the Conference was "Promoting Land Administration and Governance for Sustainable Development in Eastern Africa". The main session themes were: Land Acquisition for Development Projects, Access to Land for Women and Vulnerable Groups, Innovative Solutions for Land Administration; and a Policy Dialogue Session.

One of the key items of discussion was on the development of a more purpose oriented land administration. So far, there is no complete coverage in land administration in most of EALANs member states. Traditional and conventional approaches do not bring the desired results. Many new tools and approaches are available today – amongst them more fit-for-purpose oriented approaches. Apart from the educated conventional approaches in surveying and land administration there was agreement that universities and industry should embrace new and innovative approaches. This includes, for example, the use of imagery to support initial data acquisition for land administration. Rwanda has very positive experience in this respect. Another important issue discussed is a proper organized linkage between Cadastre and Registry.

During the Conference, over 100 participants attended, with over 16 presentations including key note presentations. Most of the paper article submissions were subjected to peer-review and the authors were asked to present revised papers. In these proceedings, the papers are organized according to the session theme in which they were presented.

The Local Organizing Committee gratefully acknowledges the support of the German Government through Nelga and giz, the Dutch government through Nuffic, and the Regional Centre for Mapping of Resources for Development towards the staging of the EALAN 2017 conference.

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CONFERENCE SESSION HIGHLIGHTS

1. Opening and Key note Address

After the official opening of the EALAN 2017 Conference by the Principal of the College of Architecture and Engineering of the University of Nairobi on behalf of the Vice-Chancellor, the first Key note address was delivered focusing on Land access for women and vulnerable groups. The key note addressed what land and access to land means; challenges for women and marginalized groups with regard to access to land.

It was noted that women and marginalized groups often have limited decision-making power and control over how they use the land or its outputs, and that access to land by these groups is often regulated by formal legal system or customary law which contradict. The subject of access to land by women and marginalized groups is important because: it is central to economic empowerment, land is a social asset, women's access to land is a human rights issue and agricultural production and food security increase when women are guaranteed tenure security.

The Entry Points for increasing women's access to land include *Land policy, Land Legislation, Implementation of land laws, enforcement, and land administration*. Although in many African countries laws and policies recognize Land access to women, we still receive complaints from public about access – It is a problem of policy & legislation; women don't have access to justice and they can be denied access to land in the community (communal land and community Land are terms used with different meaning in different countries in the region). The question to ask is whether there is another way apart from legislation. The use of paralegals, for example, *Kituo cha Sharia* in Kenya – can be another alternative, to create awareness of laws that exist and how relevant they are to women; and conducting more research on the issue. In conclusion, it was noted that the situation of women and marginalized groups accessing land is complex and requires a re-examination of existing constraints

2. Land Acquisition for Development Projects

Three presentations were made during this session focusing on land acquisition. The first presentation in the session was on impoverishment risks in development induced displacement and resettlement as a result of airport expansion project in Dar es Salam City. It was reported that displacement communities became poorer after losing their income generating activities and no compensation was considered; and that there was no community participation in critical decisions, largely because a resettlement policy does not exist.

The second paper was on the unique radical terraces or contours introduced in Rwanda in 1970 as a tool for environmental protection and by contributing to increased maize and fodder yield – the contours are planted with grass to provide fodder for animals - and reduced soil erosion. The radical terraces are done in groups and have become a Rwandan culture.

The third presentation was about the lessons learnt from the implementation of certificates of customary ownership (CCO) in Kasese District, Uganda. The motivation for the introduction of the certificates of customary ownership was because the process follows customs and norms of the land, the process is understood by the locals thus acceptable, it is affordable, promotes equity and justice, improved mapping with adoption of SOLA open tenure. The lessons learnt were that community interest increased, local leadership interest and support is required and that there should be clear documentation guidelines.

3. Access to Land for Women and Other Vulnerable Groups

The first paper in this session reported on the assessment of performance of local grassroots level rural land administration institutions in Amhara Region, Ethiopia. It was noted that every village has a land administration expert and that land administration structures varies from one region to another. Although most land administration and arbitration committee members seem to have motivation to deliver service, capacity limitations have hindered them to extend their services; there is also weak participation of women members.

The second presentation was about land holding, acquisition and securisation challenges for women in South Kivu Province, Eastern DRC. The main issue from the presentation was not about existing laws but on implementation of the same – a need was expressed to educate the bigger masses with on the laws that protect women rights

4. Innovative Solutions for Land Administration

This session was split into two and a total of four presentations were made. The first paper was about land use practices and their implication on the functioning of the lake ecosystem and the livelihoods of the farming community in Lake Hayk watershed. Rapid land use and cover change particularly conversion of wetlands and grazing land to cultivated lands is the typical characteristics of the catchment, which has created undesirable impact on the lake ecosystem of water birds, fishes and lake volume. Loosely defined property rights of the wetlands, absence of local governmental institution on wetland and inefficient land registration system are the driving force for land degradation in the catchment.

The second paper presentation was on the use of open source geo-solutions to develop an informal cadastre for Redeemed Village in Huruma informal settlement in Nairobi, Kenya.

The innovativeness of the methodology was the use of VGI in developing the cadastral model based on STDM as opposed to normal digitization and the research used participatory approach and key stakeholder were consulted regarding the contents of the database. The conversion from the certificate of lease is expected to done through government regularization programs. The documentation of rights was mainly for regulation but could be used to support planning in subsequent phases.

The third paper was about analyzing the impact of Social Tenure Domain Model (STDM) on tenure security in an informal settlement. It was remarked that although it may be too early to monitor the impact of implementing STDM, about 60% of the affected people were aware of STDM and so far confined to the area of study.

The final presentation in the session was about making standards for land administration operational. This requires more piloting before implementation-much cheaper than conventional approaches (i.e. looking for controls, monumentation, title preparation) thus not affordable to most people. Many steps involved causing corruption e.g -6-8 steps, there is opposition to digital records. Paper based records prone to corruption. The LADM Edition II is under consideration to include extension of in RRRs, fiscal extensions, measuring and monitoring, marine cadastres and 3D cadastres.

5. Policy Dialogue Session

The session entailed a keynote address, two presentations and a panel discussion. The keynote address on Land administration and Governance in Eastern Africa region Challenges and opportunities was delivered by Dr. Emmanuel Nkurunziza, Director General RCMRD. The key points and recommendations from the keynote address include the following:

- i) Adopt/ implement Fit-for-purpose land administration by assessing our needs and then use the available technology and skills.
- ii) come up with Home grown solutions
- iii) Be creative and innovate.
- iv) Land policy need to be reviewed
- v) Legislations needs to be amended to cater for local needs
- vi) Curriculums need to be reviewed to cater for current needs.
- vii) Peer learning / International exchange programme/ have sharing programmes
- viii) Creation of land policy research centre for research purposes

The first presentation after the Keynote was a research carried out at Kinondoni Municipality, Dar es Salam Tanzania and it outline measure level of risk, Motivation of the study, Frauds among others. The research showed the relationship between level of documentation and

risk and it was evident from the research that as more people use the document the more the risk. It described the formal and informal transaction processes. It came out that the formal process is cheaper, easier, and quicker than informal but it's more risky. Use of formal document then we perceive less risk. Formal titles have risk perception and higher preference. High quality titles pose fewer risks. It was concluded that massive titling for larger group of people is advised for less risk rather than individual titling.

The second presentation cited what is going on in our cities, discussed cities as backbone of our economies, indicating that population growth in the cities is too high; The presenter also discussed features of cities in Africa which are multi-dwelling, multi-storey and massive real estate and the challenges in the cities among them transportation and overcrowding of people and dwellings. The challenges that land administrators are facing in urban areas include rapid urbanization, negative impact of climate change, hunger and malnourishment, income inequality, energy needs, waste management, obstruction and encroachment of riparian reserves, and natural water courses. The mitigation measures that could be adopted include conservation and restoration of vegetation, conservation of species and gardening, recycling of waste water and adhering to the zoning regulation. Demand led urban development looks at what you have and what you need and give to administrators and ask for it.

During the Policy Dialogue panel discussion, the following key issue merged

- i) Those selling fit for purpose land administration create a problem since it seems like a like a temporary measure but in discussion with surveyors. There is need to convince them that we can never be 100% accurate or precise; the argument needs to be rational and scientific.
- ii) The politicians need to be convinced before surveyors regarding fit for purpose land administration;
- iii) Different forms of tenure exist and they can all be accommodated; necessary tools can be designed to include them. The key thing is being able to domesticate the tools like LADM and STDM.
- iv) To ensure quality of the process, all possibilities should be considered and that's why piloting is important; manuals should be produced to guide implementation followed by process monitoring – monitoring whether we were adhering to rules in the manual;
- v) Impact evaluation of the fit-for-purpose is important; The World Bank was tasked to do this. They have published documents on the same.
- vi) A fit-for purpose cadastre can be applicable to more than one purpose;

- vii) We should not talk about a cm cadastre; We should not raise expectation in that direction; Thematic accuracy and Temporal accuracy instead accuracy should be considered as a proper link between object and subject
- viii) Accuracy is a traditional problem; Rural areas we cannot get 1cm accuracy. Instead we should have right accuracy for the right problem and It has to be done differently for different parts of the country
- ix) Universities and polytechnics are teaching point positioning regardless of what it presents. We teach the students to do what is in the current legislations which were made decades ago and they were just borrowed; We have to teach open minded people, why we are doing it?
 - o New techniques are available and skills
 - o solving problem
- x) We don't have sharing programmes; There is need for International exchange programmes
- xi) Policy dialogue issues can be identified in land administration, land governance and land development, tenure security, efficient land use and administration, for example, innovative ways that can provide better tenure security are needed -freehold or leasehold is not a solution; principles of good land governance need to be upheld with regard to access for women and vulnerable groups
- xii) Review of land policy should be considered
- xiii) Reviewing the implementation of new land laws
- xiv) Establish if new institutions are these institutions working coherently or they are so expensive to maintain?
- xv) Creation of land policy research Centre proposed by constitution- this can help us do research often and can collaborate with other countries which can bring development
- xvi) Capacity Building and time

6. NELGA Session

This session was provided for the EALAN members to understand the activities of NELGA, which was conceived in the context of the AU-Agenda on Land which is to enhance institutional capacities for land governance in Africa, development of guidelines/framework for land policy in Africa.

The main outputs from NELGA have been the Community of Experts (COE), development of guidelines for curriculum development on Land Governance in Africa; and training and research programmes responsive to Africa's peculiar challenges.

Potential areas of Synergy between NELGA and EALAN were explored and the way forward was: EALAN to consider the curriculum development guidelines; cooperation in education and research and EALAN to take up the challenge; and come up with systematic approach for student attachments.

CONTENTS

Fore word and Acknowledgements	iii
Conference Session Highlights.....	v
key Note Address: Land Access for Women and Vulnerable Groups.....	1
assesment of the Practice of Rural Land Rental Markets in Amhara National Regional State, Ethiopia.....	7
Impoverishment Risks in Development-Induced Displacement and Resettlement in Dar es Salaam city. The case of Airport Expansion Project.....	8
Radical terraces: Sustainable land management for food security in Rwanda	26
Local Grassroots Level Rural Land Administration Institutions Performance in Amhara Region, Ethiopia.....	27
Land Holding, Acquisition And Securisation Challenges For Women In South Kivu Province, Eastern DRC.....	28
Ownership title quality and risk perceptions during property transactions in Kinondoni Municipality Dar es Salaam Tanzania	29
Assessment of land use practices of Lake Hayk of Gobeya watershed and its implication to the Lake Ecosystem	30
Use of Open Source Geo solutions to Develop an Informal cadastre for a selected informal settlement in Nairobi, Kenya: Case study of Redeemed Village in Huruma Informal Settlement.....	49
Modeling of Dynamic Property Rights - A Case of Properties in Proximity of Road Reserves in Tanzania.....	63
Analysing the Impact of Social Tenure Domain Model (STDM) on Tenure Security in an Informal Settlement	64
Making Operational Standards for Land Administration.....	87
A Review of the Causes of Land Use Conflicts Between Farmers and Pastoralists in Tanzania and a Proposal For Resolutions.....	88
Dilemmas over Contradictory Goals for Sustainable Urban Land Governance and Development: The Case of Nairobi.....	103

KEY NOTE ADDRESS: LAND ACCESS FOR WOMEN AND VULNERABLE GROUPS

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I. Introduction

Distinguished Participants, Ladies and Gentlemen,

It is a great honor for me to deliver, on behalf of the National Land Commission, a keynote address at this very important forum. First, I would like to congratulate the EALAN members and the NELGA platform, in particular the organizing committee and University of Nairobi for the excellent arrangements for this conference and for their hospitality. Secondly, I would like to thank the African Union – Land Policy Initiative; GIZ and other notable partners for supporting the organization of this conference, and also would like to recognize the great efforts of all the participants colleagues who have worked very hard to prepare for this seminar, particularly in conceptualizing its substance. Finally, I trust all the participants are enjoying their stay in Kenya.

Today, as requested by the organizers, let me first start with a brief comment on the subject of land and what access to land means. I then would like to focus on why gender and marginalized groups are an issue in access to land. Then, I will discuss the entry points of increasing women's and marginalized groups access to land before linking all these topics back to the broader issue of securing land rights. As you appreciate, the topic requested by the organizers for me to discuss in this keynote speech is wide ranging, and I hope the issues will be elaborated further during the panel discussions following this keynote speech.

II. Land and what access to land means.

Ladies and Gentlemen,

As noted in the 'Framework and guidelines for land policy in Africa' (2010), land is a significant factor in Africa's economy through its linkages and contribution to other sectors. However, whereas land continues to be the primary source of wealth, social status and power the imbalance between the economic contribution of women and marginalized groups in, on and around land use in Africa continues. The Gender and Land Rights database by FAO (not representative of all African countries – Kenya is missing) indicates the female agriculture holding ranging from 3.1% in Mali to 50.5% in Cape Verde. These figures are significantly low but begin to present a picture of how we can begin to understand women's unequal access to land and property as a key obstacle to women's economic empowerment. For marginalized ethnic groups

access to adequate land remains a perpetual source of conflict. We know of the examples of the San of Botswana, Herero of Namibia and the Ogiek of Kenya as contentious land access issues. The terms and conditions under which rights to land are acquired, retained, used, disposed and transmitted become major sites of contestation.

There are many reasons why land is important for women and marginalized groups.

1. Land as praxis for the enjoyment of other rights. Exclusion from the land and tenure security is closely linked to other exclusions e.g. the use of natural resources such as water and forests.
2. Land has multiple functions- economic (selling, renting, leasing, natural resources), food security, can enable reduced vulnerability or mitigate against shocks, social functions, conservation.
3. **Access** to water and other resources as well as basic facilities is often conditioned by access to rights to land. Any concept of sustainable development relies heavily on both access to property rights in land and security of those rights.
4. **Access** to land for the rural poor, many women and marginalized groups is often based on custom. Customary rights to land in indigenous societies, for example, are usually created following their traditions and through the ways in which community leaders assign land use rights to the community members. These rights of access may have their origin in the use of the land over a long period. They are often rights developed by ancestral occupation and by the use of land by ancestral societies. In such cases, it is through the act of original clearance of the land and settlement by ancestors that rights are claimed. **(Comment on property markets – Uasin Gishu contrasted to Kakamega County)**
5. **Access** to land is an important aspect of household, community and national decision-making powers. Land has great cultural, religious and legal significance. The correlation between decision-making powers that women and marginalized groups hold can be linked to the quantity and quality of land rights they hold. The urban – rural dichotomy speaks clearly to these exclusion zones in decision-making power.
6. **Access** to land is governed through land tenure systems. Land tenure is the relationship whether legally or customarily defined among people as individuals or groups with respect to land. Land tenure systems determine who can use what resources for how long and under what conditions. In Kenya we have the public, private, community, freehold, leasehold. The manner in which rights to land are actually distributed and used can be very

complex especially when one considers the role of women and marginalized groups.

7. People also use a wide range of strategies to gain access to land. These include:
 - Purchase, often using capital accumulated while working as migrants in urban areas.
 - Adverse possession or prescription (the acquisition of rights through possession for a prescribed period of time). In some countries, this may be the only method for small farmers to gain formal access to vacant or abandoned land and to bring it into productive use.
 - Leasing, or gaining access to land by paying rent to the owner.
 - Share cropping, or gaining access to land in return for paying the owner a percentage of the production.
 - Inheritance, or gaining access to land as an heir.
 - Squatting illegally on land.

Challenges for women and marginalized groups access to land

What do these challenges mean?

Women (not a homogeneous category) and marginalized groups (lets not forget the PLWD) rarely own land they live or work on, have tenure security or control over the land. They often have limited decision-making power and control over how they use the land or its outputs. This position is often regulated by formal legal system or customary law. E.g. in Ghana steps towards the documentation and verification of the customary law and how the systems work in various geographical regions. How the various customary systems work without generalizing is significant. In Kenya before the 2010 Constitution – in many families fathers were practicing the distribution of property (equitable?). **Question posed here is how can the two systems prevent and promote women's and marginalized groups access to land.**

The formal legal systems in many countries have constitutions or land laws that grant gender equality in access to land. The work of the LPI programme and the AU is commendable in pushing for legal systems that are progressive. However, in practice there are laws for marriage, divorce and inheritance that contradict these laws by discriminating against women, and marginalized groups. The enforcement of the African Court's ruling on the Ogiek is one example of these contradictions. (the case of women's right to land). The issue of succession and land size – what does this import for food sustainability? **Question of urbanization in Africa- Kenya as an example e.g. devolution – peri-urban, parceling of land.**

Generally in Africa it holds that 75% of the land is under customary system of property tenure. While systems of customary law regarding land, tenure often granted women access to land, this right is lost with the idea of individual ownership. The Kenyan Government's drive for 3 million title deeds, the shrinking size of community land and insecure land tenure. Over the last 10 years has seen a great drive for individualization e.g. Baringo County; Narok County. Factor in women's land rights within these already marginalized groups the issue is wanting. Customary systems do not seem to guarantee gender equality in access to land. Women's *de facto* access to land is restricted by lack of implementation of existing laws, by customary law, traditional and social practices, norms and power structures within communities and households, by lack of legal security systems to protect them against eviction, land grabbing and other forms of violations.

Why is increasing women and marginalized groups access to land important?

1. Central to economic empowerment – land serves as a basis for productivity
2. Land is a social asset – cultural, political power and participation in decision-making.
3. Women's access to land is a human rights issue. Evidence shows it reduces domestic violence and negotiating safe sex. Eg social media the women in Kampala Uganda who has over 20 children- what struck me was not the number of children, but her sense of security in buying and owning her parcel of land. In urban setting the ability to negotiate safe sex has been linked to access to land.
4. Agricultural production and food security increase when women are guaranteed tenure security. Studies by the Rights and Resources Initiative states that women become good managers of forests.

Entry Points for increasing women's access to land

1. Land policy

Women's participation in the process of developing a land policy is fundamental to increasing women's access to land. Experience shows that women have been able to gain greater access to land through land reform in countries where the participation of rural women is a well defined state policy. For a land policy to be able to ensure women's equal access to land, it needs to be based on the principle of gender equality in access to land, have clear objectives/goals on equal access to land, and indicators and base line data to enable follow-up.

II. Land Legislation

Supporting local analysis on the effects of current legislation on land, divorce, single mother, widows and inheritance for women's access to land and the consequences. Building a knowledge base and capacity on gender equality. Providing forums for discussions for the various groups with policy makers by safeguarding of laws where they are working. The interpretation of customary laws through supporting change agents; and promoting dialogue is crucial.

III. Implementation of land laws

The effectiveness of laws depends on awareness about them, ability to involve them and to what extent cultural norms and traditions are practiced and followed instead of formal laws. Advocate for the representative of women in land boards and other bodies responsible for overseeing land rights is critical. Supporting awareness-raising and access to information for women, men and communities about existing legislation and policies. Informing these groups about where to turn to get assistance to claim land or protection against land grabbing. Explore new, effective communication channels in order to prevent dependency on traditional ways of spreading information that tend to leave out women.

IV. Enforcement

When a dispute arises, enforcement requires that the disputing parties are familiar with the law. It assumes the parties to have equal access to institutions and actors such as lawyers, legal aids, etc. as well as the ability to make a claim. A good level of enforcement is further jeopardized by weakness in the institutional capacity of the judicial system to implement laws or handle all incoming cases; corruption, biased courts and legal officers (who adhere to discriminating norms); and conflict situations in which the legal system and law enforcement tend to be run by the army or rebel groups.

V. Land Administration

The technical systems of land administration dealing with land delimitation, titling and registration of land or user rights play an important part in creating equal access to land in different systems of land tenure. It provides opportunities for ensuring that laws and policies on equality in access are implemented or that informal agreements on access to land are formalized and thereby improve tenure security. In systems of private tenure rights, land titling and registration is a prerequisite for landowners to use their land as collateral. Processes of land delimitation, titling and registration of tenure have to be carried out in an open manner which does not discriminate against women in any way and which encourages an increase in women's access to land.

Conclusion

Ladies and Gentlemen,

The intention of this presentation was not to discourage sex disaggregated and/or gender related programs or projects, rather to demonstrate that in making changes does not always result in the benefits originally intended. The situation of women and marginalized groups accessing land is complex and requires a re-examination of existing constraints at the macro-level; institutional arrangements; local dynamics and related factors in social beliefs, rules and customary practices.

I hope I was able to point out some of the concern, indeed the challenges are big, but at the same time, it is not something we can afford to escape or delay. I do sincerely hope that our conference today and tomorrow will provide us with useful insights to contribute towards land access and acquisition.

Thank you very much for your kind attention and I hope the conference will be a great success.

Thank you.

ASSESSMENT OF THE PRACTICE OF RURAL LAND RENTAL MARKETS IN AMHARA NATIONAL REGIONAL STATE, ETHIOPIA

**THIS PAPER WAS NOT
PRESENTED**

Belachew Yirsaw Alemu

Bahir Dar, Ethiopia

Abstract

The purpose of this study was to assess the rural land rental market practices and evaluate the determinants and drivers of rural land rental markets in the rural Amhara. To achieve this purpose, a combination of survey study and legal analysis methods were employed. In this study, both primary and secondary sources of data were used.

Findings of this study revealed that land rental market in the study areas has multidimensional effects on the income level of farmers, and on land and labour productivity. With regard to its effect on the income of farmers, the level and scope of the benefit arrangements varies with the type of the contractual agreement between the parties which may be either sharecropping or cash rent. In the case of 'kurt' (fixed) sharecropping contract, the land holders get more benefits compared to the sharecroppers because the amount of the share is determined in advance, irrespective of the amount of the produce at the end of the harvesting year. When it comes to cash renting, usually the lessee benefits more than the land holder as the amount of rent is low in most of the cases, and also because the duration of the contract is longer compared to sharecropping.

The major driving factors for land rent/sharecrop-out agricultural land in the study areas are shortage of labour and agricultural inputs among others. Similarly, the most driving factors for rent/sharecrop-in agricultural land are shortage of agricultural land and availability of abundant labour.

The policy implication of the study is to reflect the market value of rental land, experts that can assess the market information and display it to the community should be assigned at each rural/Woreda rural land administration offices.

Key words: Rural land rental market, Labour productivity, Land productivity, sharecropping, land rent.

IMPOVERISHMENT RISKS IN DEVELOPMENT-INDUCED DISPLACEMENT AND RESETTLEMENT IN DAR ES SALAAM CITY. THE CASE OF AIRPORT EXPANSION PROJECT.

Dawah Lulu Magembe-Mushi

Abstract:

Contrary to the State's rhetoric of inclusive governance, the urban poor are completely excluded from planning for infrastructure development and resettlement processes, leading to a lack of understanding of their needs by the state and their subsequent impoverishment after resettlement. This paper discusses impoverishment risks experienced by massive population resettled from Airport Expansion Project in Dar es Salaam city, Tanzania. The risks experienced were outcomes of procedures followed and policies/acts adopted in the implementation process. Literature on impoverishment risks experienced during displacement shows that poorly managed displacement processes and lack of adherence to policies and guidelines expose the affected population to impoverishment risks for both short and long term. The actualization of the risks depends on the preparedness of the project implementers or the government's enforcement bodies in implementing the resettlement project. This paper through empirical evidences obtained from a PhD study done in 2014, has found out that about eleven (11) impoverishment risks were experienced by both the displaced and hosting communities at different periods and magnitudes. The findings indicate that the displaced poor households have been further impoverished in the course of resettlement process as a result of limited attention to the risk of impoverishment both in policy and in local government practices.

Keywords: development-induced displacement and resettlement (DIDR), impoverishment risk, compensation, Dar es Salaam, Tanzania.

1. Introduction

Displacement can be defined as the process of dislocating people from their long-time and permanent residences through acquisition of land to be used for a different activity. Development related changes happened in developing countries in the 21st century, to a greater extent than in the developed countries. These changes have caused land acquisitions which have led into involuntary displacement of large populations. In 2007-2008, 4.31 million people worldwide were affected by implemented or threatened forced evictions (COHRE 2009 in Hooper et al, 2012). In Africa from 1980 to 1986 about 33 percent of all the World Bank assisted development projects on transportation, water and urban development caused involuntary resettlement and the proportion grew to 57 percent between 1987 and 1995 (Robinson:2003:19). Tanzania, being one of the developing countries, also experiences mass involuntary displacements of population for a variety of reasons. Such projects include that of villagelization¹, site and services and squatter upgrading, road expansion and highway construction, airport and harbour

construction and expansion, the development of new centres, capital city and satellite city development and so on. All these projects and others of this nature have caused involuntary displacement and resettlement and in the same way, will continue to displace and resettle large numbers of people in the country. For example, the resettlement programme through the villagelization¹ policy enabled a large number of rural communities to have access to basic services and facilities within their reach; so as to improve living conditions by providing communal social services and facilities within the rural communities. However, the programme came with its negative impacts such as concentration of people and livestock in particular places affected their economy and environmental conditions. It increased distances between settlements, farms and grazing lands. This shows that these displacement process comes with both positive and negative impacts which need to be fixed so as to have more positive ones.

1.1 Development Induced displacement and resettlement in Tanzania

Stanley (2004) describes development-induced displacement and resettlement (DIDR) to be part and parcel of urban development projects of which the focus is on physical development projects that require land expropriation. Stanley added that the DIDR are so far, the leading cause of vast displacement, although there is no precise data that exists on the number of persons affected by DIDR. In Tanzania, these displacements are the result of urban development, transport and infrastructure programmes which usually take place in cities. This is due to the fact that within the cities there is large population which go together with scarcity of land. In that case, any new development introduced within the city results into change of land use which most of the time affects the existing population of the urban residents. This country so far has five cities, Dar es Salaam, Mbeya, Mwanza, Arusha, and Tanga. Dar es Salaam, being the largest has the population of more than 4.4 million people, followed Mwanza, (2.8 million), Mbeya (2.7 million), Tanga (2.0 million) and Arusha (1.7 million) people. In Dar es Salaam city projects such as port/harbour expansion, highway extension, airport expansion, gas pipeline and the development of satellite cities resulted into displacement and resettlement of large population (see figure 1).

¹ Villagelization was a socialism policy which required people to live together in villages so that they can share all the basic facilities provided by the government

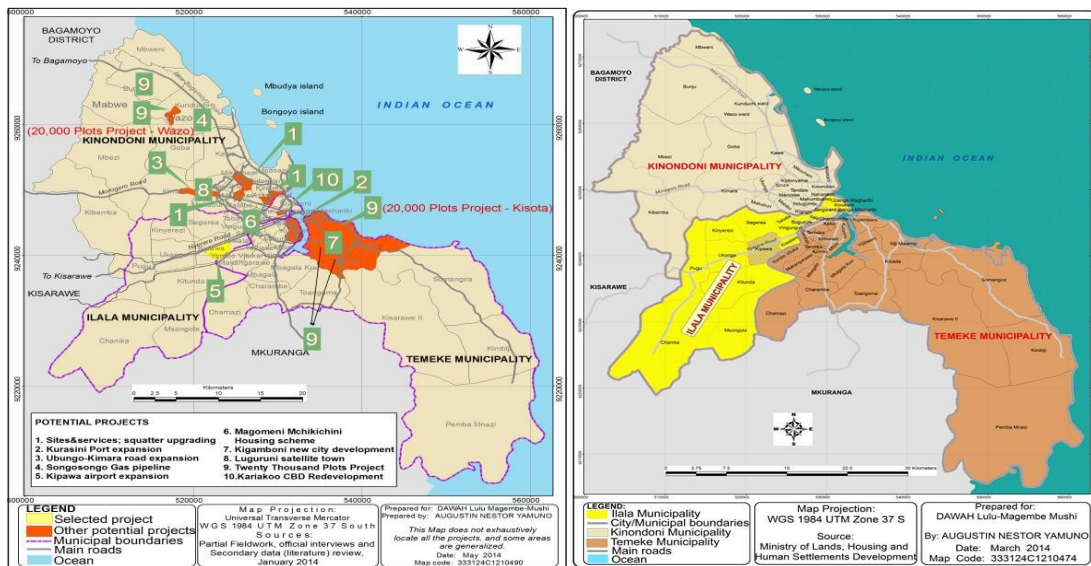


Figure 1: Some of Development Projects which have/will caused Displacement of previous land users in Dar es Salaam City

This paper analyses the airport expansion project (project no 5 in Figure 1), which completely displaced two settlements, Kipawa and Kigilagila, and resettled the affected property owners more than 12 kilometres away from the project area. The Julius Nyerere International Airport (JNIA) expansion project is located within Kipawa Ward in Ilala Municipality (See figure 2). The Ward is comprised of various land uses which included: residential, industrial, institutional and it is also accommodating the country's most active international airport, the JNIA. The affected areas were occupied by informal settlements, which proliferated in a land provided for future institutions expansion in the Dar es Salaam Master Plan of 1979. These settlements were occupied by more than 2,000 house owners (Magembe-Mushi, 2014). According to the 2002 population census, the Ward had a population of 50,000 people. In 1997 came the idea of expanding the international airport so as to increase its capacity and services to meet international demands and standards. Within such a framework, 2,084 Kipawa and Kigilagila suburban properties were earmarked for demolition and their land was compulsorily acquired to pave the way for the expansion of the airport (TAA, 2010). By doing so, the project caused total displacement of two settlements. The airport expansion project aims at increasing the capacity of the airport to handle more flights from 1.5 to 5 million passenger arrivals annually over the next 10-years period. The Tanzania Airports Authority (TAA) reported that more than 15 percent annual growth in aeroplane traffic is expected after the expansion. Therefore, the expansion will contribute to the economic growth of the country (ibid). This paper explores the impoverishment risks which were faced by the displaced population in relation to the guiding policy and regulation which were applied in the process.

1.2 Methodology

The paper is based on a research conducted from 2012 to 2014. Being a case study research, empirical data were collected by using multiple data collection methods such as: in-depth interviews, household surveys, official and key informant interviews, non-participatory observations, photographic registration and mapping. These data collection methods were applied to the displacees in their new areas, hosting community, previous and current local

leaders within the resettlement areas; project implementers, and municipal authorities in the concerned municipality. Through these methods, processes, procedures and regulations applied in displacing and then relocating the affected people were documented and analysed through data analysis programmes, and other map making applications.

