



Linking Land Tenure and Use for Shared Prosperity

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Scalable Approaches to Improving Tenure Security and their Impacts in Irrigation Schemes: Lessons from Malawi and Kenya

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Abstract

In Africa (and the rest of the developing world), there is a sustained drive to expand irrigation as a basis for agricultural intensification. This process has the potential to have a major transformative impact on patterns of land and water resource use. As well as providing opportunities, it also represents a significant risk to the poorer and less powerful members of communities. In the context, issues of land and water rights become of central importance to the nature of irrigation developments. The development of irrigation infrastructure can significantly increase land values while at the same time limiting secondary use rights of land resources. As a result, conflicts over land access and tenure are likely to increase, as are processes of speculation in land and the development of inequalities in land assets and wealth. Development of irrigation schemes therefore raises specific issues in relation to land rights. Water rights are no less important, and add complexity to the issue. Water rights issues revolve around two different “levels” of water use: the right to abstract water to feed the irrigation scheme, usually through a license or permit, and water delivery rights, held by individual water users – the farmers – based on a contract with the irrigation agency and in return for a water fee. Key water delivery rights issues include farmers’ security of access to water, the nature and level of the water fee, accountability mechanisms to ensure timely and effective water delivery, and the responsibilities and functioning of Water Users’ Associations (WUAs). In Malawi for instance, IFAD has been supporting, among others, irrigation development projects. Starting with the Smallholder Flood Plain (1998-2006), the Irrigation, Rural Livelihoods and Agricultural Development Project - IRLADP (2006-2012) – co-financed with the World Bank, and currently under design, the Programme for Rural Irrigation Development (PRIDE). The Government of Malawi (GoM) has recently set irrigation as one of its top priorities. Irrigation is, however, under developed and several large-scale government irrigation schemes have been neglected and fallen into disrepair. In this key sector of irrigation IFAD supports strong government initiatives related to water management that include users’ participation and the institutionalization of water management practices at the local level. With regard to land tenure, the introduction of irrigation schemes raise three broad issues: Firstly, the creation of the scheme may entail the expropriation of existing land rights, and the reallocation of land-cum- water rights to new users. Secondly, the nature and duration of use rights of farmers need to be defined. Thirdly, the increase in land potential and value may result in more vulnerable people losing access to land to better resourced beneficiaries. This paper presents the experiences drawn from the various IFAD supported projects dealing with issues of land tenure security in irrigation schemes. It specifically presents lessons drawn from project experience in Kenya and Malawi with a view to informing broader policy and practice debates. Finally, this paper highlights the partnership between IFAD and the UN-Habitat through the Global Land Tool Network (GLTN) aimed at implementing the Land and Natural Resources Tenure Security Learning Initiative for Eastern and Southern Africa (TSLI-ESA).

Key words: Land and water rights, Water Users’ Association

1.0 BACKGROUND

Land and water constitute the most important resources for which majority of Africa's population depend either directly (in form of agriculture, forestry, fishing, etc.) and or indirectly (through services like tourism, trade, etc. (Mabikke, 2013.). In as much as Africa is experiencing a growing demand for the increased commercial agricultural land, the need to expand subsistence farming land continues to rise as the population in the subsistence agriculture continues to grow. Both approaches are closely linked to water access. In most African countries, there is a sustained drive to expand irrigation as a basis for agricultural intensification. This process has the potential to have a major transformative impact on patterns of land and water resource use. As well as providing opportunities, it also represents a significant risk to the poorer and less powerful members of communities. In the context, issues of land and water rights become of central importance to the nature of irrigation developments. The development of irrigation infrastructure can significantly increase land values while at the same time limiting secondary use rights of land resources. As a result, conflicts over land access and tenure are likely to increase, as are processes of speculation in land and the development of inequalities in land assets and wealth. Development of irrigation schemes therefore raises specific issues in relation to land rights. Water rights are no less important, and add complexity to the issue. Water rights issues revolve around two different "levels" of water use: the right to abstract water to feed the irrigation scheme, usually through a license or permit, and water delivery rights, held by individual water users – the farmers – based on a contract with the irrigation agency and in return for a water fee. Key water delivery rights issues include farmers' security of access to water, the nature and level of the water fee, accountability mechanisms to ensure timely and effective water delivery, and the responsibilities and functioning of Water Users' Associations (WUAs).

In Malawi for instance, much of the lessons learnt from the Irrigation Rural Livelihoods and Agriculture Development Project (IRLADP) are drawn from newly developed medium-scale irrigation farms (20-80ha). These farms have been developed on customary land that under the existing Land Law of Malawi is managed by the Traditional Leadership system. The irrigation farms constructed under the IRLAD Project through the Ministry of Agriculture, Water and Irrigation Development were developed with funding from bilateral donors, World Bank and the International Fund for Agricultural Development (IFAD). Since 2004, IFAD (and other partners like the Global Environment Facility) have been supporting the Mount Kenya East Pilot Project (now – Upper Tana Natural Resource Management Project -UTaNRMP) which aims at linking sustainable use of natural resources, especially water and forests with enhanced rural livelihoods in five selected river basins of the Upper Tana catchment. IFAD supports strong government initiatives related to water management that include users' participation and the institutionalization of water management practices at the local

level. Upon this background, this paper presents some of the lessons and experiences drawn from two specific IFAD supported projects (IRLAD in Malawi and UTaNRM in Kenya) dealing with issues of land tenure security in irrigation schemes with a view to informing broader policy and practice debates.

2.0 IFAD AND GLTN PARTNERSHIP

In 2012, the International Fund for Agricultural Development (IFAD) and the United Nations Human Settlements Programme (UN-Habitat), through the Global Land Tool Network (GLTN), entered into a partnership to implement a **Land and Natural Resources Tenure Security Learning Initiative for East and Southern Africa (TSLI-ESA)**. The main objective of the TSLI-ESA project has been to identify common issues and to enhance lesson sharing and knowledge management on land-related tools and approaches amongst the various projects, country stakeholders and partners in selected East and Southern African countries. The TSLI-ESA project focuses primarily, but not exclusively, on the following themes: i) Mapping ii) Land and Water Rights iii) Group Rights iv) Women's Access to Land, and v) Inclusive Business Model (IBM). This paper focuses on one the 5 TSLI-ESA thematic areas on *Land and Water Rights*.

