



Making REDD work for communities and forest conservation in Tanzania

## TFCG Technical Report 29

# Social Impact Assessment of the Kilosa REDD+ Pilot Project

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## EXECUTIVE SUMMARY

This impact assessment evaluates anticipated desired and undesirable social impacts that may occur through implementation of the Kilosa REDD Project by MJUMITA and Tanzania Forest Conservation Group (TFCG). The Kilosa REDD Project is one of nine REDD pilot projects being implemented in Tanzania as part of the REDD Readiness funding provided by the Government of Norway. The Kilosa Project is one of two projects that MJUMITA and TFCG are implementing in Tanzania under the overall project titled *Making REDD work for communities and forest conservation in Tanzania*. In addition to identifying positive and negative social impacts the Report also identifies viable mitigation measures for reducing (and in some cases eliminating) negative impacts.

The social impacts assessment (SIA) was conducted in a highly participatory fashion using a seven-stage process. The assessment was closely guided by the Social and Biodiversity Impact Assessment Manual V.2 (Forest Trends & Katoomba Group 2011). More than 400 community members and landscape-level stakeholders participated in identifying the activities that would be conducted as part of the REDD Project, and their potential impact on communities residing in the Project Zone.

Communities identified eight (8) principal strategies that they want to implement in the Project Zone. The eight strategies together constitute the Community Development Plan – a step-by-step description of how communities intend to ensure that desired social impacts are achieved, and that negative impacts are identified early and appropriately mitigated. Additionally, a draft community monitoring plan has been proposed, uniting the efforts of a professional consultant commissioned to develop a monitoring and evaluation plan, and the specific indicators needed to ensure that strategies are being implemented as planned.

The eight strategies addressed in the Community Development Plan (CDP) are:

1. Development of direct incentives for managing forests (this include creating a community based carbon trading cooperative that would aggregate carbon credits of all communities participating in participatory forest management to achieve their REDD objectives);
2. Improvement of local level governance in every village, not only to administer REDD-related objectives, but also to ensure effective implementation of the CDP;
3. Landuse plans developed in every village to address disorganised landuse, landuse conflicts, and ensure that every village has a REDD project area while meeting landuse needs for other activities (such as agriculture);
4. Establishment and implementation of participatory forest management to ensure that REDD objectives are achieved locally, and to ensure that communities are directly involved in decision making around forest use and access at local level;
5. Improvement of agriculture and livestock productivity, the two main subsistence activities in the Project Zone that must improve to reduce pressure on forests and secure food and income;
6. Improve entrepreneurs skills and expand variety of income generating activities taking place in the Project Zone;
7. Reduce non-sustainable extractive use of forests, particularly for charcoal production and large scale firewood use for the brick and brewing industries; and
8. Improve the availability of extension services at local level

Some **key findings** related to the SIA are that:

1. Attribution of improvements in welfare or forest conditions in the Project Zone specifically to the REDD Project will be a challenge given that there are several other government and non-government organisations working in the area on social and forest-related issues. To avoid unwarranted attribution and/or double counting will require that Project proponents and village governments keep careful records of how the various sources of funding and support are used.

Nevertheless, a key contribution that the REDD project is already making in the Project Zone, and which it will continue to make is to:

- a) increase the exposure that communities have to support available at District level through stakeholder meeting such as this SIA required. District support ranges from direct financial resources, to improving access to extension services and improvement of education services;
  - b) strengthen village governance so that community leaders are able to produce the correct documentation to receive support, to meet eligibility requirements, and to keep good records of local development projects were supported; and
  - c) enable communities to meet eligibility requirements sooner by diverting some of the carbon credit payments into community projects that are also supported by District funding.
2. The importance of existing landuse conflicts between pastoralists and settled cultivators have been largely under-estimated by the Project and communities. In this vein, livestock keepers did not participate in the stakeholder SIA workshop. Recent history, however, has shown that Kilosa District has undergone violent conflicts related to livestock versus agricultural landuse, which must be resolved lest they threaten the success of the REDD Project. The Project must make an honest assessment of the rightful importance of livestock keepers in the Project landscape and - it is determined that non-inclusion threatens project success, should henceforth include representatives from the pastoralist communities in all Project planning and activities.
3. There is a tendency for communities and project to encourage non-extractive use of forest i.e. a conservation approach, but some extraction is needed to maintain forest as a net CO<sub>2</sub> sequestering system that generates C credits. Hence, Project should promote rather than discourage timber extraction, charcoal production and fuelwood extraction and should focus instead on zonation of these activities into acceptable areas in the Project Zone, and converting them to sustainable production systems.

## LIST OF ABBREVIATIONS

| <b>Abbreviation</b> | <b>Meaning</b>  |
|---------------------|---|
| <b>AIDS</b>         | Acquired immuno-deficiency syndrome                         |
| <b>CBFM</b>         | Community based forest management                           |
| <b>CCTC</b>         | Community-based carbon trading cooperative                  |
| <b>CDP</b>          | Community development plan                                  |
| <b>CMP</b>          | Community monitoring plan                                   |
| <b>GoT</b>          | Government of Tanzania                                      |
| <b>HIV</b>          | Human immunodeficiency virus                                |
| <b>MEC</b>          | Monitoring, evaluation and communications                   |
| <b>MJUMITA</b>      | Community Forest Conservation Network of Tanzania           |
| <b>PFM</b>          | Participatory forest management                             |
| <b>PSI</b>          | Priority social issue                                       |
| <b>REDD</b>         | Reduced emissions from deforestation and forest degradation |
| <b>TFCG</b>         | Tanzania Forest Conservation Group                          |
| <b>ToC</b>          | Theory of change  |
| <b>TSH</b>          | Tanzania Shilling (1 USD ~ TSH 1600)                        |
| <b>USD</b>          | United States Dollar  |
| <b>VC</b>           | Village council   |
| <b>VEO</b>          | Village executive officer                                   |
| <b>VER</b>          | Verified emission reduction                                 |
| <b>VNRC</b>         | Village natural resource committee                          |

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## INTRODUCTION

Land-based carbon projects extend across many social and geographical scales. Many rural communities are keen to embark on carbon projects as a way of generating income, jobs, and other social benefits (Richards & Panfil 2011). Carbon offset buyers are also attracted to the idea of simultaneously reducing global emissions and improving the livelihoods of local communities.

This report describes the process and outcomes of a social impact assessment (SIA) that was conducted for the project: *Making REDD work for communities and forest conservation in Tanzania*. The objectives of the REDD project in Tanzania span across three scales: a) to mitigate global climate change, b) to conserve high conservation value forests in Tanzania, and c) to ensure that local rural communities that manage forests for carbon and biodiversity benefit in ways that bring about meaningful individual and community development. Hence, the REDD project in Tanzania aims to simultaneously deliver social and environmental co-benefits. The Project proponents are aiming to have the project design validated and verified against the Voluntary Carbon Standards (VCS) and the Climate, Community and Biodiversity (CCB) standards.

The REDD Project consists of two implementation phases: the REDD readiness phase and the REDD implementation phase. The REDD readiness stage is currently in progress (September 2009 – August 2014). It is one of several REDD readiness pilot projects being implemented worldwide to prepare communities in developing countries (Annex II nations) for national programmes to reduce emissions from deforestation and degradation. An important outcome of Phase 1 is to identify the social objectives for Phase 2 and to ensure that negative social impacts from REDD activities are minimized and mitigated. The REDD implementation phase will begin after Phase 1 has been implemented and evaluated (i.e, after 2013). Thus, Phase 2 is anticipated as a 20 to 30 year project that will operate under Tanzania's framework of a National REDD Strategy.

The project scope for Phase 1 of *Making REDD work for communities and forest conservation in Tanzania* is Lindi (Urban and Rural) and Kilosa Districts in Lindi and Morogoro Regions, respectively. Approximately 50,000 hectares of globally important montane and lowland coastal/miombo forest representing the Eastern Arc Mountains and Coastal Forest eco-regions, respectively, are included in the project scope. This document is limited to reporting on the outcomes of SIA of ongoing and future activities of Phases 1 and 2 occurring in Kilosa District only.

## DESCRIPTION OF THE PROJECT:

The “*Making REDD work in Tanzania*” Project is being implemented by the Tanzania Forest Conservation Group (TFCG) in partnership with the Community Forest Conservation Network of Tanzania (MJUMITA is its acronym in Swahili). The overall aim of the project is to reduce greenhouse gas emissions from deforestation and forest degradation in Tanzania in ways that provide direct and equitable incentives to communities to conserve and manage forests sustainably. In Phase 1 (2009 – 2014), the project plans to achieve this by supporting the development of a Community Carbon Enterprise or hosted within the existing network of Tanzanian communities engaged in participatory forest management i.e., MJUMITA. The Enterprise will aggregate verified emission reductions (VER) from its members and market them in international carbon markets. Project funds and carbon revenue will be channelled directly to the communities on the basis of direct outputs or results i.e., actual carbon emissions reduced, captured or stored. Eighty percent of the project budget will only be disbursed upon demonstrating direct REDD results; in total, 18% of the project's financial disbursements will be linked to results-based performance.

A basic and important underlying premise for Phase 1 of the project is that for REDD to operate in Tanzania, rural communities must have legal and recognised rights to the forests that they manage. Thus, the project links directly to ongoing efforts in Tanzania to promote community-based and participatory forest management, CBFM and PFM, respectively. Assisting forest owning communities

through the steps needed to secure their rights to manage forests, and training communities to manage their forests sustainably are an integral part of Project goals and activities of Phase 1.

The Project's purpose for Phase 1 is to demonstrate at local, national and international levels a pro-poor approach to reducing deforestation and forest degradation by generating equitable financial incentives from the global carbon market for communities that are sustainably managing or conserving Tanzanian forests at the community level. Consequently, the Project incorporates an evaluation and communication component into its design so as to inform project implementation and share lessons learnt with the national and international community. The Project is committed to building in-country capacity with regards to REDD at both local and national governmental levels. The capacity building is linked to a strategic advocacy component aimed at forging a smooth path for REDD in Tanzania by engaging project proponent and implementers in the formulation of REDD frameworks and processes at national and international level.

The project intervention logic of Phase 1 identifies four (4) project outputs. These are:

- **Output 1:** Replicable, equitable and cost-effective models developed and tested at the group or community level for REDD on village and government forest land in ways that maximize benefits to communities, forests and the nation
- **Output 2:** Replicable, equitable and cost-effective models developed that are designed to address the drivers of deforestation and forest degradation and to reduce leakage across project sites in ways that build capacity of communities and other stakeholders and provide additional climate change adaptation benefits to participating rural communities.
- **Output 3:** Monitoring, evaluation and documentation processes supported that assess the overall impact of the project at local and national levels and communication of the findings undertaken
- **Output 4:** Advocacy process supported at the national and international levels that promote equitable and effective REDD benefit sharing mechanisms and in particular with regard to forest managers at the community level

Major project activities of Phase 1 focus around developing and generating these four outputs (Table 1). Most of these activities are already underway.



**TABLE 1: OVERVIEW OF PROJECT OBJECTIVES, OUTPUTS AND ACTIVITIES**

|  |   |  |   |
|--|---|--|---|
| <p><b>GOAL:</b> To reduce greenhouse gas emissions from deforestation and degradation in Tanzania in ways that provide direct and equitable incentives to rural communities to conserve and manage forests sustainably.</p>  |   |  |   |
| <p><b>PURPOSE:</b> To demonstrate, at local, national and international levels, a pro-poor approach to reducing deforestation and forest degradation by generating equitable financial incentives from the global carbon market for communities that are sustainably managing or conserving Tanzanian forests at a sub-national level.</p>   |   |  |   |
| <p><b>OUTPUT 1: REDD / AR and Community Forestry</b></p> <p>Replicable, equitable and cost-effective models developed and tested at the group or community level for reducing emissions from deforestation and forest degradation (REDD) on village and government forest land in ways that maximize benefits to communities, forests and the nation.</p>  | <p><b>OUTPUT 2: Addressing deforestation drivers and capacity building</b></p> <p>Replicable, equitable and cost-effective models developed that are designed to address the drivers of deforestation and forest degradation and to reduce leakage across project sites in ways that build capacity of communities and other stakeholders and provide additional climate change adaptation benefits to participating rural communities.</p>   | <p><b>OUTPUT 3: Documentation, Monitoring and Evaluation</b></p> <p>Monitoring, evaluation and documentation processes supported that assess the overall impact of the project at local and national levels and communication of the findings undertaken.</p>  | <p><b>OUTPUT 4: National and International Advocacy</b></p> <p>Advocacy process supported at the national and international levels that promote equitable and effective REDD benefit sharing mechanisms and in particular with regard to forest managers at the community level.</p>  |
| <p><b>MAJOR ACTIVITIES</b></p>   |   |  |   |
| <ul style="list-style-type: none"> <li>• Selecting and characterising communities and forests for inclusion in the project</li> <li>• Reviewing management plans and bylaws to ensure poverty and gender equity, and to take account of carbon financing and providing technical support for the implementation of participatory forest management.</li> <li>• Establishing baselines and designing and implementing carbon monitoring systems across all sites</li> <li>• Developing and implementing a project design document (PDD) that meets VCS and CCBA standards</li> <li>• Developing a business plan for the proposed MJUMITA carbon co-operative</li> <li>• Establishing a community carbon cooperative within MJUMITA with the capacity to aggregate and sell voluntary verified emission reductions (VER) from REDD in village forest reserves</li> <li>• Support a dynamic, responsive communication framework at each site</li> <li>• Channeling start-up project funds through the transfer mechanism in order to gain community buy-in at an early stage and ensure that the system can be tested in advance of external VER payments from buyers</li> <li>• Marketing the VERs and selling them to buyers</li> <li>• Scaling up support to other sites following the development of successful models</li> </ul> | <ul style="list-style-type: none"> <li>• Analyse drivers of deforestation and forest degradation.</li> <li>• Develop and implement participatory plans to address leakage and deforestation drivers.</li> <li>• Undertaking a targeted training programme for district, NGO and community members on REDD, through a partnership with the Regional Community Forest Training Centre (RECOFTC)</li> <li>• Assessing the feasibility of establishing and institutionalising the capacity to deliver short term training programmes designed to build capacity on climate change and community forestry in partnership with RECOFTC</li> </ul> | <ul style="list-style-type: none"> <li>• Monitoring of project indicators, risks and milestones described in the project document</li> <li>• Undertaking mid-term and final evaluations</li> <li>• Evaluating the impact and approach of the project and documenting lessons learnt.</li> <li>• Establishing and updating project websites</li> <li>• Supporting the continued development of the community-carbon network as part of the Tanzania Natural Resources Forum to act as a national level CSO forum for sharing, developing and disseminating bi-lingual information on REDD for the Tanzania context as national and international REDD frameworks and policy processes develop.</li> <li>• Establishing and supporting a project advisory committee with representation from project partners and collaborating agencies Annual evaluation and planning meetings</li> <li>• Communicating results and lessons learnt from the project</li> </ul> | <ul style="list-style-type: none"> <li>• Development and implementation of an advocacy strategy and facilitation of community involvement in advocacy process</li> <li>• Hold meetings with key stakeholders involved in REDD policy development and implementation.</li> <li>• Production of printed materials on REDD-related issues</li> <li>• Promote media coverage of REDD-related policy issues</li> <li>• Distribute materials about REDD issues</li> <li>• Conduct research on REDD-related policy issues</li> </ul> |

Phase 2 of the Project consists of the implementation phase of the REDD National Strategy in Kilosa District, post 2013, after having achieved the readiness objectives set out in Phase 1. The goals and objectives of Phase 2 represent the visions of communities in the Project Zone in terms of how REDD income and outputs of Phase 1 will be used to ensure that REDD is achieved in the Project Zone and poverty is alleviated. A large component of the SIA process was to identify the post-Phase 1 focal issues that communities want the REDD project to address, and to subsequently assess the potential positive and negative impacts associated with achieving the focal issues.

This SIA directly and indirectly addresses Outputs 1, 2 and 3 of the REDD Project. Directly, it addresses Output 3, i.e., evaluating the impact of the project (Phase 1 & 2) on local communities.

## **SOCIAL IMPACT ASSESSMENT**

Social impact assessment (SIA) is the process whereby the intended and unintended, positive and negative social consequences of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions are identified, analysed, monitored, and managed (IAIA, 2003). The primary purpose of conducting SIA is to bring about a more sustainable and equitable biophysical and human environment and to ensure that there is a net improvement of the social conditions in a Project Zone, brought about by the project. Credible documentation of the ways in which the Lindi REDD project will affect the livelihoods of the people that live in and around the Project Zone can help ensure positive outcomes for local people.