By using in-depth interviews personal stories were shared on how relocation have resulted into impoverishment risks which are the main concern of this paper. About 211 surveys, 37 in-depth interviews and 13 officials and key informant interviews were conducted to both displacees and hosting community in the four resettlement areas within Ilala Municipality in Dar Es Salaam city. The research also review policies, project documents and other literature on the matter concerned so as to get more insights on the studied issue.

2. Urban development policies applied in Tanzania

The DIDR often affect the economically, politically and socially weak and marginalized groups in a population. At individual and community levels, the impoverishment risks associated with resettlement can be felt more intensively by certain segments of the displaced population. In Tanzania, and most developing countries, project sponsors, such as government institutions, development agencies, credit agencies and private developers, had no one clear policy or guidelines on how to conduct involuntary resettlement. It is common for the State to have policies guiding different domains, many of which dealt solely with the legal process of expropriation, a number of which outlined compensation mechanisms, but none of which deal in detail with resettlement (Stanley, 2004). This section provides different provisions which were applied by some of the projects on resettlement in the absence of one clear resettlement policy in Tanzania.

2.1. World Bank Resettlement Policy Framework

The World Bank was the 1st institution in the 1980s to come up with the first policy on involuntary resettlement intended for any development agency engaged in funding or development projects that caused displacement. The Bank made sure that the displacement and resettlement of people became an essential and not a side-line part of project planning and implementation. In creating such an importance, the World Bank formulated Operational Policy (OP) on Involuntary Resettlement. The OP Section 4.12, was first drafted in 1980 and being updated periodically. It has the following objectives which were applied in some of the resettlement projects in Tanzania:

- Where involuntary resettlement and land acquisition is unavoidable, resettlement and compensation activities should be conceived and executed and provide sufficient investment resources to the displacees as an opportunity to share project benefits.
- Displaced and compensated persons will be meaningfully consulted and will have opportunities to participate in planning and implementing resettlement and compensation programs.
- Displaced and compensated persons will be assisted in their efforts to improve their livelihoods and standards of living or restore them, in real terms, to pre-displacement levels or higher (The World Bank, 2001:1).

2.2 African Development Bank's (AfDB) Involuntary Resettlement Policy

Just like that of the World Bank, this Involuntary Resettlement Policy (IRP) was developed to cover the involuntary displacement and resettlement of people caused by this bank financed projects. The IRP applies to projects which caused relocation or loss of shelter, loss of assets or have impacts on the existing livelihoods. The policy has an overall goal of poverty reduction therefore, assists the bank and its borrowers to address resettlement issues in order to mitigate the negative impacts of the implemented projects i.e. displacement and resettlement which can provoke changes that could dismantle settlement patterns and modes of production, disrupt social networks, cause environmental damages and diminish people's sense of control over their lives (AfDB, 2003). The Bank intends to establish a sustainable economy to such affected society.

The overall goal of this policy is to ensure that the displaced people are treated equitably and that they share the benefits of the project that has caused their relocation. Other objective includes; to ensure that displaced people receive resettlement assistance, preferably under the project so that their standards of living, earning capacity and production levels are improved (ibid).

The policy advised that, relocation criteria should consider involving the affected families, both the relocated and their hosts in discussions and selection of sites and, the resettlement plan should consider the legal and institutional framework of the country in question (AfDB, 2003:19).

2.3 National Land Policy of 1995

The National Land Policy of 1995 (in review), guides all issues relating to land use in Tanzania. Among the issues that are stipulated in the policy include recognition of land ownership, and resources in and on it. It addresses issues of land tenure, citizens' right of access to land, and the land delivery system and advocates fair and prompt compensation when land rights are interfered by the government. All these are very crucial when it comes to land acquisition which results into displacement and resettlements. The Policy has fundamental principles which have been used in guiding land acquisition for urban development projects. In Section 4.1.1 Sub-section (i) a, b, c, and d state:

- All land in Tanzania is public and vested in the President as a trustee on behalf of all citizens, no one owns land in Tanzania but rather use it for a certain period of time.
- The policy acknowledges that land itself has value.
- The government insists on paying full, fair and prompt compensation when land is compulsorily acquired.
- The government observes justice by making it possible for the acquisition of land in the public interest to be challenged in court, as it states in Section 4.2.16 (iii).
- Compensation for land acquired for public interest shall be on the bases of opportunity cost, covers market value, disturbance allowance, transport allowance, loss of profit or accommodation; and the original cost of acquiring or getting the land as provided in Section 4.2.20 (i-vii).

These fundamentals go with that which has been stipulated by the financing institutions above, though there are differences in considering compensation and the planning approach. This policy is accompanied with other Acts such; Land Acquisition Act No 47 of 1967, Land Act No. 4 of 1999, Urban Planning Act of 2007.

3. The gap between impoverishment risks and policy framework in DIDR in Dar es Salaam

This section discusses common risks as described by Cernea (1996), Cernea and McDowell (2000); Downing (2002), Robinson (2003), Magembe-Mushi, (2011), and others. These risks include: landlessness, joblessness, homelessness, marginalization, increased morbidity, food insecurity, and loss of access to common assets and services, social disarticulation, family disintegration, violation of human rights and disruption of formal education. The following sub sections define the risks, and describe how they were felt within the case project in Dar es Salaam. It also compares the provisions from the guiding regulations as discussed in section 2 to see how they were/not applied in the displacement and resettlement processes and the degree at which the risks were felt by the affected people.

3. 1 Landlessness

Landlessness was explained by Cernea as the first risk to happen when displacement and resettlement occurs once land is expropriated. Landlessness removes the main foundation upon which people's productive systems, commercial activities and livelihoods are constructed. According to Cernea (1996b:18), this is a principal form of de-capitalization and pauperization of displaced people as they lose both natural and man-made capital. For the urban poor, such as those in Dar es Salaam city, land not only provides a place to live, but also acts as the main resource supporting different livelihood strategies. The urban poor use land as a place for their homes, to generate economic activities and to create social networks which they can depend on (Magembe-Mushi, 2011:32).

Policy provisions: In policies and frameworks discussed above, the major concern when it comes to land acquisition was the compensation which has to consider the land value in relation to location of the acquired land. Also, the location of the resettlement areas has to be of beneficial to the relocated population. For example, the ADB advocates for relocation sites to have services as much as the acquired land.

Reality: The project applied the Land Policy, Land Act of 1999 and Land Acquisition Act of 1967, but the reality was contrary to the provisions. The affected residents from the Kipawa and Kigilagila settlements were displaced and relocated up to 22Kms away from their previous settlements (*see figure 3: Resettlement areas*). They were taken much further from the city centre, and away from their income generating activities since the new settlements were at the peri urban areas and less developed compared to where they were before. More interesting for the airport expansion project is the fact that it as well made the hosting community to become landless. That happened when farmlands were acquired and subdivided into plots and allocated to previous owners as well as the displaced people. That leave the farm owners farmland-less as they were left with a plot or two, with their houses on it, the rest was allocated to new comers. In that case these host community lost their

farmlands, grazing areas and become landless as well as jobless as they had to change their livelihood activities.

3.2 Joblessness

As defined by Cernea (1996b), joblessness is the state of having lost employment or any other income generating activity. Such a situation can affect those who are in particular employment sectors and those who are self-employed. Joblessness can endure long after physical displacement and resettlement has occurred. Cernea added that creating new jobs is difficult and requires substantial investment, unless a fair and rightful allocation of resources is practised for both the displaced residents and those remaining (Cernea, 1996b:19). Considering Cernea's point, substantial investments and the judicious allocation of resources can create new jobs for the displaced and the host residents.

Policy provisions

The World Bank and ADB have provisions for livelihood restoration strategies that ensure resettlement plans offer support after displacement; for a transitional period, and other long term measures such as land preparation, job opportunities and credit facilities. The local policies and Acts speak about compensation that will consider opportunity costs and loss of profits.

Reality

Even if the local policies and Acts had provisions on that, the affected population for the airport expansion project did not receive any assistance when it comes to livelihood restorations. Being sent far away from their settlements in which they lived for more than 10 years, they lost all their income generating opportunities which were not compensated for. Their previous settlements were closer to a city, accessed by large population, and with full of opportunities, and services. Some of the residents had their income generating activities at their own door steps. That was not possible in the resettlement areas which were newly surveyed with low population density and scattered settlements.

3.3 Homelessness

For Downing (2002:10) homelessness is the loss of house-plots, dwellings and shelter. Such a loss can be temporary for many of the displaced people, but for some, homelessness or the worsening of their housing standards can be a lingering condition (Cernea, 1996:20). It goes further into losing social services and facilities, inconveniences and disturbances while resettling, as well as losing culture, space and identity, costs of reconstructing new dwellings, being far from your work place etc, (Cernea, 2000).

Policy provisions

All the policies and Acts have provisions for compensating on loss of properties due to land acquisition. Some of the provisions go further and consider transport and disturbance allowances. E.g. the Land Act of 1999 considers compensation to include: *"the market value of the real property, transport and disturbance allowances, loss of profit or accommodation, ..."*(URT, 1999).

Reality

When it comes to implementing the provisions in the airport expansion project, it was found that the compensations were not provided as stipulated. There were disagreements in the valuation process whereby property owners had a feeling that their properties were valued less, and compensated in lumpsum not knowing what amount was for what item as the Act provides. Even though the affected property owners were compensated, they still became temporarily homeless, some for a couple of weeks and some for months (*see plate 1*). On the other hand, some of the hosting community members (about 4 farm owners) were displaced and their houses demolished as there were found to be in the areas allocated for social facilities within the resettlement areas.

Plate 1: Some of the temporary huts used as shelter during the resettlement process, made of materials from demolished houses from previous settlements



Source: Magembe-Mushi, 2014

3.4 Marginalization

Downing (2002) defines marginalization to be a loss of self-esteem as a result of being considered a newcomer or outsider within a society. Robinson added that marginalization occurs when families lose economic power and spiral on a downward mobility path. This happens because many individuals cannot use their previously-acquired skills at the new location. In such cases, human capital is lost or rendered inactive or obsolete. (Robinson, 2003:12). Patel et al (2015) added that marginalization can be through hostility from the host community as well as loss of understanding in the community.

Policy provisions

In both local and financial institutions' policies reviewed above, none of them had provisions for emotions or trauma caused by the processes. The guiding regulations were only concerned with physical losses but not emotional or psychological trauma such as marginalization.

Reality

Having no provisions whatsoever in the guiding regulations marginalization were so much felt by the new comers from the airport expansion project. For these people, they mostly suffer hostility from their hosts. That was contributed with the fact that the host community were not yet compensated for the loss of their farms acquired for plots subdivisions for resettlements. Having lost their property, the host community resisted to let the new comers occupy their land. The hostility was through vandalising housing constructions of the displaced people, chasing them

away, not letting them use facilities like wells dug by the hosting community. The marginalization lasted for a number of months but somehow affected both the hosting community and the new comers within the resettlement areas.

3.5 Increased morbidity

Cernea and McDowell (2000:23) again state that massive population displacement threatens to cause serious declines in health levels. Displacement-induced social stress and psychological trauma are sometimes accompanied by the outbreak of relocation-related illnesses, particularly parasitic and vector-borne diseases, such as malaria and schistosomiasis. Unsafe water supply and improvised sewage systems increase vulnerability to epidemics, chronic diarrhoea, dysentery and so on. The weakest segments of the demographic spectrum – infants, children, and the elderly are affected most strongly (*ibid*). Of all the risks of displacement, increased morbidity was specifically said to happen when there is mass population displacement as large scale of displacement was associated with a decline in health levels.

Policy provisions

The ADB advocates for relocation sites to have services as much as the acquired land that means availability of social services and facilities in the resettlement areas have to be taken care of. Also, the compensations provided were meant to put the affected persons to the level they were before displacement if not making it even better. Impliedly, even in the availability of social services.

Reality

In the airport expansion project, increased morbidity was very much felt by the displaced community. That was because the displaced lost all the social facilities that they used to enjoy while in their previous settlements. These people did not have access to clean and safe water, they had to dig shallow wells so as to get water (*see plate 3*). This led into eruption of water-borne diseases such as Typhoid, Cholera, and dysentery.

Plate 3 Sources of water found in the resettlement areas (*Source: Magembe-Mushi, 2014*)

Plate 3 Sources of water found in the resettlement areas



Source: Magembe-Mushi, 2014

3.6 Food insecurity

According to Cernea and McDowell (2000:23) food insecurity and undernourishment are both symptoms and results of inadequate resettlement. Forced uprooting increases the risk that people will fall into a state of temporary or chronic undernourishment. During physical relocation, sudden drops in food crop availability and incomes are predicted. Subsequently, as rebuilding regular food production capacity at the relocation site may take years, hunger or undernourishment tends to become a lingering long-term effect. Also, decreased access to fair price shops i.e. public distribution shops with subsidized goods to poor, (Patel et al, 2015), was considered to be the cause of food insecurity for the displaced people.

Policy provisions

Again, food insecurity was not explicitly considered in the policy provisions. The compensations given for the loss of property was considered to take care of the loss of harvests in case a farmland or crops affected due to land acquisition.

Reality

In the case of the airport expansion project the displaced and the host communities both suffered from food insecurity due to resettlement process. For the case of the new comers they missed shopping facilities like nearby shops market places even transport facilities which could have taken them to where the missing facilities were available. In that case, some of them had to have one meal a day due to scarcity of food and lack of income which was contributed by being jobless. For the case of host community, being farmers who lost their farms they as well lost their income as well as food for their families. Losing their farmland made them lose both income as well as food.

3.7 Loss of access to common facilities

Common resources are services or facilities which are commonly provided by the government to be commonly utilized or accessed by the public. Such resources can include, but are not limited to, access roads, community halls, shopping facilities, health centres, burial grounds, and play grounds. Moving away from such facilities can create disturbances or changes in the life style of the urban poor and result in unfair and injudicious allocation of resources (Cernea 1996 and Magembe-Mushi, 2011:36). Decreased access to education and health services, school dropout ratio and loss of school attendance days, increased distance, travel cost and monthly cost for education vis-à-vis income of the parents, decreased access to hospitals in emergencies, (Patel et al, 2015), all these is caused by loss of access to social services.

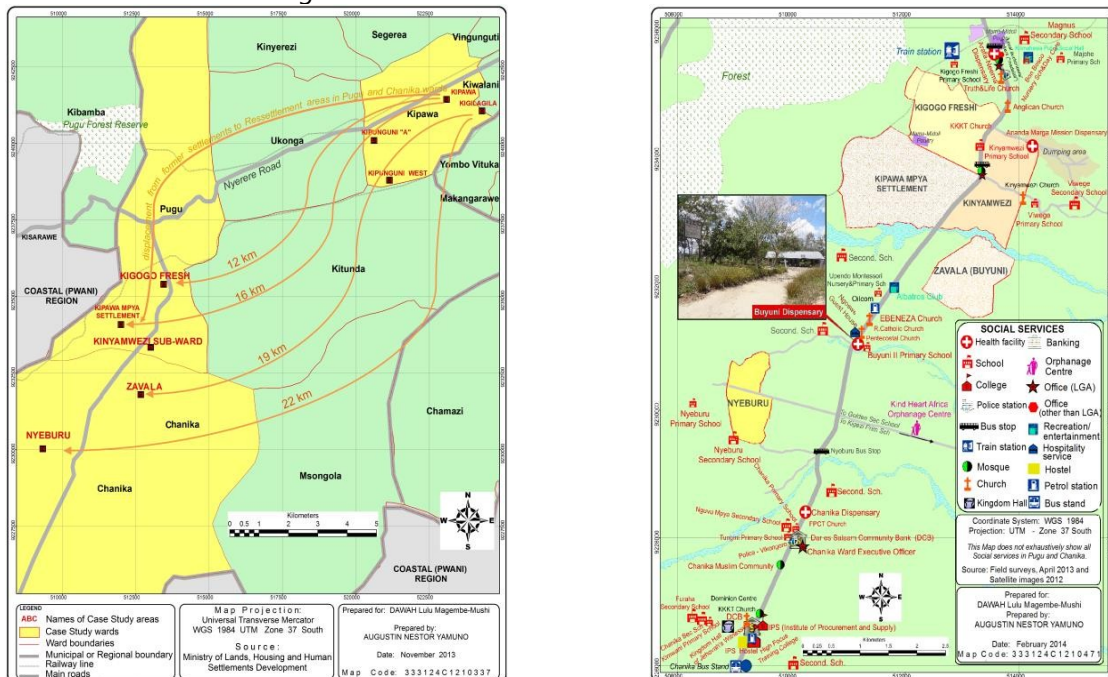
Policy provisions

This factor is also not considered in policies that were reviewed. That is because, the policies assume that resettlement action plan could have made sure that the resettlement areas qualify for human habitation, that is provided with all the necessary facilities. In that case, the loss of access to common facilities or resources is not considered eligible for compensation.

Reality

By 2014 when the research was conducted, the resettlement areas were lacking almost all the social facilities. The hosting community together with new comers depended on the neighbouring settlements for services and facilities (*See figure 4*). As a result, there were congestion in primary schools due to increase of school going children who relocated with their parents. Also, the increase of population and provisions of new neighbourhood in the areas which were previously farmland changed lifestyle of the hosting community. That is, they were characterized as urban dwellers while they lack all the facilities and services required for the urban kind of life.

Figure 3 Kipawa ward and the resettlement areas in Pugu and Chanika Wards. Figure 4: The Available services and facilities in resettlement areas.



3.8 Social disarticulation

As was explained by Cernea (1996), social disarticulation is a process which disperses and fragments communities, patterns of social organization and interpersonal ties. It is a loss of valuable social capital. Robinson (2003) adds that, is the situation when society is disarticulated; *"when people are forcibly moved, production systems are dismantled, long-established residential communities and settlements are disorganized, while kinship groups and family systems are often scattered. Life sustaining social networks that provide mutual help are rendered non-functional. The trade links between producers and their customer base are interrupted, and the local labour market is disrupted. Formal and informal associations, and self-organized services, are wiped out by sudden scattering of their membership"* (Robinson, 2003:12). From Robinson's argument, social disarticulation is more than just a dismantled society; it can also lead into other risks such as joblessness and family disintegration, political unrest as well as increasing poverty.

Policy provisions

Just like other non-physical loss, social/family disintegration was not considered in any policy provisions. The policies and other regulations assume that if the displacement and resettlement processes are planned and guided by regulations there shouldn't be such risks.

Reality

In real life situation, social disintegration was felt in the airport expansion project. The affected communities were disorganized and restored in four areas of Kigogo Freshi, Kipawa Mpya, Kinyawezi and Nyeburu (*see Figure 4*). These people had their production systems dismantled, and their residential communities disorganized. That was due to the fact that though they were taken to four different resettlement areas, plot allocation did not consider neighbours or even the arrangement that existed in their previous settlements. In that case, neighbours ended up living in different areas far from each other, ranging from 1Km to 5Kms away. That dismantled the existing ties and disorganized the communities. The long-lasting situation that the displaced community suffered from social disarticulation was the loss of trade links between producers and their customer and disruption of labour market. Also, employment opportunities for unskilled and cheap labour on daily basis wasn't there due to low level of development as well as low population density.

3.9 Family disintegration

This is also one of the challenges of displacement as it was explained by Cernea (1996). It happens when family members have to live apart, due to lack of a common space to live in, which they had shared before the displacement (Downing, 2002). In urban development projects, which had a planned displacement and organized resettlement processes, it is less likely that family disintegration will occur.

Policy provisions

Just like other non-physical loss, family disintegration was not considered in any policy provisions. The policies and other regulations assumes that if the displacement and resettlement processes are planned and guided by regulations there shouldn't be such risks.

Reality

Family disintegration was not experienced in the airport expansion project. Though for a period of time, (2 weeks to 3 months) the family members somehow had to sleep outside or share a single room as they relocated to the new settlements before finishing their new houses. That made families to build small temporary shelters (*see plate 1*) while waiting for their main houses to finish.

3.10 Violation of human rights

Forced evictions and involuntary resettlement of individuals, families and communities rank among the most widespread human rights violations in the world (Hooper et al, 2012:1). Robinson (2003:13) adds violation of human rights as one of the risks of displacement and resettlement processes. He states that displacement from one habitual residence and the loss of property without fair compensation can, in itself, constitute a violation of human rights.

Robinson added that the violation will also be of civil and political rights, including the loss of one's political voice when displaced and resettled.

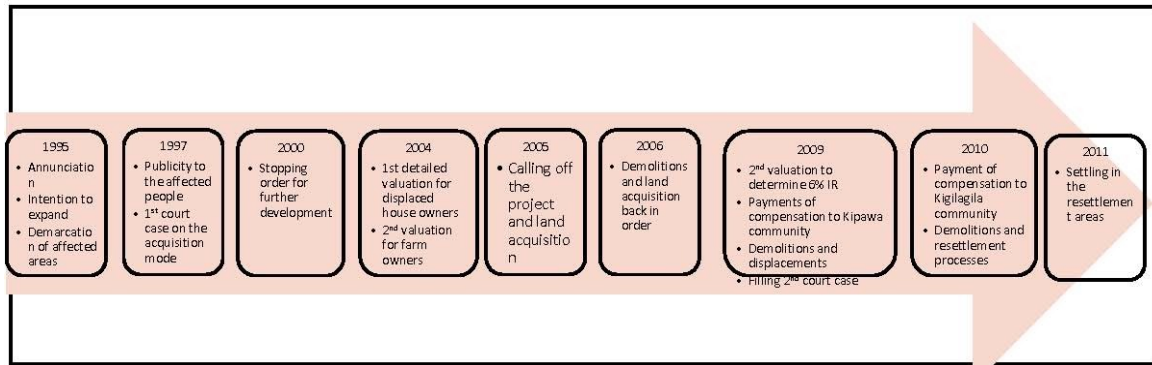
Policy provisions

When it comes to participation of the affected people, all the policies and Acts reviewed advocated for it. The local Act went further giving the affected people rights to refuse acquisition or take to court whatever they thought was not right during the processes of land acquisition and displacement.

Reality

It was found out that the affected community in the airport expansion project knew their rights and what they were entitled to during acquisition and resettlement. But still there were violation of those rights during the implementation of the project. There were about 343 among 1,220 (Magembe-Mushi, 2014:220) of property owners who refuse to take compensation cheques because they did not agree with the amount given. There was an act of inhuman when the displaced people were given only 3 months after receiving their compensation cheques to relocate to their new settlements. The affected communities complained that 3 months was such a short time for relocating a family which stayed for more than 10 years in that particular settlement. Such a short notice made the displaced community to become homeless temporarily. The other inhuman act is the fact that the affected population had to wait for more than 10 years for the implementation of the project (*see figure 5*). That was because the process took too long and sometimes it was called off and called back in. That disturbed the affected people and made them live uncertain kind of life, thinking each day was their last in the settlement.

Figure 5: The Displacement process



Source: Magembe-Mushi 2014

4.0 Discussions

Findings have shown that airport expansion project was among the rich cases for studying impoverishment risks caused by resettlement. That is, all the eleven risks were to different extents experienced by both the hosting and affected communities. It was unexpected for the hosting community to suffer the same impoverishment risks in other cases, more intensively than the displaced community. Interesting enough, even the hosting community was subjected to displacement, when four households were completely demolished. That happened when their houses fell under the land which was allocated for social facilities in the newly developed neighbourhood. It was observed that in some cases, the host community intensively suffered from the risks than the displaced ones. For example, the risk of food insecurity, landlessness and joblessness were much felt by the host community than the displaced ones (*see figure 6*).

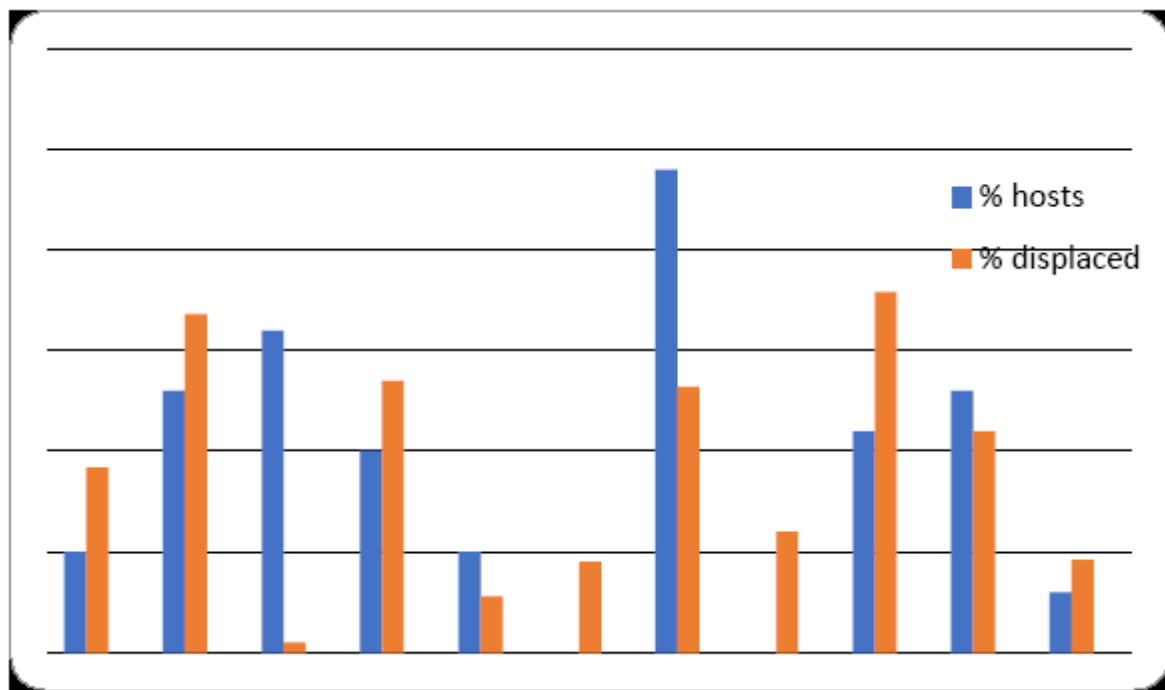
The other fascinating factor that was observed in the airport expansion project is that of prolonged project implementation. It took 16 years (*see figure 5*) from announcing the project to the actual resettlement. In between there were other political events, like the general election which called off the project in order to win the peoples votes and call it back in after the elections. The delays and deceiving statements made the affected people become so "uncertain" for their future. For eleven years, the displaced community were in a stop order for further development or even renovation of their houses as they were waiting for demolition and relocation. As it was discussed with Patel et al (2015), uncertainty became a major factor for the affected community to become more poor as they were living each day for 11 years thinking that it was their last.

Also, poor participation of the affected communities in both processes (displacement and resettlement) was observed, regardless of the fact that it was so much emphasized by the guiding regulations. Absence or poor participation of the hosting community make them more vulnerable to the risks. That is because the resettlement plan did not consider their livelihoods nor their houses. The resettlement neighbourhoods were development without their opinion nor their presence. That led into some of the houses to fell into the land allocated for social facilities and therefore demolished. That could not have happened and an area which was mostly farmland. If the community participated in the process the allocation of social facilities on the existing houses could have been avoided. Also,

the hosting community could have been aware of the project and negotiate on the compensation terms that could have saved violence and marginalization which faced the displaced community while resettling.

The issue of distance from the displaced settlement was also found to be one of the factors which caused all the impoverishment risks to be felt (Magembe et al 2015). The resettlement areas were from 10kms to 22kms (Magembe-Mushi, 2014) away from their previous settlements. That is a huge distance for a person to be able to continue with their normal life let alone benefiting from implemented project.

Figure 6 Impoverishment risks experienced in the Resettlement areas



Source: Magembe-Mushi, 2014

Figure 5 show eleven impoverishment risks experienced by both displaced and hosting communities. With exception of two risks, increased morbidity and family integration, all other risks were faced by both displaced and hosting communities. Food insecurity was the most felt risk to the hosting community as they lost their farms which were used for food and income generation. That made landlessness to be second felt risks to the hosting community. For the case of the displaced community, loss of common facilities was most felt followed by joblessness as they were resettled in newly developed neighbourhoods. The displaced community hardly felt the risk of landlessness as they were provided with big and surveyed plots while the hosting community lost many acres of their farms and some lost even their houses. All these were caused by not following the policy provisions which were used to guide displacement and resettlement processes in the absence of the country's resettlement policy.

5.0 Conclusion

Projects that lead to displacement and resettlement do exist and will continue to exist in developing countries such as Tanzania with rapid urbanization and high level of poverty. In that case, these kinds of projects should not add on to the already

existing poverty, but to find better ways of using the projects in reducing poverty and make the country develop. To fulfil that, implementation of resettlement projects should focus on improving the level of affected land/property owners as much as they improve level of development by implementing such a project. Having policies and regulatory frameworks in place for such processes indicate a good will of the concerned financier and the government to achieve their objective.

As it was discussed in the reviewed policies and acts above, there are great efforts in making sure that outcomes of the implemented development-induced projects are fair for both the implementers and the affected by the implementations through land acquisitions. These guiding regulations were made in order to fulfil different purposes and they were in different documents. That made it not possible to be available and considered by the project implementers. That is why in some cases there were back and forth movements in land acquisition process. In other cases, the language used in some of the regulatory frameworks provide loopholes to the implementers in the expense of the affected communities. For example, 'fair and prompt' and compensation was unclear to both the project implementers and to those who received the compensation. That created a room for diverse interpretation, hence unjust and confusions.

Coming back to the three questions asked before: 1) Are the poor further impoverished after resettlement? The answer is yes, for a period of time. The first three months to one year in the resettlement areas, the displaced community became poor than they used to be. The situation can be different afterwards as the community could find other alternatives which were available within their surroundings. That could have been the same to the hosting community, losing their farms and to some their houses made them poorer for a certain period of time. It is assumed that they later on found other alternatives.

2) Are there gaps in policy pertaining to impoverishment risks? As illustrated in Figure 5, all the 11 effects of displacement and resettlement were somehow faced by both groups. These risks were contributed by lack of guiding regulations and to some extent, by not adhering to the provisions provided in the other frameworks. It can be recalled that these regulations were formulated so as to avoid negative effects which come in displacing and resettling affected population. So, it can be concluded that the gaps which existed into the guiding policies contributed to the risks that were faced by both groups of affected population. On the other hand, having different provisions from different legislation e.g. land policy, land acts and ordinances, as reviewed in section 2, contributed to failure to implement them in reality as well as prolonging the implementation of the resettlement process. In that case, it is urged the country should prepare a resettlement policy which will consider all the provisions from different regulating bodies and legislation so as to avoid negligence and ambiguities while implementing a resettlement project. That will reduce the impoverishment risks which are associated with the process.

3) Was there effective community participated in critical decisions related to displacement and resettlement in the airport expansion project? It can be concluded that, there was no community participation in all the critical decisions related to

displacement and resettlement for the airport expansion project. That is why it even caused displacement by the displaces when the farm owners were also displaced. That could have been avoided if the community participated in that kind of decisions.