Overview of Land and Water Rights Thematic Area

In many countries, the core challenge in integrated land and water resource management is that of *Land and Water Governance*, particularly in relation to deeper political and societal foundations on which day-to-day decisions and courses of action rest. Recognition of land and water objectives at different levels in society and the governance challenges they face at the different levels may assist the task of identifying the correct 'entry points' on which to initiate actions (Mabikke, 2013). The thematic area on land and water rights recognizes and documents small-scale farmers' land and water rights particularly in irrigation schemes. In Africa (and the rest of the developing world), there is a sustained drive to expand irrigation as a basis for agricultural intensification. This process has the potential to have a major transformative impact on patterns of land and water resource use. As well as providing opportunities, it also represents a significant risk to the poorer and less powerful members of communities, and issues of land and water rights become of central importance to the nature of irrigation developments. The development of irrigation infrastructure can significantly increase land values: conflicts over land access and tenure are likely to increase, as are processes of speculation in land and the development of inequalities in land assets and wealth.

Irrigation schemes therefore raise specific issues in relation to land rights. Water rights are no less important, and add complexity to the issue. Water rights issues revolve around two different "levels" of water use: the right to abstract water to feed the irrigation scheme, usually through a licence or

permit, and water delivery rights, held by individual water users – the farmers – based on a contract with the irrigation agency and in return for a water fee. Key water delivery rights issues include farmers' security of access to water, the nature and level of the water fee, accountability mechanisms to ensure timely and effective water delivery, and the responsibilities and functioning of Water Users' Associations (WUAs).

As to land tenure, irrigation schemes raise three broad groups of issues. Firstly, issues arising from the creation of the scheme, which may entail the expropriation of existing land rights, and the reallocation of land/water rights to new users. Secondly, issues in respect of the nature of the tenure security enjoyed by farmers on irrigated plots (nature and duration of use rights, etc.). Thirdly, issues related to land transactions fostered by the increased land values that irrigation brings about. These issues link closely to the water delivery rights issues. IFAD has provided significant support to securing the land and water rights of smallholder farmers and ensuring equitable access to land in government irrigation and watershed management projects. Examples are in Rwanda, Malawi, Kenya and Swaziland.

3.0 MALAWI COUNTRY CONTEXT

Malawi's population of about 11 million in 2003 is among the poorest in the world with a per capita income of about US\$170 per year and with 60% of the population living below the poverty line. About 89% of Malawi's poor are rural, and agriculture is their key source of income. Of these poor, the overwhelming majority (i.e., 49%) are in the Southern region; 40% in the Central region, and 11% in the Northern region. Malawi faces huge challenges in achieving the Millennium Development Goals (MDGs) of "eradicating extreme poverty and hunger" by the year 2015, which would require, among other priorities, sustained investments to increase agricultural productivity and to improve the effectiveness of agricultural investments. Raising agricultural productivity and diversifying its agricultural base to improve value-added is key to reducing the widespread food insecurity faced by Malawi's population and to increasing rural incomes.

Irrigation Rural Livelihoods and Agricultural Development (IRLAD) Project

After the introduction of multi-party democracy in 1994, the government embarked on the formulation of a new land policy. A Presidential Commission of Inquiry on Land Policy Reform was established in 1995. Among the main challenges identified were: high rural population densities, the unequal distribution of land with areas of scarcity and areas of under-utilised land, addressing the loss of customary land under colonialism and post-independence titling processes, corruption in land allocation and illegal encroachments and illegal land allocations in conservation and protected areas, including lakeshores. The commission submitted its final report in 1999 and in 2000 a technical team

produced a draft Land Policy. Among other things, the policy aims to improve tenure security by clarifying and strengthening customary land rights and by strengthen formal recognition of the role of traditional authorities in the administration of customary land. It also aims to bring about a more equitable distribution of land by resettling people from crowded to less densely settled areas. In 2003 a Special Commission on the Review of Land Related Laws was established. The Law Commission identified 16 Acts requiring review and possible revision¹.

A Land Bill drafted in 2003 is yet to be passed. Among other things, the Bill proposes the vesting of all land in the people of Malawi and stipulates that all citizens who need land for livelihoods shall be given access. The Bill also provides for the registration of, and transactions in, customary land. Women's rights to own land is recognized. Emphasis is given to the decentralization of land administration. Among the controversial issues that appear to be delaying the Bill being passed into law are: addressing the legacy of the conversion of customary land to government-owned land; the roles of traditional authorities in land administration; and inheritance of land by women. Much of the land that was converted from customary to leasehold land was used for the establishment of government-owned irrigation schemes. Many of these schemes have experienced difficulties due to the allocation of land outside local communities, without the consent of traditional authorities. Schemes have often not been well maintained due to a lack of ownership by farmers and there have been concerns about the accumulation of parcels by some scheme members. The government plans to develop 200,000 to 500,000 of newly irrigated land.

Several land tenure security and land management issues are addressed under the Irrigation, Rural Livelihoods and Agricultural Development Project (IRLADP). Under the first component IRLADP is contributing to: a) Ensuring equitable allocation of land and security of tenure in four existing Government-owned small-scale gravity irrigation schemes covering about 1 800 hectares and 840 hectares of new demand-driven small-scale and mini-irrigation schemes. b) Conservation catchment planning, including the mapping of activities. Mapping is used in assessing impact of conservation interventions on water catchment management and identifies areas requiring further attention. c) The establishment of livestock watering ponds. To avoid encroachment of cultivated fields on grazing lands and cattle tracks, consideration is being given to water demand and accessibility of beneficiary livestock in the development of watering ponds and catchment conservation maps are being used to map grazing areas and livestock facilities to ensure better integration of livestock development. Under the second component, land is being allocated by individual land owners and traditional authorities for various Farmer Services and Livelihoods Fund (FSLF) and Inputs for

¹ Namely: the Land Act, the Customary Land (Development) Act, the Local Land Boards Act, the Registered Land Act, the Town and Country Planning Act, the Forest Act, the Public Roads Act, the Mines and Minerals Act, the Land Survey Act, the Land Acquisition Act, the Adjudication of Title Act, the Wills and Inheritance Act, the Local Government Act, the Malawi Housing Corporation Act, the Temporary Control of Premises Act and the Investment Promotion Act.

Assets programme (IFA) projects, such as orchards, livestock water ponds, fish ponds, agro-processing and storage facilities, etc. Drawing on experience from small scale irrigation (SSI) schemes, these arrangements are being documented where appropriate.