The International Association of Impact Assessment (IAIA) defines social impacts as the consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organize to meet their needs and generally cope as members of society. The term also includes cultural impacts involving changes to the norms, values, and beliefs that guide and rationalize their cognition of themselves and their society” (IAPA 2003). Thus, the “impact” of a project activity is the difference between what would happen with the action and what would happen without it (Richards & Panfil 2010). Impact can be assessed before, during, and after an activity is implemented. CCB Standards demand good practice at both the validation and verification stages of the project.

## **CCB STANDARDS**

The Climate Community and Biodiversity (CCB) Standards were originally launched in 2005. The Standards are widely favoured by carbon project developers, investors, and buyers. CCB Standards require that carbon projects generate net positive impacts for local communities. A core component of the CCB Standards is the specification that the co-benefits of carbon project must - like carbon- be real, ‘additional’ and measurable. At the very least, specify that carbon projects must ‘do no harm’ to communities in the Project Zone.

The CCB Standards for Project Design are specific about the steps needed to determine which social impacts to expect from the carbon project, and to ensure that the impacts are – for the most part – positive and that negative impacts are mitigated to have neutral effects. The Standards require that:

- Step 1. An accurate description is made of conditions at the start of the project;
- Step 2. Projection is made of how those conditions would change, if the project were never implemented (the “without-project” scenario);
- Step 3. The likely outcomes after the implementation of the project (the “with-project” scenario) is described;
- Step 4. A justification of how project activities are likely to bring about the expected changes; and
- Step 5. A credible system for monitoring social impacts – known as the “community monitoring plan” is designed and implemented.

In summary, the CCB Standards require that the project proponents describe the socio-economic condition of communities and make projections about how this condition will change with and without the influence of the project. To be approved against CCB Standards, the “with-project scenario” must show an improvement over the “without-project” scenario (Figure 1).

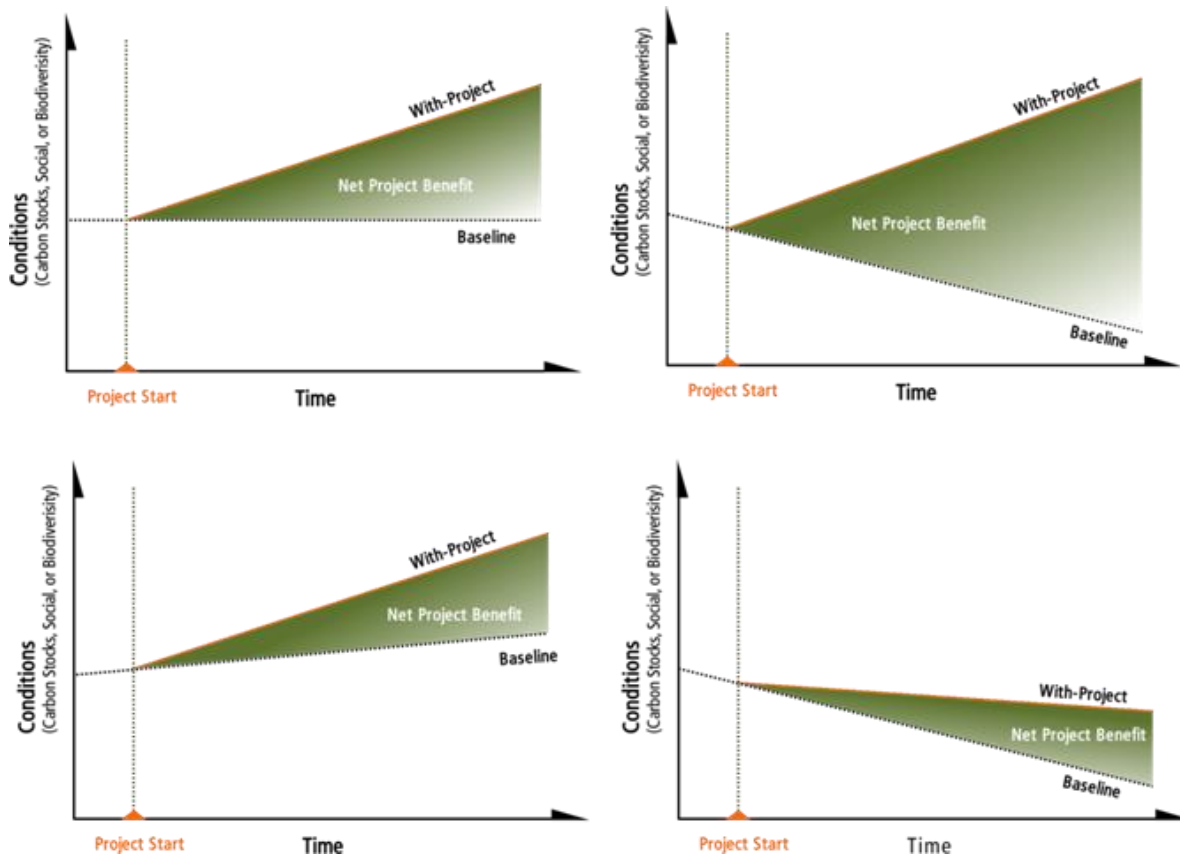


FIGURE 1: FOUR HYPOTHETICAL BASELINE SCENARIOS OF THE NET POSITIVE IMPACTS OF A PROJECT (SOURCE: FOREST TRENDS 2011 – REDD PUBLICATIONS)

The approach advocated by CCBA is that of participatory social impact assessment (PSIA). In PSIA communities in the Project Zone are given the opportunity to evaluate the potential impacts a project might have on their lives, and to identify the strategies needed to enhance positive impacts and mitigate or remove negative impacts. This SIA was guided (but not exclusively) by the seven-stage approach advocated in the *Manual for social impact assessment of land-based carbon project (Part 1 & 2)* (Richards & Panfil 2010). The seven stages in the Manual are designed to correspond with and meet the requirements of specific criteria and concepts of the CCB standards (Table 2).

**TABLE 2: SUMMARY OF HOW THE SEVEN SIA STAGES CORRESPOND TO CONCEPTS AND CRITERIA OF THE CCB STANDARDS**

| <b>SIA Stage</b> | <b>Brief Description</b>  | <b>Relevant CCB Concepts and Criteria</b>                                      |
|------------------|---|--|
| Stage 1          | Description of socio-economic conditions before project start-up and identification of all stakeholder groups that might be affected  | Concept G1 (especially Criteria G1.1, G1.2, G1.3, G1.5 & G1.6), Criterion G3.8 |
| Stage 2          | Projection of social conditions and impacts, assuming there is no project, and focusing on the variables and outcomes most likely to be affected  | Concept G2 (especially Criteria G1.1, G1.2 & G1.4)                             |
| Stage 3          | Formulated description of how the project proponents and stakeholders think the social objectives will be achieved, and identifying key assumptions between the outputs, outcomes and impacts | Concept G3 (especially Criteria G3.1, G3.2, G3.3, G3.5, G3.7 & G3.8)           |
| Stage 4          | Analysis of possible negative social impacts and cost-effective mitigation measures   | Criteria G3.5, G5.4, G5.5, G5.6, and Concept CM2                               |
| Stage 5          | Identification of monitoring indicators to measure progress in achieving the desired social outcome & objectives  | Concept CM3  |
| Stage 6          | Design of the social or community monitoring plan, including data collection methods for measuring indicators   | Concept CM3  |
| Stage 7          | Analysis, reporting and verification of the SIA results with stakeholders   | Concepts CM3 and GL  |

## **ORGANISATION OF THE REPORT**

This report is based on the consolidation and synthesis of activities and reports that were generated between October 2009 and August 2011 in the Project Zone. The report is designed to sequentially address each of the seven SIA steps recommended in the SIA Manual for land-based carbon projects (Richards & Panfil 2010).

The first part of the report describes the Project Zone and lays out the original conditions prior to the project. Part Two of the report summarises how communities envision the original social (and environmental) conditions in the absence of the REDD project. Part Three summarises communities' projections of future social scenarios with the project, and thus their expectations of what the project can help them achieve (i.e. social objectives). Part Three also outlines the specific activities that project proponents and stakeholders identified as necessary to undertake in order to achieve the social objectives and key assumptions between the outputs, outcomes and impacts of each proposed activity. Potential negative impacts anticipated from project activities and proposes cost-effective mitigation measures to address these are addressed in this section also. In Part Four, a brief summary is presented of the indicators that will be used to measure progress in achieving the desired social outcomes and objectives. Part Five describes the proposed community monitoring plan (CMP) and addresses how communities will monitor positive and negative social impacts and the success of mitigation measures.

Part Six summarises the results of the consultation process that was used to report, validate and verify the SIA results to communities and other stakeholders. The report ends with a brief discussion on the lessons learned from undertaking this SIA and recommendations on how to improve the SIA process for land-based carbon projects.

## **METHODS**

This SIA is the outcome of several methodological approaches that were combined to obtain a full account and analysis of the local conditions, potential social impacts, mitigation measures and a community monitoring plan. The principal approach guiding the SIA process is that of the *Manual for Social Impact*

*Assessment of Land-Based Carbon Projects* (Richards & Panfil 2010). The Manual strongly advocates development of in-house ability to conduct SIA and is designed to help project staff (in this case MJUMITA and TFCG staff) to credibly document the ways in which activities related to projects they are implementing or planning to implement would affect the livelihoods of the people that live in and around the project site. Part 1 of the SIA Manual (Core Guidance for Project Proponents) recommends seven successive stages to conducting an SIA (Table 2).

For the most part the seven stages of Richard & Panfil's Manual are compatible with those of traditional SIA procedures. Stages 1 and 2 identify the baseline conditions and analyze the without project scenarios. Stages 3 and 4 identify the project's intended and unintended positive and negative social impacts, and the actions (strategies) needed to enhance positive impacts and mitigate negative impacts. Stages 5, 6, and 7 consist of developing a monitoring plan of impacts, and analyzing and reporting. The Manual diverges from traditional SIA procedures, however, by advocating low-cost impact assessment that can be undertaken by project staff rather than by consultants. To achieve this, the Manual advocates high community and stakeholder participation in all aspects of the assessment i.e., higher participation than is usually attained through the consultation process of traditional SIA.

Phase 1 of the REDD project (i.e. REDD readiness) was already underway when the SIA process began. Hence, some Phase 1 intervention activities whose components are relevant for the SIA were in progress or completed and could be pooled into the SIA process. Specifically, a stakeholder analysis, an analysis of drivers of deforestation, and the development of a monitoring, evaluation and communications (MEC) plan had already been commissioned to independent consultants. To avoid duplication of efforts, the SIA process was adapted to take advantage of the information and insights generated by these works. Similarly, the community and stakeholder SIA workshops served as platforms for verifying information relevant to SIA, and correcting it and improving it where necessary.

Stages 1, 2 and 3 of the Manual were conducted primarily by project staff after having undergone training in SIA methods in October 2010. Project staff organised three-day workshops with a select group of community members in each of the 13 villages in the Project Zone. In these workshops participatory approaches were employed to: 1) obtain descriptions of the Project Zone prior to the project, 2) discuss historical trends on specific social and environmental conditions, and 3) identify the socio-economic objectives for the REDD project and 4) to identify factors supporting and opposing achievement of the socio-economic objectives (

A total of 369 people participated in the village level workshops related to Stages 1, 2 and 3 of the SIA process (

Stage 4 (analysis of potential negative impacts and developing mitigation measures) was conducted as a two-step process. In step one, project staff facilitated a four-day landscape stakeholder workshop held between 25 and 28th July 2011. Representatives from 12 villages and other landscape-level stakeholders participated. The objective of the workshop was to a) verify the information gathered at the village workshops and validate the post-workshop synthesis and analyses, b) identify key project activities needed to fulfill the long-term social objectives i.e., Phase 2 of the REDD project, and c) with workshop participants, identify the intended and unintended social consequences of project activities. The principal approach for conducting Stage 4 of the SIA was the Open Standards for the Practice of Conservation's theory of change (or causal model).

The workshop was conducted in Swahili, a language that was understood and spoken by all participants. All materials, instructions and outcomes were translated for easy communication. All completed steps and summaries were pinned to the wall for further reference. Colour coding was maintained to facilitate the process and to ensure that illiterate participants could also contribute to discussions and activities.

Open Standards (OS) are a set of standards that "provide the steps and guidance necessary for successful implementation of conservation projects" (CMP, 2007). The OS approach is a comprehensive and holistic

approach to project design, monitoring, and evaluation and is of most value when used at the design stage. OS provide a practical and cost-effective way for analysing social impacts by using the 'theory of change' or 'causal model' approach. During the village and landscape level workshops the project design team and the project stakeholders developed, as best as they could, a hypothesis of how the project would achieve its intended goals and objectives, including its social objectives. In OS, this becomes the project's theory of how and why change will happen. The project theory needs to trace how project **activities** (undertaken in the short-term) and the **outputs** of those activities (experienced in the short- to mid-term) will result in social **outcomes** (experienced in the short- to mid-term) and will subsequently lead to social **impacts** (experienced in the long-term). A causal chain, the results chain, was developed to illustrate the process of social change

Table 4). Approximately 30 community members per village participated in the SIA workshops. Participants included the chairperson and secretary of every sub-village; the chairperson, secretary and treasurer of the village Council; the village executive officer (VEO); religious and/or traditional leaders among others. Effort was made to ensure that at least one representative of natural resource users (e.g. charcoal producers) participated. Across all communities, approximately one third (32%) of participants were women.

**Selection criteria:** members from village natural resources committee and the village or neighbourhood council were selected based on gender, age and sub-village representation. At least two elders, one traditional header, two religious leaders (Muslim and Christian), a charcoal maker and a representative from the Ward executive officer were also invited. A letter was sent in advance to the Village council leaders requesting a workshop and describing the roles and responsibilities that needed to be fulfilled. The ultimate selection of individuals who attended was left to the Chairperson, Secretary and the Village Executive Officer. Thus, there may exist some bias in the selection process; the workshop participants may not fully represent the population.

Table 3). Mechanisms for grievance procedures were also discussed.

A total of 369 people participated in the village level workshops related to Stages 1, 2 and 3 of the SIA process ( Stage 4 (analysis of potential negative impacts and developing mitigation measures) was conducted as a two-step process. In step one, project staff facilitated a four-day landscape stakeholder workshop held between 25 and 28th July 2011. Representatives from 12 villages and other landscape-level stakeholders participated. The objective of the workshop was to a) verify the information gathered at the village workshops and validate the post-workshop synthesis and analyses, b) identify key project activities needed to fulfill the long-term social objectives i.e., Phase 2 of the REDD project, and c) with workshop participants, identify the intended and unintended social consequences of project activities. The principal approach for conducting Stage 4 of the SIA was the Open Standards for the Practice of Conservation's theory of change (or causal model).

The workshop was conducted in Swahili, a language that was understood and spoken by all participants. All materials, instructions and outcomes were translated for easy communication. All completed steps and summaries were pinned to the wall for further reference. Colour coding was maintained to facilitate the process and to ensure that illiterate participants could also contribute to discussions and activities.

Open Standards (OS) are a set of standards that "provide the steps and guidance necessary for successful implementation of conservation projects" (CMP, 2007). The OS approach is a comprehensive and holistic approach to project design, monitoring, and evaluation and is of most value when used at the design stage. OS provide a practical and cost-effective way for analysing social impacts by using the 'theory of change' or 'causal model' approach. During the village and landscape level workshops the project design

team and the project stakeholders developed, as best as they could, a hypothesis of how the project would achieve its intended goals and objectives, including its social objectives. In OS, this becomes the project's theory of how and why change will happen. The project theory needs to trace how project **activities** (undertaken in the short-term) and the **outputs** of those activities (experienced in the short to mid-term) will result in social **outcomes** (experienced in the short- to mid-term) and will subsequently lead to social **impacts** (experienced in the long-term). A causal chain, the results chain, was developed to illustrate the process of social change

Table 4). Approximately 30 community members per village participated in the SIA workshops. Participants included the chairperson and secretary of every sub-village; the chairperson, secretary and treasurer of the village Council; the village executive officer (VEO); religious and/or traditional leaders among others. Effort was made to ensure that at least one representative of natural resource users (e.g. charcoal producers) participated. Across all communities, approximately one third (32%) of participants were women.

**Selection criteria:** members from village natural resources committee and the village or neighbourhood council were selected based on gender, age and sub-village representation. At least two elders, one traditional header, two religious leaders (Muslim and Christian), a charcoal maker and a representative from the Ward executive officer were also invited. A letter was sent in advance to the Village council leaders requesting a workshop and describing the roles and responsibilities that needed to be fulfilled. The ultimate selection of individuals who attended was left to the Chairperson, Secretary and the Village Executive Officer. Thus, there may exist some bias in the selection process; the workshop participants may not fully represent the population.