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RADICAL TERRACES: SUSTAINABLE LAND MANAGEMENT FOR FOOD SECURITY IN RWANDA

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Abstract

For many decades, mountains have been considered as a source of natural hazards especially landslide and erosion. Therefore, they were dangers for both the uphill and the valley. Sometimes, in a hilly country like Rwanda, they were not properly exploited for agriculture and people in mountainous areas were depending on the production from valleys which were themselves threatened by erosion and landslide until terracing was introduced. The current study compared the importance of terracing on both crop yield and the sustainable management of mountains. The current study showed that terracing has increased mountains crop yield by more than 200% which is considered as a result of the decrease of soil erosion. Although some people argue that the uphill water retention could be the cause of landslide due to high infiltration, the current study showed that a big amount of retained water is consumed by crops and therefore contributes to the increase of the production. The current study suggests that land terracing could be one of the best ways to increase crop yield and therefore food security in a hilly country like Rwanda through erosion and landslide control.

Key words: Radical terraces, Land management, Food security

LOCAL GRASSROOTS LEVEL RURAL LAND ADMINISTRATION INSTITUTIONS PERFORMANCE IN AMHARA REGION, ETHIOPIA

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Abstract

Land administration institutions play vital role to transform the legal and policy framework into action. Hence, effective land administration institutional setting benefits from strong institutional set up at grassroots level and the availability of motivated and capable individuals. Grassroots level land administration institutions established at village level in Amhara regional state of Ethiopia include; Kebele (village) land administration office, Kebele land administration Committee and Elders arbitration committees. Despite claims that these institutions are providing services on land administration issues, there are no systematic studies carried out to investigate their performance. Therefore, the purpose of this study is to assess the performance of the local level land administration institutions. To this effect the study was carried out in three rural Kebeles/villages from the three districts of Amhara regional state. Data was generated from a cross section of the community in the Kebele, the land administration experts at woreda and kebele level, the Kebele Land administration Committee and the Elderly Arbitration committees through questionnaire survey, interview and FGD. The findings of this study shows that the land administration system in the Amhara region seems to be well structured and the efforts to decentralize and strengthen the land administration system down to the village/ kebele level is a commendable intervention. The study has indicated that most land administration and arbitration committee members seem to have motivation to deliver service, however capacity limitations have hindered them to extend their services. In addition, the existence of a segment of the local community feeling mistrust on the local level institutions is an important signal to think about measures to be taken to magnify the credibility of the local institutions. Weak participation of women members in the Kebele land administration committee and absence of women members in the elderly Arbitration committee is evident incidents implying the need for empowering women to enable them discharge their duties with utmost efficiency. Taking note of all the above prevailing problems on the local level land administration the need for providing capacity building and continuous follow up and supervision is recommended to make sure that the service delivery in improved and sustained and trust could be developed by the community on local institutions.

Key words: Arbitration, Committee, Elders, Kebele/village, Land administration

LAND HOLDING, ACQUISITION AND SECURISATION CHALLENGES FOR WOMEN IN SOUTH KIVU PROVINCE, EASTERN DRC

ALINE CHIKARA

Abstract

Land holding, acquisition and security problem for women have last long in Democratic Republic of Congo particularly in South-Kivu. This problem takes different forms depending on whether it arises in urban or rural environment, or whether the woman has limited income or educated or according to her matrimonial situation. Generally, women have their land rights through male family members, usually the husband, the father or brother heirs. It is through arrangements with boys that girls and widows get access to lands left by their deceased parents or husbands. Some (Shi) customs, stipulate that «women can neither inherit the land, directly access it, nor selling it and land can only be the head of the family legally defined as men". Rare women who have access to land are generally unable to secure and to enjoy it peacefully. Some women register their own lands under their husbands and sons' identities for social peace in their families. Others do not even care to have their own lands by fear of suspicion of embezzlement, which can result from this undertaking because of the indifference from the land regulation. This indifference can be attributed to several parameters; particularly illiteracy, ignorance of land governance; low income and administrative requirements. Women have also access to land through temporary system of land renting share-cropping. Other women finally, have access to lands in an informal way. They occupy or exploit lands without searching for owner' consent. This is frequent in big concessions, zones under armed groups influence and with Internal Displaced People (IDP). However, Congolese legislation ignores extra-legal arrangements. Women are therefore, dispossessed, expropriated and expelled without prior notice or compensation by more informed and economically or politically powerful people. This land insecurity is currently major obstacle to economic empowerment of women and constitutes one of the principal causes of food insecurity and Community conflicts. Land administration and governance integration in teaching programs is suggested reducing land conflicts.

Key words: land Tenure, land regulation, access to land

OWNERSHIP TITLE QUALITY AND RISK PERCEPTIONS DURING PROPERTY TRANSACTIONS IN KINONDONI MUNICIPALITY DAR ES SALAAM TANZANIA

Samwel Alananga and Agnes Mwasumbi

Abstract

The use of documented titles in property transactions can reduce transaction failure risks only if perceptions on title quality among market participants are positive in favour of documentation of titles. Given the technological advancement in the information technology and the printing industry coupled with the extra-legality of land occupation in Tanzania, documented titles to land may be perceived riskier than informal networks as means to authenticate titles during transaction. The effectiveness of informal networks in reducing transaction failure risks may differ depending on whether the purchaser doubts the seller's credibility or the declared title of the seller. Based on survey data on 1514 residential property owners from Kinondoni Municipality, Dar es Salaam Tanzania, binomial logistic regression models were implemented to predict perceived seller's credibility and title-induced risks at purchase. It was observed that despite the positive relationship between title quality and transaction failure risks, the limited use of land titles in transactions among buyers is not only associated with lower perceived transaction failure risks that originates from seller's credibility i.e. conmen and unscrupulous dealers but also higher perceived transaction failure risk that is induced by the declared titles themselves. This study attributes this observation to the strengthened use of social networks in transactions in response to limited availability of official land titles. This buyers' response seems to increasingly eliminate conmen and unscrupulous dealers off the property market making the sellers' associated risks relatively marginal. As long as the majority have higher perceived doubt on declared title documents at purchase than on sellers' credibility, any transaction deterrence could be attributed to title problems rather than the presence of unscrupulous informal real estate agents. It is therefore argued that if it is to the interest of the government to promote the property market, title related problems must be addressed prior to regulating the real estate market.

Key words: Transaction failure, ownership risks, housing markets, land markets, developing countries

ASSESSMENT OF LAND USE PRACTICES OF LAKE HAYK OF GOBEYA WATERSHED AND ITS IMPLICATION TO THE LAKE ECOSYSTEM

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Abstract

The study was conducted in Lake Hayk watershed found in Tehulederie woreda of South Wollo zone within Amhara region. The study objective was to critically assess the land use practices in the lake Hayk watershed and its implication to the normal functioning of the lake ecosystem and the livelihoods of the farming community and other engaged in off-farm activities. To achieve the objective, data was collected from 80 sample rural households using questionnaire, 10 key informant interviews, and 2 focus group discussions with farmers and experts. Besides to this, satellite image of 30 meter resolution also used to identify the land use and land cover change in the Lake's watershed. The overall survey result showed that rapid land use and cover change particularly conversion of wetlands and grazing land to cultivated lands is the typical characteristics of the catchment, which has created undesirable impact on the lake ecosystem of water birds, fishes and lake volume. Loosely defined property rights of the wetlands, absence of local governmental institution on wetland and inefficient land registration system are the driving force for land degradation in the catchment. Due to these factors, reduction of habitat and reproduction sites for water birds and fish, increasing of siltation of the lake leads to disturbance of the lake ecosystem. It is therefore recommended that defining the property rights of the land resource particularly the common lands and the wetlands, establishing local level participatory based wetland use management, defining the boundary of the wetland, establishing strong cadastral system around the lake, and preparation of land use plan is proposed to minimize the negative effects of land use of the watershed on the wetland.

Key words: Habitat and reproduction sites, institutional setup, Lake Hayk watershed, Land use planning, Property right regimes.

1. Background of the study

Many communities in developing countries depend heavily on the exploitation of land resources for their livelihoods. There is a high degree of dependence by rural households on wetland, forest, grazing land resources for economic benefits. Papyrus in tropical Africa can produce up to 143 tons per hectare, while production rates for Typha range from 30 to 70 tons per hectare (Abebe and Geheb 2003). Thus, the over exploitation, high dependence and improper land use on wetland habitats and their natural resources by resident human populations and their domestic

animals have increased on these systems, causing a myriad of both direct and indirect threats on the land resource, and ultimately the livelihoods of the peoples. Besides, to these, there is still inadequate information on the utilization and management of resources. Like in other developing countries, in Ethiopia, land resources continue to play an important role in the lives of a large proportion of the population in one way or another.

The Lake Hayk watershed (the study area) and its lake ecosystem have been exposed to diverse land use practices, which provide diverse provisioning socio-cultural and ecological services that are vital for sustaining the livelihoods of the surrounding community. Because of their ecological significance and importance to the livelihood of the local populations, the Lake ecosystem and the middle and upper catchments need to be conserved and managed in a proper manner. The land management in the lake catchments and particularly in the upper watershed has an important bearing on the ecosystem services that are needed by the upper and downstream community and the lake ecosystem as a whole. The destruction of the forests and uplands endangers the watersheds and results in massive soil erosion, declining soil productivity, sedimentation of river channels and siltation of dams, catastrophic floods and acute water shortages during the dry season (Vicente et al. 2004).

2. Statement of the Problem

Slope variation, different slope class (different Land class), intensive land use and different land use practice, and high population density are the common characteristics of the lake Hayk watershed. On the other hand, the watershed has great potential in land resources. It has lakes, wetland ecosystems along the lake, the farm land, forest and bush land, common grazing lands and other land use types. Therefore, the type of land use and management practices in this lake watershed affect the life and sustainability of the lake, the wetland ecology (i.e. habitat of bird and fish) and capacities of the wetland for flood control and silt trap. The facts on the ground indicate that there is a shift of land uses (land use and land cover change), encroachment of the wetland ecology, and changes in the sediment load of the streams water that enter to the lake (indication of siltation and land degradation in the watershed). Besides to these the Wetlands have continued to face a myriad of challenges related to land ownership and the existence of spectacular gullies and extensive depositional sediments that affecting the health of the lake.

Hence, evaluating the land use and management practice and its impact on the lakes and the lakes wetland based on the land use and cover change studies of the watershed, the property right system of the common and private land resource (such as the wetland, the grazing land, forest and other land uses) helps to know what is happening there. Thus, in order to provide foundations for effective management of natural resources, an understanding must be built on the variability in time and space of the resources and role of human cultures and institutions in bringing those variations (Thomas, 2001). This study is therefore important to know whether the

land use practice and management in the lakes watershed moves in line with the sustainable land use and management thinking or not.

3. Objective of the study

3.1 General Objective

The general objective of this research is to critically assess the land use practices in the lake Hayk watershed and its implication to the normal functioning of the lake ecosystem and the livelihoods of the farming community and other engage in off farm activities.

3.2 Specific Objectives

Objectives of the study

- To investigate property rights established on land resources (farmland, communal lands including woodland, grazing land and wetlands) in the lakes watershed.
- To investigate land use practices around the lake in the context of the Lakes ecosystem conservation.
- To assess institutional arrangements put in place to protect the lake wetlands.
- To identify the land use and land cover change around Lake Hayk and the triggering factor affecting the land uses.

4. Description of the study area

Lake Hayk, found in Tehulederie woreda of South Wollo zone with in Amhara region of Ethiopia, created by volcanic eruption. It surrounded by mountainous Landforms and intensive Land use such as cultivation, grazing, recreational and housing development. Astronomically, the area has a latitude and longitude of 11°15' N and 39°57'E respectively. The altitude ranges of the catchment between 1912 and 2598 meters above sea level. The lake covers 23 km² and average depth of 23meters with a unique wetland ecosystem.

The Lake has a potential for ecotourism Due to the presence of Abuna-Eyasus moa monastery (established in the 13thcentury) in the lake, the existence of remarkable chain of mountain in the vicinity, the beautiful scenario of the Lake, the presence of lodges to receive guests, the prevalence of edible fish and the comforted climate are potential factors that could influence tourists to stay longer time at lakes shore .Beside to these direct benefits the lakes serve as to regulate the micro climate condition of the locality. The lakes shares 7 Kebele administrations from Tehulederie, Wurebabo and Hayk city administration. The surrounding watersheds have different slope classes due to high variation in landforms. Most of the original vegetation in the study area has been replaced as a result of agricultural, tree logging, residential

activities. Gobeya watershed, the sub watershed of Lake Hayk, conducted case study in this research covers a 2058 ha exist in the administration of Kebele 12 of woreda.

.Map of the study area

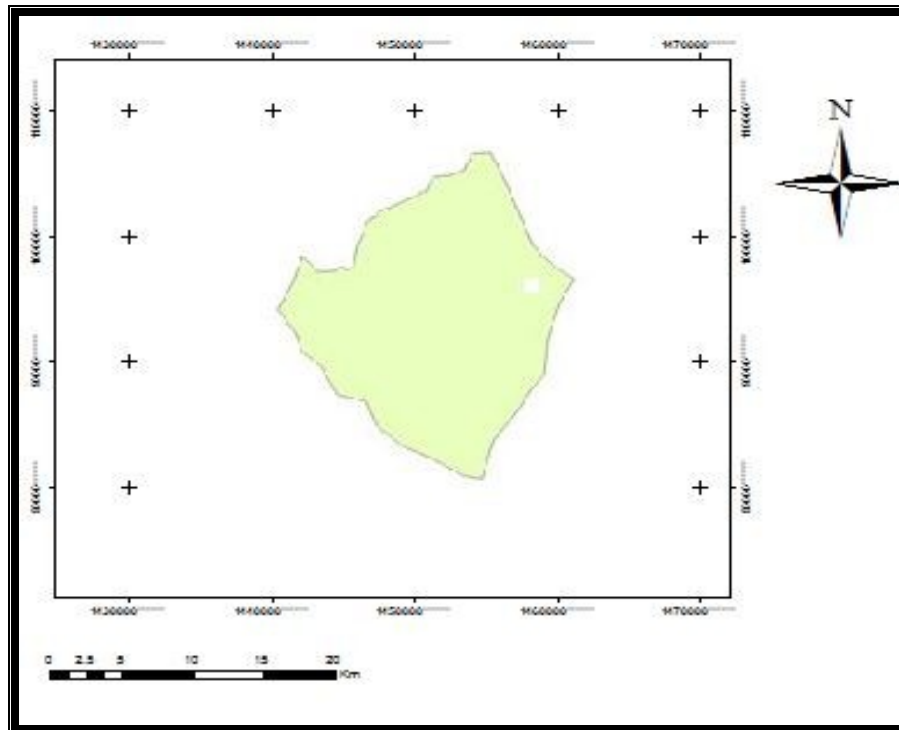
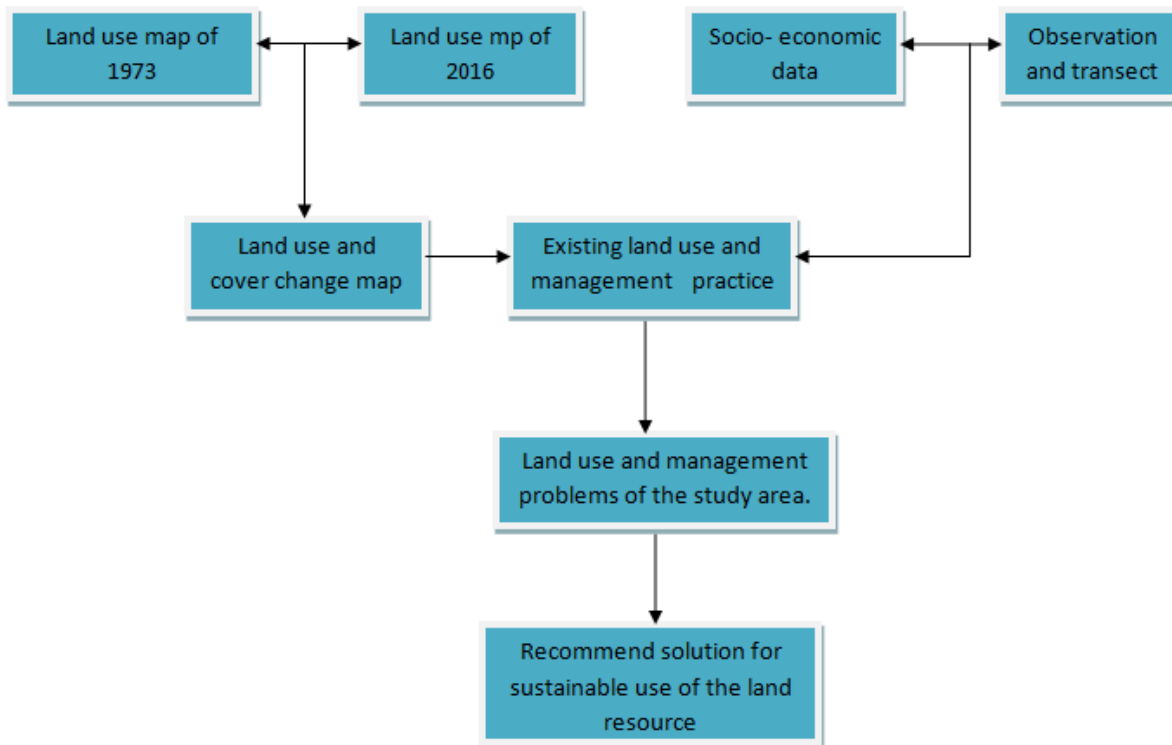


FIGURE 1 MAP OF THE STUDY AREA

5. Research design

In order to examine the use and management of the lake Hayk watershed a cross sectional research design be used. To generate appropriate information about the area researcher collect information from the local community and local administration as well as satellite image of different years were also used. To maximize the generation of reliable data for analysis, the research design was complimented by proper research methods and techniques for data generation and collection. To address the stated objectives, broad based information gathered. In the process of data collection and generation multiple sources of evidence such as survey questionnaire, semi- structured interview, focus group discussion, field observation and satellite image were used. To strengthen the data acquisition, triangulation or the combination of methodologies including qualitative and quantitative approaches were applied.

Research design



5.1 Field work

The fieldwork for this study was carried from January to May 2016. The initial field activity was reconnaissance survey of the study area to establish background information on agro- ecological condition, livelihood activities, land use systems, natural resource base, lake ecological system, property right regime implemented in the district. Preliminary interactions was also carried out with government and non-government institutions working in the district to gather an insight on what types of Land use and management practice established in the watershed and its impact to the lake ecosystem.

5.3 Selection of respondent households

Rural households and the community are used as the primary and secondary unit of analysis respectively, hence representative households and community groups selected from list of households in the kebele. The list of households in the Kebele serves as a sampling frame.

The current Kebele Administration is structured to contain many gotts (hamlets) comprising substantial numbers of households. Sample study households should therefore be taken from purposively selected 3 gotts in the selected Kebele. This followed by stratification of households in each gott based on land units. After the proportion of households in each got is identified a random selection of sample

households proportional to the percentages of each group be conducted for each Kebele. For the purpose of questionnaire, respondents were selected using stratified sampling method. Accordingly, 10% of household sample size from kebele was drawn that means 80 heads of farm households randomly selected by using formula set by Yamane (1967:86). The formula is given as:
$$= \frac{N}{1+N(e)^2}$$

5.4 Focus group discussions with elder, men and government and non-government institutions

Group interview was included to supplement and confirm information that is generated in the questionnaire and in-depth interviews with key informants. Discussions using semi structured and open ended questions held with the men and women group and the Kebele leadership, and rural Land administration committee. Elders, religious leaders, and the agricultural development extension workers involved in the group discussions. Staffs of these institutions are assumed to have extensive experience and knowledge about Land use activities in their localities as well as the management of the lands. Generally two group discussions were done in the lower and upper catchment with a total 15 participants.

Group discussions points though vary across different groups they designed to have communities as the focus of the discussion is exploring what are the major Land use and management problems in the kebele. Notes taken from a group discussion and key informants were summarized the same day and any key and important issues arising in one group discussion be used for further discussion in the following group discussions.

5.5 Key informant interviews

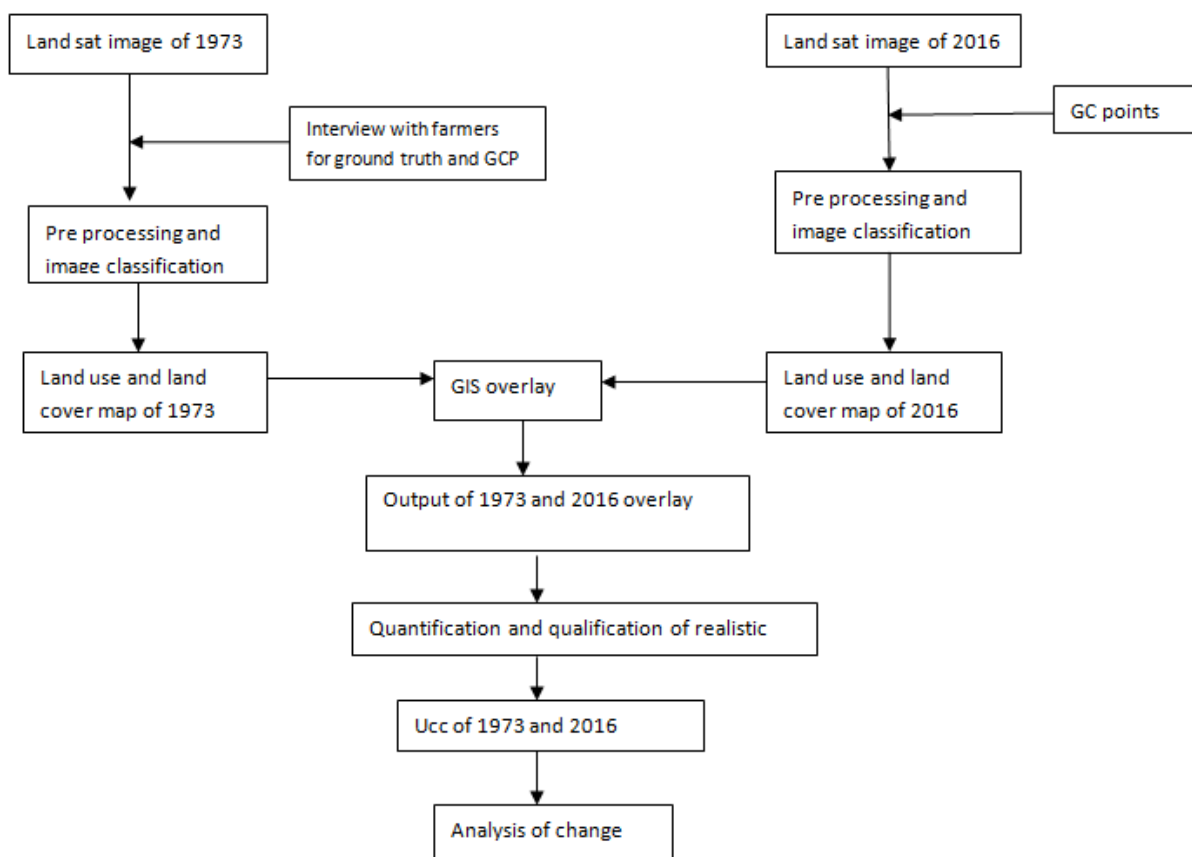
Attempts to explore facts on the ground makes it a rational approach to include key informant interviews by involving selected group of individuals who are likely to provide needed information, ideas, and insights on the proposed research. Opinions of experienced local people (Key informants) were selected with the help of the Kebele administration and Land administration and use agents. 5 Key informants in the kebele and 5 in the woreda used and a check list of open ended questions were prepared and presented to them in a simple and understandable manner. The time and place for key informant interview guided by the Key informants themselves.

To get real Land use and Land cover change in the area the researcher used 43 years gap medium resolution satellite image. A spatial database depicting the land use patterns of the January 1973 and January 2016 was developed using Land Sat TM satellite imagery. Major works done were:

1. Acquisition of a semi-processed satellite image of the study area of January 1973 and January 2016 years.

- 2) Identification of Ground Control Points (GCP's) before interpretation of satellite images commences. At each GCP location, GPS measurements were taken in a field (25 coordinate points for 4 Land use class) work in as to verify and confirm the information gathered through remote sensing.
- 3) Geo-referencing (geo-rectifying) the January 1973 and January 2016 satellite image using the same imagery was remapped and projected to UTM ground coordinates.
- 4) Producing land use and land cover maps of January 1973 and January 2016, and organization of the maps for further processing.

Flow chart for land use and land cover change detection



6. Livelihood System

In the study area, the households generate their livelihoods, from arrays of activities. Indeed, crop and livestock production are the major sources of livelihood of the community in the s area. The focus group discussion confirmed that Short growing period, rainfall scarcity and poor soil fertility of the area might have discouraged crop production. However, population increment in the area has led to a declining in livestock herding and made the quest for farmland mandatory. In other words, due to the above mentioned factors the local communities forced to shift their livelihood system from animal husbandry to crop production.

Accordingly, the survey result indicated that 65 percent of the sample households were dependent on mixed farming (both crop production and animal husbandry). However, the remaining 35% depend on crop production only. Although the respondents were asked if they have additional means of earn their livelihood system besides the above to diversify their income. The result shows that more than 45 percent of sample households have mentioned that they practiced selling of firewood from the community forest and private lands and day labor in the nearby town of Hayk and Dessie. This may increase the chances of wetland degradation as a result of deforestation from these economic activities. This implies that the degradation of wetland (water) quality due to a certain land use type in upstream parts of a watershed can have negative effects on users in downstream parts of the watershed and the degradation affects flow through the watershed. this findings is similar to the study conducted by UN (2009) that different land use systems may have different impacts on wetland values direct or indirectly as a result of land use practices of the stakeholders (upstream or down-stream).

7. Land use and land cover change

Land use/land cover changes are important elements of the watershed environmental change processes of the study area. Change analysis of features of Earth's surface is essential for better understanding of interactions and relationships between human activities and natural phenomena. A common method for the detection of land use change is to compare two or more images covering the study area at different dates. The present study used Land sat Multispectral Scanner (MSS) from 1973, and a Land sat Enhanced Thematic Mapper Plus (ETM+) from 2016 for land use/cover mapping (Table 1). The selection of the image data was based on: (1) the need to show wide time coverage of Land use and cover change in the area (2) the availability of medium quality satellite data with minimal cloud coverage. The Land use and Land cover classification of 1973 and 2016 produced with an overall accuracy assessment of 82% and Overall Kappa Statistics = 0.7114(fig 1). There is a great land use and cover change in the area of wetland and cultivated land (table 1).

Land use and cover map of 1973

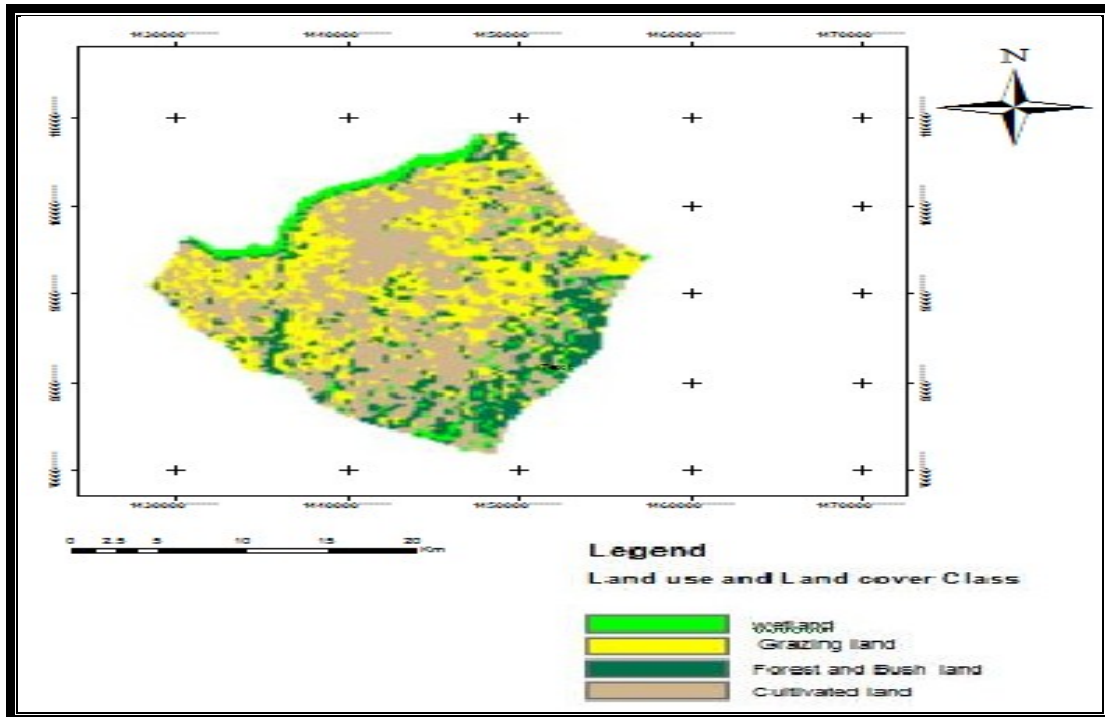


FIGURE 2 LAND USE AND COVER MAP. SOURCE OWN SURVEY (MARCH, 2016)

Land use and cover map of 2016

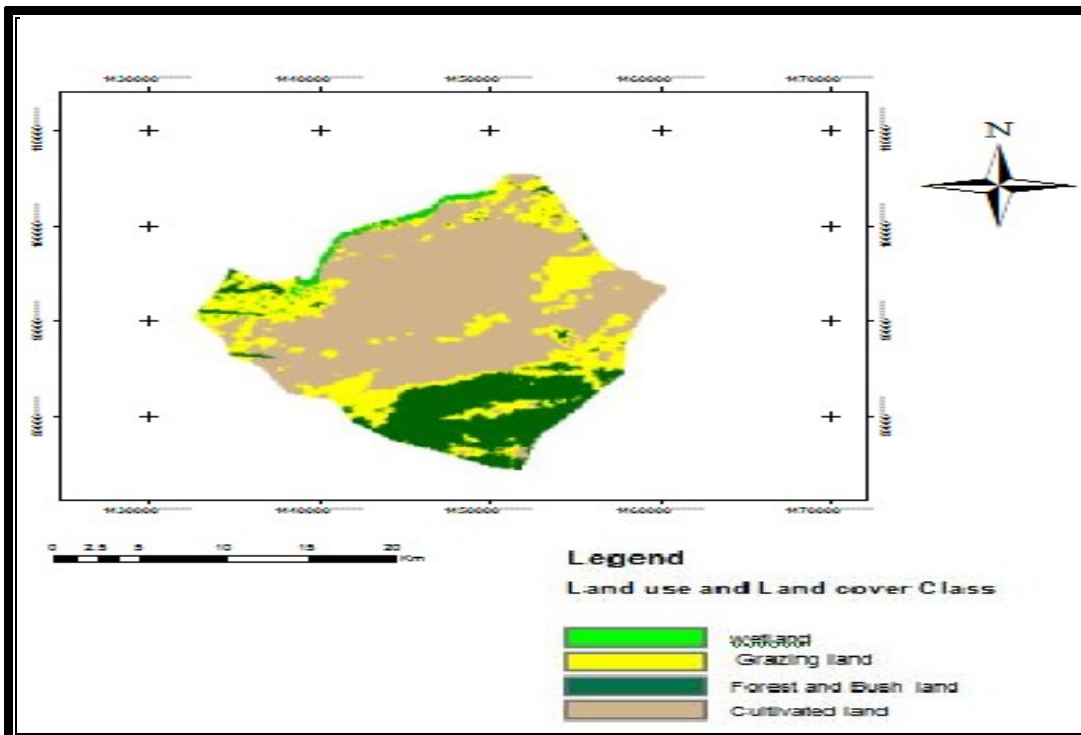


FIGURE 3 LAND USE AND COVER MAP. SOURCE OWN SURVEY (MARCH, 2016).