Irrigation, Rural Livelihoods and Agricultural Development Project	
Lead implementer	Ministry of Agriculture
Implementation period	2006-2012
Goal	Reduce poverty by promoting sustainable pro-poor growth
Total project costs	USD 52.1 million
Co-financing	IFAD, World Bank and Government of Malawi
IFAD contribution	USD 8.0 million
Target	196,550 poor rural households
Components	(i) irrigation rehabilitation and development; (ii) farmer services and livelihoods fund; (iii) institutional development; and (iv) project coordination, and monitoring and evaluation.

Project area IRLADP



Source: IFAD

Promoting Equitable Land Access in IRLADP

Other projects supporting the rehabilitation of large-scale government irrigation schemes have faced challenges in transferring ownership and control to WUAs and abuse in the allocation of land parcels by Scheme Management Committees or WUAs. Hence emphasis was placed in the design of IRLADP on resolving land tenure issues prior to the commencement of the project. It was agreed during negotiations that government would grant long-term leases to the WUAs and to facilitate the subsequent sub-leasing by the WUAs to their members². As part of the project covenants and loan agreement it was stipulated that irrigation transfer agreements, including suitable tenure arrangements, would be finalised prior to the commencement of rehabilitation works³. However these stipulations proved difficult to implement. Hence during the Mid-Term Review (MTR) of the Project it was recommended that the relevant covenant be adjusted to allow for the rehabilitation works to continue while discussions on leasing, sub-leasing and other tenure options and safeguards continued. With regard to small scale irrigation (SSI) and mini scale irrigation (MSI) schemes and other rural livelihoods projects to be implemented in rain-fed areas, it would appear

² World Bank Project Appraisal Document, October 2005, page 10, third paragraph.

³ World Bank Project Appraisal Document, October 2005, page 18, 5th bullet under "Other Conditions" and Section 3, Schedule IV, paragraph 10 of the IFAD Loan Agreement.

that the Project design did not explicitly recommend any actions for addressing issues of land tenure security and land allocation.

Rehabilitation of Government Irrigation Schemes in Malawi

For all schemes draft lease agreements have been reviewed and the Ministry of Lands has given a lease period of 66 years. However, by then end of 2011, the lease offers have not yet been presented because WUAs have not yet received their registration certificates. As soon as WUAs are constituted, lease offers will be issued and signed lease agreements will be included as Annexes to the irrigation management transfer (IMT) agreements. Once land lease offers have been officially made to the WUAs, discussions will be held with the WUAs to re-sensitize them on the implications of these offers in terms of annual payments by members and budgeting requirements of the WUAs. The lease rate for all schemes is 1000 Kwacha or \$6 per hectare. In addition to this, members are expected to pay a water fee of 200 Kwacha per plot and a membership fee of about 500 Kwacha per member (membership fees vary between schemes). Once lease offers are made, scheme members are expected to accept the offer within 60 days and to pay the first year's rent. There is a need for continued sensitization and discussion to ensure that everybody is fully informed about the lease terms.

For one scheme, Muona, the conversion of land from customary to state land has been agreed to by the traditional authorities and documented in a "Consultation with the Chief" form. Existing users retain their original parcel allocations. Provisions for inheritance of land parcels and re-allocation of unused parcels to other family members have been included in IMT agreements. Allocation of land parcels to members is regulated by the WUA Committees, as has been the practice under the previous Scheme Management Committees. Currently WUAs intend to allocate parcels on an annual basis. Experience suggests that parcel allocations to each member could change from year to year. This could undermine members' land tenure security and willingness to invest in land and farming. However, options are being looked into for providing longer-term, documented rights to particular land parcels for each member. To ensure equitable benefit sharing, minimum and maximum limits on the number of parcels that members can access are set by interim WUAs⁴. Typically plots are about 0.1ha in size. Limits to the number of plots that a member can access seem to vary between schemes. In the case of Limphasa the range is 4 to 12 parcels whereas in Likangala the range is 2 to 4 parcels. Cases of parcel accumulation and absentee owners have been reported and are considered sensitive. It is believed that clarifying the status of land as public land owned by government, lease agreements between government and WUAs, WUAs granting documented rights to actual users and on-going sensitization of members on ownership and user rights would contribute to addressing concerns regarding plot allocations.

⁴ In many cases this practice predates the interim WUAs

Table 1. Land allocation in government schemes

Government Schemes	No. of Members	Ha	Average land allocated
Likangala	1385	405	0.29
Limphasa	970	466	0.48
Khanda	316	77	0.24
Njala	240	45	0.19
Segula	128	29	0.23
Chiliko	137	24	0.18

Small Scale Irrigation and Mini Scale Irrigation Schemes in Malawi

While no specific activities were identified during the design of the Project with regard to land tenure security issues in small scale irrigation (SSI) and mini scale irrigation (MSI) schemes, the Project has been grappling with these issues. Most SSI and MSI schemes are being established on land already belonging to one or more owner⁵. Typically in SSI schemes being established, land will be shared during the dry season and used exclusively by the owner in the wet season. This is already a widespread practice in Malawi in mini irrigation schemes informally developed by farmers. As with the Government Schemes, land parcels in SSI Schemes tend to be about 0.1 ha in size. Parcels are being surveyed and demarcated during the design of the schemes. In the MSI Schemes, land parcels may be smaller and in some cases not divided but instead operated as group gardens.

For SSI schemes general “in principle” agreements regarding the granting of consent by existing land owners for infrastructural development on their land, the provision of compensation to “owners” or users for the loss of land and land sharing arrangements between owners and other members are indicated in the participatory agreements drawn up during the planning of the schemes. However, specific agreements with individual land owners on these issues have not yet been documented. A set of guidelines and a format for documenting agreements between WUAs and landowners has been developed. The “pro-forma” agreement specifies the conditions and terms for the use of land by WUAs during the dry season and owners in the dry season. It indicates the duration and rental amount for renting the land. The agreement is to be signed by the land owners, WUA, Traditional Authority and District Commissioner and copies are to be kept by the respective parties. The guidelines advise on the process that should be followed for finalizing an agreement. This includes collecting information on owners – whether they are in fact using the land in the wet season, whether they are resident in the area, whether they share the land with family members and whether they will

⁵ SSI schemes typically involve several owners but smaller MSI schemes in some cases may only involve only 1 owner.

be members of the scheme. Compensation in these cases could include the provision of alternative land and/or participation in the scheme and receipt of rent. Also the current format does not provide for the specific conditions and terms of consent and compensation for each owner. In addition to this, specific conditions and terms for each owner may need to be attached to the general agreement. The application of the draft guidelines and agreement format is now being piloted. The number of owners who are sharing land varies significantly between SSI schemes. In some cases the number of owners is quite large. For example, in the Chikumbutso Scheme at Chingale, the scheme is 20 ha, there are 170 members, of which 26 (15%) are land owners. In the Windu Scheme at Dzedze, the scheme is 42 ha, there are 306 members, of which 82 (27%) are land owners. This indicates that IRDLAP is contributing to more equitable land access.