**TABLE 3: METHODS AND APPROACHES USED FOR THE SIA**

| <b>SIA Stage</b> | <b>Brief Description</b>  | <b>Methods employed</b>  |
|------------------|---|--|
| Stage 1          | Description of socio-economic conditions before project start-up and identification of all stakeholder groups that might be affected  | Literature review of secondary data, rapid rural appraisal, participatory mapping, key informant interviews. A stakeholder analysis was undertaken independently of the SIA process; A study on drivers of deforestation and degradation also conducted independently.                   |
| Stage 2          | Projection of social conditions and impacts, assuming there is no project, and focusing on the variables and outcomes most likely to be affected  | Focus group discussions, scenario analysis, key informant interviews, expert analysis, development of conceptual models for the project  |
| Stage 3          | Formulated description of how the project proponents and stakeholders think the social objectives will be achieved, and identifying key assumptions between the outputs, outcomes and impacts | Group discussions at village and landscape level, development of theories of change for social objectives, building causal models a with multiple stakeholder groups at landscape level  |
| Stage 4          | Analysis of possible negative social impacts and cost-effective mitigation measures   | Stakeholder workshop, some participatory impact assessment, and post-fieldwork synthesis and analysis by expert (independent consultant)   |
| Stage 5          | Identification of monitoring indicators to measure progress in achieving the desired social outcome & objectives  | Conducted independently of SIA process by an independent consultant. Methods used include: document review, field visits to select villages, focus group discussions and meetings with selected stakeholders   |
| Stage 6          | Design of the social or community monitoring plan (CMP), including data collection methods for measuring indicators   | Conducted independently of SIA process by an independent consultant as monitoring plan for all project components (including carbon). Methods used similar to Stage 5 document review, field visits to select villages, focus group discussions and meetings with selected stakeholders. |
| Stage 7          | Analysis, reporting and verification of the SIA results with stakeholders   | Landscape level Stakeholder workshop and feedback meetings at village level by project staff and village government leaders  |

Stage 4 (analysis of potential negative impacts and developing mitigation measures) was conducted as a two-step process. In step one, project staff facilitated a four-day landscape stakeholder workshop held between 25 and 28<sup>th</sup> July 2011. Representatives from 12 villages and other landscape-level stakeholders participated. The objective of the workshop was to a) verify the information gathered at the village workshops and validate the post-workshop synthesis and analyses, b) identify key project activities needed to fulfill the long-term social objectives i.e., Phase 2 of the REDD project, and c) with workshop participants, identify the intended and unintended social consequences of project activities. The principal approach for conducting Stage 4 of the SIA was the Open Standards for the Practice of Conservation’s theory of change (or causal model).

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**TABLE 4: SUMMARY OF PARTICIPATION AND GENDER BALANCE AT VILLAGE-LEVEL SIA WORKSHOPS**

| Village/community                 | No. women  | No. men    | Total      |
|-----------------------------------|------------|------------|------------|
| Chabima                           | 10         | 19         | 29         |
| Dodoma Isanga                     | 10         | 20         | 30         |
| Ibingu                            | 10         | 19         | 29         |
| Idete                             | 10         | 26         | 36         |
| Ilonga                            | 11         | 22         | 33         |
| Kisongwe                          | 10         | 19         | 29         |
| Lunenzi                           | 7          | 24         | 31         |
| Masugu Juu                        | 10         | 20         | 30         |
| Masugu Kati                       | 10         | 20         | 30         |
| Mfuluni                           | 9          | 24         | 33         |
| Mkadage                           | 10         | 20         | 30         |
| Munisagara                        | 10         | 19         | 29         |
| Nyali                             | 10         | 19         | 29         |
| <b>AVERAGE</b>                    | <b>10</b>  | <b>21</b>  | <b>31</b>  |
| <b>TOTAL</b>                      | <b>117</b> | <b>252</b> | <b>369</b> |
| <b>Proportion of women to men</b> | <b>32%</b> | <b>68%</b> |            |



Step two of Stage 4 consisted of consolidating the outcome of group-work activities, synthesizing the results, completing gaps in the conceptual models and results chains, and writing the SIA report. Step two was conducted post-workshop; it was led by an independent consultant with input from project staff.

Stages 5 and 6 of the SIA process addresses the need to monitor and evaluate (M&E) social impacts over the course of the project cycle. Both stages require identification of appropriate indicators and developing a monitoring plan. The entire process was conducted by an independent consultant as part of a larger assignment to design a monitoring, evaluation and communication (MEC) plan for both Lindi and Kilosa REDD project sites. The landscape level workshop was used to informally assess whether additional indicators were needed. Time constraints prevented facilitators from undertaking any aspects of design of a community monitoring plan (CMP).

Analysis and reporting of information pertaining to Stages 1 to 6 was commissioned to an independent consultant who subsequently prepared this SIA report. [A summary of the report will be presented to community members (village councils) for verification and final approval].

## **PART ONE: ORIGINAL CONDITIONS OF THE PROJECT ZONE**

The objective of the original conditions study is to thoroughly describe the Project Zone and the surrounding project zone as it was before the project commenced. In this regards it sets the with-and-without project reference scenarios, i.e., the basis for determining the likely impacts (positive and negative) of the project.

The CCB Standards define the Project Area as “the land within the carbon project boundary and under control of the project proponent”. The project zone is defined as “the Project Zone and the land within the boundaries of the adjacent communities potentially affected by the project”. For the Kilosa REDD project, the project zone consists of the area within the jurisdiction of the 13 villages that are included in the REDD project. This is a land area equivalent to 52,300 ha or 523 km<sup>2</sup> (**Error! Reference source not found.**).

### **PROJECT SCOPE**

The TFCG – MJUMITA REDD project activities are taking place in Kilosa District, Morogoro Region, Tanzania (Figure 2). Kilosa District is one of six districts that comprise Morogoro Region. The District is located in east-central Tanzania approximately 300 km west of Dar es Salaam, the largest city in Tanzania and the National Government’s administrative hub (Figure 2). Kilosa District has nine administrative divisions comprising 46 wards and 164 registered villages. The REDD Project is taking place in 10 of these villages. Three communities (Masugu Juu, Masugu Kati and Mkadage) are not villages unto themselves but rather, ‘mtaa’ or ‘streets’ of Kilosa Municipality. They were included in the original project area but were excluded subsequently due to ambiguities over forest tenure within the ‘mtaa’. For the purpose of this impact assessment the ‘mtaa’ are treated as villages; hence 13 ‘villages’ are considered in the Report.

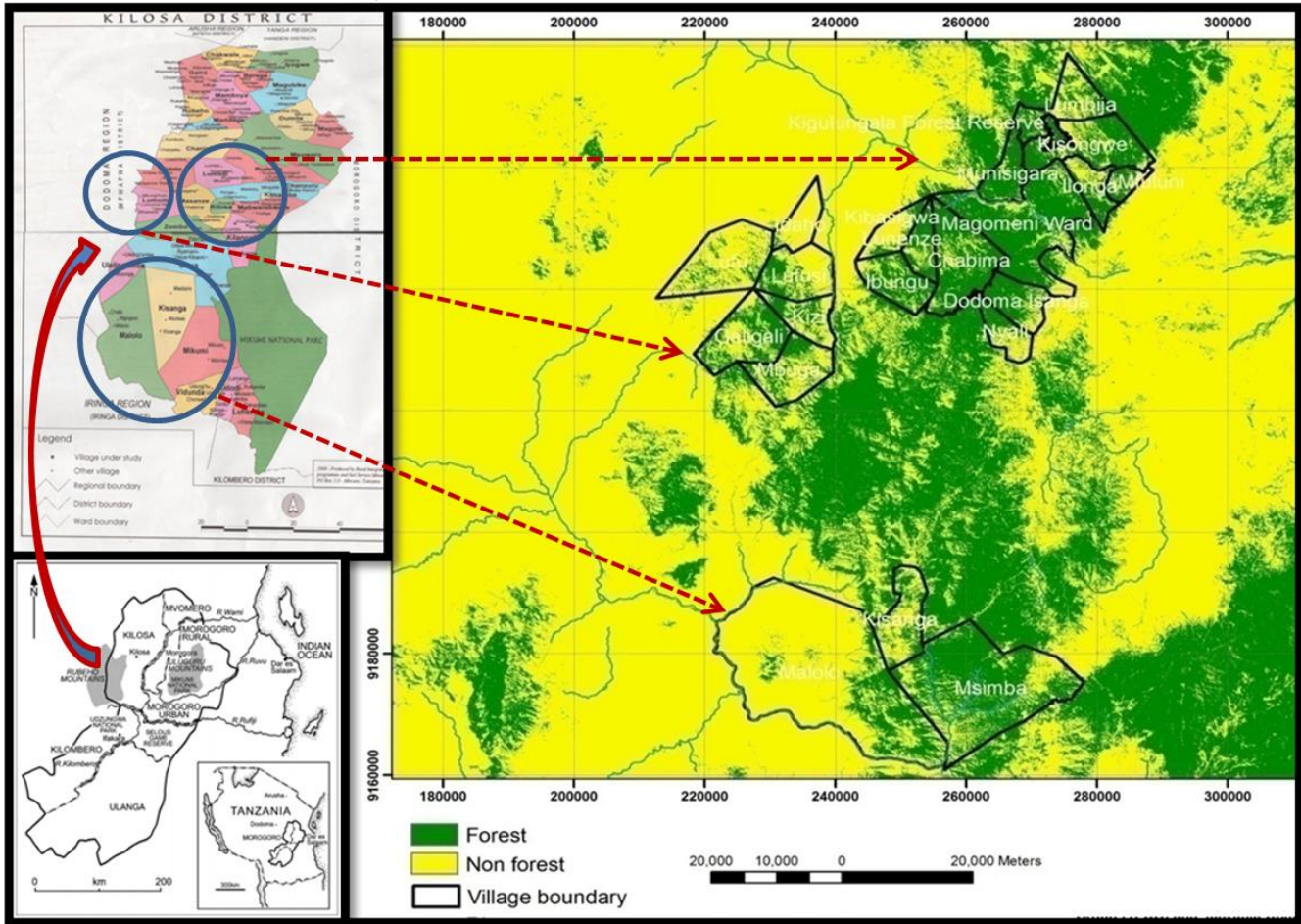
The District headquarters are based in Kilosa Town which is located approximately two hours on a medium quality unpaved road from the Regional headquarters (Morogoro City).

In the Project Zone map (**Error! Reference source not found.**) below, the areas in yellow were non-forested in 2000, green represents forest cover in 2008, and red represents areas that lost forest cover between 2000 and 2008. The objective of the KILOSA REDD Project is to maintain forest cover where it currently exists, to prevent additional loss or degradation of forest cover and to increase carbon stock in degraded forests. Increasing forest cover in non-forested areas is also an objective. The Project Zones are gradually being identified as communities undertake village landuse planning exercises.

### **DEMOGRAPHICS**

According to the 2002 Tanzania National Census, the population of the Kilosa District was 489,513. The projected population of 2010 based on 2002 Census data and a growth rate of 2.5%, was approximately 590,000 people with a 1:1 ratio between males and females. Population density in the District is about 34 people per km<sup>2</sup> and the average household size is 4.6 people.

**FIGURE 2: MAP SHOWING REDD PROJECT ZONE IN KILOSA DISTRICT AND PART OF MPWAPWA DISTRICT**



## GENERAL DESCRIPTION OF COMMUNITIES IN THE PROJECT ZONE

### CULTURAL HISTORY AND RELIGION

Kilosa District is inhabited by three main ethnic groups: the Kaguru who comprise more than half of the population of the district, the Sagara, and the Vidunda. The Maasai and Sukuma, originally from other northern Tanzania are now widely settled in Kilosa and various other districts in Morogoro such as Ulanga, Mvomero and Morogoro Urban. Being pastoralist tribes by tradition, the Maasai and Sukuma moved and settled in these Districts in search of grazing lands for their livestock. The Maasai and Sukuma settlers have occasionally clashed with existing ethnic groups (see Box 1). Conflicts are consistently based over the land use and occupancy rights.

Table 5: Basic information of villages in Kilosa REDD Project Zone (7 of 13 villages)

| Village  | Chabima  | Dodoma Isanga  | Ibingu   | Idete  | Ilonga   | Kisongwe   | Lunenzi   |
|--|--|--|--|--|--|--|---|
| <b>Year village was founded (or officially registered)</b> | Founded > 100 years ago; Registered in 1993                                  | Founded > 100 years ago  | Established & registered in 1974 (Ujamaa Village)                    | Established 1992   | Founded > 100 years ago; Registered 1976   | Established: 1974<br>Registered: 1976  | Established 2003  |
| <b>Administrative Ward</b>                                 | Masanze  | Masanze  | Lumuma   | Chanzuru   | Chanzuru   | Lumbiji  | Lumuma  |
| <b>No. &amp; names of Sub-villages</b>                     | 3: Shuleni Juu, Muhuzizi, Ikamba   | 3: Isanga, Kati and Kipekenya  | 4: Shuleni, Kokoto, Ngaramilo, Msufini                               | 5: Ipela, Ng'hunde, Kimela, Idumba and Mkiga   | 7: Bondeni A, Bondeni B, Gongoni, T.T.C Muhenda, Msalabani, Msimba, Ilonga Juu               | 3 : Mlenga, Kisongwe, Kilumbi  | 2: Lunenzi, Manyomvi  |
| <b>Distance from District HQ (km)</b>                      | 50 km  | 35 km  | 70 km  | 50 km  | 10 km  | 50 km  | 80 km   |
| <b>Size of village area</b>                                | 14275ha  | 305ha  | 18048ha  | Not known  | Not known  | 11483ha  | Not known   |
| <b>Demographics</b>  | Total = 1151<br>No. hh = 313<br>Male = 623<br>Female = 528<br>Children = 565 | Total = 1308<br>No. hh = 421<br>Male = 706<br>Female = 602<br>Children = 505 | Total=1309<br>No. Hh = ?<br>Male =575<br>Female =734<br>Children=434 | Total= 1127<br>No. hh = ?<br>Male =588<br>Female=539<br>Children = ?                   | Total=6501<br>No. hh=979<br>Male =1000<br>Female =1400<br>Children = 2400                    | Total=3467<br>No. hh = 697<br>Male = 1993<br>Females=1474<br>Children=1993         | Total=853<br>No. hh=229<br>Males=401<br>Females=452<br>Children=268 |
| <b>Most common tribes (ethnic groups)</b>                  | Sagara   | Gogo (majority) and Pangwa   | Sagara   | Kaguru(majority) Hehe, Kurya, Luguru, Gogo, Pogoro, Ngoni, Nyamwezi, Sagara and Kwiva. | Kaguru (majority), Hehe, Gogo, Luguru, Sukuma, Chaga, Maasai, Barbaigi, Haya, Waha, and Pare | Kaguru (majority), Samba, Gogo, Hehe, Sukuma, Pangwa, Baribaigi, Luguru and Pogoro | Sagara (majority),Gogo, Nyamwezi, Yao, Kwere, Sagara, Manyema.      |
| <b>Additional languages spoken (Swahili used by all)</b>   | 6 languages  | 3 languages: Gogo, Pangwa  | 5 languages: Tiliko, Waha, Maasai, Hehe, and Gogo                    | 11 languages;  | 11 Languages   | 5 languages  | 3 languages<br>Gogo, Sagara and Hehe.                               |
| <b>Religions present</b>                                   | Christian (dominant) & Muslim  | Christian (dominant) & Muslim  | Christian (dominant) & Muslim  | Christian (dominant) & Muslim  | Christian (dominant) & Muslim  | Christian (dominant)   | Predominantly Christian (>90%)                                      |
| <b>Main economic / subsistence activities</b>              | Agriculture  | Agriculture  | Agriculture  | Agriculture  | Agriculture  | Agriculture and Livestock keeping  | Agriculture   |