In general, this study evaluates the change in wetlands around and within Lake Hayk from 1973 to 2016. It comprises land use/land cover change detection of wetlands and other land uses in the area.

Table 1: Land use / Land cover changes of the study area as extracted from time series of Land sat images (1973 and 2016).

Land use and Land cover	1973		2016		change in	
	Area(ha)	%	Area (ha)	%	Percent	Ha
Cultivated Land	998.0928	48.48	1169.1	57	+8.52	+ 171
Forest and Bush Land	339.1956	16.47	360.27	17.4	1	+ 21
Wetland	131.2596	6.37	40.59	1.9	-4.47	-91
Grazing Land	590.0184	28.66	488.25	23.7	-4.96	-101
Total	2058.57	100	2058.21	100		

Computed percentages of land use/cover classes show that in 1973, cultivated Land, forest and bush land, Lake Hayk wetland and Grazing Land occupied 48.48%, 6.37% and,28.66% respectively(Table1).However, significant spatial expansion in cropland (agriculture) whereas a reduction of wetland and grazing land was observed in the 2016 land use/ land cover (Figure 5). The area of cultivated land increased from 998 ha to 1169 ha, by 171 ha and, while the wetland, and grazing Land were reduced substantially from 131 ha to 40 ha by 91 ha and 590 ha to 488 ha by 102 ha respectively in the year of 2016. Observed trends in land use/cover changes indicate that the encroachment of cultivation in wetland and grazing land areas is a continuous trend in all the land tenure systems. The most notable changes include the expansion of agriculture on the expense of wetland and grazing land means that it has a negative impact on the environment of the Lake and the wetland ecosystem. Therefore, an efficient and sustainable land use plan is required to reduce the rapid land use/cover changes, particularly the loss of wetland and other common grazing lands.

8. Challenges and threats facing Lake Hayk Ecosystem.

8.1 Absence of local institution concerning wetlands.

In Gobeya Kebele, along Lake Hayk, different wetland users (local communities and governmental sector) use the wetland and decisions from their own point of view. Because of lack of workable wetland institutional structural arrangement that is responsible to facilitate wetland use and management and this approach was affecting the availability of wetlands and speeding up their degradation in the area.

Both the local communities and local Governmental institution (woreda government institution) did not have stake on the use and management of this fragile system. Therefore, lack of wetland institutional workable mechanisms that responsible and accountable to lead wetlands from top level to the lower level of government sector had made a gap for different sectors and local communities to use wetlands from their own outlook and institutional objectives. This is also explained by Tadesse and Solomon (2014), considering the cross-sectoral nature of wetland management, it is of crucial importance to designate a responsible agency to guide and coordinate the development interventions in wetland resources.

8.2 Loosely defined property regime

The management of wetlands is strongly linked to the property rights and property rights regimes. The study revealed that there is unclear and loosely property rights and property regimes in the wetland of lake Hayk fringes. There is confusion in the communities, woreda government institution, and the local residents about the owner of the lakeside wetlands. About 54 percent of the respondents believe that the wetland is the private properties of individuals that have parcel near to the wetlands. This is linked to the enlargement and shrinkage of the wetland. On the one hand, 30 percent of the respondents believe that wetlands are a state property that state is full responsible in controlling the wetlands. 10 percent believe that it is a common property and the others 6 percent accept that no one property. (Table2). Such confusion has a negative implication on the sustainable utilization of the wetland resource. In reality when we see the bundle of rights in the wetlands are considered it can be observed that all types of properties exist in the wetlands. The government seems the owners of the wetlands because some action has been taken in to 2003 and 2004. This action was to demarcate the boundary of the private Lands and the wetlands using stones in some parts of the area. However, such actions are not functional and sustainable in the area due to poor monitoring and lack of active community participation. In practice Private Land owners share the boundary of the wetlands has the right to control wetlands that exist in front. Such bundles of rights are the rights to expand their boundary to the wetlands when the lakes decrease its boundary, the right to graze the wetland for their animals, cut the grass and fence the wetland. The communities graze the wetlands in the time of droughts, uses the water for Human and animal, cuts papyrus. It seems like no one's property because everyone can move and enjoy alone the shore.

Misunderstanding also happened with the woreda land registration core process concerning wetlands. When registered private land along the wetlands the registered office undermine the wetlands and gives the names of the borders of the private Lands as Lake Hayk. There is also conflict between the rights of the property owner to use the land versus the government's interest in controlling pollution, protecting wildlife and their habitat, and managing ecosystems or even other landowner's property.

TABLE 2 RESPONSE OF THE COMMUNITIES CONCERNING THE PROPERTY OF THE WETLANDS

Communities reaction on owners of wetlands	Frequency	Percentage
private properties that have parcel near to the wetlands	43	54
state property	24	30
common property	8	10
no one property	5	6
Total	80	100



Figure 4. Loosely defined tenure system in the wetland

The legal framework concerning State holding In Amhara rural Land Law(proclamation 133/98) defines Rural Lands demarked and held by federal or regional government for country and area development and growth, and it includes forest Lands, wild life sanctuaries, mining Lands and parks as well as Lands around Lakes and rivers. Such article only exists in the definition of the proclamation not clearly elaborate in the main part of the Law. It therefore fails to address how to regulate wetlands as state goods.

8.3 POOR Legal framework

The analysis of the existing legal framework reveals the non-existence of adequate relevant legal provisions necessary for conservation of wetlands in Ethiopia. The current legal framework provides unfavorable environment for Tehulederie woreda Environmental protection, Land administration and use office and/or agriculture department Office to ensure conservation of Lake Hayk Wetland. In addition, the Government of Republic of Ethiopia has not domesticated Ramsar Convention into

the existing policy, legal and institutional framework. Besides to this insufficient funds and to some extent lack of the political will from local leaders are common problems. . Fear by local politicians to lose votes during the future elections, if they supported the eviction of residents who are encroached the wetland is also stated as major problem to implement proper wetland management (Key informant interview). This reluctance has led to illegal encroachment into the wetland and the case was more evident in 2000 in contrary to the Rural Land Law of Amhara region, proclamation No 133/98.

8.4 Weak Stakeholder's coordination and Land use conflict

The study established that there were different stakeholders who were playing different roles but contradict each other on the wetland. The Survey showed that different institutions have different interest concerning Lake Hayk wetlands. Major stakeholders and institutions in this wetland resource are woreda Agriculture Office, woreda water resource office and woreda Environmental protection land administration and use office. The agriculture department major interests are to increase agricultural production (both crop and animal) (Table 4). So they are interesting in draining and filling the wetlands for crop production and intensive grazing. This institution has high extension program in the area for fruit and vegetable production in the area. In addition, the woreda water resource department encourages irrigation in the area, by abstracting water from the Lake, and severely affects the volume of the Lake's water. There are 2 big and 20 small-scale functional irrigation pumps in the study area (wetland). On the other hand, the woreda Environmental protection, land administration use office has more interest on conservation of wetlands, controlling development interventions in wetland areas, delineation and demarcation of the boundaries of private land and wetlands and developing and regulating land use and management plan in the area. This office made some progress in demarcation private and wetlands in some parts of the wetlands but it is not functional due to lack of strong monitoring effort.

The contradiction of interests among these different institutions leads to Land use conflict in the area. Inconsistency between property rights and institutional behavior has created a favorable environment for land use conflicts (Alston et al. 2000). The household survey, key informants and focus group discussion participants revealed land use conflict is the typical problems and they feel that this may lead to the total loss of the wetland and the ecosystem in general (Table 3). This reality signals the need to define areas for compatible agricultural production, grazing area, water bird Habitat. In addition other land uses, as core area, protection area and development area should be delineated to and serve as buffer zones to minimize encroachments in to the lake wetlands. Generally to balance the interest of these deferent stalk holder participatory communities based Land use plan preparation is an urgent task in the area.

Table 3. Matrix that show Land use conflict in the area.

Land use type	Crop production	Animal grazing	Wild-life(bird)	Fish production	Extent of the conflict
Crop Cultivation	-	Exist	Exist	Exist	High
Animal grazing	Exist	-	Exist	Exist	High
Wild life(bird)	Exist	Exist	-	Exist	High
Fish production	Exist	Exist	Exist	-	High

Table 4. Key stakeholders in Lake Hayk wetland.

Category	Stakeholder	Roles	Level of influence on wetland and the lake.
Development institution	Woreda agriculture office	Extension on wetland agriculture	High
		Development and protection of Natural resource	Low
Development institution	Woreda water development office	Development of irrigation infrastructure	High
Regulation and protection	Woreda Environmental protection, Land administration and use	Define the property rights of the wetland	Low
		Demarcate and delineate the wetland and the lake boundary	Low
		Develop a Land use and	Low

		management plan	
Land users	Land users in front of the wetland	Dry season grazing	High
		Cut the wetland vegetation	Medium
		Encroach the wetland for agriculture	High
		Participation in the wetland management	Low
	The surrounding communities	Dry season grazing	High
		Participation in the wetland management	Low

Table 4 clearly shows that there is no responsible institution in the management and utilization of wetland resource. This inform us that the importance of strong wetland institution at woreda level.

9. Changes of major ecosystem services as affected by land use

9.1 Loss of reproduction and habitat site (place) for water birds

Fringe zone vegetation plays important role in the ecology of wetland which supports diversified flora and fauna. The Land use and land cover studies showed that there is a significant Land use cover change of wetlands to agriculture(from 130ha in 1973 to 40 ha in 2016) ,on the other hand the area has major site of water birds(38 water bird species and 1,682 number of waterfowl). These Water birds depend on the Lake Hayk wetlands for a variety of activities that include feeding, breeding, nesting and molting. The highest number of water birds is often found in the wetlands that have the greatest diversity of aquatic invertebrates, plant species and vegetation types, or where there is permanent water. Especially during the recent decades the level of Lake Hayk is decreasing alarmingly and the ecosystem of the lake is disturbed (Dagnachew and Abate, 2014). The destruction of historical nesting and feeding grounds has forced water birds to compete for diminishing resources. Clearing and degradation of fringing and littoral wetland vegetation reduces water bird breeding success as a consequence of the loss of habitat and increased vulnerability Therefore, disturbance of the site leads to total loss of unique species in the area in particular and biodiversity and ecosystem disturbances in general

Figure 5.(field survey, march 2016). Loss of reproduction and habitat site.



9.2 Decrease the lake water level.

This Wetland vegetation of Lake Hayk provides an important buffer to adjacent lake by filtering and holding sediments that would otherwise enter lakes eventually fill it. This lake wetland is the last protective barrier to the health of the lake Hayk ecosystem. The natural buffers become fragmented that ecosystem services like waste treatment, flood prevention and supporting the ecology diminished which has significant negative impact on the lake. Lack of proper land management in the watershed coupled with decreasing the size and vegetation density of the lake Hayk wetland there is a less capacity for filtering the sediment before entering to Lake Hayk. According to Dagnachew Melaku and Abate Shiferaw (2014) there is a drastic decline in the size and depth of the lake water where in the past 30 years the lake decreased by 108 hectares and based on the previous lake shape, and area model; now, the lake level declined to 22 meter and almost 5.8 km² or 580 hectares surface area of the lake were shattered, as the previous position. Observation, The land covers studies, the focus group and key informant interview also support that the color of the lake are changing from blue to black this is a symptom of high sediment load in the lake. Some of anthropogenic factors for decreasing the lake water are over pumping of the lake water for irrigation, inappropriate use of wetland, land use and cover change and deforestation (Dagnachew and Abate, 2014). My observations also inclined to the expert believe due to loss and degradation of wetland that is a backbone of the lake by trapping sediment.

Table 5. Historical survey of depth analysis at Lake Hayk.(Dagnachew and abate,2014)

Date/Year/	Max depth (in meter)	lake area (in km ²)	Source
1540	110	28	(ArcGIS model based on; Alvarez, 1540)
1941	88.2	23.2	(Morandini, 1941)
2000	84	24	(MoWR, 2000)
2007	81	22.8	(Molla etal. 2007)

9.3 Decrease the production of fish.

Lake Hayk and its wetland is the Home of three fish species – Ambaza (African Cat fish), Koriso and Dubi which are economically important fish species. The average production of fish per year is 2500 tones (2015 Tehulederie woreda agriculture office annual report). There are one legal associations which have 92 members and 435 illegal fishermen directly participate in fishing in the area (2015 woreda agriculture office annual report) such production is a good supply of fish to the nearby town of Hayk and Dessie. Key Informant interview and focus group discussion reveal that there is a decrease the quality (particularly the size of the fish) of fish in the area. The reasons for such reductions are many (inappropriate fishing technology, computation for the resource, lack of intensive monitoring by the local government), among this are loss of reproduction and habitat for the fish and total loss of core zone (key informant interview). Increased soil erosion brings excess sediment load and causes low oxygen content and mud cover on the gravel beds in the inflowing rivers and wetlands and flood plains are converted to agriculture (Mohammed et al 2011.).This Wetland is vital to fish populations because fish depend on certain wetland processes. Thus, a network of abundant and healthy wetlands is vital to the survival of most fish species. Therefore, wetland loss of Lake Hayk is a great impact on fish production leads to dismantle the livelihood of the communities that depend on fish production and marketing process.

10. Conclusion

There is a great Land use and cover changes in the study area in the Last 40 years. Significant Land use and cover change observed in cultivated Lands, grazing Land and wetlands. The area of cultivated Land increased from 48.48% to 57 %, by 9 % and, while the wetland, and grazing Land were reduced substantially to1.9 % by -4.47 % and 23.7% by -4.96 % respectively in the year of 2016. However, Forest Land cover remains constant in the Last 40 years. Such land use and cover changes have a spillover effect on the downstream of Lake Hayk ecosystem and the wetland.

The Lake Hayk ecosystem and the wetlands have provided diverse socio-economic services to the surrounding rural and semi-rural communities. However such ecosystem are disturbed and degraded due to poor Land use practices along the lake and the wetland, loosely defined property rights of the wetland, weak institutional setup, absence of strong legal system on wetland, and weak stakeholder coordination.

Land use conflict (the conflict between Cultivators and grazers, fisheries and Grazers, wildlife ecologists and cultivators and so on) are the typical characteristics of the area which leads to the loss of wetlands, wetland ecosystems, and lakes.

Lake Hayk and its wetland is the home of 38 water bird species and 1,682 numbers of waterfowl. These Water birds depend on the Lake Hayk wetlands for a variety of activities that include feeding, breeding, nesting and molting. Highest number of water birds is often found in the wetlands that have the greatest diversity of aquatic invertebrates, plant species and vegetation types, or where there is permanent water. Among the many factors for the decrease in the size and depth of the lake are increasing high amount of sediment from the surrounding area.

11. Recommendation

The land resource including the forest, grazing Land, and Wetlands resources provide means of livelihood for the people in the Hayk lake basin. In order to reduce mis-use, degradation of the land resource and negative impacts of the watershed Land use and management on the lake ecosystem and the wetland, the following recommendations are suggested.

- Defining the property rights of the Land resource particularly the common Lands and the wetlands is the important thing for tenure security which is an ideal for sustainable use of the Land resource and the health of the lake ecosystem and the wetland.
- Establishing Local level participatory based wetland use management will play a role to save remaining wetlands in the lake Hayk Basin. The Local communities have less tradition on such matters so awareness creation and experience sharing on community based wetland use management is basic.
- The importance of wetland use and management legal framework, establishment of wetland institution from woreda to regional and federal level and importance of strong coordination of stakeholder on wetland is basic for the sustainability of wetland ecosystem and the lake.
- Defining the boundary of the wetland, demarcating buffer for wetlands, establishing strong cadastral system around the lake (in the watershed), and

wetland data base is very important to know the real boundary of the lake, the wetland and to know the status of wetland and lake biodiversity (lake and wetland ecosystem).

- Sustainable land use management of the watershed based on sound land use planning and restoration program is proposed to minimize the negative effects of land use and land use and land cover change of the watershed on the wetland.

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USE OF OPEN SOURCE GEO SOLUTIONS TO DEVELOP AN INFORMAL CADASTRE FOR A SELECTED INFORMAL SETTLEMENT IN NAIROBI, KENYA: CASE STUDY OF REDEEMED VILLAGE IN HURUMA INFORMAL SETTLEMENT

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Abstract

Sprawling of informal settlements in Kenya has been a major challenge due to the high rate of urbanization in towns and cities to the extent that decent housing and security of tenure in such areas has been deficient. Land Administration (LA) in terms of acquisition, transfer through sale or even inheritance continue to operate informally with little or no documentation of the interests existing in such informal settlements. Most of those information often reside with the knowledge of the village elders and sometimes with the area chiefs verbally or in a paper based form prone to tear and wear, therefore a methodology to capture their houses/dwellings as well as their personal details in an integrated and GIS based database system is paramount.

The research therefore proposes to use open source geo-solutions to map their current dwellings, integrate with their personal details and develop a prototype structure certificate of residency that could be generated from the database constituting the informal cadastre that is up to date, user friendly and based on open source geo-solutions.

This study will further explore the fit for purpose geospatial data collection approaches which include digitization the structures from aerial/satellite Imagery to constitute the spatial unit which shall be given a unique identification to link it with the party information through a social tenure relationship under Social Tenure Domain Model (STDM).

Key Words: Informal Settlement, GIS, STDM, LA, Certificate of Residency

1. Introduction

1.1 Background Information

One of the reasons so many people are forced to stay in informal settlements is the state's failure to put an appropriate regulatory framework in place for providing low-cost housing or access to secure and serviced land. With nowhere to go, people encroach on unoccupied land, including areas that have been set aside for roads, railways and other public uses. For example, in Nairobi, about 2 million people, or 55% of the city's total population, live in the 200 informal settlements on only 5% of the city's total land (Habitat, 2010).

The complexity of tenure claims in the informal settlements has been difficult to incorporate into the formal systems owing to their dynamic and continuously changing nature; innovative tools are therefore required to capture these claims. This necessitates the development of an informal cadastral model that would document such interests to make it easier to manage informal land tenure situations as well as prepare for possible future formalization processes such as regularization or relocation

Most informal settlements in Kenya are typically located in the neighbourhood of affluent estates (Figure 1). Such estates include Muthaiga neighbouring Mathare, Woodley estate neighbouring Kibera among others. To address land administration in informal settlements, the Government of Kenya initiated land regularization program so as to bring some of the informal settlements into the formal systems. Informal settlements in Kenya are in dire need of such regularization since previously the response of the government through evictions at one point and exclusion from planning at another has not been successful.

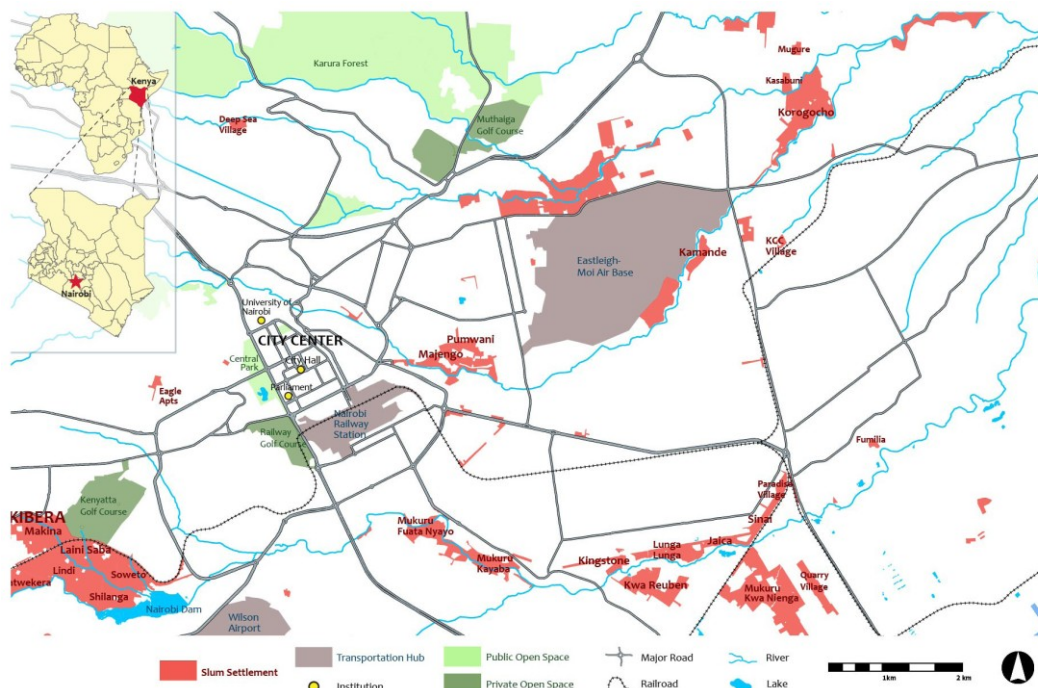


Figure 6: Distribution of informal settlements in Nairobi (Source-Nairobi Zonal Plan 2012)

1.2 Study Area

Nairobi City owes its origin from the construction of Kenya-Uganda railway which started in Mombasa in 1896 under the colonial government. When the rail reached Nairobi in 1899, the railway headquarters was moved from Mombasa to Nairobi which resulted to the emergence of settlements around it. Nairobi was then zoned into Central Business District (CBD), industrial area, commercial, residential and undeveloped land (Mitullah, 2003). With population pressure especially from the

rural areas coming into the city to look for employment yet there were no provision for such class of the population in the zoning, some were hosted by the relatives while majority occupied informal settlements which were built on the undeveloped land. A study by UN-Habitat reported that 95% of new arrivals from rural areas find their home in informal settlements (UNHSP, 2003a).

Under the colonial government zoning (Figure 2), areas with large parcels such as Kilimani and Muthaiga were considered low density residential areas preserved for the Whites while areas such as Parklands of middle density reserved for Asian community and lastly the Shauri Moyo and the entire Eastlands (Native reserves) were left for Africans which comprised of very high densities.

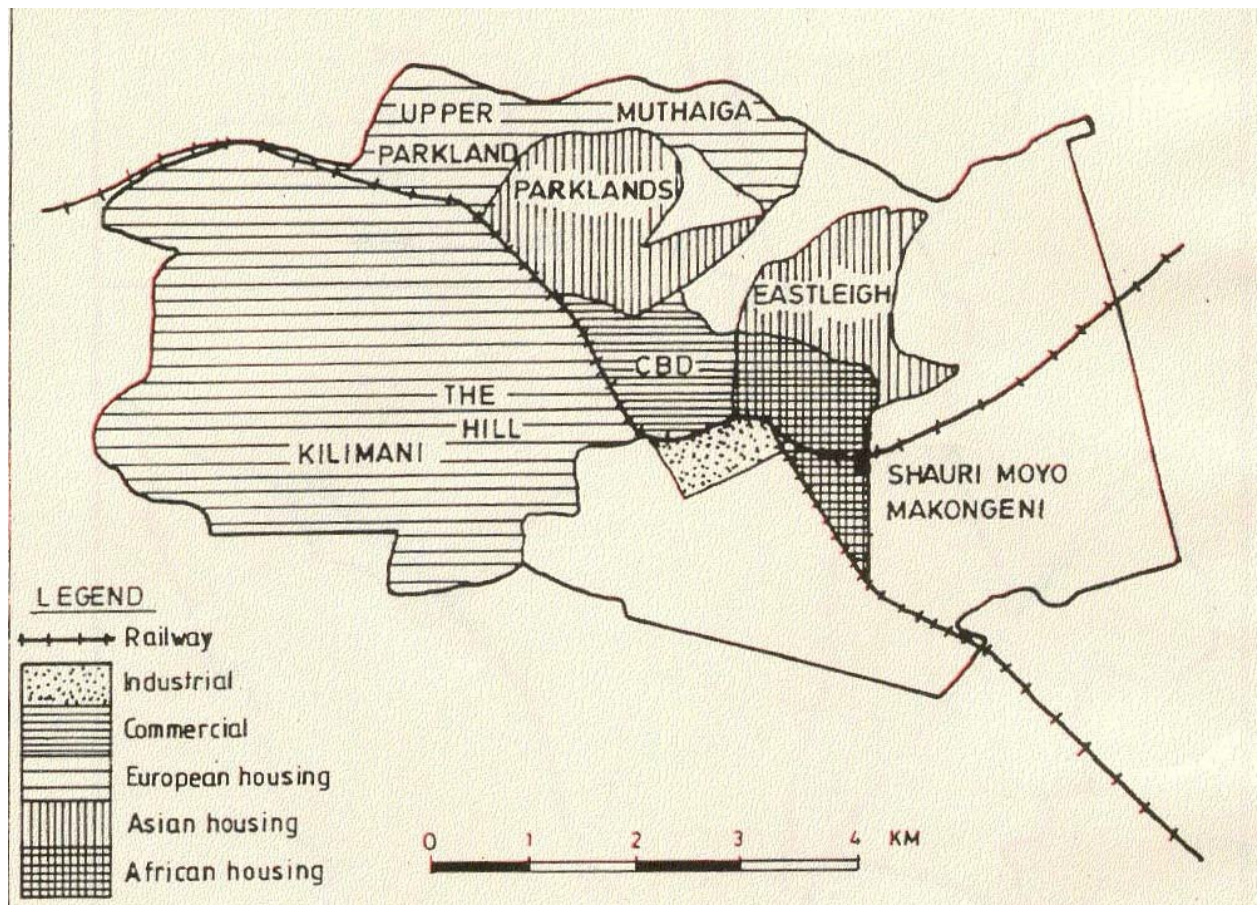


Figure 7: Colonial Zoning of Nairobi (Source-Nairobi Inventory 2015)

The biggest impact of independence was felt in what were previously the areas designated for natives. Independence led to the lifting of restrictions on entry and travel to any part of the country. The result accelerated rural-to-urban migration. The families of the native migrant working population previously restricted from moving into the city, now came in droves and settled with their relatives in the native reserves and some constructed structures in the un-occupied lands.

Redeemed Village commenced as a settlement in 1978. The original inhabitants had been evicted from a neighbouring site intended for the construction of Kiamaiiko

market. They also had been left out of a land allocation process by the Government meant for Kariobangi. The mayor and councilor at the time settled them temporarily at the current location. In 1986, the village initially known as Post, caught fire and the pastor from Redeemed Gospel Church assisted with reconstruction efforts hence it was renamed 'Redeemed'.

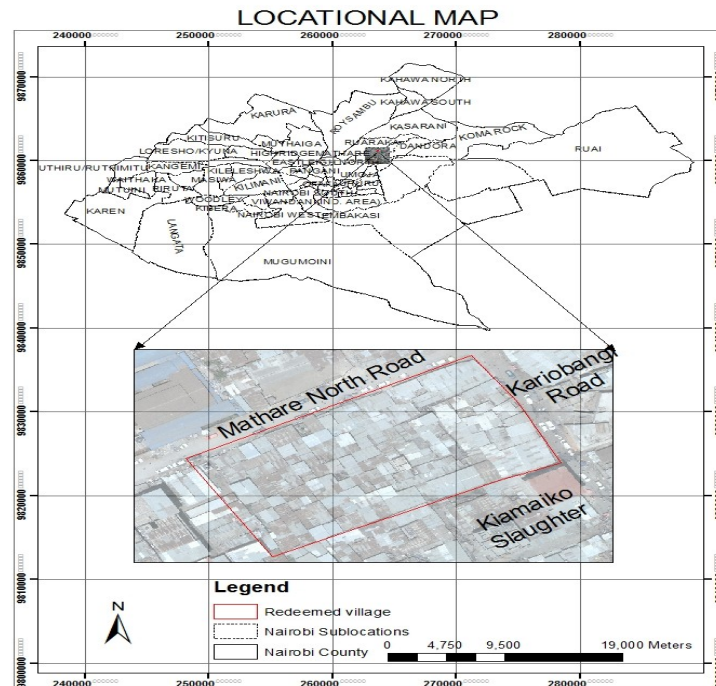


Figure 8: Study Area (Source-Own)

Redeemed village measures approximately 0.8 acres in size and is enclosed between Kariobangi road and Mathare North road adjacent to Kiamaiiko slaughter. It is located in Kiamaiiko ward, in Mathare constituency, Nairobi City County. It is accessed through Kariobangi road, off Juja road approximately 3km from the CBD.

2. CADASTRE

A Cadastre conventionally refers to a parcel based and up-to date land information system containing record of interest in land (i.e. rights, restrictions and responsibilities) and usually includes a geometric description of land parcels linked to other records describing the nature of interests, and ownership or control of those interests, and often the value of the parcel and its improvements (FIG, 1995). An "informal Cadastre "definition can therefore be defined as a one that considers non documented interest (RRR) that is conventionally not included in the formal cadastre

Demand for land record management in informal settlements is for the secure land tenure and improvement of services where scarcity of land as well as tenure insecurity has made it difficult to develop appropriate model that could capture these complexities. Social tenures of the inhabitants need to be documented,

recognised and protected. Pro-poor approaches involving participatory adjudication to accommodate social land tenures would require less accurate forms of data (Zevenbergen, 2011). Additionally, the informal beneficiary group often transfers their rights informally when moving or inheriting, as they do not follow the formal steps of the recordation or registration system, especially when it is not affordable, simple or locally operated (Payne et al, 2008). This issue is emerging in many places in the world (Barnes and Griffith-Charles, 2007).

In Kenya, the cadastral coverage is estimated at 25% but still consisting of disjointed datasets emerging from different projections used, multiple application of many registration statutes and the existence of both general and fixed boundary systems (Siriba, Voss and Mulaku, 2011). The remainder is largely consisting of customary and informal tenure in which the former has been legally recognised in law while the latter is under conceptualization in various policy documents. The government through the department of land adjudication has taken some steps of increasing the cadastral coverage by systematically registering customary lands to individual members and establishment of settlement schemes for regularization of informal settlements. The processes have been slow, expensive and limited to budgetary allocations hence have not changed much the existing situation. Informal tenure arrangements have filled the gap left by the formal system to enable the poor to house themselves and earn livelihood. These informal arrangements need to be recognized and protected, starting from the establishment of the informal cadastre.

3.0 METHODOLOGY

Objective	Research Question	Methods	Output
Characterize informal settlements in Kenya	What is the tenure status of land occupied by informal settlements?	Desktop Review Interviews	Informal Settlements Typologies
Developing the model	What is the appropriate model for informal settlement?	External modeling/User Needs Assessment Conceptual Modelling Logical Modelling Physical modelling	User needs assessment report Unified Modelling Language (UML) diagram

Testing the model	Can the model accommodate all typologies?	Digitization of the structures Editing and numbering of the structures Creation of the dummy register Importation of the numbered structures and the dummy register into the customized STDM	Database
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3.1 Characterization of informal settlements in Kenya

Several documents were reviewed including the National Land Policy, National Slum Upgrading and Prevention Policy, KISIP Project Appraisal documents as well as other reports on informal settlements.