Table 2. Land allocation in small scale irrigation schemes

SSI Schemes	No. of Members	Ha	Average land allocated	No. of LOs	% of LOs
Tiyese	108	17	0.16	n/a	n/a
Tiyese	149	17	0.11	n/a	n/a
Tchetchete	44	10	0.23	n/a	n/a
Chikumbutso	170	20	0.12	26	15%
Windu	306	42	0.14	82	27%

MSI schemes can be divided between mini-scale irrigation schemes (1 – 10 ha) and rain-water harvesting schemes using drip irrigation, which are being financed under the Inputs for Assets (IFA) sub-component of the Project. In the case of the former, WUAs are being established and farmer based organisations (FBOs) for the latter. While the schemes may be small, the number being set up and the total land to be utilized is significant. Consideration has not yet been given to the signing of agreements between land owners and WUAs or FBOs in these schemes. MSI schemes are likely to have fewer owners, hence concerns regarding social equity and potential disputes between owners and non-owning members could also be of concern. For example, in the Chawanangwa Scheme in Nkhata Bay there are 8 members of which 1 member; (the Chief) is the owner of the land. The scheme is a small garden of about 225 m² next to the chief's house, utilising rain water captured from his house in an underground tank. In some cases land owners have been reluctant to participate in SSI and MSI schemes because they fear the loss of their land rights. The documentation of agreements on compensation and conditions and terms for land sharing would assist in addressing land owners' concerns.

Table 3. Land allocation in micro scale irrigation schemes

MSI Schemes	No. of Members	Ha	Average land allocated
Khulo	69	8	0.12
Chipuzumbumba 1	105	5	0.048
Chigwere	150	10	0.067

Land, Water and Irrigation facilities on Public Land in Malawi

Land and water resources and the way they are used are central to the challenge of improving food security across the world. As indicated in the State of the World's Land and Water Resources for Food and Agriculture (FAO, 2011), the availability of land and water to meet national and global demands for food and agriculture production have been put into sharp relief following the recent rise in commodity price levels (and associated volatility) and increased large-scale land acquisition. As way of boosting subsistence farmers' access to adequate land and water resources, Government earmarked the establishment of at least 5,000 ha of Public Irrigation facilities. Considering the funding window available, existing large irrigation schemes of about 100-500ha were rehabilitated under the Project and these were previously managed by Government. After completion of rehabilitation works, in line with the Irrigation Act 2001, the IRLAD project facilitated change of lease of the referred farm land from Public to Private and placed the registered Water Users Associations (WUA) and new custodians taking over from government. Under this arrangement, the operation and maintenance responsibility of the irrigation scheme facilities would duly be transferred alongside the management bit to the WUA. In the same vein, any subsequent Public Irrigation Facilities developed by government or the NGO sector would be required to abide by the Irrigation Act 2001 to construct the irrigation Scheme, establish a WUA to manage, operate and maintain the scheme with the understanding that government will not in any way contribute to regular maintenance of the facilities.

Irrigation Legal Framework in Malawi

The IRLAD Project adopted a legal framework defined in the Irrigation Act which involves establishment of a Water Users Association at every Public Irrigation Site. This was first pioneered through a Project that was implemented by the Government of the Republic of Malawi prior to the IRLAD Project. The Small Holder Flood Plain Development Project (SFPDP) was funded by IFAD and was implemented in 8 years. The major component of the Project was rehabilitation of ex-government schemes and farmer organisation into legally binding institutions. The WUAs are currently treated as any other Association as defined by the Constitution of Malawi and as such the Trustees Incorporation Law is the law used to register the WUAs/ The law in administered in the

Ministry of Justice. Registration of a WUA requires that a Board of Trustees be constituted and all farmers cultivating in the scheme are mandated to register in as members of this WUA. The WUA also has to have an Executive Committee being a management committee that will oversee day to day functions of the WUA.

Registration of the WUAs involves filling in of Forms that demonstrates readiness for registration i.e. adequacies in the Committees required and backed up with minutes of gatherings of the annual general assembly and the Board expressing interest to become that legal binding institution. The legal face of the WUA qualifies the body to own land, lease land, secure a loan and sue and being sued. Further the status also allows for re-demarcation of land to subsistence farmers based on defined by-laws of the WUA. It is also mandatory that the WUA will pay for Water Abstraction Rights to the Water Resources Board. Under the medium scale irrigation sites whose lessons are under presentation in this paper, the same legal framework is applicable. As such, focus of this paper will be on the land management issues that are informal in the absence of a lease as is the entitlement of a WUA.

IRLAD's Land and Water Management Agreements

IRLAD is a Government of Malawi Project that was set up to address issues of irrigation infrastructure rehabilitation, development of new structures and improvement of farmer livelihoods through enhancement of technologies. The IRLAD Project was first located in 11 districts of Malawi before being expanded to the rest of the country. The development of new irrigation sites was limited to the medium scale sized irrigation schemes (50-100ha) and these schemes were mostly developed on land managed by traditional leaders under the customary tenure. Considering that the irrigation schemes under development involved quite significant investments, government cared to devise a system of protecting the infrastructure for sustainable use by the irrigation farmers earmarked to benefit from such infrastructure. Registration of the WUAs placed the farmer bodies in a position of qualification to lease the land on which the schemes were being developed. However, the country has been undergoing a review process of the land law that was anticipated to automatically place the registered irrigation farmers in positions where they would automatically lease the land without having to change the tenure of the land. Unfortunately the new land law has not been passed as expected and the alternative arrangement devised was to establish a loosely binding agreement that will still ensure security of use of the infrastructure from potential land grabbers. This is when the Land and Water Management Agreement tool was designed. This agreement is between custodian land holders who were located the land by traditional chiefs and the irrigation farmers agreeing on modalities of land utilization. The basic agreement is that the custodians of the land would use the land to cultivate during normal rain fed growing periods and

transfer user rights back to irrigation farmers in the WUA during the dry season. Elements of the land and water management agreement include the time limits on which each party will have to cultivate on the land; the traditional leaders who have distributed land to the custodian owners; the fees the WUA will pay where applicable; the arbitrator in case of disputes who was generally agreed to be the District Commissioner as representative of the President at district level.