TABLE 6: BASIC CONDITIONS OF VILLAGES IN KILOSA REDD PROJECT ZONE (TABLE 5 CONTINUED)

|  | Masugu Juu   | Masugu Kati  | Mfuluni                                       | Mkadage  | Munisagara  | Nyali   |
|--|--|--|---|--|---|---|
| <b>Year village was founded (or officially registered)</b> | As hamlet 2005   | As hamlet 2005   | Established 1992                              | As hamlet 2005   | Established 1972  | Established 1975  |
| <b>Ward</b>  | Magomeni   | Magomeni   | Chanzuru                                      | Magomeni   | Masanze   | Zombo   |
| <b>No. &amp; names of Sub-villages</b>                     | This is not a village; it is a Hamlet of XX Town/Village | This is not a village; it is a Hamlet of XX Town/Village | 3 subvillages: Malungu A, Malungu B and Iselo | This is not a village; it is a Hamlet of XX Town/Village | 5 subvillages; Mkiga, Ipela, Idumba, Kimela and Nghunde | 11 subvillages: Gulioni, Shuleni A, Shuleni B, Magawa, Msikitini, Mkwajuni, Upangwani, Kigunguli, |

|   |  |   |   |  |  |   |
|---|--|---|---|--|--|---|
|   |  |   |   |  |  | Mlandawa, Chimbwi and Mtego wa Simba  |
| <b>Distance from District HQ (km)</b>           | 20 km  | 16 km   | 30 km   | 10 km  | 20 km  | 24 km   |
| <b>Size of village area- if known</b>           | Not known  | Not known   | Not known   | Not known  | Not known  | Not known   |
| <b>Demographics</b>                             | Total = 190<br>No. hh =<br>Male = 101<br>Female = 89   | Total = 528<br>No. hh =<br>Male = 101<br>Female = 89  | Total = 787<br>No. hh =<br>Male = 383<br>Female = 404         | Total = 2366<br>No. hh =<br>Male = 1144<br>Female = 1222                                       | Total = 2054<br>No. hh =<br>Male = 1043<br>Female = 1011                             | Total = 2622<br>No. hh = 537<br>Male = 1202<br>Female = 1420<br>Children = 1245 |
| <b>Most common tribes (ethnic groups)</b>       | Sagara (dominant) Gogo, Luguru, Ngoni, Pogoro, Sangu, Nyamwezi, Sukuma, Ngindo, Waha, Kaguru, Yao and Makua) | Sagara (dominant) Pangwa, Gogo, Ngoni, Ngindo, Kaguru, Kinga, Nyakyusa, Konde, Waha, Sukuma, Nyamwezi, Hehe, Konde, Vidunda | Kaguru (dominant) Gogo, Nyamwezi, Yao, Kwere, Sagara, Manyema | Sagara (dominant) Tiliko, Sukuma, Kwiva Maasai, Hehe, Kaguru, Luguru, Nyamwezi, Haya and Gogo. | Sagara, Tiliko, Sukuma, Kwiva Maasai, Hehe, Kaguru, Luguru, Nyamwezi, Haya and Gogo. | Sagara, sukuma, hehe, gogo, luguru and kaguru                                   |
| <b>Languages spoken used</b>                    | 14 languages   | 16 languages  | 8languages;   | 12languages  | 12languages  | 2 languages   |
| <b>Religions present</b>                        | Muslim (dominant) & Christian  | Christian (dominant) & Muslim   | Christian (dominant) & Muslim                                 | Christian (dominant) & Muslim  | Christian (dominant) & Muslim  | Christian (dominant) & Muslim   |
| <b>Main economic and subsistence activities</b> | Agriculture, charcoal, timber harvesting   | Agriculture   | Agriculture   | Agriculture and timber harvesting  | Agriculture and timber harvesting  | Agriculture   |

## SOCIO-ECONOMIC CONDITIONS

Subsistence agriculture is the main activity of the majority of households in the Project Zone. The main livelihood activity is crop farming (80%) followed by livestock keeping (60%). A substantial proportion (42%) of the respondents are involved in small businesses such as running small shops, tea rooms, brewing local beer, and buying and selling crops. Only 10% of the respondents have formal employment mostly being primary and secondary school teachers. Interestingly, the District's social economic profile for 2009 states that <1% of the population is involved in livestock keeping (KDO 2009)

A recent (2007 and 2008) study conducted in six divisions and seven villages in Kilosa District shows that 70% of all households have access to clean water though this was mostly available outside the respondents' homes. Only a few (19%) households are connected to the electricity grid. Apart from bicycles - which are owned by nearly two-thirds (63%) of households - ownership of other means of transport is very low. With regards to housing quality, most (84%) of the houses are constructed of mud bricks and roofed with corrugated iron sheets.

According to the District Agriculture and Livestock Development Offices (DALDO), the total area suitable for agriculture approximates 537,000 ha. Most (93%) of land that is cultivated is used for subsistence agriculture; only 7% is used for cash crops. Cash crops cultivated are sisal, sugarcane, cotton, sesame, sunflower, and onion. Sisal and cotton estates have been in the area since the 1960s. Onion is the most recent cash crops; it emerged as cash crop especially on the North side of the District (Malolo, Kidete and Lumuma Wards). Recently there are about 1,850 ha under onion cultivation of which 1,370 are under improved irrigation schemes and 70 ha are traditional irrigation schemes.

Also according to the DALDO, the area suitable for livestock grazing is approximately 291,000 ha. About a third (94,000 ha) of this, however, have been affected by tsetse flies and are not suitable for grazing. The

estimated carrying capacity of the remaining areas is 2 ha per cattle. It is currently being used at a rate double the carrying capacity. Consequently, overgrazing is an issue in the District. In response to livestock keeping related conflicts in the area, the DALDO has identified eight settlements in which pastoral grazing can take place.

There are two major industries in the District, the ILLOVO Sugar Company based in Kilombero Valley and five sisal estates. The sugar company operates its own sugarcane estates but also purchases sugarcane from out growers (It is the largest sugar-processing company in Tanzania and processes two types of sugar at two factories: Msolwa (Kilombero 1, or K1) and Ruhembe factory (Kilombero 2, or K2) which started in 1962 and 1977 respectively. K1 is located within the Project Zone, in Kisanga Division. It produces brown sugar. Both factories contract members of the Kilombero Cane Growers Association (KCGA) and Ruhembe Outgrowers located in the District.

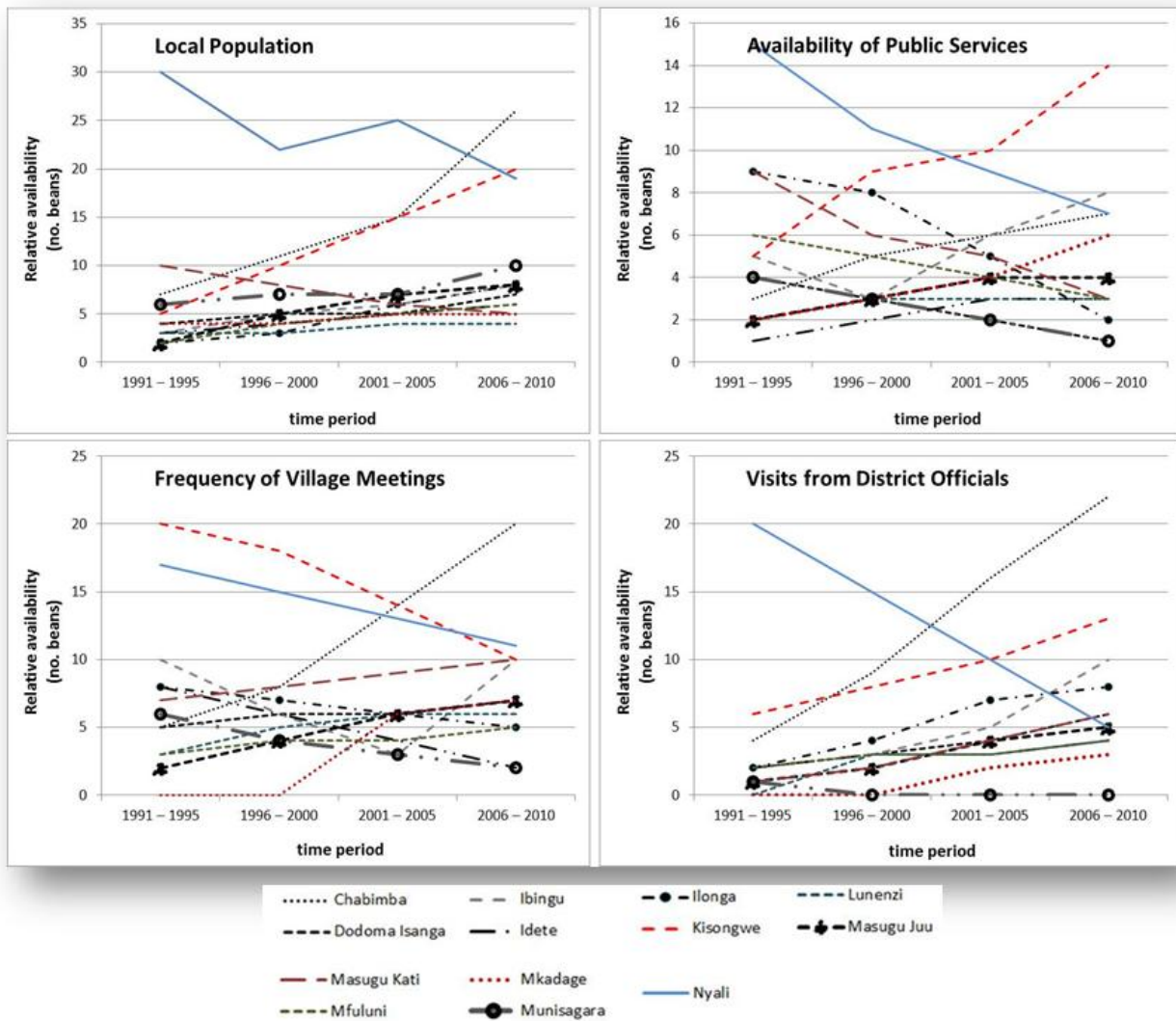
The average annual income in Kilosa District is TSH 270,000 (USD 170). This is below the national average income of USD280.

## **HEALTH SERVICES**

Tables in the Annex 2 provide a more detailed description of village specific conditions of extension and public services. In general, however, the District has two hospitals, a government owned and operated hospital (Kilosa Hospital with 150 beds) and 2 private hospitals. The doctor to patient ratio for the District is 1:10,000, the nurse to patient ratio is 1:10 and the midwife to patient ratio is 1:3.

According to the District Medical Office HIV/AIDS prevalence has been growing since the first cases were recognised in Kilosa in 1988. In 2009, 11.5% of those screened were HIV positive and the overall rate for the Morogoro Region was estimated to be 4.2% in 2007/8 in the 15-49 age group, slightly below the national average of 5.6% (National Bureau of Statistics, 2011). HIV/AIDS prevalence is highest in the 25 to 34 year old age group. The DMO cite reluctance to make behavioural changes as the main reasons predisposing individuals to the disease.

FIGURE 3: PAST TRENDS IN POPULATION SIZE, PUBLIC SERVICES AND KEY GOVERNANCE ISSUES (1991 - 2010)



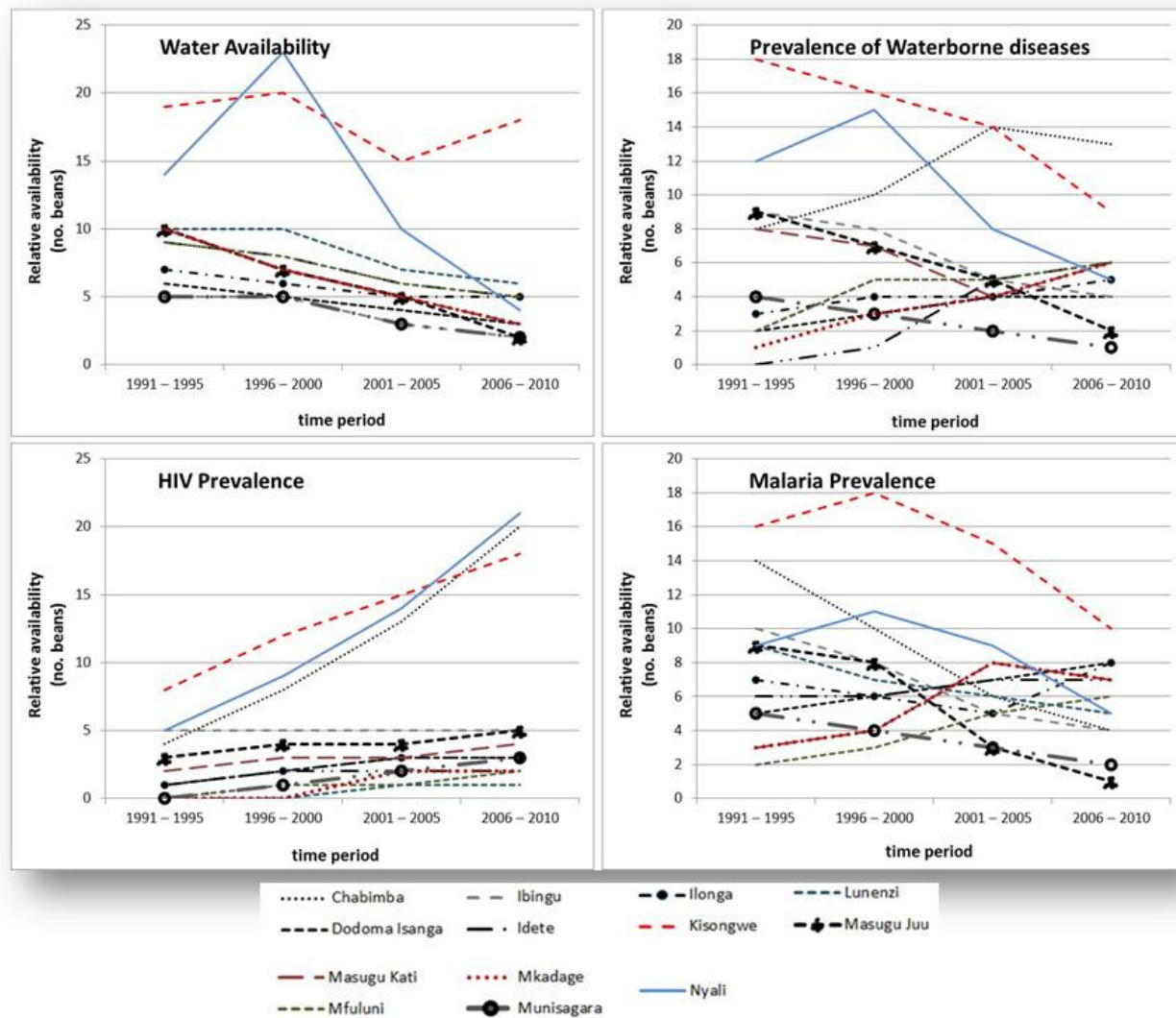
**GENDER ISSUES:**

According to a study conducted in Kimamba Village on the effects of gender on accessibility to resources, more than 70% of decision making at household level related to resources allocation is made by men (Ishengoma, date unknown but after 1999). Lack of access to capital (49.6%), limitation on time (12.0%), lack of decision making power (8.2%) and limited agriculture knowledge (1.2%) are the main factors preventing women from contributing more to household food security.

**VULNERABILITY TO NATURAL DISASTERS:**

In 2010 Kilosa District was subjected to the worst flooding in the country when the Mkondoa river swelled and burst its banks inundating Kilosa Town and forcing 24,000 residents from their homes. Two villages in the Project Zone (Mkadage and Munisagara) were some of those in the Mkondoa Valley affected by this flood. Residents' crops were destroyed as was infrastructure. In particular, the railway to Mkadage and Munisagara was damaged, which cut off communication between Kilosa Town to the villages and delayed aid from reaching the communities.

FIGURE 4: PAST TRENDS WATER AVAILABILITY AND PREVALENCE OF KEY HEALTH ISSUES (1991 - 2010)



### EXISTING LAND AND NATURAL RESOURCE USE CONFLICTS

Competition between cultivators and livestock keepers is especially pronounced during the dry season when water and grazing resources are scarce. The competition is compounded by the fact that there is an overlap between ethnic and livelihood identities. For example in Tanzania, the Nilotic Maasai and Barabaig are normally associated with pastoralism, while other Bantu groups like the Kaguru are more related to cultivation.

Conflicts over resource use, particularly land and water between sedentary agriculturists and nomadic pastoralists have been on the increase and have become more violent. In Ludewa village of Kilosa district, for example, conflicts between cultivators and livestock keepers resulted in 31 deaths in December 2000 (Underlying reasons for landuse conflicts

This section has been adapted from information obtained in Mung'ong'o and Mwamfupe (2003) and from the SIA workshops.

A study entitled "Poverty and changing landscape of migrant Maasai in Morogoro and Kilosa Districts" (Mung'ong'o and Mwamfupe, 2003) provides some insight into the cause and outcome of the presence of Maasai in the Project Zone. Wealth ranking exercise of Maasai and non-Maasai communities demonstrate that while the group of well-off pastoralists is typically small, that of the poor is - on average - large with the worst cases occurring mostly in pastoral communities. The decline of pastoral resources and the



rising profitability from agricultural pursuits have drawn more Maasai into agriculture thus widening the wealth gap between the well-off groups and the poor.

Furthermore, although Maasai farmers apply the same cultivation methods as other non-pastoral communities, their farming practices are still rudimentary. Few Maasai cultivate their farms using modern machinery. Increase of pressure on agricultural lands has increased as more and more Maasai take up crop cultivation as a way of life. According to the authors, however, “there is very little evidence that the integrity of the environment is under any threats as yet” from rising pressure on use of agricultural land.