Characterization of informal settlements was established with emphasis on tenure status of the land occupied categorised into public land, private land and community land as theoretical framework for development of the informal settlement typologies. A Focused Group Discussion (FGD) was held with the leaders of the selected informal settlement where specific characterization was discussed and evaluated against the broad typologies already identified from the literature review.

3.2 Development of the model

The four stages of modelling were undertaken as follows:

3.2.1 External Modelling/ User Needs Assessment

This involved identification of the users/stakeholders involved in informal settlement regularization program. They were mapped based on the previous attempts that have been tested by both government interventions and Community self driven initiatives.

Two previous government intervention programs of Kenya Slum Upgrading Program (KENSUP) and Kenya Informal Settlements Improvement Project (KISIP) were visited and their views captured in an in-depth interview with key staff.

3.2.2 Conceptual Modelling

Based on the external model, different classes were identified and their associations established in a Unified Modelling Language (UML) diagram. Some classes were found to be aggregates of others hence were classified as sub-classes. Relevant associated attributes, methods plus their multiplicities were well defined and designed using Dia drafting software which is open source software for drawing UML diagram, Entity-Relationship (ER) diagrams as well as flow charts in a user friendly manner. It has a limitation of migrating from one notation to another, therefore creating incompatibility between UML and ER modelling methods.

3.2.3 Logical Modelling

Skeleton tables were generated from the conceptual model based on the attributes of the classes using pgADMIN which is an open source database management software integrating both the spatial and non spatial tables. The tables were normalized to conform the First, Second and Third Normal Forms.

3.2.4 Physical Modelling

This was the resultant database management system that was customized from the generic Social Tenure Domain Model (STDM) developed by GLTN/UN-Habitat. The generic model considered so many tenure relationships ranging from leasehold, freehold, individual owner among others and the spatial unit as a land parcel where as the developed model only had two tenure relationship of structure owner and tenant while the spatial unit was the structure.

3.3 Testing the model

Aerial Imagery of 15cm resolution covering the project area was acquired. All the structures were digitized into vector format using QGIS as open source GIS software. The reference datum was set to ARC Datum, 1960 commonly known as EPSG 21037(CRS in QGIS) so as to conform to the formal land parcels. All GIS functionalities of creating layers, editing and attribute key in were done in a QGIS environment.

Under participatory GIS (pGIS), community leaders were able to identify the digitized structures overlaid on the imagery printed at enlarged scale of 1:500. Therefore it was used to number all the digitized structures. The numbers were then written on the print out created by preparing overlapping sheets drawn at a much larger scale of 1:200. These were edited in QGIS environment and a structure number created to be used as the unique identifier. A dummy register consisting of structure owners as well as tenants was keyed in as a spread sheet in excel constituting the party class in the conceptual model.

The structures and the dummy register were imported into the database PostGIS and Postgres respectively under the customised STDM.

4. RESULTS AND DISCUSSIONS

4.1 Characterization of informal settlements in Kenya

The phenomenon of informal settlements in Kenya can be associated with reasons that are both historical as well as current. Historically, the colonial model of land tenure displaced many Africans which created landlessness alongside the colonial urban policy that excluded the Africans from urban settlements. There was no room for Africans in cities like Nairobi. But when the number of Africans coming to the urban area grew beyond the capacity of the designed "Native Settlements", those who could not find housing moved to the fringes of Nairobi such as today's Mathare valley informal settlements.

After independence in 1963, the new administration deployed a mixed and varying policy which at one stage consisted of the call for the Africans to return to their rural "homes" while other times there were forced evictions of those who had resided in makeshift structures that were mainly built on public land. Between the 1970s and the late 1990s, the government attempted various initiatives which did not reverse the trend. The increased growth and expansion of informal settlements in almost all counties in Kenya can be associated to both continuity of some colonial modes of exclusion as well as the inattention of policy makers to policies, budget priorities and housing needs of the low income population.

Therefore the following typologies characterize the tenure arrangement for informal settlements in Kenya.

TABLE 6: TYPOLOGIES OF INFORMAL SETTLEMENTS IN KENYA

Land Category	Typology	Informal settlement Category	Examples
Public land	1	Government land	Mathare, Huruma, Kibera,(Nairobi) Maweni (Mombasa)
	2	Reserves(Roads, Riparian, Pipeline)	Gitathuru, Mukuru, Deep Sea, Mitumba (Nairobi)
Private land	3	Individual	Embakasi village(Nairobi), Likoni Misufini (Mombasa)
	4	Company/Group	Kisii village (Nairobi)
Community land	5	Ancestral	Manyatta, Nyalenda (Kisumu)

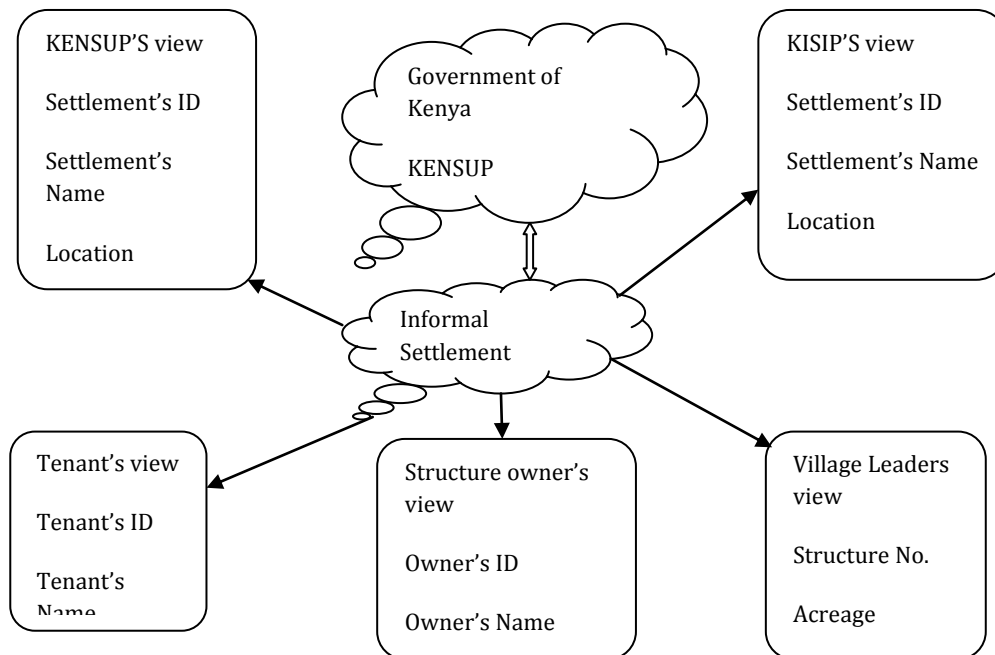
The first four typologies have a similar characteristic of tenure insecurity with most residents living under constant fear of evictions which in turn make development initiatives difficult. The second typology represents a very unique category, majority of which came as a result of a previous eviction from another land. Such cases are witnessed in Mathare where the residents were pushed to occupy the Mathare valley which is a riparian reserve yet they were settled there as a temporary measure to take care of the immediate need. Also in the same category is the Kibera informal settlement where the better part falls along the railway reserve

The third typology is very interesting and has been a subject of debate in national TV stations. The recent case has been the famous Waitiki farm in Likoni Mombasa that was raided by informal settlements (Kenyan Daily Nation, 23rd August 2015) who then deliberately refused to leave even after a court order was issued. The fourth typology occurs where a legal entity such as companies or cooperatives are the legal owners of the land occupied by informal settlements. This typology is usually marked with accusations of who occupied the land first and contestation of the acquisition of such land by the purported companies.

4.2 Data Modelling

External Model/User needs Assessment

Based on the five typologies, the following classes were identified and found to be common across all the informal settlements categories;



Based on the literature review and the user needs assessment interview with KENSUP, KISIP and Community Village leaders, the critical issues that emerged was

the list of beneficiaries which appeared to be mirage both to the government and the community at large.

Conceptual Modelling

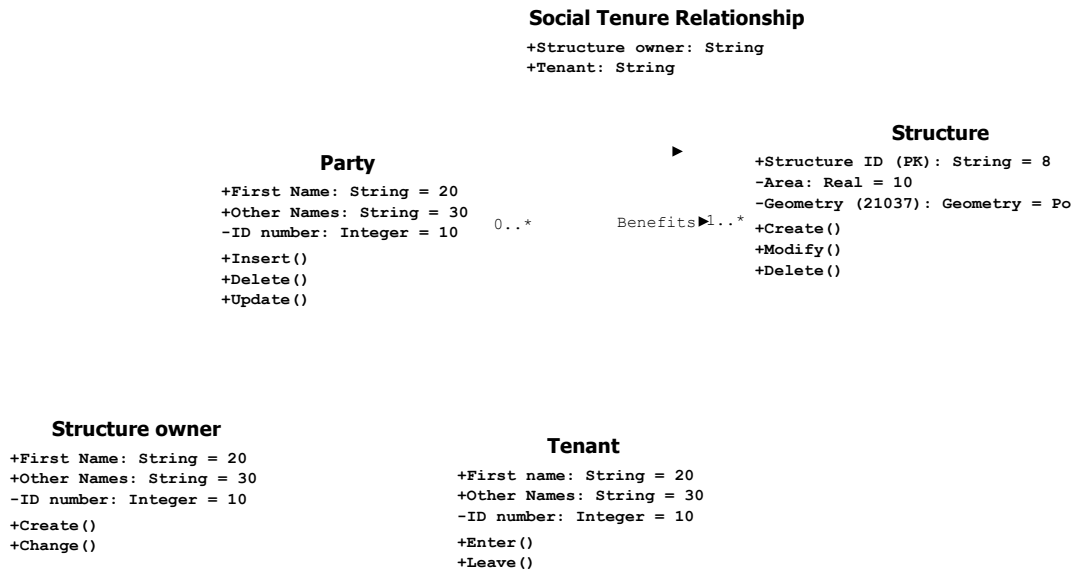


Figure 9: Conceptual Model

The Unified Modelling Language (UML) was used to develop the various classes as identified in the external model. The classes, their attributes and behaviours/methods were drafted in a UML diagram as shown above. Classes that share common attributes were aggregated so as to reduce redundancies as well as explore inheritance characteristics of the super-class.

Logical Model

Based on the conceptual model, relevant data fields were developed that were of primary importance to both the government departments as well as the community leaders. It is these skeleton tables that data values would be entered and tested as per the parameters that had been defined.

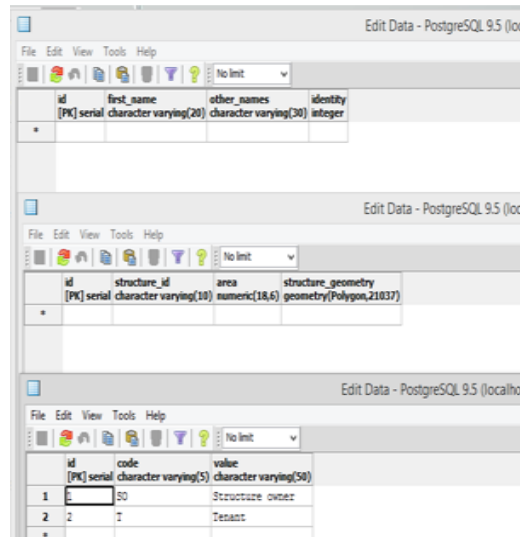


Figure 10: Logical Model

Physical Model

The generic STDM model was configured to be able to capture the three main classes and their attributes as captured in the logical model.

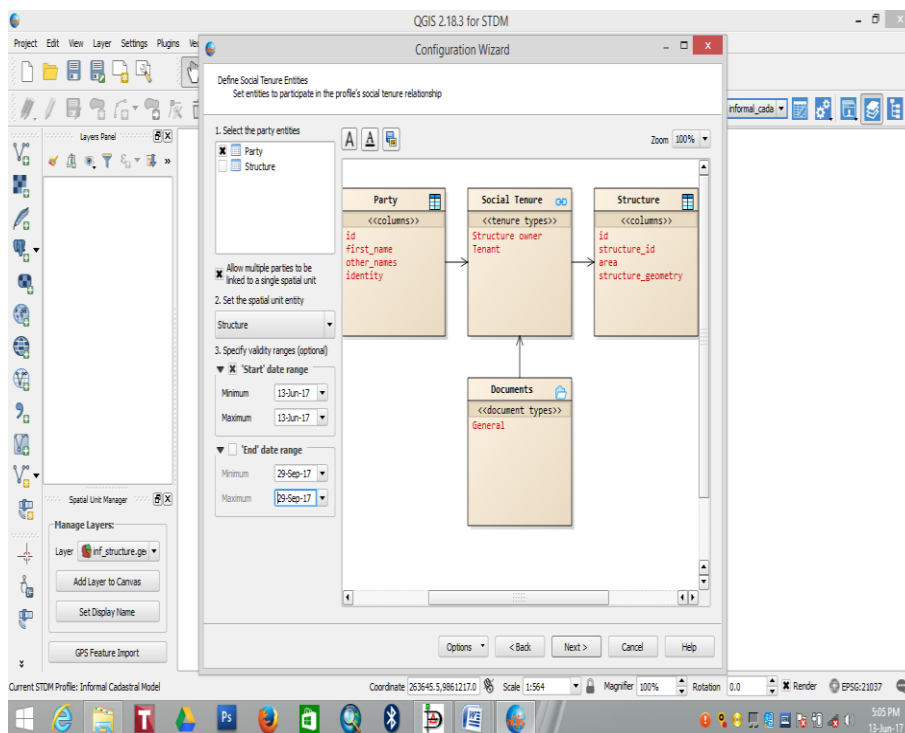


Figure 11: Customized STDM Model

Testing the model

The resultant model was tested by importing data into the database. The prototype database could handle both the spatial data as well as the attribute data, all in one inter phase.

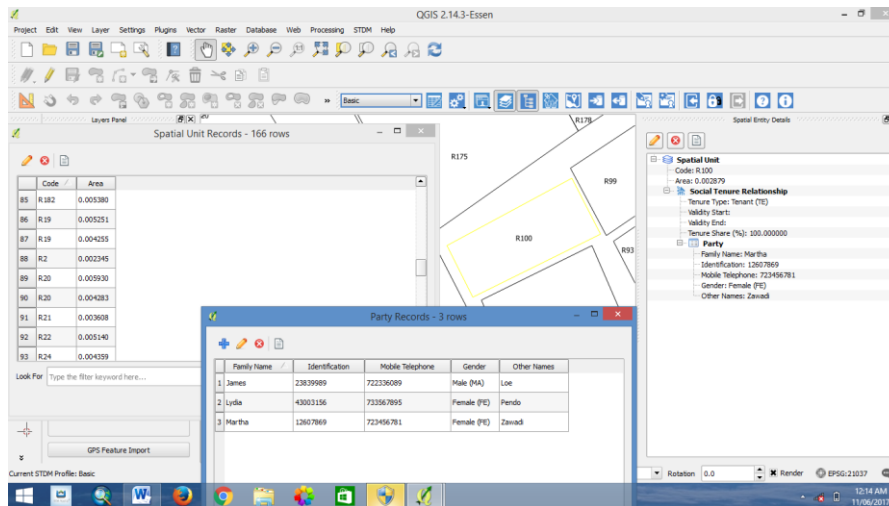


Figure 12: Database

The inter phase was user friendly and could allow any designated person to either add a new record or update the existing records. Such changes could only be effected after a login credentials have been put hence information and data security, and integrity well taken care of.

Digital proof documents were then designed which could aid extraction of vital information from the database such as the structure and the personal details of the beneficiaries coupled with other static design features such as logos, signatures which ensured that counterfeits proofs were prevented and could easily be noticed because they will not be from the database. Other support documents such as photos of the beneficiaries could also be added.

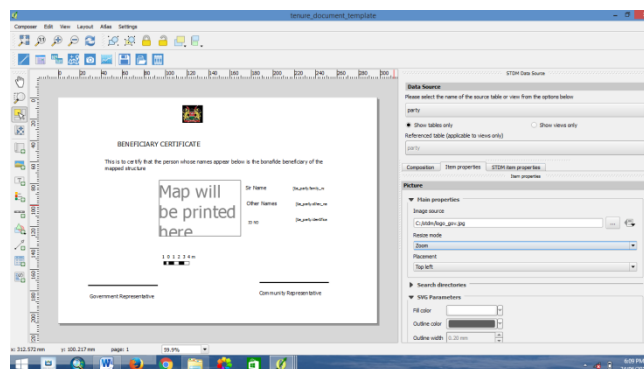


Figure 13: Certificate Template

Once the template have been designed, then any party information as well as the structure in which social relationship exist was auto-generated and printed as a pdf or jpeg document which could be manually signed off by the relevant authority and a copy left for the beneficiary.

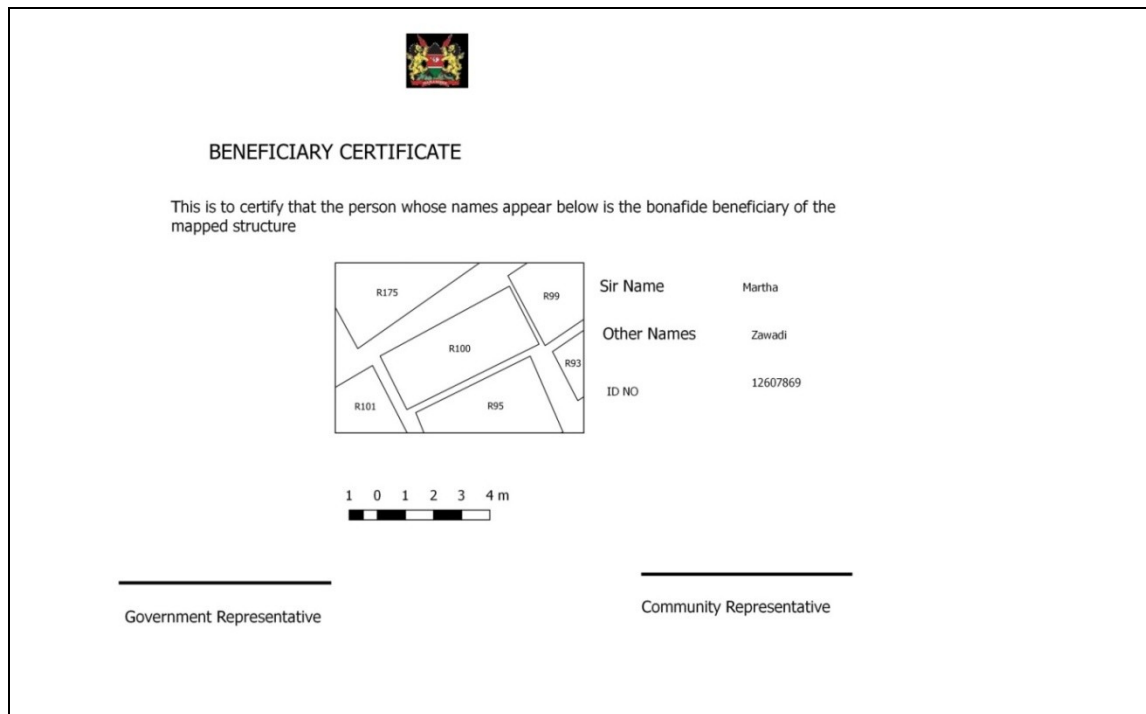


FIGURE 14: SAMPLE CERTIFICATE

5. CONCLUSIONS AND RECOMMENDATIONS

Informal settlements in Kenya are categorised in five broad typologies which emanates from both colonial and post colonial times. Various attempts have been made by the Kenyan government to try and reverse this trend by improving the existing informal settlements and also preventing the occurrence of new ones though the methodology and strategy adopted have been laborious, time consuming, expensive and not suitable to the immediate needs of the informal settlements.

National programmes such as, the Kenya Slum Upgrading Programme (KENSUP) and the Kenya Informal Settlement Improvement Project (KISIP), are some of the measures put in place to respond to this evolving scenario of informal settlements. However, the two programmes are inadequate in addressing the problem of tenure security unless proper and tested models are recommended to them coupled with a comprehensive legal and institutional framework

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MODELING OF DYNAMIC PROPERTY RIGHTS - A CASE OF PROPERTIES IN PROXIMITY OF ROAD RESERVES IN TANZANIA

**THIS PAPER WAS NOT
PRESENTED**

Martine Hagai, Ardhi University

Abstract

Roads facilitate interllia agricultural sector, industrial development, livelihood of cities/towns and so on which forms the major source of national socio-economic activities and growth. While the national economies are directly linked to mobility, transport significantly accounts for a substantial portion of Gross Domestic Product (GDP).

Road transport is the major means of transport in Tanzania. However, existing roads in Tanzania are inadequate to cope with evolving socio-economic activities due to such factors as unarguably increasing population, rapid urbanization leading to informal settlements, environmental pollution and so on. This situation calls for the roads upgrading to meet the demand. Roads upgrading projects commonly are coupled with acquisition of corridor of land which results in demolition of properties found within the corridor or Right of Way. The management of roads and their Right of Way in Tanzania is currently governed by two legislations which are The Highway Ordinance 1932 and Road Act 2007". The two legislations, stipulate 60 and 45 m respectively of the Road Reserve Area. Apparently, the two legislations are used in tandem to grant compensation to properties found within the Right of Way. Obviously, properties which existed in 1932 have their spatial and non-spatial data changed by 2007. This situation poses a problem of establishing rightful properties which existed in 1932 and which ones existed by 2007, so that they may be equitably compensated. This is problem is due to lack of spatial temporal data of the properties, a circumstance which makes it difficult establishing a proof of eligible property owners during road upgrading projects. This situation adversely affects of road upgrading projects, due to lack of Spatial Temporal, as most of property owners claim their properties existed in 1932, thus resulting in huge compensation costs. This situation leads into increase of project costs causing delays in implementation of road upgrading project and social conflicts.

A prototype spatial-temporal GIS to facilitate provision of spatial-temporal data of properties along roads as mechanism to mitigate the problem is developed. Results indicated that Spatial-temporal GIS is potential for monitoring of dynamic properties indeed a tool for dynamic land administration.

Keywords: Geographic Information Systems (GIS), Spatial –temporal GIS, Geodatabases, Road upgrading

ANALYSING THE IMPACT OF SOCIAL TENURE DOMAIN MODEL (STDM) ON TENURE SECURITY IN AN INFORMAL SETTLEMENT

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Abstract

Tenure security for informal settlers remains a challenge in developing countries since these settlements grow rapidly due to the rural-urban migration with cities being the focal points for economic growth, innovation and employment. The main objective in this study was to analyse the impact of STDM in tenure security to facilitate sustainable development. Little is known on whether the use of pro-poor tools in land registration actually improves the lives of those for whom the tools are aimed at. In response, this research seeks to find out if the use of the Global Land Tool Network's Social Tenure Domain Model (STDM) software reduces the threats of eviction for settlers; enhances their ability to leave, rent, and invest in land; and improves the housing stock and surrounding infrastructure. Looking at the variables used in measuring the indicators for the sub-objectives, majority exhibit high confidence in tenure security and there is a general reduction in the threats.

Keywords: Tenure Security, Pro-poor tools, Informal settlements, Mashimoni Village, Social Tenure Domain Model.

INTRODUCTION

Existing Land Administration (LA) solutions are generally expensive due to the precision emphasis; slow because of the inefficient institutions; and favours the elite with single tenures and not the multiple tenures typical of the informal land rights. Hence the push for Fit for Purpose and pro-poor tools which are flexible and allow for participatory approach are a better alternative in LA, however its effect is yet to be seen. The specific aim and focus of this paper is to analyse whether low cost LA tools actually improve tenure security. The paper is structured in the following way, section I - Background and Justification; section II - Literature Review; section III – Study Area and Methods; section IV – Results; section V – Discussion and Conclusion

SECTION I: BACKGROUND

The global informal settlement population as at 2001 had risen to 924 million in the world as reported by UN-HABITAT (2003) which is about 15 percent of the world's total population. "In 2005 the number of people living in insecurity of tenure reached one billion. People who are not secure in their property rights will not be motivated to have any serious investments. They will not have the enthusiasm to improve their

houses neither will they be concerned with the improvement of their neighbouring infrastructure (Ubink, Hoekema, & Assies, 2009). Another main issue with tenure insecurity is the high likelihood of being evicted which causes a lot of fear and anxiety (Weinstein, 2014; Huchzermeyer, 2007).

There is an urgent need to bridge the technical gap in land registration services. More specifically, there is a need to better understand whether alternative pro-poor land administration tools actually improve land tenure security outcomes. To this end, this research aims to contribute to this need by evaluating the impact of using STDM on tenure security.

SECTION II: LITERATURE REVIEW

This literature review is guided by the concepts introduced in section I on tenure security, informal settlement and pro-poor tools. The ultimate goal is exploring the possibility of achieving a fast land recordation of the informal settlement and understanding the state-of-play as to whether alternative forms of land registration are actually improving land tenure security outcomes within a community.

2.1. Tenure Security

Tenure security has been defined differently by different authors through the years. According to van Gelder (2010) tenure security can be based on one's perception; allocation of property rights (*de jure*) and/or the (f)actual circumstances of a tenure situation (*de facto*). In the *de jure* approach the property rights of the owner are in a title and in case of any breach, the government can step in to solve. *De facto* is defined by the intrinsic characteristics based on the length of time in a settlement, the size of the settlement and the community solidarity. Perceived tenure insecurity is when an individual lives with the riskiness of probable eviction by state, land owner or conflicts with family, neighbours or gangs.

Simbizi *et al.* (2014) further builds on van Gelder's definition of tenure security by looking at it in totality/holism since it's a complex dynamism.

The United Nations (UN-HABITAT, 2008) adapted tenure security definition from FAO, 2003 and UN-HABITAT, 2003. It narrows it to "a) the degree of confidence that land users will not be arbitrarily deprived of the rights they enjoy over land and the economic benefits that flow from it; b) the certainty that an individual's rights to land will be recognised by others and protected in cases of specific challenges; and c) the right of all individuals and groups to effective government protection against forced evictions". So tenure security should be embedded on the length/duration of rights for the individual/group use and protection from any arbitrary curtailment of land rights. The government should guarantee legal protection. Also of importance to these inhabitants is the freedom to leave, lease, and rent property to their beneficiary of choice. For the purposes of this research, the United Nations (2008) definition of tenure security will be adopted.

So tenure security of the majority living in the informal settlements in the developing countries is still wanting and needs to be completed.

2.2 Informal Settlement

Informal settlements term is broad and can be defined by several characteristics. Their features, explanation and names vary in definition by various authors. Hence, UN-HABITAT (2003), for the purpose of global application e.g. Sustainable

Development Goals considered and interpreted the various definitions. Accordingly, it defined informal settlement as inclusive of poor housing and infrastructure; inadequate access to water and sanitation; overcrowding and insecurity of land tenure.

The population of Nairobi is approximated at 3.36 million (United Nations Development programme, 2011) with about 134 informal settlements (UNEP, 2006), housing almost 60% of it's population (UN-HABITAT, 2006). "Proliferation of the informal settlement is as a result of market and public policy failure for a significant segment of the urban poor population and also it impacts negatively on the quality of life" (Wekesa, Steyn & Otieno, 2011).

As shown in Figure 2-1, informal settlements lie towards the informal land rights typical of the customary, occupancy and group tenures where land registration is yet to be achieved. The leases and freehold lie on the formal land rights where registration is vibrant under the conventional land administration. Under the formal land rights, common tenure security indicators are possession of title, the duration, the transferability and the exclusivity of land rights (Simbizi *et al.*, 2014). These authors Simbizi *et al.* (2014) further acknowledge that these indicators cannot suit the informal land rights and so they designed a more holistic conceptual model that captures all forms of tenure. Durand-Lasserve & Selod (2009) also agree that tenure security, can be enhanced by land recordation and length of occupation of the inhabitants. Since informal settlements have been characterised by insecure land tenures, recordation can be quickened in land administration by use of the pro-poor tools.

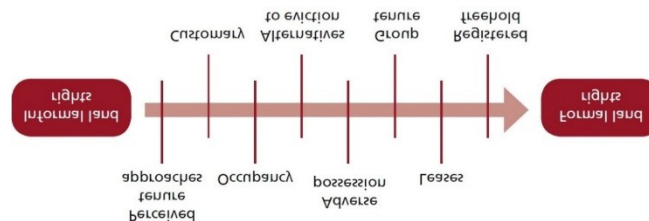


Figure 0:1: Continuum of Land rights (UN-HABITAT: 2008)

Showing the variety of property rights - ranging from the informal on one end to formal on the other. In between are the customary, occupancy and leases among others.

2.3 Pro-poor tools

Pro-poor tools have been developed intentionally to speed up land registration in the sub-Saharan countries. In the developing countries about seventy percent of the land is not registered (Augustinus, 2010). As a result they are not beneficiaries of the land administration system in terms of security of tenure, service delivery and land management approaches. The 30% under the cadastral coverage have unique parcel based polygons that are mapped and also accompanied with legal evidence and land rights. On the other hand, the 70% have a variety of social tenures typical of the pastoralists, slum dwellers and the vulnerable whose land rights have not been documented. This technical gap was identified as early as 1980s by policy specialists who realised that the social tenures could not fit in the conventional land administration systems in terms of rights held, customary areas, spatial description of

the rights and land title conditions (Dorner, 1992; Bruce & Migot-Adholla, 1994; Migot-Adholla, Hazell, Blarel, & Place, 1991). These findings gained popularity towards the end of the 1990s and early 2000 when many professionals in the land administration became convinced of this social tenure misfit.

This concern led to the development of pro-poor tools for land administration. These are affordable and efficient tools suitable for bridging the gap of recorded and unrecorded land by providing a standard for representing the relationship of people to their land (Augustinus, 2010). Examples are STDM, Open data Kit, Geo ODK, Kobo Toolbox and MapMyRights. To achieve the tenure security project in the informal settlement, the use of STDM tool was found to be viable, and the implementation done. However, we are still yet to really see if pro-poor tools are delivering better security in the short to medium term – hence the need for this research.

2.4 Impact of Pro-poor Tools

In analysing the impact of STDM on tenure security, the measurement was done based on the specific objectives which are

- Assessment of property owner's perception towards tenure security and motivation to invest in their structures
- Assessment of threats of evictions after the STDM implementation.
- Assessment of the government and private organisations improvement of the infrastructure after STDM intervention.

3. STUDY AREA AND METHODS

3.1 Area of study

Mashimoni is one of the 13 villages forming the entire Mathare valley informal settlement in Nairobi, the capital city of Kenya (Muungano Support Trust, Slum Dwellers International, University of Nairobi, & University of California, 2012). It is approximately 6km from Nairobi's central business district on the North-Eastern side bordered by Juja Road in Kasarani division on one side and Mathare River on the other side, see Figure 3.1

The settlement area is about 0.0526 Sq. Km with a population that has grown to 4478 in about 1692 households (Muungano Support Trust *et al*, 2012).