Lessons learnt from administration of the land and water management agreement

- As population increase continue to occur in Malawi, and pressure for subsistence food production remains rampant, land issues continue to take the centre stage in the Agriculture sector in Malawi. If not managed, land issues are likely to cause potential strife in the communities' investments are being made.
- Farmers will always welcome interventions that are aimed at enhancing their food production initiatives. However, they may not care much about potential security threats as the country has a reputation of dialogue and mutual understanding. However it is best to ensure adequate security through written documents.
- There is need to provide adequate information on impact of leasing and the benefits therein. This is meant to gear the land users to move towards the actual leasing of the land in order to ascertain permanent legal security of the land and developed infrastructure.

4.0 KENYA COUNTRY CONTEXT

Kenya occupies a total land area of 592,901 km² comprising 97.8 % land and 2.2% water surface. Out of this only 20% of the land area can be classified as medium to high potential agricultural land and the rest is mainly arid or semi-arid. Approximately 75% of the population lives within medium to high potential agricultural areas while the rest lives in the arid and semi-arid lands (ASALs). The high rainfall zone, which receives more than 1,000 mm of annual rainfall, occupies less than 20% of the productive agricultural land and carries approximately 50% of the country's population. Most of the food and cash crops as well as livestock are produced in this zone under semi-intensive and intensive systems. The medium rainfall zone which receives between 750-1000 mm of rainfall annually occupies 30%-35% of the country's land area, and provides home for about 30% of the population. Farmers in this zone keep cattle and small stock, and grow drought-tolerant crops. The ASALs, which receive 200-750 mm of rainfall annually, cover 84% of the total area. ASALs carry 80% of the country's livestock and 65% of the wildlife, and are used predominantly as rangelands and game parks. The population of Kenya is estimated at 31.3 million with an annual growth rate of around 1.8% and an average population density of about 55 persons per km². The agricultural sector

remains the backbone of the economy, providing about 80% of export earnings, although its share in GDP has declined from nearly 40% in the 1970s to about 20% in 2001.

Overview of Water Resources Situation in Kenya

Water is one of the most valuable natural resources in Kenya. Kenya is classified as a water-scarce country. The natural endowment of renewable freshwater is currently about 21 BCM (billion cubic meters) or 647 m³ per capita per annum. By WHO standards, a country is categorised “water-scarce” if its renewable freshwater potential is less than 1,000 m³ per capita per annum. It is estimated that by 2025, Kenya will have a renewable freshwater supply of only 235 m³ per capita per annum at current management and use levels. About 40% of the renewable freshwater has potential for development and this represents the maximum safe yield. The remaining 60% are required to sustain the flows in rivers so as to ensure biodiversity and act as a reserve for development beyond the timeframes of the strategies. Kenya’s maximum safe yield of surface water resources is 7.4 BCM per annum and the maximum yield of groundwater about 1.0 BCM per annum. This presents a formidable case for sustainable management of all water resources.

The area around Mt. Kenya is classified as high agricultural potential, but agricultural yields have been declining due to land degradation, declining soil fertility and climate change. Forecasts indicate a further decline of agricultural productivity growth of 2.5% p.a. due to climate change. The Tana River catchment contains Mt. Kenya as one of the five major water towers in Kenya supplying drinking water to Greater Nairobi. However, underpinning Kenya's physical and economic water scarcity, there has been a drastic reduction of surface water availability in the Tana catchment, especially during the dry season, limiting the potential for further development of surface water for irrigation. The more volatile nature of the flow regime has raised the sediment load in the Tana River with serious consequences for power supply. Previous studies have shown that the total sediment load of the Tana River varies from 2,796 tonnes/day during the dry season to 24,322 tonnes/day during the rainy season. The main tributaries that drain into the Tana River include 14 rivers from the Eastern side of Mt. Kenya, five rivers from the Western side of Mt. Kenya and five rivers from the South Western side of Aberdares making a total of 24 tributaries. These rivers have a combined length of approximately 822 Kilometres and a mean flow rate of 178 m³/s.

Issues and Challenges in Water Resources Management in Kenya

Water resources underdeveloped: The current water abstractions are only a fraction (13%-19%) of the assessed safe yield or potential for development, which in 1992 amounted to 1.1 BCM per annum and is currently 1.6 BCM/annum, thus indicating an extremely low level of development. This

extremely low level of development portrays a negative picture of the country's commitment to developing water resources. Kenya, although water-scarce, has room for extensive development towards achieving maximum utilisation of the renewable fraction of the freshwater resources.

Climate variability: Rainfall patterns in Kenya are extremely variable not only spatially and temporally, but also in rainfall intensities. This makes the natural flow of water in the watercourses highly variable in space and in time. Major recent floods which effected Kenya occurred in 1997-8 (El Nino) and 2003. Major drought periods have been recorded every 7-10 years with the severest occurring in 1981-1985 and 1998-2000. The high variability of rainfall affects the safe yields that may be extracted and can only be overcome by optimising stream flows through sustainable NRM in the catchments, and providing and managing water storage facilities. Until recently not much attention or priority has been given to water storage mainly due to the high investment costs.

Catchment degradation: Catchment degradation is causing increased runoff, flash flooding, reduced infiltration, erosion and siltation and this is undermining the limited sustainable water resources base in the country. The main causes of catchment degradation are poor farming methods, population pressure (forest excision for settlement) and deforestation (for agricultural land and fuel wood). For example, the sediment yields for the Ewaso Ny'iro and Tana Rivers have increased to 15 times the level of 1970. Catchment degradation will invariably affect surface water availability as rivers and reservoirs will dry up. Tables 1 and 2 below give an example of sediment distribution from various sources in the Aberdares and Mt Kenya sub-catchments.

Water resources assessment and monitoring: The hydrometric network and data recording and reporting systems for monitoring and assessing the river flows has deteriorated and can no longer support adequate assessment of the water resources base of the country. The number of river gauging stations in Kenya has shrunk from over 900 in the early 1970s to less than 100 currently operational. Also the monitoring of groundwater resources and water quality has not been given the attention it deserves. The data gaps in the present assessments need to be addressed.