In the last decade, the availability of arable land has diminished (Figures 5 & 6) in the Project Zone alongside with other resources, such as water (Figures 4 & 6). The mounting pressure on land use has been in progress for approximately 20 years. Earlier studies in Kilosa District (e.g., Misana 1996) predicted that land use conflicts between crop cultivation and livestock keeping could lead to bloodshed.

According to Mung’ong’o and Mwamfupe (2003) [and contrary to District officers participating in the SIA landscape level workshop], land in Kilosa District is not ideal for pastures and cultivation. Nevertheless, there has been an influx of large herds of cattle into the District in conjunction with an increase in area under cultivation.

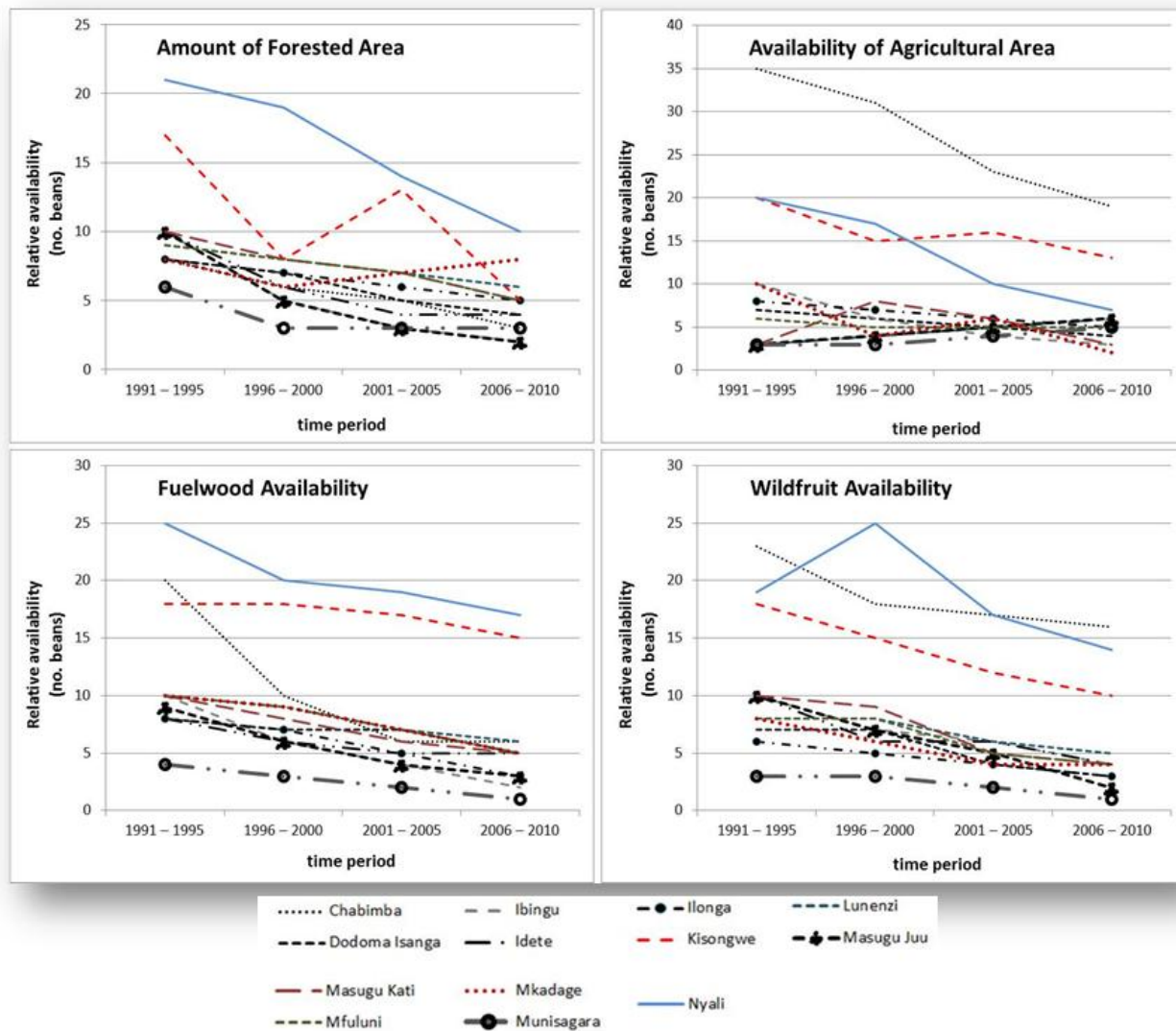
The two main underlying causes for existing land use conflicts can be summarized as follows:

- Absence of proper land use planning at both the district and village levels is the major contributing factor to such conflicts.
- Overgrazing: It is estimated that there are 250,000 cattle belonging to the Maasai in the District. This ‘forces’ herders who possess excessive livestock, to extend their resource use into agricultural land.

Box 1).

Pastoralists also find themselves in conflict with the forest reserve conservation authorities on the Western Highlands in Kilosa district. Further conflicts have also been noted between small holder crop cultivators and large estate farms found in Kilosa District. The presence of large-scale farms places a limit for expansion of small holders’ farms. Such conflicts, however, have not come out into open clashes probably because the Forestry and Beekeeping Division has had long standing laws that prohibit farmers to expand into the forest reserve. Nevertheless, incidents of encroachment into the forest reserve are not uncommon.

FIGURE 5: PAST TRENDS IN LANDUSE AND AVAILABILITY OF FORESTS AND FOREST PRODUCTS (1991 - 2010)



## UNDERLYING REASONS FOR LANDUSE CONFLICTS

This section has been adapted from information obtained in Mung'ong'o and Mwamfupe (2003) and from the SIA workshops.

A study entitled "Poverty and changing landscape of migrant Maasai in Morogoro and Kilosa Districts" (Mung'ong'o and Mwamfupe, 2003) provides some insight into the cause and outcome of the presence of Maasai in the Project Zone. Wealth ranking exercise of Maasai and non-Maasai communities demonstrate that while the group of well-off pastoralists is typically small, that of the poor is - on average - large with the worst cases occurring mostly in pastoral communities. The decline of pastoral resources and the rising profitability from agricultural pursuits have drawn more Maasai into agriculture thus widening the wealth gap between the well-off groups and the poor.

Furthermore, although Maasai farmers apply the same cultivation methods as other non-pastoral communities, their farming practices are still rudimentary. Few Maasai cultivate their farms using modern machinery. Increase of pressure on agricultural lands has increased as more and more Maasai take up crop cultivation as a way of life. According to the authors, however, "there is very little evidence that the integrity of the environment is under any threats as yet" from rising pressure on use of agricultural land.

In the last decade, the availability of arable land has diminished (Figures 5 & 6) in the Project Zone alongside with other resources, such as water (Figures 4 & 6). The mounting pressure on land use has been in progress for approximately 20 years. Earlier studies in Kilosa District (e.g., Misana 1996) predicted that land use conflicts between crop cultivation and livestock keeping could lead to bloodshed.

According to Mung'ong'o and Mwamfupe (2003) [and contrary to District officers participating in the SIA landscape level workshop], land in Kilosa District is not ideal for pastures and cultivation. Nevertheless, there has been an influx of large herds of cattle into the District in conjunction with an increase in area under cultivation.

The two main underlying causes for existing land use conflicts can be summarized as follows:

- Absence of proper land use planning at both the district and village levels is the major contributing factor to such conflicts.
- Overgrazing: It is estimated that there are 250,000 cattle belonging to the Maasai in the District. This 'forces' herders who possess excessive livestock, to extend their resource use into agricultural land.

**BOX 1: INTER-ETHNIC VIOLENCE BETWEEN LIVESTOCK KEEPERS AND CULTIVATORS IN KILOSA DISTRICT, TANZANIA**

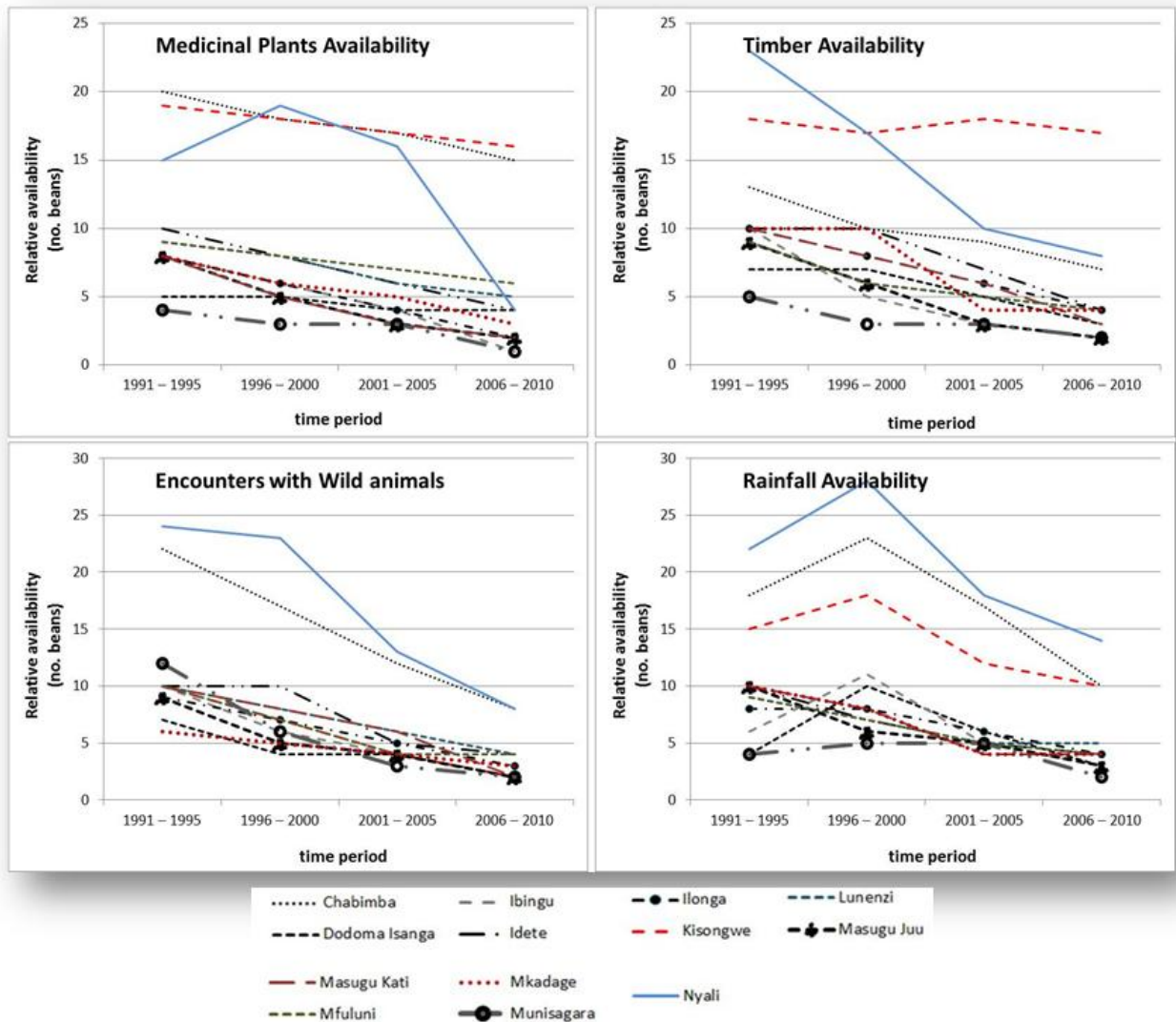
On 8 December 2000, 30 people were killed at Rudewa-Mbuyuni village in Kilosa district, Morogoro, during clashes between cultivators and livestock keepers. According to one newspaper, the immediate cause of the fight was "a planned revenge of Maasai pastoralists, following the farmers' attack on two Maasai women. It is alleged that the two women were beaten by people belonging to the farming community, using their militia defence group, the *Sungusungu*. The women sustained head and body injuries and had to be admitted to the Kilosa District Hospital where they stayed for several days receiving treatment. In reporting the incident, most newspaper reports were biased in favour of cultivators and portrayed the livestock keepers as "aggressive Maasai pastoralists" who were pitted against the normally peaceful village cultivators. Regardless of the specific casting of villains and victims, however, all of these reports portrayed livestock keepers in Morogoro as "Maasai pastoralists." It was also generally implied that these pastoralists were "outsiders" rather than "indigenous" to Morogoro Region.

However, this portrayal of the livestock keepers as "outsiders" is a myth. According to Tanzanian historical records, changing rural livelihood patterns, warfare and colonial as well as postcolonial interventions have implied substantial population mobility in many parts of Africa, so boundaries between neighbouring peoples have generally been fluid and defined by these people's respective ability to, or interest in, defending specific boundaries between the areas they were occupying. The people most often referred to in early writings as occupiers of what in pre-colonial times was referred to as Ukaguru and Usagara, which compose a large part of the area covered today by Kilosa District, are the Kaguru and the Sagara. However, tribal boundaries are, as so often shown, more of a colonial construct and the result of external influence than something inherent to the peoples of Africa. Moreover, colonial policies and local interactions between neighbouring peoples have implied amalgamation of certain sections of different groups, for example the Sagara with the neighbouring Hehe and sections of the Kaguru with neighbouring Gogo. Other population groups have also since quite early in history found their way to Kilosa district. Kilosa town was situated strategically in relation to the Arab caravan routes to both Tanga and the Southern Highlands (Iringa/ Tukuyu) and emerged as a trading centre. Some of the first cotton and sisal estates were established in Kilosa district during the German colonial period, and large numbers of workers were brought to the Kilosa estates. Many have stayed there as farmers, and many Indian and Arab traders settled there early in history. Immigration to Kilosa of groups of people referred to as pastoralists is not a new phenomenon, as early historical records from the area indicate. It is mentioned that during the 19th century the Maasai were pushing south ... as far as Ugogo and Usagara. According to some sources, the Iparakuyu Maasai began to move southwards long before 1840. It is well documented that the Iparakuyu Maasai have resided in parts of Gogo, Sagara, Kaguru and Nguu areas for far over a century. Hence, only a superficial view of the Rudewa-Mbuyuni killings would ascribe the ethnic violence to the incompatibility and eventual clash of different ethnic groups and their associated livelihoods.

Source: Maganga, F.; R. Odgaard and E. Sjaastad 2005. "Who is Indigenous?" Contested Identities and Resource Conflicts in Morogoro Region, Tanzania. Mimeo.

Figures 6 to 7 depict community perception of changes in natural resource availability the last 20 years (1991 and 2010). In general and across all villages, most resources have diminished and are scarcer today than they were two decades ago. Peaks in rainfall between 1996 and 2000 most probably explain peaks in water availability, peaks in prevalence of waterborne diseases, and peaks in prevalence of malaria in that same time frame and (Figures 4 and 7).

**FIGURE 6: PAST TRENDS IN AVAILABILITY OF FOREST PRODUCTS, WILDLIFE ENCOUNTERS AND RAINFALL (1991 - 2010)**



## CONFLICT RESOLUTION (PAST AND ONGOING)

[Modified from Mung'ong'o and Mwamfupe (2003) and SIA workshops]

Conflicts between Maasai pastoralist and the crop cultivators are being resolved in a number of ways. The most common resolution mechanism is in the form of fines, i.e., direct compensation for losses experienced (by either pastoralists or cultivators). This is usually conducted through Ward Tribunal Councils; in some cases through the courts of law. Farmers in Kilosa District have also resorted to forming traditional defense groups called '*Sungusungu*'. Unfortunately, this form of open confrontation can lead to further tension between groups.

Persistence of open clashes in Kilosa District is a clear indication of the weakness of reconciliatory bodies and/or approaches. In Kambala village, for example, Maasai pastoralists complained of biased judgments that

favor crop cultivators. Cultivators – on the other hand – argue that pastoralists are, in most cases, the main offenders. Discussions with key informants held by Mung’ong’o and Mwamfupe (2003) revealed that most participants were not in agreement with District Councils’ approaches in conflict resolution. It was reported, for example, that the use of fines and threats aggravate rather than resolve problems. Village informants complained that the fines charged for transgression of livestock into cropland did not reflect size of loss and were too small to truly deter the behaviour.

The main factors impeding conflict resolution in the area are:

- There are inefficiencies in the resolution process. Both pastoralists and farmers complain that it takes a very long time to resolve conflicts. This raises suspicion of corruption and builds up tension between parties. Mounting tension often prompts a resort to open, direct, and violent conflict;
- There is a limit to the amount of land that is available to support crop cultivation and livestock keeping. It is not clear, however, whether limits are due to a real shortage of land to productively support these activities, or due to a general reluctance by both farmers and pastoralists to adjust their practices so as to enable more efficient use of land by both landuse activities. Overgrazing and shifting cultivation are examples of widespread inefficient landuse in the Project Zone.
- The presence of sisal estate farms within village lands limits further expansion of farmlands by subsistence farmers. Estates are privately owned and occupy some of the most productive agricultural areas.
- Poor or complete absence of landuse planning. Prior to the REDD Project, only some villages had undergone landuse planning. However, when asked, village leaders were unsure whether or not their villages had participated in any type of LU planning other than the one being facilitated by the REDD Project. Lack of knowledge may be because planning was limited to simple demarcation of boundaries between villages by District councils with little to no community participation. Part of the planning process tried to resolve the pastoralists-cultivator conflicts by designating villages as either cultivation or pastoral villages.
- At national level, the National Land Use Commission has had severe budgetary constraints to undertake LU planning. On average the Commission was allocated just enough funds to undertake land use planning in four (4) villages per year for the whole country (Mung’ong’o and Mwamfupe, 2003).