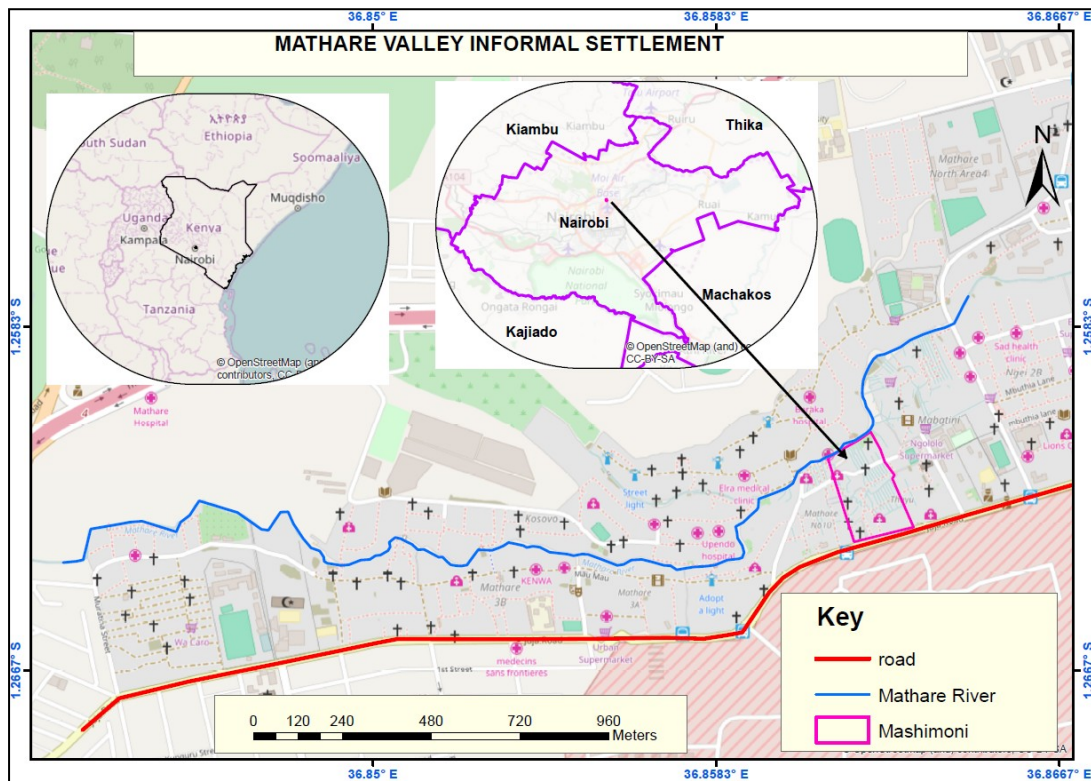


Figure 0.2: Location map of Mashimoni, Mathare valley, Nairobi Kenya:

3.2 Research Design

The study design adopted for this research is twofold; a case study design and after-only design (Kumar, 2011 p.103-123). Case study here refers to the fact that this particular population have one thing in common. The people in Mashimoni had the STDM implementation in the year 2014, making the population suitable for case study. This case study is important in understanding the impact of STDM on this particular group. After-only design refers to research where STDM intervention had been done hence, analysing the impact in 2016 after the implementation qualifies the research to be studied under the after-only design since before the STDM no research was done.

A mixed study design of both qualitative and quantitative was used. Qualitative research in this context focuses on understanding the population's perception and experiences. A sample of the population is selected and information obtained from them is analysed logically in a deductive manner. This is done using excel and SPSS software. On the other hand, quantitative research focuses on accuracy in measurement and classification of the information collected from the group. Information about perception obtained in a qualitative design can be measured by varying the number of respondents with the same belief in a quantitative design.

3.3 Methods

Methods of data collection are categorised into primary and secondary sources. The main primary sources of data are Observation, Interview and Questionnaire, while secondary data was sourced from journals, report documents and satellite images.

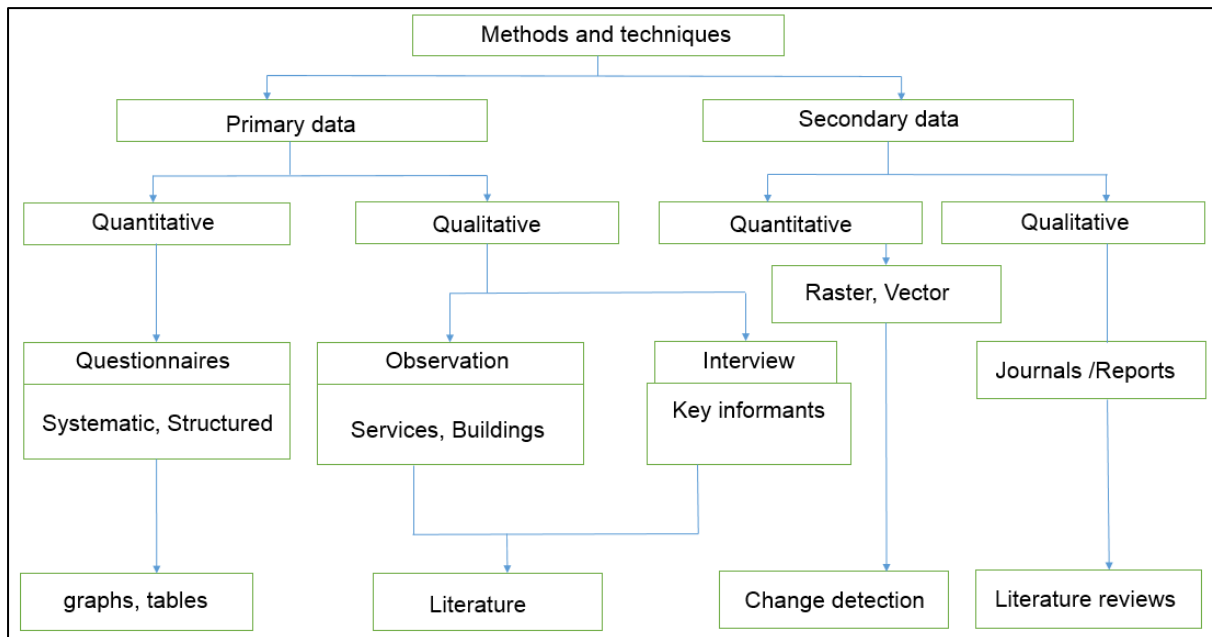


Figure 0:3: Research Methods and techniques

From Figure 3-3 above, it is evident that a mixed methodology approach was used in data collection. The primary and secondary methods of data collection are used independently for all the sub objectives. However for the first sub objective, research question 2, both the primary and secondary are used with equal weighting with a little bias in favour to the primary because some of the secondary data was not available in the format needed and it's validity and reliability in analysis was not guaranteed (Kumar, 2011).

4 RESULTS

This chapter aims at presenting results from analysis of data collected from questionnaires, interviews with various actors, observation and satellite images. The findings are shown in the following subheadings based on the research questions.

4.1 Assessment of property owner's perception towards tenure security and motivation to invest in their structures

4.1.1 What is the perception of land interest holders on tenure security after STDM

Figure 4-4 indicates how the land interest holders have different perceptions of tenure security as obtained from the Likert scale. 86% of the non-statutory owners exhibit levels of confidence with only 14% showing no confidence. The high confidence perhaps can be attributed to the fact that their names are in the database making them have some sense of tenure security. This is an achievement courtesy of the GLTN scaling up the land tool and providing a team of STDM developers that trained the users. Others are confident because of the solidarity and unity in the large number that have registered in the STDM. The non-statutory owners showing

some level of No confidence reason on the fact that they are not in possession of certificates. The tenants don't show any confidence simply because they have no property of their own and are only registered as tenants, saying they can be evicted by the landlords any time, hence they are not tenure secure. 71% of the tenants indicated they are not confident at all, as shown in Figure 4-4. From the interview with GLTN, it is the government's responsibility to ensure tenure security while they support data management.

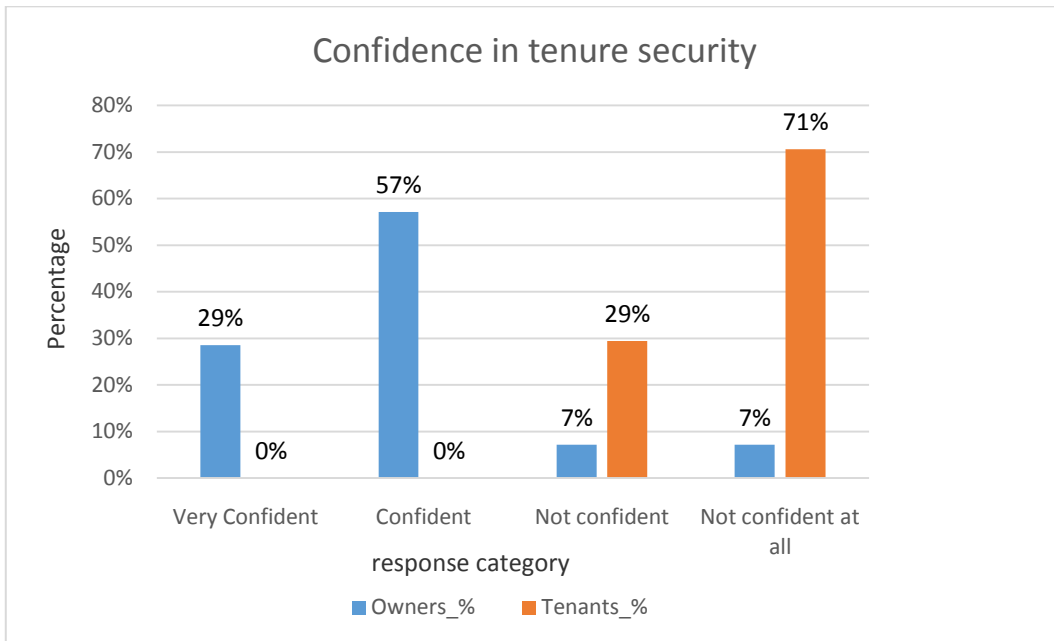


Figure 0:4: The perception of Mashimoni Residents on Tenure Security

Out of the total respondents of the non-statutory owners in Figure 4-5, 64% are confident of staying for 5 years (short term), 36% say for 10 and 15 years (long term). Some of those with the long term have properties for social purposes like school and churches, while those in the short term period (5 years) attribute their confidence in their long stay in Mashimoni.

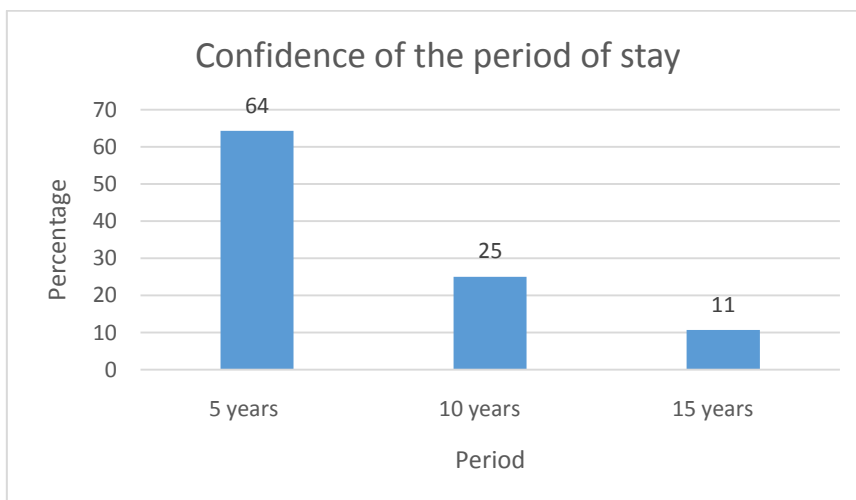


Figure 0:5: Years of confidence

4.1.2 What is the state of the house structures?

Another indicator of perceiving security of tenure was the observation of the materials of the house structures in the field area and if there were any changes since the introduction of STDM. According to the results in Figure 4-6 below, the number of house structures made with iron sheets increased from 33% (n=15) to 53.3% (n=24). On the other hand mud walled houses reduced from 51.1% (n=23) to 33.3% (n=15). This means that some of the mud walled houses were upgraded to iron sheets, and probably iron sheets to brick houses (6.7%) or possibly additional brick houses were built during the period under review. There was no change in the number of Iron & Carton (2.2%), mud wall & Iron sheets (2.2%) and Mud wall and Carton (2.2%). The upgrading follows the order; mud wall → iron sheets → brick walls.

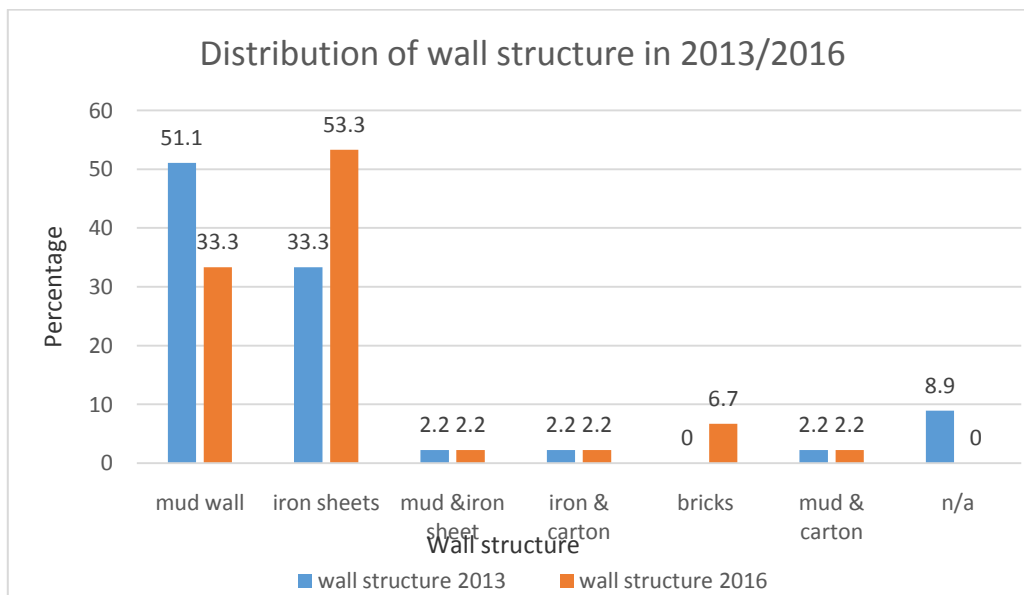


Figure 0:6: Distribution of houses made of various wall structure in 2013/16

House coverage change analysis between 2013 and 2016

In order to determine changes in the size of the house coverage, the classified images (2013 and 2016) are imported into the ArcGIS shown in Figure 4-7. The 8 classes are reduced to four in order to focus in the change in house area. The image is clipped to the area of study and the areas of the old and new roofs within the study area are sampled and analysed in excel.

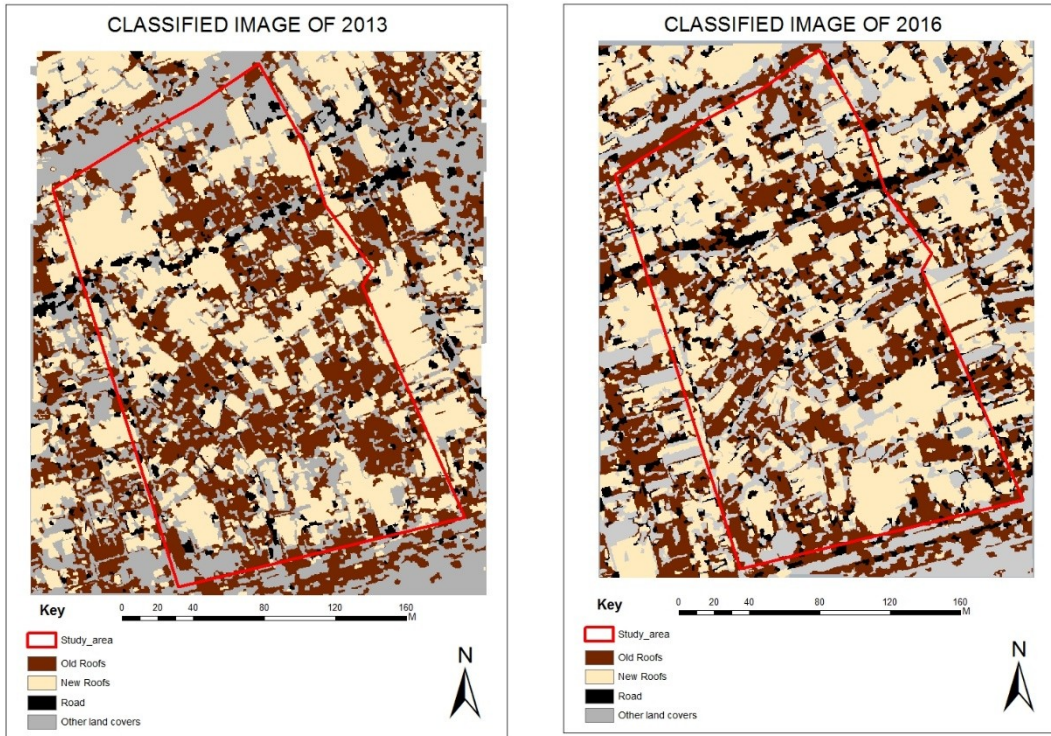


Figure 0:7: Classification of the two images

Analysis revealed that there was very little decrease of the area in 2016 as compared to 2013, howbeit it's certainty is questionable due to the spatial data source. This change is visible in the sum of areas of the roof tops shown in Figure 4-8

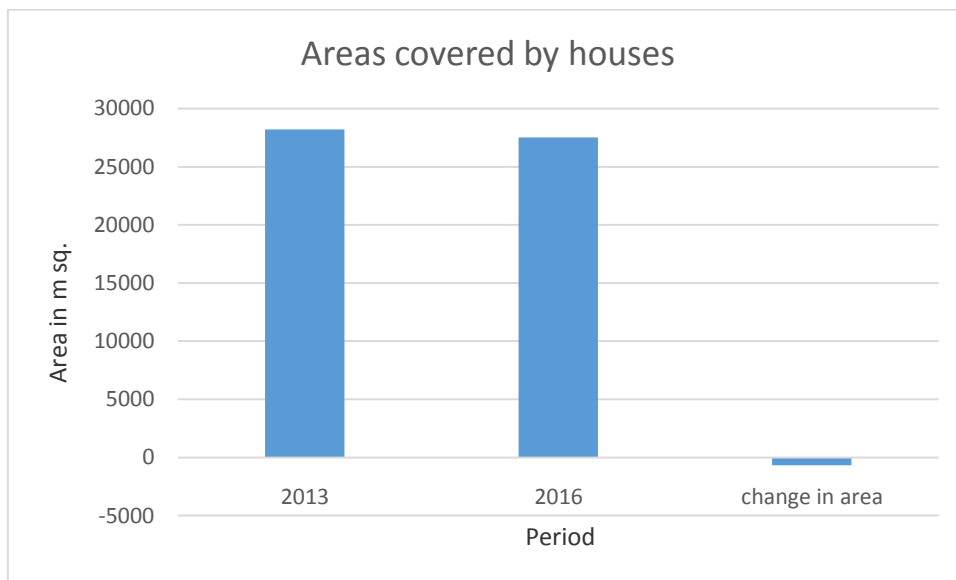


Figure 0:8: Summation of areas covered by houses

The percentage change of the area covered by the roof tops has a decrease of -2 % which is a small change considering that the residents reasoned that there was no space for sideways expansion but are expanding vertically. Probably some of the

houses were demolished to pave way for churches and schools as derived from interview of the leaders.

4.1.3 What is their perception of the use of the STDM in property transactions?

Land issues are known to be dynamic with a lot of transactions taking place. Figure 4-9 depicts the changes in non-statutory owners from 1984 to 2016. The number of non-statutory owners between 1984 and 2013 was 17, approx. 62%. Between 2000 and 2013 property buying had declined. This outcome of the data reflects an up-down trend in property buying through the years with a little increase in 2015 which could be as a result of the introduction of STDM in 2014.

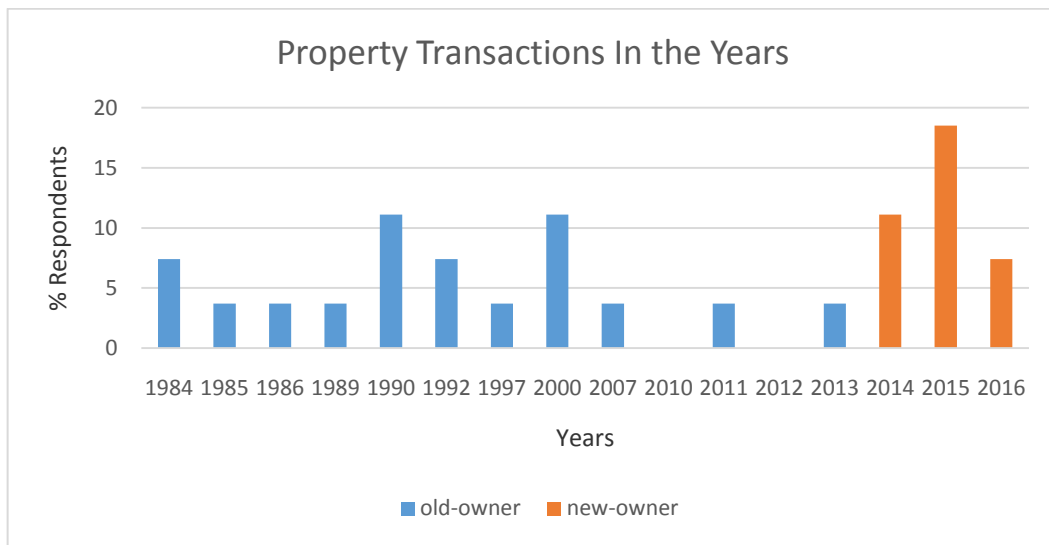


Figure 0:9: Distribution of when people bought property in the various years

Figure 4-10, depicts the distribution of tenants in Mashimoni. The number of tenants from 1984 to 2007 were approx. 12%. This is far below the number of non-statutory owners, meaning that during that period there was a possibility of non-statutory owners occupying their own housing units. From 2010 onwards, the number of tenants increased which is typical of the influx of people into the informal settlements where monthly rent is affordable for the majority of people with low income.

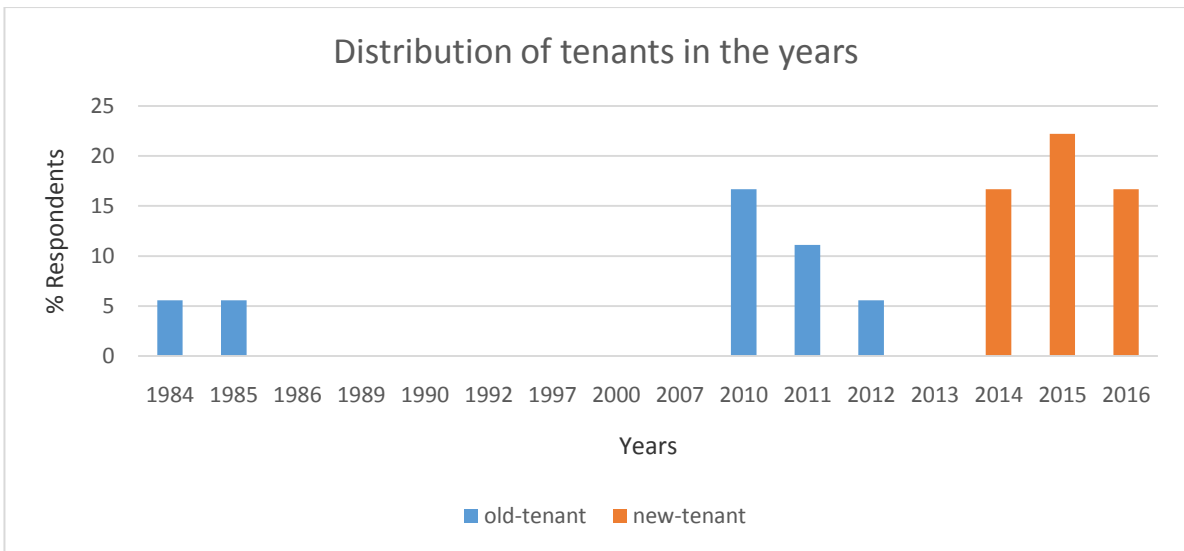


Figure 0:10: Distribution of tenants in the years

Figure 4-11 shows that the majority of land interest holders in Mashimoni acquired their property through buying; receiving as a gift and inheriting; as squatters and tenants. This documentation shows that the residents are assured of protection of their structures, hence a recognised data for the residents to refer to in case of buying, selling and leasing their property. In general all the non-statutory owners are 64.4% while the tenants are at 35.6% in reference to the Figure 4-11 below

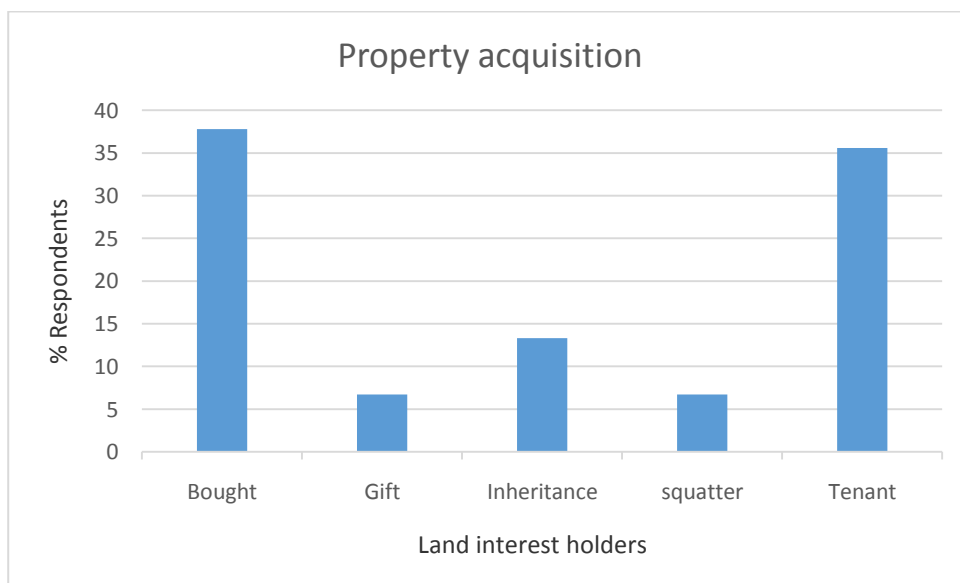


Figure 0:11: Variation in property acquisition

Out of the 28 non-statutory owners, Figure 4-12 shows that 39% feel that their rights are fully protected, while the majority 57% feel that it partially protects. The minority 4% feel that it does not protect at all. This implies that 96% are assured that their rights of use, sell and disposal of their property is protected in the STDM. This can be attributed to the awareness that has been going on through meetings with the residents' representatives forming the SEC. Since the STDM data was originally generated by the land interest holders and is also managed by the very non-statutory owners with periodic updating, then they are no longer under threat. The

4% are those who are not keen in embracing the STDM. An example is cited during interview with the chief, who narrates a case reported to him where the non-statutory owner sold one of his houses and failed to update in their data. So when he died, the new non-statutory owner and the children of the deceased both claimed ownership. If this change had been updated in the STDM data base, then it would have been resolved, however at the time of this research, the matter was still at the chief's desk awaiting his decree.

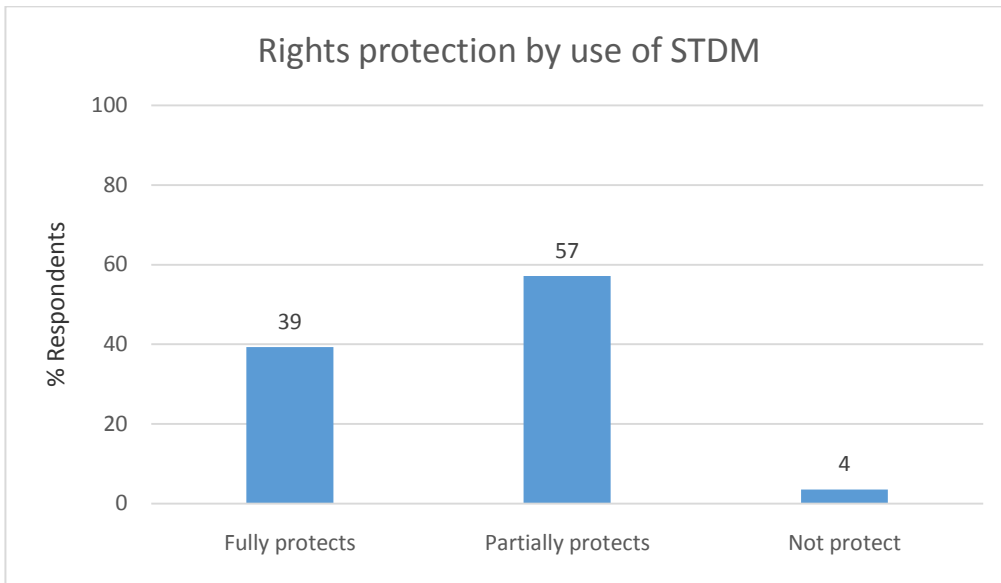


Figure 0:12: Respondents perception of the STDM in protecting their rights

4.2 Assessment of threats of evictions after the STDM implementation.

From Figure 4-13, 47% of the threats were from external forces from outside the community; 31% from internally within the community and 22% felt there were no threats at all as observed by all the respondents. This indicates that even after the STDM, there were still eviction threats.

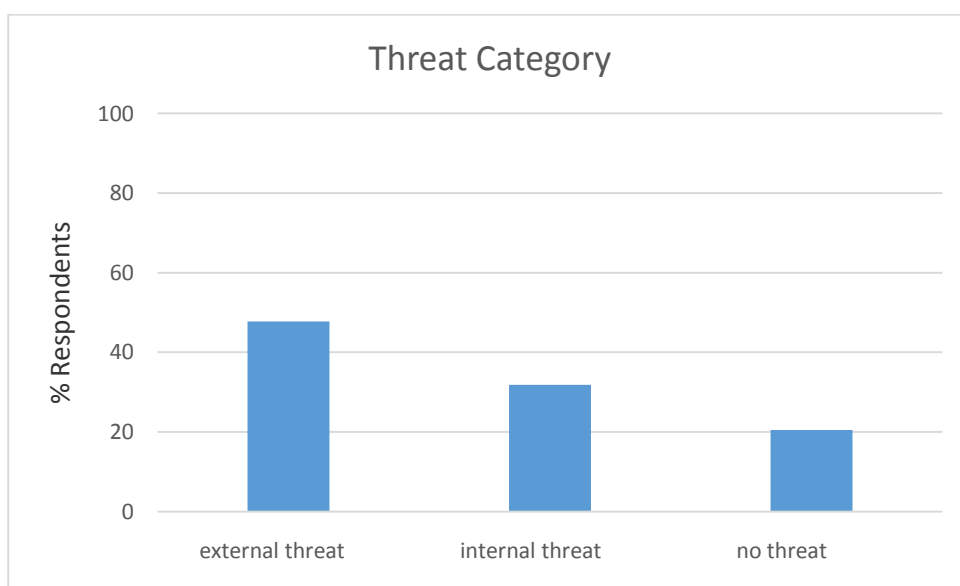


Figure 0:13: Threat categories after the STDM

From the observation in Figure 4-14, the 40% (11+18+7+4) of the non-statutory owners have varied degrees of existence of threats mainly from government and private organisation while about 60% think that there are no eviction threats after STDM. On the other hand about 60% (53+6) of the tenants show high eviction threats which mostly emanate from within while about 40% show no eviction threats. So the land interest holders view the STDM as a model that may be used to minimize forced evictions while the 59% of tenants are under threat of eviction and so view it differently.