Transboundary water resources management and utilisation: Kenya's neighbours share over half of Kenya's water resources, mostly surface water. Through the Lake Victoria Basin, Kenya provides about 45% of surface water inflows to Lake Victoria, and hence to the upper River Nile. This inter-dependence between Kenya, its immediate neighbours, and downstream and upstream Nile countries has considerable implications in the management of the country's major water resources. These resources must be jointly managed within agreed frameworks to ensure equity and to avoid conflict.

Degradation of water resources: Over-abstraction of surface water in some parts of the country, inappropriate land use changes, soil erosion, and deterioration of riparian lands causing flash floods, turbidity, and siltation of water courses and storage facilities have led to serious degradation in the quantity and quality of the water resources. Poorly controlled discharge of effluent from industry and sewage outfalls, and excessive nutrient and agrochemical pollution from rural sources has impacted negatively on the quality of water. The dramatic reduction in the depth of Lake Baringo, from over 15 metres in 1921 to an average of 1.8 metres today is due not only to reduced inflows but also to the increased sediment load from surrounding unprotected and degraded catchments (WRMA 2010).

It is advocated that in order to achieve a water secure Kenya, there is a need to reverse the growing degradation of water resources, increase investment in hydraulic and storage structures for flood control, energy generation, irrigation development, urban, industrial, rural and livestock water supply. Other issues which require immediate attention include weak catchment management, pollution control and water allocation mechanisms. In recognition of these issues and challenges, the Government of Kenya has initiated a process of reform for the entire water sector. The sector is being transformed in line with national policy as outlined in the National Poverty Reduction Strategy Paper, the Economic Strategy for Wealth and Employment Creation and the Water Act of 2002, in an attempt to meet the Millennium Development Goals (MDGs). This National Water Resources Management Strategy recognises and appreciates integrated water resources management as a national priority, which underpins all of Kenya's social and economic development.

Legal and Institutional Framework for the Water Sector in Kenya

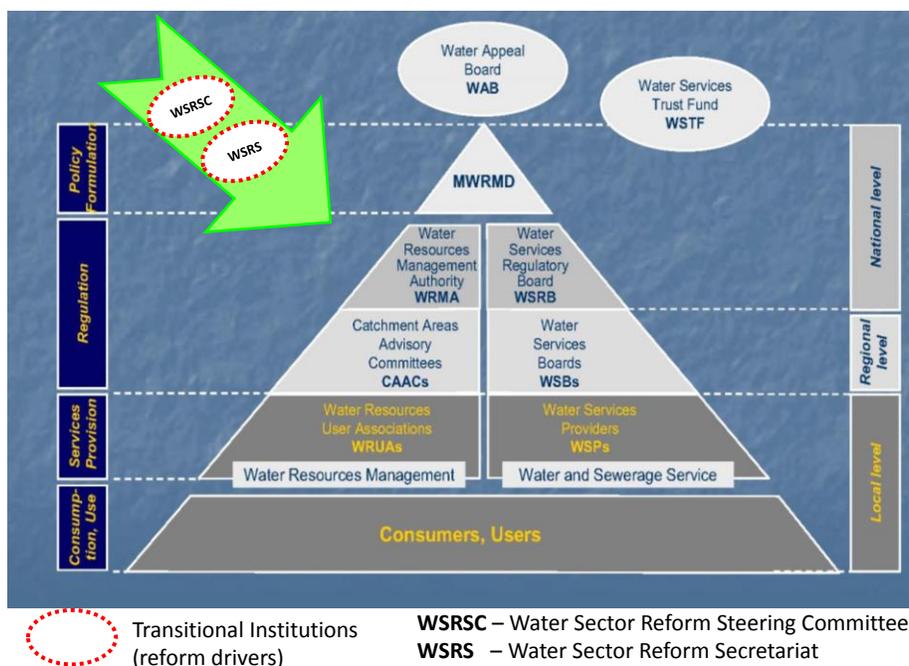
The fundamental objectives for managing Kenya's water resources are enshrined in the Water Act (2002). Sections 11(1) and 11(2) define the National Water Resources Management Strategy in accordance with which, the water resources of Kenya shall be managed, protected, used, developed, conserved and controlled. The strategy prescribes the principles, objectives, procedures and institutional arrangements for the conservation and control of water resources including: (i) classifying water resources, (ii) determining the requirements of the reserve for each water resource; and (iii) identifying areas designated as protected and groundwater conservation areas.

Sessional Paper Number 1 of 1999 (National Water Policy on Water Resources Management and Development) provides the policy directions to address the above mentioned challenges. The policy directions include: (i) treatment of water as a social and economic good; (ii) preservation, conservation and protection of available water resources; (iii) sustainable, rational and economical allocation of water resources; (iv) supplying adequate amounts of water meeting acceptable

standards for the various needs; (v) ensuring safe wastewater disposal for environmental protection; and (vi) developing a sound and sustainable financial system for water resources management, water supply and water borne sewage collection, treatment and disposal. To ensure equitable distribution and sustainable management of water resources, a National Water Resources Management Strategy (2010) was formulated. The overall goal of the Strategy is to eradicate poverty through the provision of potable water for human consumption and water for productive use.

The fundamental objectives for managing Kenya’s water resources are to achieve equitable access to water resources and their sustainable and efficient use. The specific objectives of the strategy are: (i). to improve water resources assessment so as to obtain more accurate figures of the annual safe yield of surface and groundwater resources; (ii) to put in place mechanisms that promote equal access to water for all Kenyans; (iii) To enhance and strengthen roles of gender in water resources management; (iv) to create mechanisms for an integrated approach to land and water resources planning and management on a catchment basis; (v) create mechanisms for catchment conservation and management; (vi) to put in place measures that enhance the availability of water resources of suitable quality and quantity where and when it is needed; and (vii) to put in place strategies that will promote the production of accurate data on water use and demand.

Institutional Framework for the Water Sector



The Water Act introduced comprehensive and radical changes in the management of the water sector in Kenya. Its provisions include: (i) separation of the management of water resources from the

provision of water resources; (ii) separation of policy making from day-to-day administration and regulation; (iii) decentralization of functions to lower level state organs; and (iv) encouraging non-government entities in the management of water resources and in the provision of water services. The Act provides for the management, conservation, use and control of water resources, and for the acquisition and regulation of water rights. Under this Act, the government established two entities to deal with different aspects of the water sector, namely the Water Resources Management Authority (WRMA) and the Water Services Regulatory Board. The Board is responsible for water supply and sewerage, while the authority is mandated to develop guidelines and procedures for water allocation, monitor and reassess the national water management strategy, receive and determine application for permits for water use, regulate and protect water resources from adverse impacts, and manage and protect catchments. The national water resources management strategy provides for the creation of water users associations and catchment area advisory committees. The Water Services Regulatory Board on the other hand, issues licenses to water service providers, determine standards for water provision, monitor compliance, develop guidelines for fixing tariffs, and develop and monitor the implementation of model performance agreements. The legal and policy directives as well as the institutional framework present a very favorable environment for greater involvement of communities, land care and forest care groups in the implementation project interventions in the Upper Tana Catchment for sustainable management of water and natural resources leading to improved livelihoods.