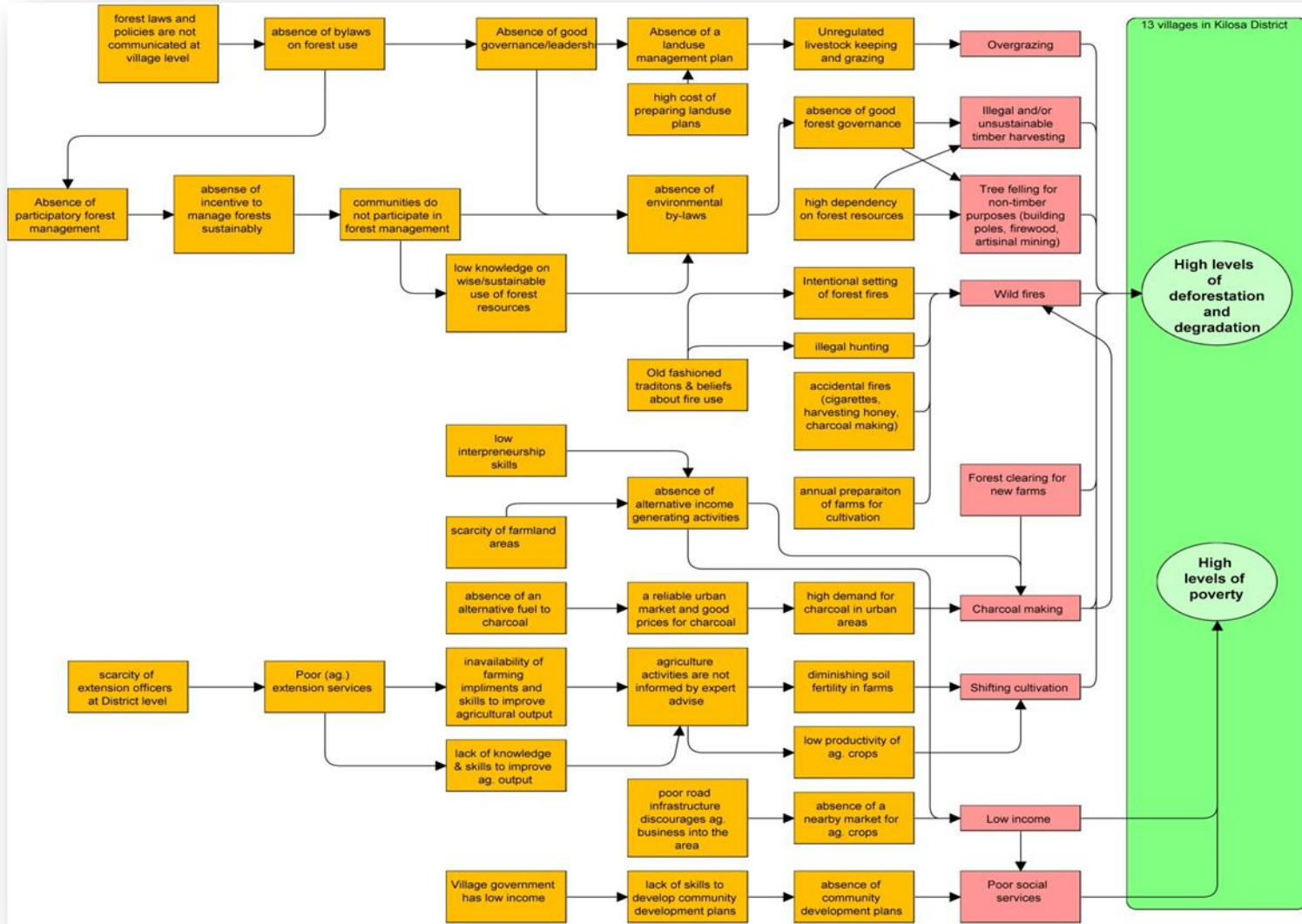
Final resolution of landuse conflicts in the region will require participatory landuse planning that includes pastoralists and farmers; inter-village LU planning that incorporates establishment of livestock ‘corridors’; and changes in both cultivation and pastoralist practices.

## **SITUATION ANALYSIS OF KEY ISSUES AFFECTING PROJECT ZONE**

Consolidation of outputs from the village level workshops was used to conduct a preliminary analysis of factors directly and indirectly contributing to two main conditions in the Project Zone: high levels of poverty and high deforestation and degradation rates. The ‘situation analysis’ was presented to landscape level stakeholders as a ‘problem flow diagram’ or ‘conceptual model’ of the REDD Project Zone. During a plenary discussion the model (or analysis) was modified by stakeholders to produce a final product that better reflects local understanding of the factors contributing to the status quo and their inter-relations (

FIGURE 7).

**FIGURE 7: SITUATION ANALYSIS OF REDD PROJECT DEMONSTRATING THE INTERLINKS BETWEEN DIRECT AND INDIRECT FACTORS CONTRIBUTING TO HIGH POVERTY LEVELS AND HIGH RATES OF FOREST DEGRADATION AND DEFORESTATION IN THE KILOSA DISTRICT PROJECT ZONE**



## STAKEHOLDER ANALYSIS:

Using their experience and knowledge of the Project Zone, REDD Project staff based in Kilosa identified key stakeholder groups. Representatives of these groups were invited to participate in the landscape level SIA workshop. During the workshop more stakeholders were identified in a plenary session and during the process of identifying potential negative impacts of the Project and the stakeholders that could be affected.

It is noteworthy to mention that pastoralists were not identified as key Project stakeholders until the landscape level workshop, by which time it was too late to solicit their participation in the process. Although they represent a minority group in the District (<1% of local residents are livestock keepers according to the District Social Economic Profile) they require large areas of land to graze their livestock and directly threaten agricultural activities. Thus, pastoralist participation in subsequent Project planning and activities is paramount to Project Success. The District has tried to resolve pastoralist-farmer conflicts by allocating grazing lands to specific areas, but this has largely been unsuccessful (see Box 1).

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| Stakeholder   | Activity in the Project Zone   | Impact of their activities on local forests (positive or negative)  |
|---|--|---|
| <b>Village Councils of all villages in Project Zone</b>   | Have overall local responsibility for governing, social development, forest management and landuse in Project Zone; Local extension of National Government.  | Weak governance results in poor implementation of national forest policies and inability to resolve long-going landuse and border conflicts.  |
| <b>District government offices (particularly the Natural Resources; Development, Forest and Agricultural Offices)</b> | Responsible for local implementation of national and regional programs.  | Weak extension services to local governments to implement forest and landuse policies; Little support to communities to improve agriculture and reduce impact on forests; conflicting policies between landuse (forest conservation vs increased agriculture) |
| <b>Village Natural Resource Committees (VNRC)</b>   | Village councils' local overseer of national and local natural resource policies and laws.   | Poorly equipped, backed up by weak governance, and with unclear instructions, the VNRCs have little incentives to implement forest laws. Vulnerable to corruption   |
| <b>Small scale (subsistence) Farmers</b>  | Cultivate a range of crops for subsistence and sale to market; clear land for cultivation; undertake shifting cultivation practices; can be divided further into those irrigating (or not) their farms | Practice shifting cultivation with increasingly shorter fallow periods; clear new land for agriculture; use fires to clear – cause forest fires   |
| <b>Large-scale Farmers</b>  | Cultivate sugarcane and rice plantations; Provide jobs   | Clear land for developing permanent agricultural lands  |
| <b>Pastoralists</b>   | Migrant or settled, together own large herds of cattle; Settled pastoralists also cultivate. Severe conflicts with non-pastoralist communities   | Graze their cattle in forests; set fires to forests to encourage new growth of pasture  |
| <b>Subsistence hunters</b>  | Hunt wildlife  | Use fire as part of hunting strategy;   |
| <b>Charcoal producers, vendors and transporter</b>  | Produce, transport and sell charcoal; Sometimes one and the same person. Most charcoal production is illegal. Some conduct activities with licence from District Natural Resource Office               | Produce charcoal without a management plan (do not replace felled trees); kiln explosions can lead to forest fires; facilitate access into forests for further degradation  |
| <b>Timber harvesters</b>  | Illegally harvest valuable timber species from local forests; hire local labourers   | Use fire to facilitate search for trees to fell; harvest illegally; harvest without a management plan; use  |
| <b>Honey collectors</b>   | Collect honey from bee hives (do not have their own hives)   | Use fire (smoke) during collection process (sometimes this causes forest fires)   |
| <b>Local communities</b>  | Live, work and conduct their livelihood activities in the Project Zone (most of them are also subsistence farmers). Can be broken up further into women, youth, elderly, traditional healers, etc.     | Fell trees and poles for firewood and building material; collect deadwood and non-timber forest products for personal consumption or sale to local consumers  |
| <b>Beer brewers</b>   | Mostly women; produce traditional brews from locally available grains  | Use large quantities of firewood that are sourced from local forests  |
| <b>Ilonga Agricultural Research and Training Institute</b>  | Located in Ilonga Village; Undertake agricultural research; extend agricultural knowledge and services to some villages in the Project Zone.   | Indirectly may be encouraging more land clearing for agriculture; Positively, may be influencing intensive agriculture in permanent farms (i.e., encouraging shift away from shifting agriculture)  |
| <b>MJUMITA</b>  | Implementing the Kilosa REDD Project together with Tanzania Forest Conservation Group  | Long-term interest in establishing sustainable and participatory forest management for carbon   |



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| Stakeholder                             | Activity in the Project Zone   | Impact of their activities on local forests (positive or negative)  |
|---|--|---|
|   |  | sequestration and storage, and for biodiversity conservation.   |
| <b>Mikumi National Park Authorities</b> | Manage the National Park; undertake community development projects in villages adjacent to the Park as part of their benefits sharing program (Name of villages) | Long term interest in conservation in NP buffer zones. Contribute to awareness raising on benefits of conserving forests. |

## PART TWO: SOCIAL REFERENCE (WITHOUT-PROJECT) SCENARIOS

In general, communities are pessimistic about the “without project” future. In the absence of the REDD Project, participants did not foresee improvements to general infrastructure, nor to delivery of social services by the District and Central governments, nor to their general living conditions. Tables 7, 8 and 9 are the outcomes of group exercises in which village level workshop participants were asked to evaluate up to 30 focal issue (social and forest-related) in terms of how they expect the condition will change in the next 5, 10 and 20 years. They were asked to predict whether a condition (e.g. service delivery, availability of a resource, quality/quantity of infrastructure, etc.) would improve, worsen or remain unchanged.

For the most part, participants predicted no changes to the status quo (and described the status quo as undesirable), or if changes were anticipated they were towards worsening conditions. Without a REDD project, communities expect public and social services and governance to remain unchanged (i.e. of low quality and inadequate) in their villages in the next five years (Table 7). In the same time frame, forest availability is expected to decrease due to increase forest clearance for shifting cultivation, other agricultural needs and from unsustainable use of forest resources. Timber and other forest products would become increasingly more difficult to find because there would be no changes to the way that forests are currently managed (informally and unsustainably). Human wildlife conflicts are predicted to decrease due to a decrease in wildlife attributed to a decrease in their habitat from forest clearance.

At these workshops, participants seemed to be unaware of District development plans targeted for their areas which would change the status quo. They were also unaware of the plans and programs of other initiatives in the Project Zone, such as those of NGOs or of the research institute. Consequently, participants’ perception of the future without the REDD Project was generally pessimistic: nothing would change or things would get worse.

One of the reasons for conducting a stakeholder workshop in addition to the village-level SIA workshops was to bring together different players in the project landscape to openly discuss their planned activities in the area that could change the short, medium and long term scenarios. At the landscape level workshops, the participation of District Council officers, NGOs, research institutes, community leaders and other stakeholders provided an ideal opportunity to revise the ‘without project’ scenarios. This allowed for more realistic scenario building, especially of near- and long-term changes brought about by planned activities of additional stakeholders.

Due to time constraints the validation and modification process was postponed for a later date in which a smaller group of key stakeholders (i.e., District planning officers, researchers, NGOs) would meet to reassess the scenarios.

### IMPROVEMENTS IN FOCAL ISSUES ATTRIBUTABLE TO NON-REDD PROJECT ACTIVITIES

Changes made to the five year scenarios based on new information from non-REDD Project stakeholders are summarised in

Table 10. Most changes were associated with improvements of infrastructure, particularly roads and schools. Changes that were included in the scenarios were those that were either already underway, or which have high probability of being realised, either because they were budgeted into the 2011 – 2012 fiscal year, or because they were part of approved national programs that were highly likely to percolate to village level. Including likelihood of occurrence into scenario development constrained projections to short term (five years) rather than medium and long-term scenarios.

Three important outcomes emerged from conducting the scenario development exercise as a plenary discussion during the stakeholder SIA workshop. First, the plenary process demonstrated clearly to all stakeholders how the absence of communication between stakeholders working in the same area can lead to redundancy of activities, waste of resources, and conflicting messages. Second, non-REDD Project stakeholders had an opportunity to share with Project proponents and communities their planned activities in the Project Zone. This generated discussions on points of convergence and divergence of objectives between different actors in the Project landscape which generated an opportunity for sharing information, avoiding redundancy, pooling resources, and coordinating activities to maximise efficiency.

Third, information sharing demonstrated to communities that numerous opportunities exist for them to improve local development independently of the REDD Project. Community members were 'shocked' to discover how little they knew of existing opportunities, and how debilitating the lack of information is to local development. Improvement of information flow between District and NGOs between them and the communities they are meant to serve, more proactive behaviour on the part of community leaders by finding out what resources and support are available to them for community development, and better community initiated planning of development projects were identified as key elements that need to change to effectively access and disburse resources into the Project Zone for community development.

This exercise highlighted an important deficiency common across the Project Zone: that village governments are not aware of the numerous District-level support programmes that exist to undertake village-level development projects and for which they are eligible. Hence a key contribution that the REDD project in Kilosa District can make is to:

- a) Increase the exposure that communities have to support available at District level through stakeholder meeting such as this SIA required. District support ranges from direct financial resources, to improving access to extension services and improvement of education services;
- b) Strengthen village governance so that community leaders are not intimidated by visit to the District offices, are able to recognise adequate programs for their communities and can prepare the documentation necessary to receive support, meet eligibility requirements, and keep records of supported projects;
- c) Through REDD funding, enable communities to meet eligibility requirements for cost-sharing programs sooner; and
- d) Increase interaction between government and non-government initiatives operating in the Project Zone with intentions to avoid redundancy and conflicting messages among them, and to increase efficiency of their programs by coordinating their activities and resources.