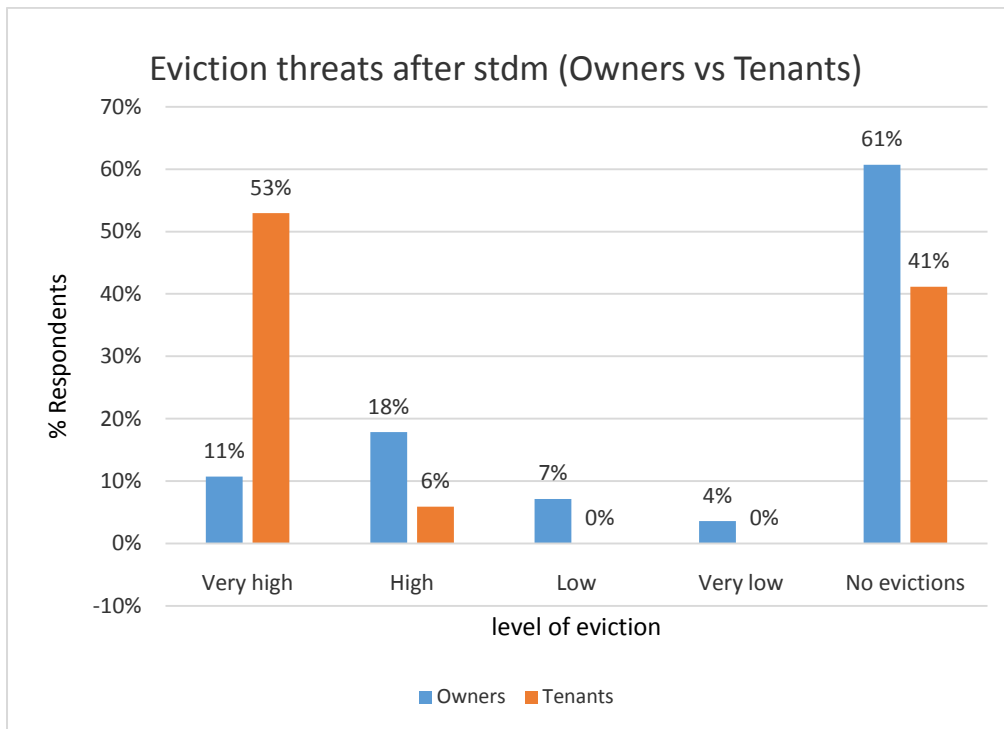


Figure 0:14: Perceived eviction threats after introduction of STDM

Figure 4-15 shows the various trends of evictions before and after STDM from the land interest holders who stayed in the village before STDM intervention to date. Before STDM 66% of them said there were low eviction threats while 34% said there were high and very high. On the other hand, 50% said there were no evictions after STDM intervention while the remainder had varied levels of threat evictions. So this implies that the STDM intervention could have led to the reduction of eviction threats.

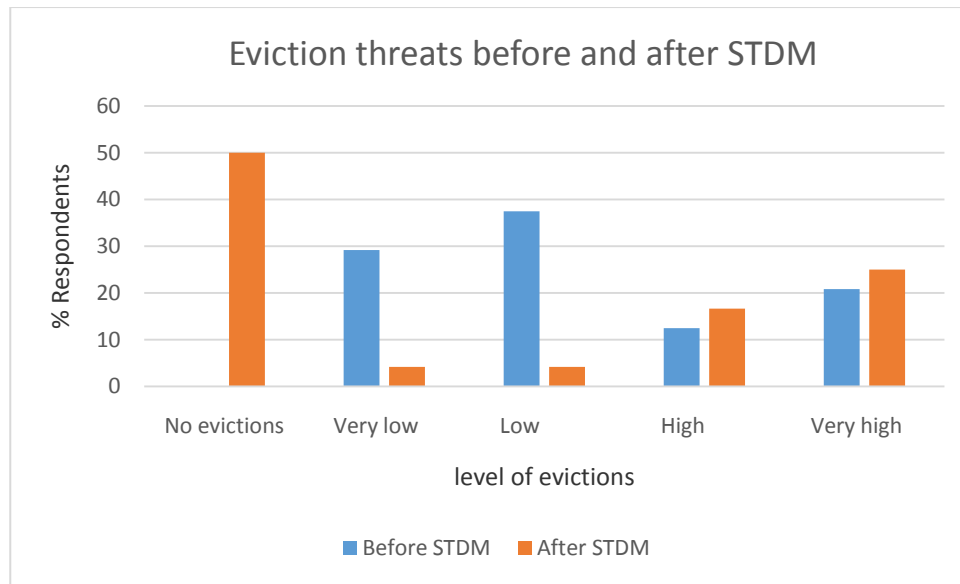


Figure 0:15: Various levels of threat evictions in the entire period

4.2.1 Characteristics of internal threats within the community

Notable threats as observed from Figure 4-16, from within the community arise from family, state of the house condition, landlord, fires and SEC. Some of the family threats arose when a non-statutory owner dies and the children start fighting on ownership of the house; the building materials are temporary and vulnerable to the quick spread of the frequent fires; the landlords also increase the rent at will; and the SEC receiving resistance from those who are anti-development. A total of 14 out of the 45 respondents experienced threats within the community.

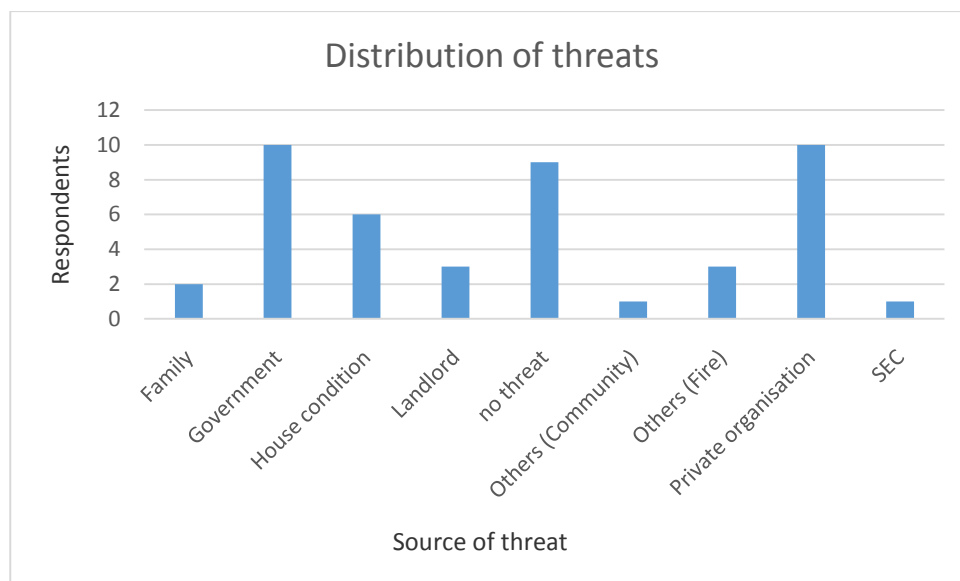


Figure 0:16: Distribution of threats

4.2.2 Characteristics of external threats from outside the community

From Figure 4-16 above, 10 of the respondents felt threatened by the government and private organisations; 1 from other communities which adds to 21 out of the 45 respondents; equivalent to 47%. With the ongoing dialogue on road expansion by the government, some residents feel threatened with evictions due to the road expansion plan and the churches are also expanding their property, making them also threatened.

4.2.3 What is their opinion on the role of STDM in minimizing/eliminating forced evictions?

Out of the 25 respondents that faced eviction threats after the implementation of STDM, 56% did not report the threats, 24% reported and nothing was done while 20% reported and got a positive response as seen in Figure 4-17. This could mean that they are not confident in the government use of the data in eliminating/minimizing forced evictions. However, out of the 44% that reported, 20% (about half) received a positive response.

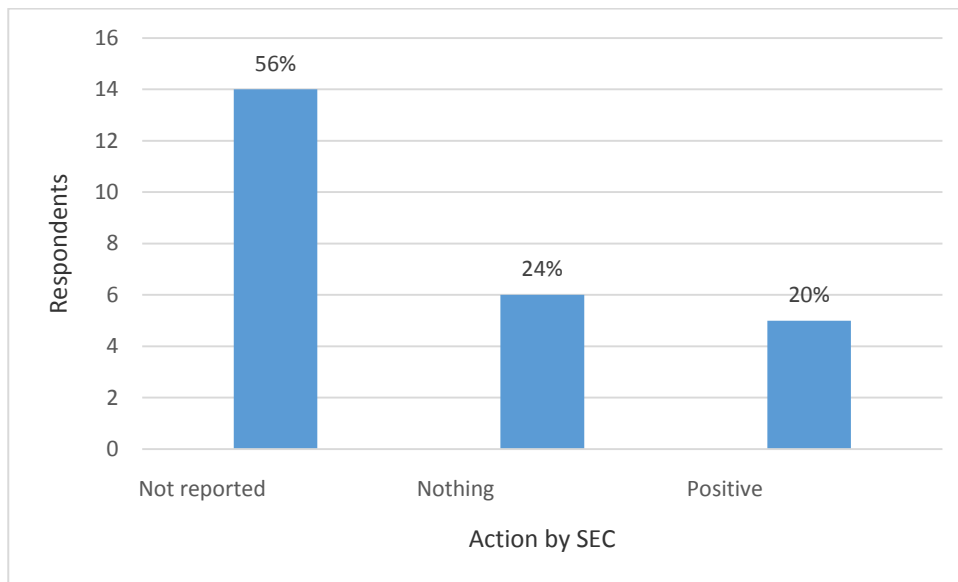


Figure 0:17: Action taken by SEC on eviction threats

4.3 Assessment of the government and private organisations improvement of the infrastructure after STDM intervention

4.3.1 What was the change in the road coverage in the period 2013-2016

From Figure 4-7 classified images of the two years, it is clear that there has not been an improvement in the road coverage of both the main and feeder roads. However, from the interview with the SEC, they have been engaging the government through Kenya Informal Settlement Improvement Project (KISIP) to build the roads using a proposed plan.

4.3.2 What is the change in the fresh water and electricity supply?

a) Change in fresh water supply

Fresh water has been provided by the Nairobi City Water & Sewerage Company Ltd. There has been quite a remarkable improvement in the water points as shown in Figure 4-18. As at 2013, they would fetch water in the neighbouring villages. The Nairobi City Water & Sewerage are planning to increase even more water points as is explained by a key informant in the interview. These water points are in the form of water kiosks where the residents buy it.

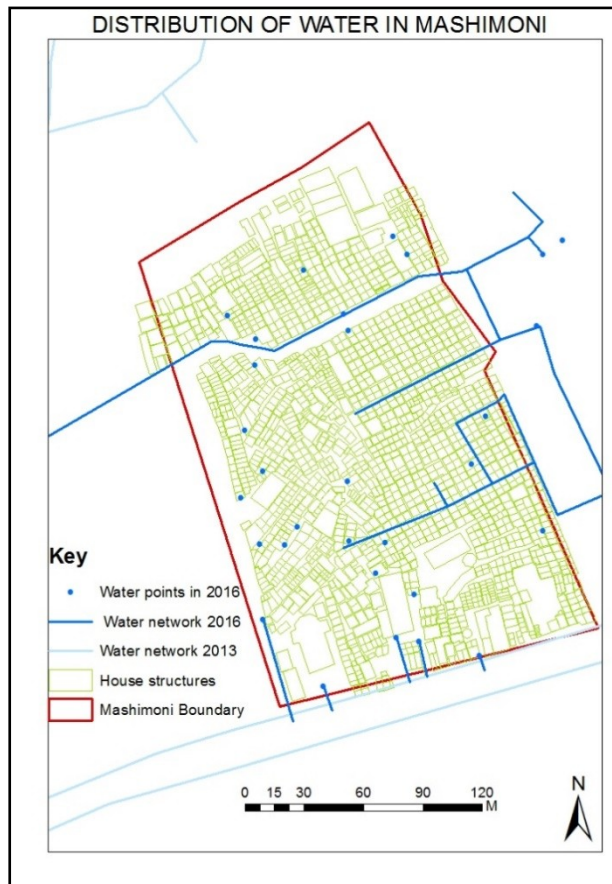


Figure 0:18: Distribution of water points
Source Nairobi Water & Sewerage Company



Figure 0:19: Distribution of floodlights
Source: Google Earth

b) Change in electricity supply

Electricity is still illegally connected and there are no plans yet to improve it. However, the World Bank through KISIP has put flood lights throughout the village. Some of the flood lights that were captured in the field using hand held GPS are as shown in Figure 4-19 below.

4.3.3 What is the change in the sewerage system

One very notable change as depicted in Figure 4-20 is in the sanitation, followed by change in both house walls and toilet and finally the change in the walls. About 36% of some of the structures have also not changed.

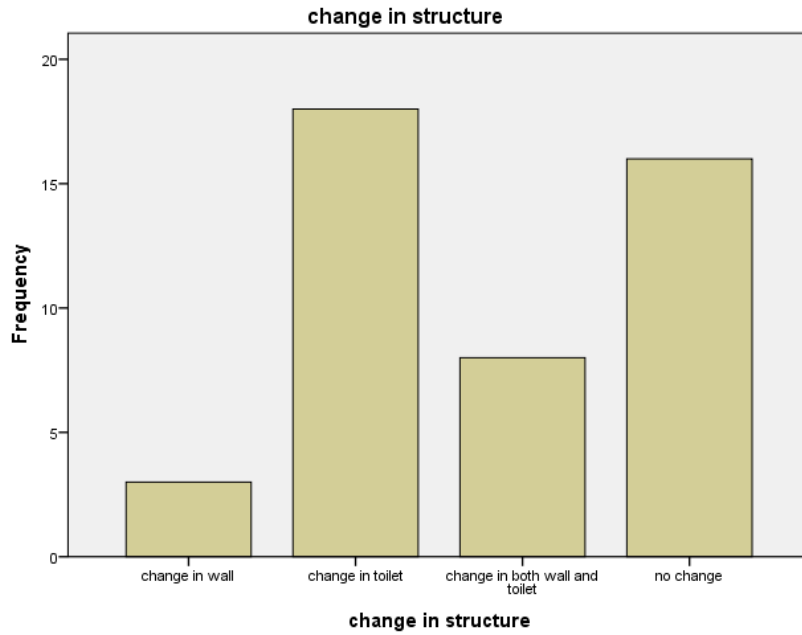


Figure 0:20: Structural changes in the buildings

The high percentage in the sanitation change is because loans were offered free of interest that motivated the owners to invest in the sanitation as explained by the SEC and Pamoja Trust during interview

Figure 4-21 depicts the distribution of sanitation in Mashimoni. 51% of the respondents used flush toilets as provided by the Landlord; 9% used flush toilets at a fee of kshs 5 per every visit while 13% preferred using pit latrine at kshs 3 per visit. 22% of respondents had no independent toilet to attend to in times of nature’s call. Others (5%) had no specific preference.

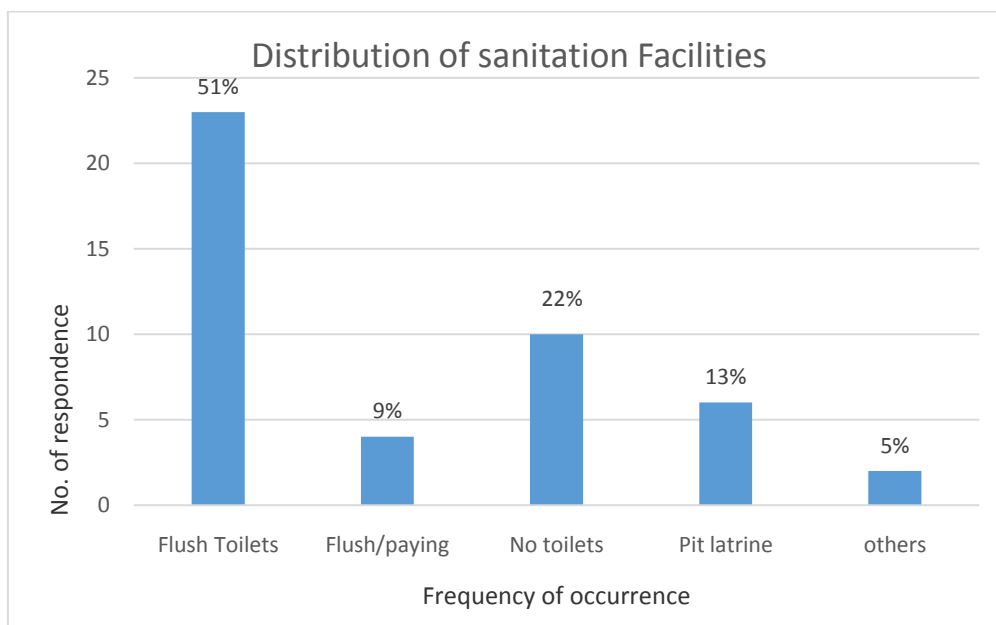


Figure 0:21: Frequency of the sanitation facilities

Before 2014, there was only one sewer line and as at 2016, there was an addition of another two as shown in Figure 4-22. These were put by the government through the city council and county governments respectively in the two years, the latter funded by DFID – UK in partnership with Pamoja, as explained in the interview by SEC.

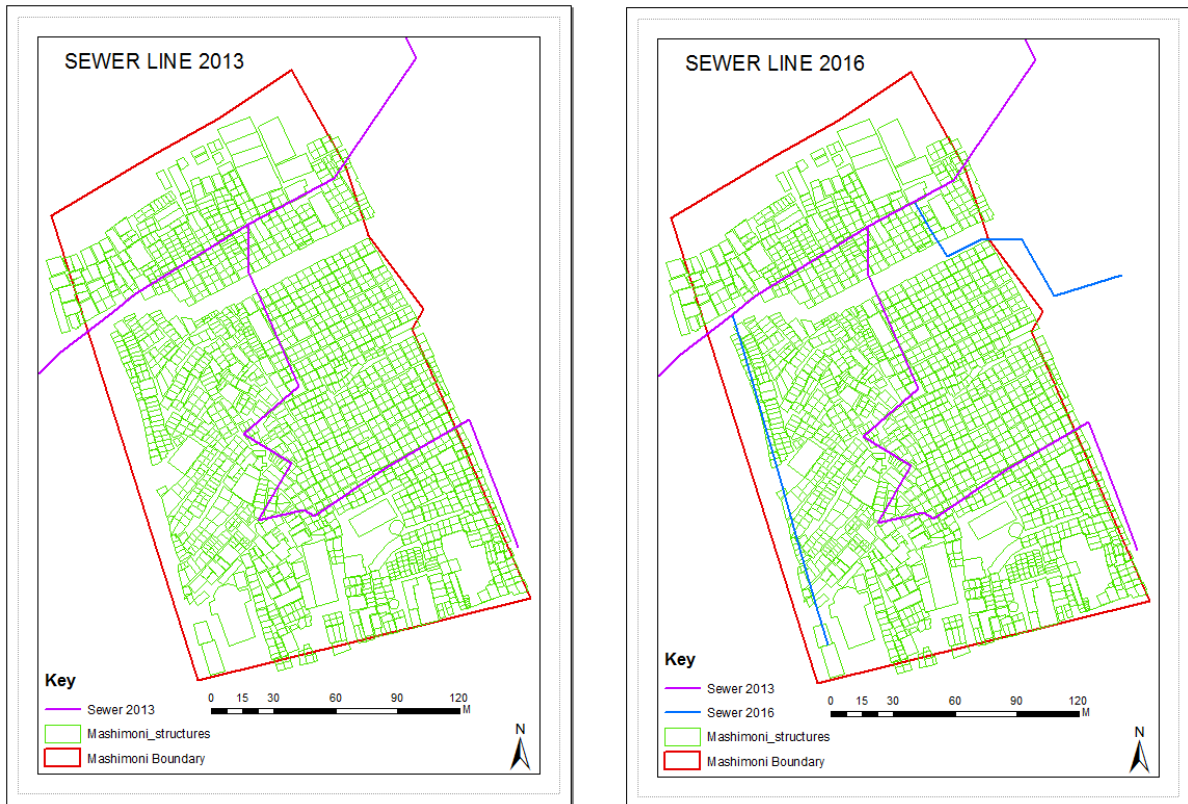


Figure 0:22: Distribution of the sewer lines between 2013 and 2016

There was a 50% increase in the sewer line as seen in Figure 4-23 below

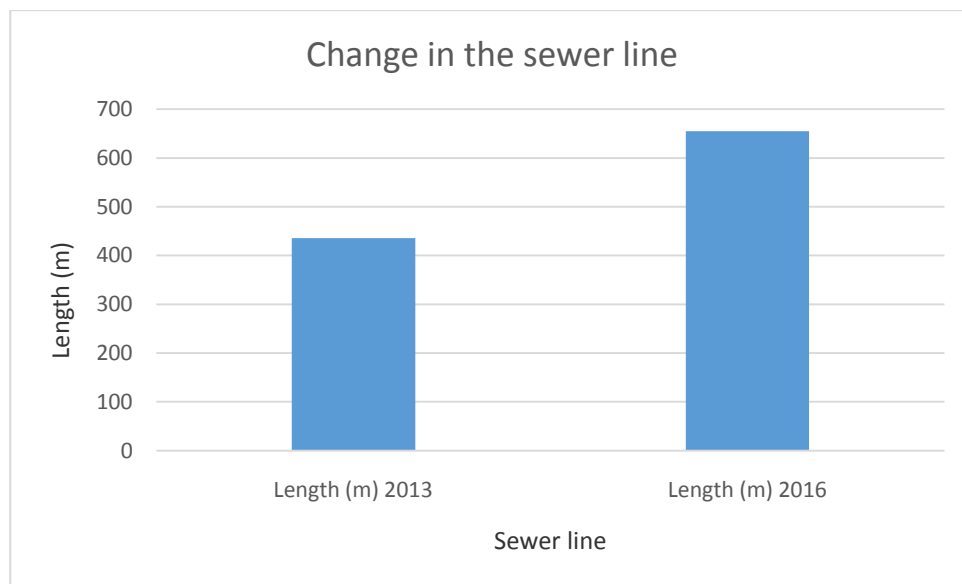


Figure 0:23: Change in the sewer line

5 DISCUSSION AND CONCLUSION

This section discusses the findings in the context of literature and summarizes the results based on the objectives that were defined for the research. It is structured under; assessing of property owner's perception towards tenure security and motivation to invest in their structures; assessment of threats of eviction after the STDM implementation; and Assessment of the government and private organisations' improvement of the infrastructure after STDM intervention

5.1 Assessment of property owner's perception towards tenure security and motivation to invest in their structures

The actors' in this study observe that tenure security will be fully realised when titles are issued. The area chief adds that the property owners are waiting to have full ownership of the land culminating in the issuance of titles. The Pamoja trust view the entire project as a process that leads to the title issuance and according to the GLTN, it supports the continuum of land rights while it is the responsibility of the government to ensure tenure security. The TUK perception of tenure security is based on proper survey with placement of beacons, aiming at having group titles and finally individual titles. This is possible through slum upgrading program, which can be enabled when extra funding is sought to put up high rise buildings, eventually replacing the slums.

Although the property owners in Mashimoni have embraced STDM, it has not influenced them to invest in their buildings (Ubink *et al.*, 2009). There is little investment in the roofs and upgrading of the walls from mud to iron sheets and bricks. This could be attributed to the low income of the majority of the residents. However, according to the community leaders some of the property owners are eager to put up permanent buildings after they receive the land titles. This means that they perceive limited rights in the STDM as clarified by Ali, Dercon, & Gautam (2011) who observed that the Ethiopians increased their investments with the increase in transfer rights, and Deininger *et al.* (2007) further adds that with certification, investments tend to increase. Also notable spatially as illustrated by Mas (2010) and El-Hattab (2016) in change detection, they have not expanded their houses horizontally but a few have expanded vertically as seen in Figure 4 - 12.

The property transactions have generally increased with new tenants moving in and others buying. Others also inherited property with very few women being beneficiaries as explained by Lastarria-Cornhiel (1997). Similarly, in Zambia, notable is the inclusion of polygamous relations which were previously excluded as possible inheritors of property (GLTN, 2015c). Deininger & Feder (2009) explains that when property is documented, it becomes easier for the owner to rent out knowing that at the end of the contract, one can easily get it back. So for those moving in, the STDM was reliable in protecting their rights of use, lease and selling their properties. In Colombia (GLTN, 2015d) the documentation of property rights has influenced their choice of neighbourhood upgrading programs.

5.2 Assessment of the threat evictions after the STDM implementation

History records that most of the informal settlements have been subjected to evictions as highlighted by various authors (Weinstein, 2014; Huchzermeyer, 2007; Berner, 2000; Weru, 2004). Mashimoni was not an exception in this because before

the piloting of the STDM, evictions were the order of the day as explained by the community leaders. The actors reveal that with the participatory enumeration approach (Karanja, 2010) of mobilization and sensitization of the leaders, village elders and the wider community during the implementation phase, it became harder for outsiders to penetrate the area. Also the fact that they were trained on how to install and use the software, made them own the STDM and update it periodically. According to Patel, Baptist, & D'Cruz (2012), enumerations provide a long term solution to evictions by using this data to engage at local level, government and global platforms. This is a true reflection of Mashimoni where there is a remarkable reduction of evictions since the piloting of STDM which was founded on participatory enumeration. However, eviction threats still exist.

Looking at results in section 4.2 indicate that threats of evictions have reduced since the introduction of STDM, as indicated by 61% of the non-statutory owners while the opposite is the case for tenants (Figure 4-14). Augustinus (2010) observes that forced evictions get limited with the use of this tenure model. Similar sentiments are observed by Wayumba (personal communication, October 13, 2016) who adds that evictions tend to reduce with the use of STDM. Entebbe airport expansion would have caused eviction of Kigungu residents but the use of STDM helped in evading eviction plans (GLTN, 2015a). Findings by Pamoja Trust (2014), Griffith-Charles (2011) and GLTN (2015b) on Mombasa, Caribbean and DRC, respectively all point to the reality of reduction of evictions with the use of this social model.

On the government's role in using the data, the residents are probably not confident since most of them have not reported to the immediate authorities, while half of those who have reported have not found positive help.

5.3. Assessment of the government and private organisations' improvement of the infrastructure after STDM intervention

The Kenyan government (Policy, 2007) is putting effort in honouring its commitment to upgrading the lives of those in the informal settlement. The results in section 4.3.2 show the improvement of water services and sewerage system, courtesy of the Nairobi water and Sewerage Company partly funded by the World Bank as explained by the actors. Flood lights observed above were put courtesy of the World Bank through KISIP.

The STDM data has also been used in the designing of the proposed road layout, which the SEC is using to engage the government through KISIP requesting for its construction. Just like GIS overlays and cadastral data have previously been used as input in the designing of road networks (Waddell, 2007) STDM has an equal potential to be used as a planning tool because it incorporates both the cadastre and the socio-economic data (Enemark, Bell, Christiaan, & Robin, 2014) which is suitable for the informal settlement development.

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MAKING OPERATIONAL STANDARDS FOR LAND ADMINISTRATION

Christiaan Lemmen

Abstract

Standards like the Land Administration Domain Model (LADM) are helping to jump-start new initiatives in land administration. The model was developed by the International Standardisation Organisation (ISO). A new, second, edition has to be prepared now. The Open Geospatial Consortium (OGC) has now set up a domain group on land administration. This OGC initiative was prepared and discussed during the World Bank Conference on Land and Poverty in 2016.

The OGC members drafted a charter for a working group for the land administration domain. In this draft there is particular emphasis on the low- to middle-income countries, which is where most challenges exist today. The charter describes how to improve the interoperability, effectiveness and efficiency of land administration systems by optimising the use of OGC and complementary open standards.

This paper describes those ongoing developments and standardisation in land administration. Standardisation is required in order to bring scalable approaches which can be easily implemented based on the defined purposes of the land administration.

A REVIEW OF THE CAUSES OF LAND USE CONFLICTS BETWEEN FARMERS AND PASTORALISTS IN TANZANIA AND A PROPOSAL FOR RESOLUTIONS

**THIS PAPER WAS NOT
PRESENTED**

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Abstract

In this paper, the issues of land conflicts between farmers and pastoralists in Tanzania mainland are reviewed and the general causes and effects of land conflicts outlined. Poor land governance, lack of land use plans, inadequate land policy, land tenure insecurity, corruption and population increases are cited as being among the main offenders fuelling land conflicts in Tanzania.

As pastoralists move across the country with large herds of hungry livestock in search of pastures and water, the livestock are wantonly led into farms where they forage on whatever crops that may be in sight. Angered farm owners (farmers) often take the law into their hands and fight the invaders. Armed fights erupt resulting to human and livestock deaths, destruction of crops and homesteads, fear and poverty.

Since a National Land Policy (NLP) is a key instrument for, among other things, land management and administration, land use planning, conflict resolution, and a stable land tenure security, both the countrywide lack of land use plans in the rural areas, and the (now) outdated National Land Policy of 1995 are brought in focus in line with the recurring land conflicts between farmers and pastoralists.

The paper provides the case of how Mediation-Arbitration (MED-ARB) approach can be used in solving land conflicts between farmers and pastoralists. Based on the various studies that have been undertaken and the recommendations made on this issue, the authors propose MED-ARB as the optimal way to put in place sustainable curative measures of land conflicts.

Key words: Land, Farmers, Pastoralists, Conflict, Resolution

1. Introduction

Land is a source of conflict in Sub-Saharan Africa, and in Tanzania particularly where land access had traditionally been characterized as being relatively classless (Yamano & Deininger, 2005). The formal institutions for land administration are often superimposed on traditional structures without a clear delineation of responsibilities and competencies, implying that they lack both outreach and social legitimacy (ibid.). A number of basic factors such as increase of development pressures on land, agricultural commercialization, overgrazing, population increase, tenure insecurity, insufficient land legislation and climate change have been identified as some of the major sources of land conflicts in Tanzania (Mwamfupe, 2015; Shao, 2008), and these

conflicts have caused deaths. However, the National Land Policy of 1995 is not well-equipped to resolve such conflicts because, it does not promote and ensure secured tenure system that encourage optimal use of land resources. Although, most cases of land conflicts (especially between farmers and pastoralists), in Tanzania have been resolved by administrative authorities rather than Alternative Dispute Resolution, ADR (Sackey, 2010), currently people don't trust these court systems due to presence of biased decision making.

2. Understanding Land Conflict

Land conflict is defined as a "social fact in which at least two parties are involved, the roots of which are different interests over the property rights to land: the right to use the land, to manage the land, to generate an income from the land, to exclude others from the land, to transfer it and the right to compensation for it" (Wehrmann, 2008, p.9). Researches relating to the causes of conflict reveal that "conflict exists where the interest of one stakeholder clashes with the interest of another" (Pruitt & Kim, 2004 in Temirkulov, 2014, p.101). A land conflict, therefore, can be understood as a misuse, restriction or dispute over property rights to land or collision of one person and another over land use or ownership.