Upper Tana Natural Resource Management (UTaNRM) Project

The Upper Tana Natural Resource Management Project (UTaNRM) is an eight (8) year project (2012-2020) funded by the Government of Kenya, IFAD, Spanish Trust Fund and the local community. It is meant to scale up the Mount Kenya East Pilot Project (MKEPP). The IFAD-funded MKEPP which was completed in 2012 focused on natural resource management in the entire Upper Tana catchment. Originally MKEPP covered five (5) river basins that drain into the Tana River. These river basins shall be covered in the UTaNRM Project expanding to 12 high priority river basins in Mt Kenya and Aberdares.

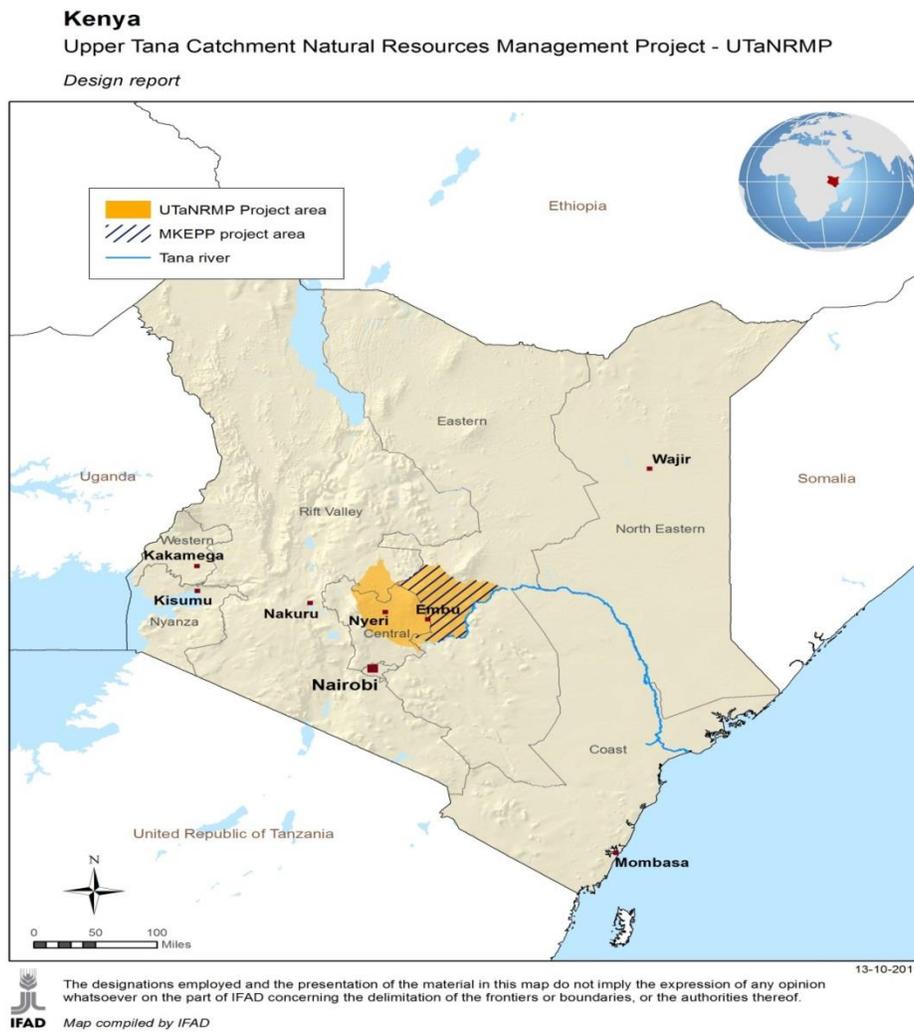
Implementation Approach of UTaNRM Project in Kenya

Basing on lessons learned from MKEPP pilot phase, the UTaNRM Project is implemented through a number of Approaches. These approaches include;

- i) Water Resources Users Associations (WRUAs): These operate at the river basin level. Through a participatory process, the UTaNRM Project assists WRUAs to develop their Sub-Catchment Management Plans (SCMPs).

- ii) Focal Development Areas (FDAs): These are groups of 800-1,200 households living on a strip of about 5km on either side of a river. MKEPP has been working with FDAs to undertake participatory planning and develop Community Action Plans (CAPs)
- iii) Community Forest Associations (CFAs): These are communities living along the margins of the forest reserves. They are empowered to develop Participatory Forest Management Plans (PFMPs) that promote forest protection, rehabilitation of degraded areas, and reduction of human-wildlife conflicts (HWC).

The Upper Tana Natural Resource Management (UTNRM) project works closely with County and Sub-county government departments in execution of its mandates. This means it has to feed within the County Development Plans (CDPs) whilst observing the national government implementation plans.



Irrigation Potential in Kenya

The potential for irrigation in Kenya is said to be high, however, expansion of new irrigated areas is very slow at a growth rate of less than 5% of the irrigable land. The irrigation potential could only be through water harvesting, storage and exploitation of ground water resources and improvement in water use efficiency. The irrigators in the basin include large scale farms, Del Monte and Kakuzi, public schemes (Mwea, Bura and Hola) and community-based small holder schemes. Demand for irrigation water greatly exceeds supply. Only 68,700 hectares are under irrigation out of 205,000 hectares of irrigable land.

The potential for irrigation in the Upper Tana Catchment is limited mainly by low availability of water for irrigation caused by degradation of the catchments and water sources, increasing siltation of water storage bodies, lack of maintenance of existing irrigation systems, illegal abstraction of water, especially in the upper parts of the catchment while the lower parts lack water, and inefficient use of water for irrigation. One of the strategies proposed by the National Water Resources Management Strategy to promote availability of water for irrigation is to adopt efficient irrigation water saving technologies. Recent reconnaissance surveys in the catchment (MKEPP 2011) indicate that many small scale irrigation schemes already exist. However, many are operating at only about 40% efficiency due to lack of maintenance and use of inefficient techniques, while others are completely dead. The project strategy will be to rehabilitate existing irrigation systems, especially in the upper and middle zones of the catchment, introduce more efficient irrigation water delivery systems using delivery pipes and efficient application methods based on micro sprinklers and drip systems.