**TABLE 7: PROJECTED STATUS OF KEY ISSUES AFTER 5 YEARS WITHOUT PROJECT (2010 - 2015)**

| <b>Key issues</b><br>↓ will decrease or worsen<br>↑ will increase or improve<br>↔ will remain unchanged | <b>Chabima</b> | <b>D. Isanga</b> | <b>Ibingu</b> | <b>Idete</b> | <b>Ilonga</b> | <b>Kisongwe</b> | <b>Lumenzi</b> | <b>Masugu juu</b> | <b>Masugu kati</b> | <b>Mfuluni</b> | <b>Mkadage</b> | <b>Munisagara</b> | <b>Nyali</b> |
|---|----------------|------------------|---------------|--------------|---------------|-----------------|----------------|-------------------|--------------------|----------------|----------------|-------------------|--------------|
| <b>Public Services &amp; Infrastructure</b>   |                |                  |               |              |               |                 |                |                   |                    |                |                |                   |              |
| Nursery school  | ↔              | ↔                | ↔             | ↔            | ↑             | ↑               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Primary school  | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↑              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Secondary school  | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Dispensary  | ↔              | ↔                | ↔             | ↔            | ↑             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↑                 | ↔            |
| Health clinic   | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Village office  | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Market building   | ↔              | ↔                | ↔             | ↔            | ↑             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Water services  | ↔              | ↔                | ↔             | ↔            | ↑             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Road  | ↑              | ↔                | ↑             | ↔            | ↑             | ↑               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Transportation  | ↑              | ↔                | ↑             | ↔            | ↑             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↑            |
| Communication   | ↔              | ↔                | ↔             | ↔            | ↑             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Electricity (energy)  | ↔              | ↔                | ↔             | ↔            | ↑             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Sanitation system/status  | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Food storage facility   | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| <b>Governance</b>   |                |                  |               |              |               |                 |                |                   |                    |                |                |                   |              |
| Village council (complete & balanced)   | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Village meetings & reporting  | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Village LU plan   | ↔              | ↔                | ↔             | ↔            | ↑             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Village Land certificate  | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Boundary conflicts  | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Cooperatives  | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| NGO presence  | ↑              | ↑                | ↔             | ↔            | ↑             | ↔               | ↔              | ↔                 | ↑                  | ↔              | ↔              | ↔                 | ↔            |
| CBO presence  | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Development projects  | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| <b>Forests &amp; the Environment</b>  |                |                  |               |              |               |                 |                |                   |                    |                |                |                   |              |
| Forested area   | ↓              | ↓                | ↓             | ↓            | ↓             | ↓               | ↓              | ↓                 | ↓                  | ↓              | ↓              | ↓                 | ↓            |
| Clearance for agriculture   | ↑              | ↑                | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↓                  | ↑              | ↑              | ↑                 | ↑            |
| New agriculture land (primary forest?)  | ↑              | ↑                | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| General forest clearance  | ↑              | ↑                | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Participatory Management  | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Government Forest Reserve   | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Procedures for harvesting timber  | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Use of fire/fire-related incidences   | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Environmental awareness   | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Timber availability   | ↓              | ↓                | ↓             | ↓            | ↓             | ↓               | ↓              | ↓                 | ↓                  | ↓              | ↓              | ↓                 | ↓            |
| Fuelwood availability   | ↓              | ↓                | ↓             | ↓            | ↓             | ↓               | ↓              | ↓                 | ↓                  | ↓              | ↓              | ↓                 | ↓            |
| Medicinal plants availability   | ↓              | ↓                | ↓             | ↓            | ↓             | ↓               | ↓              | ↓                 | ↓                  | ↓              | ↓              | ↓                 | ↓            |
| Wild fruits availability  | ↓              | ↓                | ↓             | ↓            | ↓             | ↓               | ↓              | ↓                 | ↓                  | ↓              | ↓              | ↓                 | ↓            |
| Human-wildlife conflicts  | ↓              | ↓                | ↓             | ↓            | ↓             | ↓               | ↓              | ↓                 | ↓                  | ↓              | ↓              | ↓                 | ↓            |
| <b>Agriculture</b>  |                |                  |               |              |               |                 |                |                   |                    |                |                |                   |              |
| Production of surplus   | ↓              | ↓                | ↓             | ↓            | ↓             | ↓               | ↓              | ↓                 | ↓                  | ↓              | ↓              | ↓                 | ↓            |
| Shifting cultivation practices  | ↑              | ↑                | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Production challenges   | ↑              | ↑                | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Rights & access to farmland   | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Problem animals on farms  | ↓              | ↓                | ↓             | ↓            | ↓             | ↓               | ↓              | ↓                 | ↓                  | ↓              | ↓              | ↓                 | ↓            |
| <b>Economic activities</b>  |                |                  |               |              |               |                 |                |                   |                    |                |                |                   |              |
| No. of businesses (kiosks,shops)  | ↑              | ↑                | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Charcoal production   | ↑              | ↑                | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| <b>Social &amp; Cultural</b>  |                |                  |               |              |               |                 |                |                   |                    |                |                |                   |              |
| Tribal diversity  | ↑              | ↑                | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Intermarriage   | ↑              | ↑                | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Population  | ↑              | ↑                | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| <b>Health &amp; HIV</b>   |                |                  |               |              |               |                 |                |                   |                    |                |                |                   |              |
| HIV prevalence  | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| HIV victims (orphans, single parents)   | ↑              | ↑                | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Malaria prevalence  | ↑              | ↑                | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| TB prevalence   | ↔              | ↔                | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |

**TABLE 8: PROJECTED STATUS OF KEY ISSUES AFTER 10 YEARS WITHOUT PROJECT (2015 - 2020)**

| <b>Key issues</b><br>↓ will decrease or worsen<br>↑ will increase or improve<br>↔ will remain unchanged | <b>Chabima</b> | <b>D.isanga</b> | <b>Ibingu</b> | <b>Idete</b> | <b>Ilonga</b> | <b>Kisongwe</b> | <b>Lunenzi</b> | <b>Masugu juu</b> | <b>Masugu kati</b> | <b>Mkadage</b> | <b>Mfuluni</b> | <b>Munisagara</b> | <b>Nyali</b> |
|---|----------------|-----------------|---------------|--------------|---------------|-----------------|----------------|-------------------|--------------------|----------------|----------------|-------------------|--------------|
| <b>Public Services &amp; Infrastructure</b>   |                |                 |               |              |               |                 |                |                   |                    |                |                |                   |              |
| Nursery school  | ↔              | ↔               | ↔             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↔              | ↑              | ↔                 | ↔            |
| Primary school  | ↔              | ↔               | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Secondary school  | ↔              | ↔               | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Dispensary*   | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Health clinic*  | ↔              | ↔               | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Village office  | ↔              | ↔               | ↔             | ↔            | ↔             | ↑               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Market building   | ↔              | ↔               | ↔             | ↔            | ↑             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Water services  | ↔              | ↔               | ↔             | ↔            | ↑             | ↑               | ↔              | ↑                 | ↑                  | ↔              | ↔              | ↔                 | ↔            |
| Road  | ↑              | ↔               | ↑             | ↔            | ↑             | ↑               | ↔              | ↑                 | ↑                  | ↔              | ↔              | ↔                 | ↔            |
| Transportation  | ↑              | ↔               | ↑             | ↔            | ↑             | ↔               | ↔              | ↑                 | ↑                  | ↔              | ↔              | ↔                 | ↑            |
| Communication   | ↔              | ↔               | ↔             | ↔            | ↑             | ↔               | ↔              | ↑                 | ↑                  | ↔              | ↔              | ↔                 | ↔            |
| Electricity (energy)  | ↔              | ↑               | ↔             | ↔            | ↑             | ↔               | ↔              | ↑                 | ↑                  | ↔              | ↔              | ↔                 | ↑            |
| Sanitation system/status  | ↔              | ↔               | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Food storage facility   | ↔              | ↔               | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| <b>Governance</b>   |                |                 |               |              |               |                 |                |                   |                    |                |                |                   |              |
| Village council (complete & balanced)   | ↔              | ↔               | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Village meetings & reporting  | ↔              | ↔               | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↑                  | ↔              | ↔              | ↔                 | ↔            |
| Village LU plan   | ↔              | ↔               | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Village Land certificate  | ↔              | ↔               | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Boundary conflicts  | ↔              | ↔               | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Cooperatives  | ↔              | ↔               | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| NGO presence  | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| CBO presence  | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Development projects  | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| <b>Forests &amp; the Environment</b>  |                |                 |               |              |               |                 |                |                   |                    |                |                |                   |              |
| Forested area   | ↓              | ↓               | ↓             | ↓            | ↓             | ↓               | ↓              | ↓                 | ↓                  | ↓              | ↓              | ↓                 | ↓            |
| Clearance for agriculture (shifting ag?)  | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↓                  | ↑              | ↑              | ↑                 | ↑            |
| New agriculture land (primary forest?)  | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| General forest clearance  | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Participatory Management  | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Government Forest Reserve   | ↔              | ↔               | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Procedures for harvesting timber  | ↔              | ↔               | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Use of fire/fire-related incidences   | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Environmental awareness   | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Timber availability   | ↓              | ↓               | ↓             | ↓            | ↓             | ↓               | ↓              | ↓                 | ↓                  | ↓              | ↓              | ↓                 | ↓            |
| Fuelwood availability   | ↓              | ↓               | ↓             | ↓            | ↓             | ↓               | ↓              | ↓                 | ↓                  | ↓              | ↓              | ↓                 | ↓            |
| Medicinal plants availability   | ↓              | ↓               | ↓             | ↓            | ↓             | ↓               | ↓              | ↓                 | ↓                  | ↓              | ↓              | ↓                 | ↓            |
| Wild fruits availability  | ↓              | ↓               | ↓             | ↓            | ↓             | ↓               | ↓              | ↓                 | ↓                  | ↓              | ↓              | ↓                 | ↓            |
| Human-wildlife conflicts  | ↓              | ↓               | ↓             | ↓            | ↓             | ↓               | ↓              | ↓                 | ↓                  | ↓              | ↓              | ↓                 | ↓            |
| <b>Agriculture</b>  |                |                 |               |              |               |                 |                |                   |                    |                |                |                   |              |
| Production of surplus   | ↓              | ↓               | ↓             | ↓            | ↓             | ↓               | ↓              | ↓                 | ↓                  | ↓              | ↓              | ↓                 | ↓            |
| Shifting cultivation practices  | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Production challenges   | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Rights & access to farmland   | ↔              | ↔               | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| Problem animals on farms  | ↓              | ↓               | ↓             | ↓            | ↓             | ↓               | ↓              | ↓                 | ↓                  | ↓              | ↓              | ↓                 | ↓            |
| <b>Economic activities</b>  |                |                 |               |              |               |                 |                |                   |                    |                |                |                   |              |
| No. of businesses (kiosks,shops)  | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Charcoal production   | ↔              | ↔               | ↔             | ↔            | ↔             | ↔               | ↔              | ↔                 | ↔                  | ↔              | ↔              | ↔                 | ↔            |
| <b>Social &amp; Cultural</b>  |                |                 |               |              |               |                 |                |                   |                    |                |                |                   |              |
| Tribal diversity  | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Intermarriage   | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| Population  | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| <b>Health &amp; HIV</b>   |                |                 |               |              |               |                 |                |                   |                    |                |                |                   |              |
| HIV prevalence  | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| HIV victims (orphans, single parents)   | ↓              | ↓               | ↓             | ↓            | ↓             | ↓               | ↓              | ↓                 | ↓                  | ↓              | ↓              | ↓                 | ↓            |
| Malaria prevalence  | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |
| TB prevalence   | ↑              | ↑               | ↑             | ↑            | ↑             | ↑               | ↑              | ↑                 | ↑                  | ↑              | ↑              | ↑                 | ↑            |

**TABLE 9: PROJECTED STATUS OF KEY ISSUES AFTER 30 YEARS WITHOUT PROJECT (2020 - 2030)**

| Key issue                                   | Chabima | D.isanga | Ibingu | Idete | Ilonga | Kisongwe | Lumenzi | Masugu juu | Masugu kati | Mfulumi | Mkadage | Mumisagara | Nyali |
|---|---------|----------|--------|-------|--------|----------|---------|------------|-------------|---------|---------|------------|-------|
| <b>Public Services &amp; Infrastructure</b> |         |          |        |       |        |          |         |            |             |         |         |            |       |
| Nursery school                              | ↔       | ↑        | ↑      | ↔     | ↑      | ↔        | ↔       | ↑          | ↑           | ↔       | ↔       | ↔          | ↑     |
| Primary school                              | ↑       | ↔        | ↔      | ↔     | ↑      | ↔        | ↑       | ↔          | ↔           | ↑       | ↔       | ↔          | ↑     |
| Secondary school                            | ↑       | ↑        | ↑      | ↑     | ↑      | ↑        | ↑       | ↑          | ↑           | ↑       | ↑       | ↑          | ↑     |
| Dispensary*                                 | ↔       | ↔        | ↔      | ↔     | ↑      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↑          | ↔     |
| Health clinic*                              | ↑       | ↑        | ↑      | ↑     | ↑      | ↑        | ↑       | ↑          | ↑           | ↑       | ↑       | ↑          | ↑     |
| Village office                              | ↑       | ↑        | ↑      | ↑     | ↑      | ↑        | ↑       | ↑          | ↑           | ↑       | ↑       | ↑          | ↑     |
| Market building                             | ↔       | ↔        | ↔      | ↔     | ↑      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| Water services                              | ↑       | ↑        | ↑      | ↑     | ↑      | ↑        | ↑       | ↑          | ↑           | ↑       | ↑       | ↑          | ↑     |
| Road  | ↑       | ↑        | ↑      | ↔     | ↑      | ↔        | ↔       | ↔          | ↔           | ↑       | ↑       | ↔          | ↔     |
| Transportation                              | ↑       | ↔        | ↑      | ↔     | ↑      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↑     |
| Communication                               | ↔       | ↔        | ↔      | ↔     | ↑      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| Electricity (energy)                        | ↔       | ↔        | ↔      | ↔     | ↑      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| Sanitation system/status                    | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| Food storage facility                       | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| <b>Governance</b>                           |         |          |        |       |        |          |         |            |             |         |         |            |       |
| Village council (complete & balanced)       | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| Village meetings & reporting                | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| Village LU plan                             | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| Village Land certificate                    | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| Boundary conflicts                          | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| Cooperatives                                | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| NGO presence                                | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| CBO presence                                | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| Development projects                        | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| <b>Forests &amp; the Environment</b>        |         |          |        |       |        |          |         |            |             |         |         |            |       |
| Forested area                               | ↓       | ↓        | ↓      | ↓     | ↓      | ↓        | ↓       | ↓          | ↓           | ↓       | ↓       | ↓          | ↓     |
| Clearance for agriculture (shifting ag?)    | ↑       | ↑        | ↑      | ↑     | ↑      | ↑        | ↑       | ↑          | ↓           | ↑       | ↑       | ↑          | ↑     |
| New agriculture land (primary forest?)      | ↑       | ↑        | ↑      | ↑     | ↑      | ↑        | ↑       | ↑          | ↑           | ↑       | ↑       | ↑          | ↑     |
| General forest clearance                    | ↑       | ↑        | ↑      | ↑     | ↑      | ↑        | ↑       | ↑          | ↑           | ↑       | ↑       | ↑          | ↑     |
| Participatory Management                    | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| Government Forest Reserve                   | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| Procedures for harvesting timber            | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| Use of fire/fire-related incidences         | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| Environmental awareness                     | ↑       | ↑        | ↑      | ↑     | ↑      | ↑        | ↑       | ↑          | ↑           | ↑       | ↑       | ↑          | ↑     |
| Timber availability                         | ↓       | ↓        | ↓      | ↓     | ↓      | ↓        | ↓       | ↓          | ↓           | ↓       | ↓       | ↓          | ↓     |
| Fuelwood availability                       | ↓       | ↓        | ↓      | ↓     | ↓      | ↓        | ↓       | ↓          | ↓           | ↓       | ↓       | ↓          | ↓     |
| Medicinal plants availability               | ↓       | ↓        | ↓      | ↓     | ↓      | ↓        | ↓       | ↓          | ↓           | ↓       | ↓       | ↓          | ↓     |
| Wild fruits availability                    | ↓       | ↓        | ↓      | ↓     | ↓      | ↓        | ↓       | ↓          | ↓           | ↓       | ↓       | ↓          | ↓     |
| Human-wildlife conflicts                    | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| <b>Agriculture</b>                          |         |          |        |       |        |          |         |            |             |         |         |            |       |
| Production of surplus                       | ↓       | ↓        | ↓      | ↓     | ↓      | ↓        | ↓       | ↓          | ↓           | ↓       | ↓       | ↓          | ↓     |
| Shifting cultivation practices              | ↑       | ↑        | ↑      | ↑     | ↑      | ↑        | ↑       | ↑          | ↑           | ↑       | ↑       | ↑          | ↑     |
| Production challenges                       | ↑       | ↑        | ↑      | ↑     | ↑      | ↑        | ↑       | ↑          | ↑           | ↑       | ↑       | ↑          | ↑     |
| Rights & access to farmland                 | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| Problem animals on farms                    | ↓       | ↓        | ↓      | ↓     | ↓      | ↓        | ↓       | ↓          | ↓           | ↓       | ↓       | ↓          | ↓     |
| <b>Economic activities</b>                  |         |          |        |       |        |          |         |            |             |         |         |            |       |
| No. of businesses (kiosks,shops)            | ↑       | ↑        | ↑      | ↑     | ↑      | ↑        | ↑       | ↑          | ↑           | ↑       | ↑       | ↑          | ↑     |
| Charcoal production                         | ↑       | ↑        | ↑      | ↑     | ↑      | ↑        | ↑       | ↑          | ↑           | ↑       | ↑       | ↑          | ↑     |
| <b>Social &amp; Cultural</b>                |         |          |        |       |        |          |         |            |             |         |         |            |       |
| Tribal diversity                            | ↑       | ↑        | ↑      | ↑     | ↑      | ↑        | ↑       | ↑          | ↑           | ↑       | ↑       | ↑          | ↑     |
| Intermarriage                               | ↑       | ↑        | ↑      | ↑     | ↑      | ↑        | ↑       | ↑          | ↑           | ↑       | ↑       | ↑          | ↑     |
| Population                                  | ↑       | ↑        | ↑      | ↑     | ↑      | ↑        | ↑       | ↑          | ↑           | ↑       | ↑       | ↑          | ↑     |
| <b>Health &amp; HIV</b>                     |         |          |        |       |        |          |         |            |             |         |         |            |       |
| HIV prevalence                              | ↑       | ↑        | ↑      | ↑     | ↑      | ↑        | ↑       | ↑          | ↑           | ↑       | ↑       | ↑          | ↑     |
| HIV victims (orphans, single parents)       | ↓       | ↓        | ↓      | ↓     | ↓      | ↓        | ↓       | ↓          | ↓           | ↓       | ↓       | ↓          | s     |
| Malaria prevalence                          | ↔       | ↔        | ↔      | ↔     | ↔      | ↔        | ↔       | ↔          | ↔           | ↔       | ↔       | ↔          | ↔     |
| TB prevalence                               | ↑       | ↑        | ↑      | ↑     | ↑      | ↑        | ↑       | ↑          | ↑           | ↑       | ↑       | ↑          | ↑     |