Conflicts about land have always occurred in Tanzania and elsewhere in the world. This is due to the fact that land is an increasingly scarce resource, an object of economic speculation and representing very strong feelings about identity and sense of belonging (Odgaard, 2006). Land is a scarce resource because it is fixed while land use increases due to rising population. Land conflicts in Tanzania exist in various forms such as neighbors about field boundaries; men, women, and generations about their respective land rights; pastoralists and farmers; states and indigenous peoples as well as companies and local populations about rights to exploit mineral and gas and other resources (ibid.).

3. Methodology

This study is based on a qualitative research design and it has utilized documentation as an instrument for data collection. The secondary data collected for this study are mainly focused on the causes of land conflicts between individuals or groups, and more so, conflicts between pastoralists and farmers in different regions in Tanzania. The preventive and curative measures for land conflict resolution are discussed. Furthermore, it is argued that Mediation-Arbitration (MED-ARB) approach can be used effectively to solve land conflict cases more efficiently than the judicial systems. The main focus of this paper is to present the curative approach or conflict resolution approach for pastoralists and farmers with regard to existing conflicts.

4. What types of Land Conflicts exist in Tanzania?

Current studies have identified a number of types of land conflicts that exist in Tanzania. However, these types of land conflicts have been put into two categories, namely land ownership and competing use rights on public land.

4.1 Land Ownership

It takes place when two or more people claim ownership over the same piece of land, each claiming to be the rightful owner. This type of conflicts can be categorized in terms of inheritance within the family or clan, overlapping rights due to legal pluralism (customary vs. statutory laws) and lack of proper land registration in the country (Sackey, 2010). Lack of tenure security in rural and urban areas has caused land conflicts within the society.

4.2 Competing Use of Rights on Public Land

This type of conflicts occurs when the statutory right of occupancy and the customary right of occupancy compete on the same piece of land. Both holders may be granted to use and own land but in most cases, statutory rights override customary rights (Sackey, 2010). The Land Act, No. 4 of 1999 and the Village Land Act, No.5 of 1999 have been a cause of land disputes on public land.

5. General Causes of Land Conflicts

There is no single factor that can adequately explain the causes of land conflicts in Tanzania. Instead the combined effects of land disputes are responsible for various conflicts mostly based on land use and/or land ownership. The following subsections outline some of the main causes of land conflicts in Tanzania.

5.1 Land Grabbing

Land grabbing has been one of the most problematic aspects of land conflicts in Tanzania where indigenous land rights are deprived. People have been moved from land without compensation and some of them remained landless and homeless due to lack of clear path and transparency of land acquisition contracts through the Tanzania Investment Center (Sulle & Nelson, 2009; Oakland Institute, 2011). This has caused conflicts between investors and indigenous people in the area where investors have invested. In addition, corrupt public leaders are the main cause of land grabbing incidents that have been increasing over the years, leading to numerous land disputes that the country is witnessing, especially between pastoralists and farmers (Semberya, 2014).

5.2 Land Expropriation and Unfair Compensation

This occurs when the government expropriates land from the community without compensation or may provide inadequate compensation which does not reflect the reality of the land market. For instance, valuation of land and other property at Kipawa, an area proposed for the expansion of the Mwalimu Nyerere International Airport in Dar es Salaam city, was done in 1997, but payments were made only in 2010 (Kombe, 2010). With this regard, the compensation after the number of years from when the valuation took place was low and didn't reflect the reality. This led to disputes between the acquiring body and the landholders.

5.3 Poor Land Governance

The dysfunctional land management and problematic governance institutions, including a lack of transparency especially in public land acquisition; weak structures for checking land grabbing; and exclusion of the disadvantaged people is one of the major cause of land disputes in most areas in Tanzania (Kombe, 2010). For instance Small-scale miners who try to protect their rights to minerals to areas allocated to large - scale mining companies are undermined (Sulle & Nelson, 2009). Due to irresponsible actions taken by government authorities, land disputes have been taking place all over the country.

5.4 Population Increase

Increase in population raises the demand for land. While the amount of land remains fixed, the high demand of land use and ownership within the community raises which results to conflicts. In this regard, land conflicts have been a crucial issue due to development pressures on land.

5.5 Legal Contradictions

The Land Act No. 4 of 1999 and Village Land Act No. 5 of 1999 classify land as: Reserved land; Village land; and General land. Reserved land is statutorily protected as national parks, land for public utilities, wildlife and game reserves and other land designated by sectoral legislation. Village land is the land which is within the demarcated or agreed boundaries of any of Tanzania's villages. This land is under the managerial authority of Village Councils, which are answerable for land management decisions to the Village Assembly. General land is a residual category and includes all public land which is not reserved land or village land and includes unoccupied or unused village land. According to Mwamfupe (2015), the definition of General Land is "ambiguous because unoccupied or unused village land is considered as "excess" and thus falls under the jurisdiction of the Land Commissioner rather than the village authorities" (p.3). In this respect, the Village Councils have been given less power on managing their land because one hand is giving them rights to manage their land, while another hand takes those rights. This situation has caused conflicts over village land and general land.

5.6 Invasion in Conflicting Land Use

This cause of land conflicts occurs when individuals with power decide to take the undeveloped land held by the poor for the purpose of developing it. For example, poor people may have land obtained by inheritance, but because they can't develop it instantly, powerful people decide to invade and develop it. This has caused land disputes in the society. In urban areas, powerful people invade lands which have been set aside for public services such as schools, hospitals, playgrounds etc and develop them. In rural areas conflict occur when pastoralists, searching for pastures and water for their herds, drive their livestock into farmlands.

5.7 Tenure Insecurity

Lack of security of tenure in Tanzania is also the major cause of land conflicts between the individuals, groups or communities. For instance, the root of land conflict between farmers and pastoralists is the lack of tenure security as every party is competing on the rights of land use as the village land is yet to be allocated for every individual or groups.

6. The Case Study of Farmers versus Pastoralists Conflicts

6.1 Conflict between Farmers and Pastoralists in Tanzania

The conflicts over land use especially between farmers and pastoralists in the country have been contributed by land tenure contradictions between customary and granted land rights (Mwamfupe, 2015; Simbarashe, 2012; Shao, 2008) and accumulation of land in the hands of big national and multinational companies, leaving small-scale producers landless. These two problems have affected the pastoralists more than other resource users. Most importantly, conflicts are essentially on the scramble for resources such as areas for grazing versus areas for cultivation. The circumstances that influence this situation to happen is due to the farmers to have freedom to choose good areas for cultivation, while pastoralists had no freedom of choosing good areas for grazing their livestock (Shao, 2008). In addition, the tendency by the government to ignore pastoralists and evict them from their pasture land in favor of foreign investors has increased pressure on the land allocated for the farmers (Mung'ong'o & Mwamfupe, 2003; Norman, 2013) which in turn has caused lots of land conflicts.

Corruption among some local authorities have increased conflict in magnitude and spread in different areas in the country such as Kilosa, Mvomero and Kilombero districts of Morogoro Region; Kiteto District in Manyara Region; Rufiji and Mkuranga districts of Coast Region; Kilwa District in Lindi Region; Mbarali District in Mbeya Region and parts of Kongwa in Dodoma Region. Other districts include Handeni and Kilindi in Tanga Region (Mwamfupe, 2015; Semberya; 2014; Shao, 2008). For instance, pastoralists in Kiteto district bribed District officers to get land that was used by the

farmers (Kitabu, 2014). Later on, as pastoralists realized that they had been cheated by the District officers, they demanded a refund of their money. As the money was not refunded, pastoralists fought the farmers to evict them from the land by force. The conflict resulted into bloody clashes and loss of property and lives (Kitabu, 2014). The research findings show that, most pastoralists are illiterate and therefore do not know the laws pertaining to the grazing behavior. This ignorance has caused land conflict within the community.

6.2 Conflict Analysis

Conflict analysis is “the in-depth study of the conflict profile, actors, causes and dynamics” (Temirkulov 2014, p.100). Fisher et al., (2000) define conflict analysis as the practical process of examining and understanding the reality of the conflict from a variety of perspectives (Fisher et al., 2000). In this respect, these definitions lead to the fact that the conflict analysis finds a way of solving the conflict situation among the conflicting parties. Many research findings show that, conflict analysis normally focuses on the root causes, actors and their relationships. It captures the dynamic character of conflicts by observation from multiple perspectives and takes into consideration the past, present and the future. From this perspective, the authors therefore analyze the root causes, actors and their relationships by using conflict tree, the onion and the ABC triangle models.

6.2.1 Conflict Tree

The conflict tree is “an adaptation of the “problem tree” that is used in management” (Groenendijk, 2003 in Temirkulov, 2013, p.100). It is a participatory instrument where conflict stakeholders take part in the analysis led by an expert. Participants create a diagram of a tree with a symbolic trunk, roots and branches. The trunk should be regarded as the core problem. The roots represent causes and the branches represent effects. Thus, the participants identify the core problems, their causes and effects. Thereafter, a causal relationship between the problem and its causes and effects can be identified (ibid.). Figure 1 illustrates the conflict analysis using conflict tree tool between farmers and pastoralists.

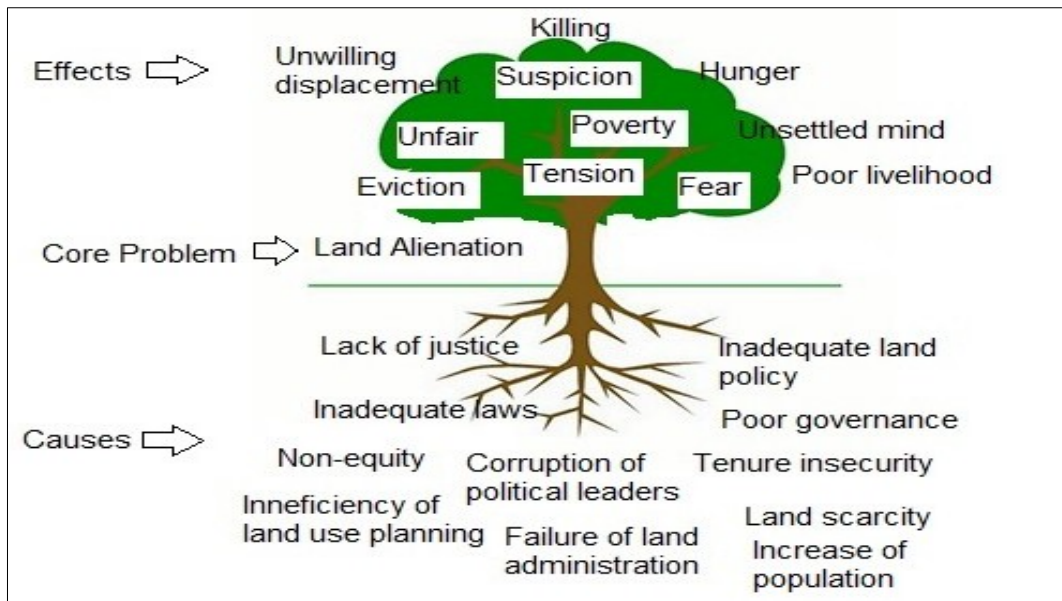


Figure 24. Conflict tree model (Source: Own illustration)

6.2.2 The Onion

The onion model allows a better understanding of the conflicting parties' positions, and their real interests and needs. It helps us to distinguish between what the different parties want, and what they really want and their need (<http://www.peacebag.org/articles/toolkit-p4-conflictanaly.html>). This type of analysis is mostly useful for “parties who are involved in negotiation, to clarify for themselves their own needs, interests and positions” (Fisher et al., 2000, p.28). Figure 2 illustrates the conflict analysis using the onion tool.

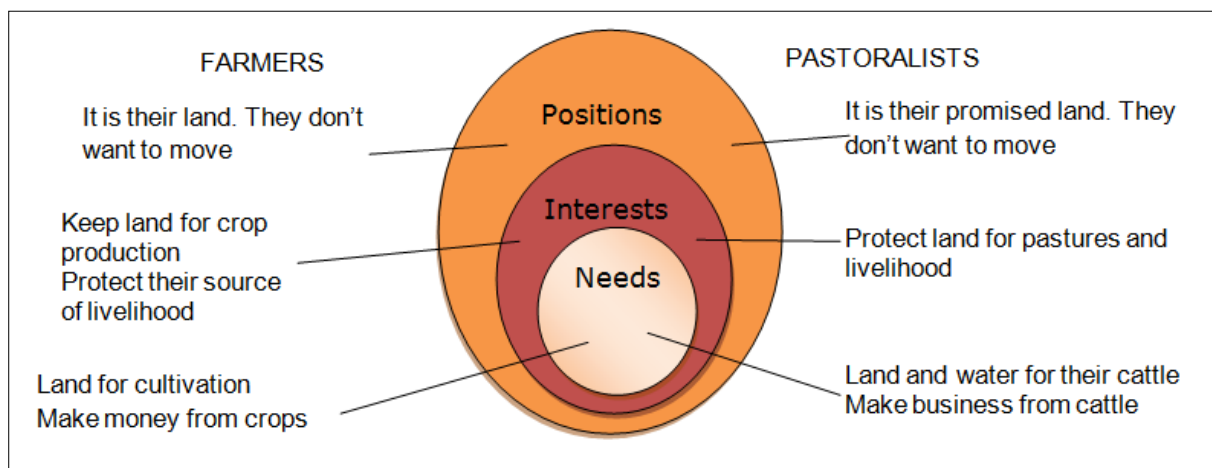


Figure 25. The Onion model (Source: Own illustration)

6.2.3 ABC Triangle

The ABC Triangle model describes the key aspects within a conflict as: (A) Attitudes, (B) Behaviors and (C) Context (or Contradictions) being the key aspects within a conflict. It is used to deal with destructive or violent conflicts (Galtung, 1969, in Czyz,

2006). **Attitudes** refer to “assumptions, cognitions and emotions that one party may have about the other” (*ibid.p.6*). It refers to the psychological states of people involved in a conflict situation which involve the parties' perceptions and misperceptions of each other and of themselves, which are more likely to be negative, as opposing parties tend to develop negative stereotypes of the others (accessed from <http://www.peacebag.org/articles/toolkit-p4-conflictanaly.html>). **Behaviors** refer to “the mental, verbal or physical expressions put forth in a conflict” (Czyz, 2006, p.6). Behavior can be explained that, they are actions undertaken by one party aimed at affecting the opposing party, with the intention of making that opponent abandon or modify their goals. **Context** is perceived as the underlying conflict situation, including the real or perceived incompatibility of goals between the conflicting sides. This is the contradiction defined by the parties, their interests, or directly from the structure of the society itself, political, economic or societal mechanisms, processes and institutions (accessed from <http://www.peacebag.org/articles/toolkit-p4-conflictanaly.html>). Czyz (2006) argues that context is the “root of conflict and it is the core issue that is causing the violent attitudes and behaviors” (Czyz, 2006, p. 7). Figures (3a) and (3b) provide the analysis of the conflict between the pastoralists and farmers using the ABC Triangle model.

I. FARMERS

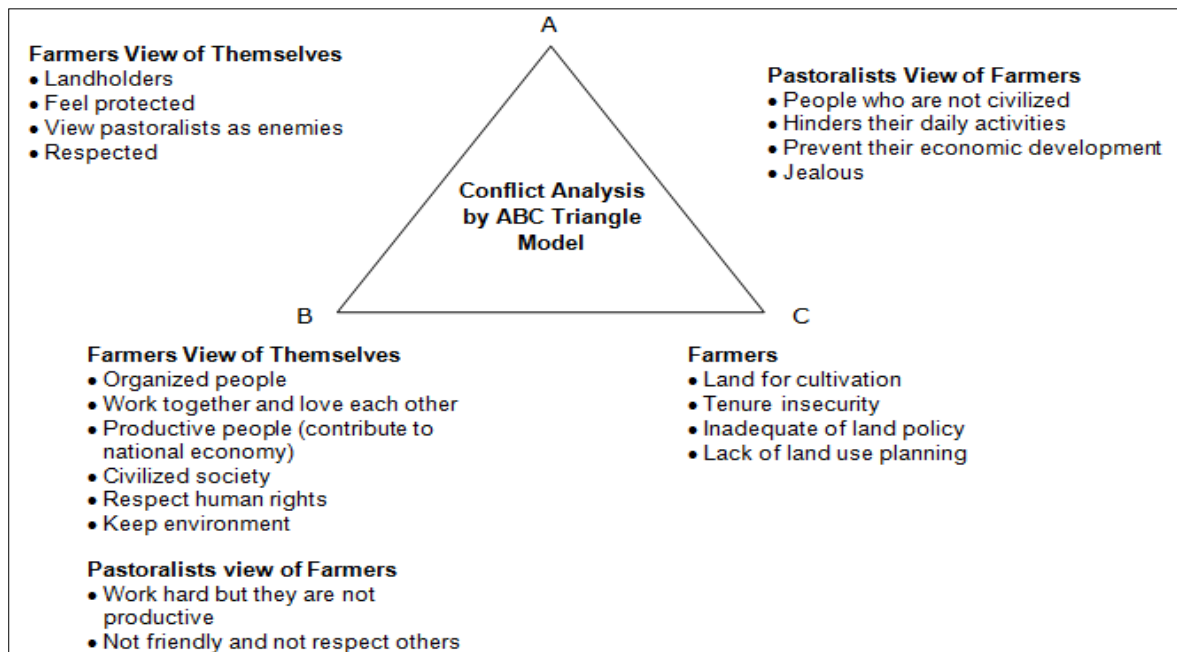


Figure 3a.

II. PASTORALISTS

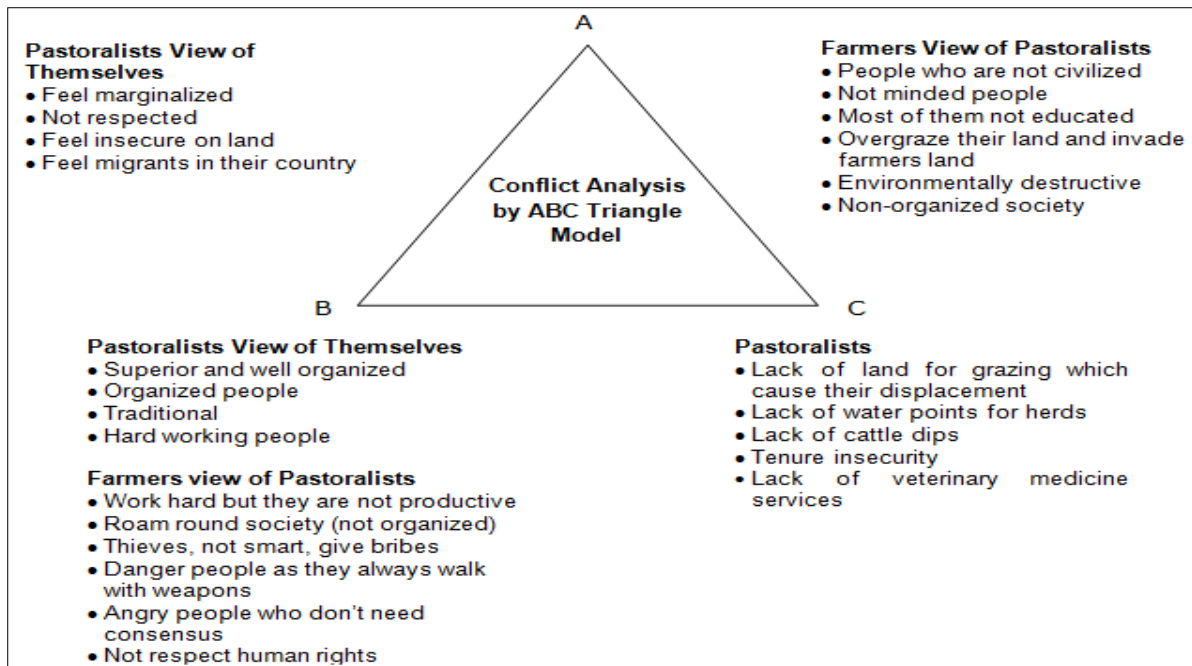


Figure 3b.

Figure 26(A) And (B) Illustrating Conflict Analysis Using ABC Triangle Model
(Source: Own Illustration)

6.3 Conflict Resolution

Conflict resolution “refers to the elimination of the causes of the underlying conflict, generally with the agreement of the parties” (Essuman-Johnson, 2009 in Norman, 2013). It provides the way of “handling conflict by taking problems out, not fighting them out” (Nathan, 1996, p.11). In this respect, land dispute resolution can be achieved through negotiation among the two parties conflicting over land such that each part feels satisfied.

It has been found that, “very little has been done to seek solutions that go beyond just satisfying the parties interests” (Mwamfupe, 2015, p.3). The interventions geared towards conflict management and resolution has been done by involving the control, but not resolving the long-term and the deep-rooted sources of the land conflicts. The inadequacy of capacity of local governments to resolve the conflict between farmers and pastoralists is compounded by the doubt that exists between the conflicting parties (ibid.). It is from this fact that, this paper also is centered on discussing the management and resolution of land conflict between farmers and pastoralists that exist in Tanzania. The preventive measures and curative measures to manage and resolve conflict between farmers and pastoralists are outlined as follows:

6.3.1 Preventive Measures

The number of previous studies have shown preventive measures to solve land conflict for the benefits of the present and future generations between farmers and pastoralists has been put forward including;

- Clarifying, legalizing and securing property rights: This measure can help to prevent land conflict by analyzing types of property rights; being documented as formal rights or perceived rights on land disputes (Sackey, 2010). These rights are supposed to be transparent, documented neutrally and objectively evaluated, appraised and secured (ibid.).
- Land use planning: Land use planning is a tool that can be used to prevent land conflicts between two parties. It can be used to mediate two parties through participatory approach in such a way that conflict can be prevented. Land use planning improves land uses and sustains natural resources while settling land conflicts. Through allocating land to different parties, the conflict can be prevented as each part will benefit from using land without problems (Kushoka, 2014).
- Surveying and land registration: Although the existing cadastre and land registration systems are not a panacea for land conflicts, some form of land parcel descriptions through cadastral surveying process and registration are necessary for land rights allocation and protection.
- Education: Awareness about land conflict and their effects should be provided so that if something happens against each part, they should look for negotiation instead of going into fighting which leads to death of people, property destruction and reduction of motivation of investment. However, education with respect to land laws and regulations should be provided to both pastoralists and farmers through campaign as most of pastoralists are illiterate. Hence, by conducting awareness campaign may help them to understand the rules and regulations about land use and ownership so as to prevent any misunderstandings that eventually cause conflicts.

6.3.2 Curative Measures

The conflicts between pastoralist and farmers in the country have been resolved in a number of ways. Such ways include the intervention of; the Village Land and Ward Tribunal Councils, the District Land and Housing Tribunal, the Land Division of the High Court and the Court of Appeal (Mung'ong'o & Mwamfupe, 2003). All these judicial organs² are referred to as non-consensual approaches in solving land conflicts. This is because the process does not involve interviewing and counseling the conflicting parties. Although, paying of losses to one group by another has been used to resolve conflicts through consensual approach between farmers and pastoralists (ibid.), the consensual approach can be done through Facilitation, Moderation, Consultation and Conciliation, Arbitration or Mediation.

Mwamfupe (2015) argue that there is a weakness in the reconciliatory bodies. Both farmers and pastoralists have negative attitudes to reconciliation bodies. For

² Section 3 of the Land Disputes Courts Act, 2002 (URT, 2002).

instance, pastoralists in Kilosa District complained of biased judgments that favor farmers. One pastoralist complained that, *"Only in one case out of 10 will pastoralists win a dispute against farmers"*. On the other hand, farmers also complained that *"the fines charged on pastoralists were not enough to deter them from grazing their livestock on croplands"* (Mung'ong'o & Mwamfupe, 2003). From these arguments, it is seen that both parties do not trust these judicial organs in resolving conflicts but also these organs lack capacity in terms of negotiation and mediation skills which are important in conflict resolutions. It is revealed that judicial organs take wrong approaches to resolve land conflicts. This is because of the existing corruption in these conflict settlement machineries. Lack of an efficient process of detecting, preventing, managing, and resolving conflicts has fueled the negative perception to these organs. *"The mediation councils (now village land councils), and the land tribunals that are meant to settle such disputes seem not only to lack mandatory adjudication, but also that they have no participatory structures"* (Shao, 2008, p.81). With this respect, the Mediation - Arbitration (MED-ARB) approach is proposed as a curative measure for dispute resolution between farmers and pastoralists.

Defining the two terms could help us understand how this model can solve conflict cases efficiently and faster and provide peace among the parties.

Mediation is a "process that employs impartial person or persons to facilitate negotiation between the parties to a dispute in an effort to reach a mutually accepted resolution. It is a process close in its premises to negotiation" (Shamir, 2003, p.23). In this approach, the Mediator's role is; to help the parties think in new and innovative ways, to avoid the pitfalls of adopting rigid positions instead of looking after their interests, to smooth discussions when there is animosity between the parties that renders the discussions futile, and in general to steer the process away from negative outcomes and possible breakdown towards joint gains (ibid.). In this respect, mediation creates the foundation that can resume the mutual relationship after the case has been resolved because it has been designed to suit the needs of the conflicting parties.

Arbitration refers to "a process whereby parties to the conflict agree to submit their dispute to a neutral person, who will decide their case (Shamir, 2003). Arbitration system authorizes a third party to decide how the conflict should be resolved. The arbitrator should be professional or knowledgeable with the issues in hand and all parties must accept him/her and derives his power from private agreement, not from the authority of the state (David, 1985 in Sackey, 2010). Researches show that there are two types of arbitration; namely binding and non-binding arbitration. Binding arbitration often does not allow appeal to a higher court. Non-binding arbitration produces a third party decision which the parties may reject if not satisfied (ibid.). Thus, for the purpose of making sure that each party is satisfied and not showing

that there is no party which is the loser, the non-binding arbitration is more useful for conflict resolution.

Therefore, the MED-ARB proposed approach can solve land conflict cases more efficiently than the judicial organs because in judicial organs, farmers and pastoralists can have little participation in decision making process. In addition, MED-ARB model may produce results that follow cultural norms and justice than judicial organs because mostly it follows the participatory structures that involve counseling and interviewing the conflicting parties. Therefore, the MED-ARB model can be used as the best approach at the very initial stage, where parties meet and discuss their differences and then resolve their differences willingly and in a friendly manner. If the consensus is not achieved, then any part can pursue the court system for further claims. This will create a room for each party to seek their rights and create peace between them.

7. The Role of National Land Policy in Land Conflict Resolution

The key issues in the National Land Policy are land tenure, land management, land administration, urban and rural planning, institutional framework and an implementation framework. Its overall objective is to promote and ensure secured land tenure system that encourage the optimal land use resources and facilitate the broad based socio-economic development without endangering the ecological balance of the environment (Mwamfupe, 2015; URT, 1997). Also, it helps to resolve recurring land conflicts (URT, 1997). The policy was the basis for enacting the Land Act No.4 of 1999 and the Village Land Act No.5 of 1999 which are used for conflict resolution. However, the position of the Land Policy in land conflict resolution matters is very difficult as most of land conflicts have been attributed by the problems inherent in the land policy of the country (Mugabi, 2013). The challenges described above are partly attributed by the policy. The land policy has some deficiencies because it does not guarantee security of tenure to some land users, especially smallholder groups like pastoralists (Bonfiglioli, 1992 in Mwamfupe, 2015). In this respect, these deficiencies have led to large areas of land being given over to alternative uses and consequently marginalizing the pastoralist's populations whose life is dynamic depending on pastures (ibid.). However, while land is still allocated to individuals, private firms including foreign investors regardless of their proven ability to develop them, the policy does not have specific statements for reversing the situation. Moreover, the Information system based in various aspects on land such as the names, addresses, size, location and the use of parcels is still ambiguous that is why some homesteads are being destroyed by development projects such as road construction. The policy is silent on this matter (Mugabi, 2013). Due to shortfalls in the land policy, conflicts happen everywhere in the country as it cannot provide solution to land conflicts.

Mwamfupe (2015) he makes a telling point that policy deficiencies are noticeably revealed on the Grazing-Land and Animal Feed Resources Act which translates and implements the National Livestock Policy of 2006. He argue that the Act provides guidance for the management and control of grazing lands and animal feed resources but problems have been identified in the Act which include the interpretation of the terms used. For example, the Act defines "communal grazing land" to mean a grazing land owned by pastoralists and it defines the pastoralist as a person who engages on livestock keeping for "production." The term "production" is defined as rearing animals for commercial purpose. The pastoralists therefore complain that the Act does not provide for the protection and promotion of herders but exclusively focuses on commercial livestock keeping. In this respect, government's failure to strike a balance between the promotion of investment (of which private interests of government policy-makers may themselves be involved), and the land access interests of smallholder farmers and pastoralists has fueled conflict instead of resolution (Mwamfupe, 2015).

Tanzania's National Land Policy needs to be improved so as to provide solutions to the challenges that the country is currently facing especially in rural areas where there are lots of conflicts, which have caused deaths of many people. Studies done suggest that the national land policy needs to opt for land education for the masses so as to address the problems of land insecurity and lack of information. The policy should also opt for a simple and transparent titling procedure to allow increased formal land ownership amongst the people (Mugabi, 2013). By doing so, this can contribute to individual property rights while enjoying rights to land and land based natural resources like forests, water and pastures.

8. Final Remarks

It is believed that, "conflict is not an objective, tangible phenomena; rather, it exists in the minds of the people who are party to it" (Greenhalgh, 1986, p.45). Therefore, to manage and resolve the conflict, one needs to understand the situation as it is seen by the key parties involved by counseling and interviewing them as the first step. When participants rethink their views with regard to their perspectives on conflict situation, will facilitate resolution faster rather than divisiveness. In this regard, the MED-ARB model approach as Alternative Dispute Resolution could be adopted so as to fast the process of resolving these conflicts that often happen in the Tanzanian communities. This could be one way of reducing the level of conflicts via the use of mediation and arbitration, specifically between the farmers and pastoralists over the use of land because it involves counseling and interviewing the parties whereby this part is mostly overlooked.

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**DILEMMAS OVER CONTRADICTIONARY GOALS FOR SUSTAINABLE URBAN LAND
GOVERNANCE AND DEVELOPMENT: THE CASE OF NAIROBI**

Augustine Juma and Luke Obala

Abstract

Attempts by many African cities to achieve sustainability in their land governance face enormous challenges as it portends of setting contradictory goals. This is clearer in the case of Nairobi where more than 50 per cent of the population are employed and live informal sector and settlements. Thus our paper interrogates the interactions between land governance, sustainable land governance and development. This is an attempt to explain their contribution to urban chaos. In the process the highlights the land development processes and their link to informality. It further attempts to explain the perceived dominance of informality.

The paper further attempts to highlight the complexity of challenges faced in achieving sustainable development. This paper therefore aims on the one hand, to highlight the informal development processes and on the other, explain challenges faced in an attempt to achieve the sustainability. In the process it explains existing land governance approaches as well as proposes appropriate land governance approaches capable of leading to sustainable development in an African city. The paper will rely largely on past studies and existing literature to help unravel the existing dynamism in land governance processes and practices. In the end the paper will draw conclusions on the relationships between informality and sustainability on urban land governance.

Key words: land, governance, sustainability and urban