The project will finance upgrading of about 1,000 ha of irrigation schemes in the upper and middle zones. Communities will contribute labor and materials for construction. Experience from MKEPP will be used to implement these activities. The upgraded schemes will be used to produce high value crops using water-efficient irrigation technologies. The project will also support formation, training and capacity building of WRUAs in efficient irrigation methods, maintenance of irrigation systems, crop husbandry and agronomy as well as soil and water conservation.

Strengthening Land and Water Rights: The Case of Ragati River WRUA

Upper Tana Natural Resource Management Project (UTaNRM) is playing a significant role in building the capacity of Water Resource Users Associations (WRUAs). Using tools like Participatory Rural Appraisals (PRA), UTaNRM has been able to train WRUAs in developing Sub-Catchment Management Plans (SCMP), soil and water conservation, agro forestry, water saving irrigation technologies and maintenance of small irrigation schemes, among other. Ragati River WRUA is one of the WRUAs that has benefited from this support.

Overview of Ragati Sub-Catchment

Ragati sub catchment has an estimated population of 195,437 people. Ragati Sub-Catchment starts from inside Mt. Kenya forest in the North East and ends at Sagana River in the South West. Ragati River covers an approximate distance of 320 kilometres from its sources in the forest to where it enters Sagana River at Kioru covering an approximate area of the 1,200km². It is located in Mathira East and Kirinyaga West Districts. Ragati WRUA falls under sub catchment 4BB which is drained by Ragati River. The main tributaries of Ragati river are; Thakumi, Rwaithaga, Karimaini, Kururu, Gichichi and Kirigi. Besides the tributaries the sub catchment has several springs, wetlands, and Dams. The sub- catchment experiences two rainy seasons, long rains from March to June and short rains from October to December. It receives an average rainfall of 800mm p.a. and occasionally 1200mm p.a. The hydrology of the sub catchment is greatly influenced by the topography, precipitation, climate change and land use. Forest harvest practices and agricultural practices affects stream flows within the sub catchment.

Ragati WRUA and Development of Sub-Catchment Management Plan

The WRUA was formed in 2009 by key Ragati stakeholders. It was formed to solve the problems which were being experienced as at that time, for example, illegal water abstraction, water scarcity, pollution from factories, industries, town and public institutions, river banks cultivation, soil erosion and encroachment of riparian areas. Presently, Ragati WRUA is registered under Attorney General's office and issued with registration certificate No.25147. At the local level, Ragati WRUA reflects the interest of water users in the Sub-catchment that need to be actively involved in the management of water resources on which they depend. The Ragati WRUA focuses on the water issues and activities to manage the specific water resources in the Sub Catchment.

Within Ragati Sub-catchment, pollution occurs in different magnitude in various zones. Both non-point and point sources pollution control measures are inadequate to check effluents from town, market centres and institutions. The non-point sources are soil erosion and run offs from the roads. With support from UTaNRM Project, Ragati Sub Catchment Management Plan was developed through participatory approach by all stakeholders. The WRUA committee members and key stakeholders underwent training on the Water Sector Reforms. A number of stakeholders are involved in the use and management of water resources within the Sub-catchment. In Ragati Sub-catchment these stakeholders include: Riparian land owners/ representatives, People who use water directly at the source, Legal water abstractors, Non –consumptive and Observer members. Ragati WRUA has laid down a strategy that emphasizes on safeguarding the reserve while meeting future

water demands and options. One of these strategies includes improving water infrastructure within the sub catchment.

5.0 LESSONS LEARNED IN MALAWI AND KENYA

Water programmes must take into account the land tenure issues raised by their interventions. This requires:

- Preliminary research to understand complex and history-loaded systems of resource tenure;
- Mainstreaming land tenure aspects in the planning, design and decision making on the provision of water infrastructure – including decisions on whether to build the water infrastructure, on its location, its nature, its use, its management regime and even its name;
- Full consultation of local resource users and other key stakeholders in the design and implementation of water programmes, promoting dialogue and negotiation among all affected stakeholders;
- Recordation of local land and water rights which is affordable and can be maintained by local communities overtime;
- Compensation in cash or in kind (e.g. through access to “improved” plots) for loss or erosion of land rights as a result of water programmes and other incentives;
- Capacity building support particularly for the communities and local leaders, and
- Clarity on who has right over what after the programme intervention including preparation of a sustainability plan

6.0 CONCLUSION

IFAD-supported projects and programmes and other partners of GLTN are already documenting and recognising small-scale farmers’ land and water rights in irrigation schemes. This includes projects supporting the issuing of land certificates to farmers involved in the irrigation schemes, the development of integrated watershed catchment plans and ensuring access to an irrigated plot for vulnerable groups. TSLI-ESA could help to scale up the use of these approaches simply by making projects more aware of the importance of addressing land rights in irrigation schemes, and through sharing information between projects on the different ways projects have tackled this issue.

Specific attention should go to the overlap between the mapping and the land & water rights themes; projects that are grappling with land and water rights issues state that the use of maps is one of the most important approaches. Certainly, some of the IFAD projects have pioneered the use of imagery and GIS technology to assess the impact of irrigation schemes on land rights and holdings and there would seem to be many opportunities for sharing these tools with other related projects. Other

projects have developed experience and learned lessons from using maps for watershed planning purposes, which they can equally share with other projects. The key point here will be for the TSLI-ESA to develop the right incentives for various project staff to begin more systematic documenting and sharing of their day-to-day learning.

Another area which the TSLI-ESA should target for scaling up is the development of tools and approaches for capacity building amongst newly-established institutions that are becoming responsible for the administration, at a local level, of land (and related water) rights. These are mainly the WUAs, which will have specific needs for simple tools that assist in managing land and related water use rights. Project staff from across the region have noted that the formalisation of land rights should be a priority in this context, which means that the WUAs will need tools for managing data on land holdings and for managing payments, transfers, etc.

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End Notes

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2. Land and GLTN Unit, United Nations Human Settlement Programme (UN-Habitat), Kenya
3. International Fund for Agricultural Development (IFAD), Italy
4. Upper Tana Natural Resource Management Project, Kenya

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