**TABLE 10: IMPACT OF NON-REDD PROJECT ACTIVITIES ON STATUS QUO IN PROJECT ZONE**

| <b>Focal Issue</b>                                     | <b>Stakeholder involved</b>   | <b>Expected changes</b>  | <b>Comments</b>   |
|--|---|--|---|
| <b>Presence of nursery schools in every village</b>    | Kilosa District education office & Central Government ministry of Education   | Kilosa District Government (KDG) has a budget to construct 30 nursery schools in 2011/2012 fiscal year; some of these schools will be in villages in the Project Zone.   | Unclear which villages in Project Zone will benefit; unclear certainty that the program will achieve this objective despite existing budget   |
| <b>Improvement of Primary school education</b>         | Kilosa District education office & GoT Ministry of Education; Village governments                                   | KDG plan to increase number of teachers at all schools where there are deficiencies; District has been issued permission to announce these jobs;<br><br>Via the TASAF programme, villages can construct new classes through cost-sharing   | A number of villages are eligible to apply for District assistance to complete class building projects that have stalled  |
| <b>Secondary schools</b>                               | District education office & Central Government ministry of Education  | The Government of Tanzania (GoT) objective is to have a secondary school in every Ward; this expectation is met in the Project Zone. The GoT is addressing the scarcity of teachers in these schools and expects to have a solution within the next five years.  | Unclear whether villages in Project Zone will benefit from these plans in the near future   |
| <b>Dispensaries</b>                                    | District education office, GoT Ministry of Education; Village governments   | One dispensary exists in every ward and KDG provides assistance annually to communities to build dispensaries in their own villages based on a shared-cost programme. In Lumuma and Kisongwe, for example, communities have already started meeting their minimum requirements to be eligible to receive District assistance (more than 4000 bricks have been made). Munisagara and Dodoma Isanga have dispensaries. Through the same programme, Chabima requested assistance in 2007 for gravel, which they were granted. | Village governments need to keep records and ledgers tracking source of funding and support for development project; Current GoT support does not address quality of health care services beyond existence of a dispensary building (e.g. equipment, staff, medicine) |
| <b>Health Centres</b>                                  |   | Health Centres are planned at Ward level, with an expectation that there should be one HC per ward. Mkadage, Masugu Juu and Masugu Kati (in Magomeni Ward) are the only villages that have a Health Centre between them.   | Nothing has been planned towards improving the situation  |
| <b>Construction of Village govt. offices</b>           | Kilosa District Development Office (LGCDG)  | An office is being constructed in Kisongwe Village within the 2011/2012 fiscal year through funding from the Local Govt. Capital Development Grant (LGCDG) administered from the District offices. Other villages should also be able to use the same funding source to construct their offices.   |   |
| <b>Water services</b>                                  |   | A water project exists in Kisongwe village that will increase the number of water points in the village  | Ilonga Village expect improvement in next 5 years – but it is unclear why   |
| <b>Road &amp; Transportation network improvements</b>  | National, Regional and District transport offices; Tanzania Railways; Kilosa State Funds (Mfuko wa Jimbo la Kilosa) | Several road improvement activities are ongoing in the Project Zone. The Kilosa Town – Lumuma road is presently (Aug 2011) under construction; Roads in Kisongwe are under construction; the bridge at Nyali is being constructed (current road closures will be opened up); The road between Mfuluni, Ilonga, and Idete is also under construction. Finally, the Kilosa – Munisagara railway tracks have recently been upgraded.  | Moreover, plans to build highway through or near Kilosa Town in the near future (next 10 to 20 years) will drastically alter the communications network in the Project Zone. NB: Transportations improvements could only minimally be attributed to the REDD Project. |
| <b>Communications</b>                                  | District Communications office; USAID; radio station companies  | With financial assistance from US AID through the District Communications office, a booster station has been installed in Morogoro Town for the radio station “Radio Jami” which will now be widely available in the Project Zone.   | Unclear whether cell phone coverage will improve in villages currently without coverage; Generally, expected to increase over the next 5 – 10 years   |
| <b>Handling of wastewater &amp; garbage</b>            | District health office  | The IWASH project is building improved toilets in primary schools. This implemented by CARE with finance from US AID   | Unclear where the activities have been conducted and whether villages in Project Area will benefit  |
| <b>Food/grains storage warehouses</b>                  | Kilosa District Govt through its DADP Programme   | Kilosa District was recently selected to receive assistance in constructing long-term warehouses for long-term storage of grain. There is also a program to assist farmers to store food until prices increase. The District Agriculture Development Programme (DADP) assists a few communities to re-furbish their warehouses   | Unclear the timeline for execution of this program (5 or 10 years)  |
| <b>Good governance</b>                                 | District government; Village councils   | District govt has distributed announcement boards to all village councils for continuous reporting finances and other information to communities outside village offices   |   |
| <b>Development and implementation of Landuse Plans</b> | WWF, DANIDA and Castan Mine   | Landuse plans exist in villages that have external supporters. For example, Malolo B was helped by WWF to develop its LUP.   | None of the villages have land certificates, however. This is a longer process that needs to be followed up   |
| <b>Resolutions to Boundary conflicts</b>               | Ministry of Lands, Government of Tanzania   | National programme of mapping village boundaries. Most village boundaries have been mapped.  | In some villages the survey was implemented with limited consultation resulting in outstanding disputes over the mapped boundaries.   |
| <b>Presence of NGOs</b>                                | There are several other NGOs already operating in the area: AFNET, Wamajukuu, HUDESA,                               | More NGOs expected to come work in the area targeting different sectors for improvement and development.   | Probably in the long term, a saturation point will be attained whereby number of NGOs will  |

| <b>Focal Issue</b>                               | <b>Stakeholder involved</b>   | <b>Expected changes</b>   | <b>Comments</b>   |
|--|---|---|---|
|  | TUNAJALI, EGAI, and WWF.  |   | stabilise or decrease   |
| <b>Community development projects</b>            | District Govt, WWF, and other NGOs operating in the area                                    | CDPs will increase because of the activities of other organisations in the area, and due to approved District budgets to increase schools and other services  |   |
| <b>Timber harvesting procedures</b>              | GoT (Tanzania Forest Services)  | The recently established TFS is expected to improve timber harvesting procedures in the nation  | Unclear what types of improvements are meant, and timeline in which improvements will be implemented  |
| <b>Environmental awareness and knowledge</b>     | Television and radio programs, Ag. Research Centre,   | Expected to increase from exposure to increasingly more information about environmental issues on radio, television and other organisations and activities in the Project Zone  | Basic knowledge of issues such as climate change expected; Changes in behaviour or practices in reaction to the improved knowledge unlikely, however if not component of existing projects. |
| <b>Conflicts with wildlife</b>                   | Farmer activities   | Expected to increase for farmers cultivating in areas close to forests; but expected to decrease over long-term as habitat is converted for human use   |   |
| <b>Agricultural productivity</b>                 | Irrigation projects   | Ag. production expected to increase in a few communities near rivers due to irrigation project, funded by the District through the DADP. Specifically, in Dodoma Isanga and Chabima water canals are being improved, farmers are receiving 'tools vouchers', fertilisers, and improved seeds. An irrigation project also exists in Ibingu. Potential to develop an irrigation project in Kisongwe exists. A project to increase ginger production also exists |   |
| <b>Rights and access to land for agriculture</b> | Village governments; external investors   | More land expected to be transferred to private ownership and village governments reported to be selling land to outsiders.   |   |
| <b>Charcoal production</b>                       | Charcoal producers, consumers, transporters   | Expected to increase because demand for charcoal in urban areas is expected to increase   |   |
| <b>AIDS prevalence</b>                           | Ministry of Health; District Health Office; National AIDS campaigns;                        | AIDS prevalence decreased from 4 to 3.8% between 2009 and 2010. Infection rates have also decreased, at the same time ARVs are increasingly available and accessible. National AIDS campaigns are on-going and the presence of awareness raising recently more prominent in the villages in Project Zone  | If this is, indeed, the case, then perhaps the REDD project does not need to have a HIV-AIDS component as previously planned.   |
| <b>Malaria prevalence</b>                        | Ministry of Health (National Malaria Campaign); District Health Office; Village governments | Expected to decrease: National malaria campaigns are on-going, distribution of mosquito nets at village level have been on-going. Moreover, nets widely and cheaply available in shops at village level; awareness raising ongoing  | Communities have complained that the nets are too small and do not fit the beds; Complaints by District offices that communities have been misusing nets (e.g., fishing, chicken coops)     |
| <b>TB prevalence</b>                             | Ministry of Health; District Health Office; Village governments                             | National awareness campaigns on-going including better medication   |   |

## **PART THREE: PROJECT DESIGN FOR ACHIEVING SOCIAL OBJECTIVES**

Attribution of improvements in welfare or forest conditions in the Project Zone specifically to the REDD Project will be a challenge given that there are several other government and non-government organisations working in the area on social and forest-related issues (see Part 2). To avoid unwarranted attribution and/or double counting of improvement will require that Project proponents and village governments have specific plans for how the REDD project will improve local conditions, keep careful records of how the various sources of funding and support are used, and monitor specific indicators over time to determine if changes are taking place.

The 'situation analysis' presented in Part One demonstrates how current undesirable conditions contribute to poverty and unsustainable forest management in the Project Zone. Reversing key undesirable conditions to desirable conditions should lead to important changes in the status quo that could ultimately improve poverty levels, promote sustainable forest management, and reduce emissions from deforestation and forest degradation.

This section describes in detail how communities will use REDD readiness funding and income generated from sale of carbon credits to change specific conditions in the Project Zone from undesirable to desirable. The project level situation analysis (Figure 7) was used to identify key focal issues existing in the Project Zone and contributing to an unfavourable status quo.

### **PRIORITISATION OF KEY FOCAL ISSUES**

In the previous section, communities and stakeholders predicted their without project future by assessing more than 30 focal social and environmental issues that contribute to the status quo (social and forest-related). Communities and stakeholders had to narrow down from more the 30 focal issues to less than 10 issues that could be addressed by the Project. This exercise was conducted in both the village and landscape level workshops (Figure 8). The exercise in which non-REDD project stakeholders shared their objectives and plans for the Project Zone greatly facilitated the process of deciding which issues should be prioritized for the REDD Project and where consolidation of knowledge and resources could be maximised.

Identification of priority focal issues for the Project was conducted at two levels, first in the villages, and then in the stakeholder's workshop. Participants in village level SIA workshops were asked to identify priority issues under two separate conditions: 1) recognising that the primary national and global objectives of REDD are to reduce carbon emissions from deforestation and degradation (i.e. the REDD project is concerned with improving forest management), and 2) disregarding that the project is a REDD project (i.e., their personal preferences). This differentiation was made to try to capture whether prioritisation was different if participants did not feel obliged to focus on REDD objectives. In the stakeholder meetings, participants were reminded of the objectives of REDD and asked to only prioritise issues that they were convinced had a strong link with meeting local and national REDD objectives: i.e. carbon credits had to be generated for funds to flow to communities.

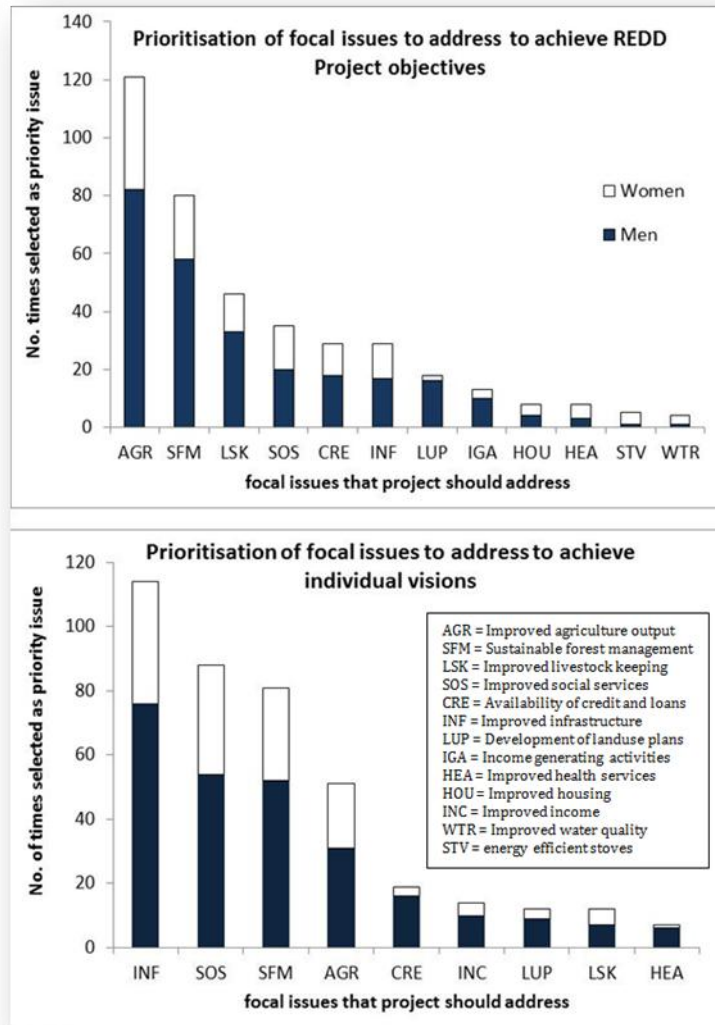
When REDD objectives were explicit, participants in the village workshops prioritised focal issues related to land and forest use, i.e., agriculture, forest management and livestock keeping (Figure 8, top graph). This suggests that participants identify clearly the principal drivers of deforestation and degradation (agricultural expansion, overgrazing, and shifting cultivation practices) that must be addressed alongside with improvements to forest management to address REDD objectives. They do not expect the project to



focus on forests over agriculture and livestock keeping; But they correctly identify, that the Project must help them improve agricultural and livestock-keeping outputs to decrease impact on forests.

Participants were more inclined to prioritise improvements to non-landuse-dependent factors (such as infrastructure improvements) over agriculture when asked to forget that this is a REDD project. Interestingly, they still maintained sustainable forest management as a priority focal issue (Figure 8, bottom graph).

**FIGURE 8: PRIORITY FOCAL ISSUES FOR PROJECT BASED ON REDD OBJECTIVES (TOP GRAPH) AND INDIVIDUAL PREFERENCES (BOTTOM GRAPH) – VILLAGE LEVEL WORKSHOPS**



The list of priority issues was slightly longer when participants took into account objectives of REDD. For example, issues such as adoption of energy efficient stoves (STV), improvement of water quality (WTR), and improvement of housing quality (HOU) were not identified as priority issues in individuals' visions, but were considered important for a REDD project. Similarly, livestock keeping was not a priority in individuals' visions, but most participants identified it as a necessary component for the REDD project. A longer list of priority issues suggests there might still be some confusion as to what – precisely – the objectives of the REDD project are and what they can 'expect' of such a project.

During the stakeholder workshop priority issues were re-visited to ascertain whether at landscape level, stakeholders agree on key issues that the project should address. Eight focal issues (i.e. factors contribution to the status quo) were prioritised:

- 1) Absence of direct incentives to manage forests sustainably;
- 2) Poor governance
- 3) Absence of landuse plans
- 4) Absence of strict and effective forest management
- 5) Poor agriculture and livestock productivity
- 6) High dependency on forest products for subsistence and income generation
- 7) Lack of income generating activities
- 8) Poor infrastructure

## **STRATEGIES TO ACHIEVE SOCIAL AND REDD [CARBON] OBJECTIVES**

Participants in the stakeholder workshop identified eight (8) strategies as key for the REDD Project in Kilosa to meet its social and carbon objectives. Each strategy addresses one or more of the priority focal issues. The strategies describe the flow of changes needed in order for the REDD Project to have positive social, economic and forestry (i.e. carbon) impacts. The strategies contain logical step-by-step procedures needed to achieve Project and community objectives.

For each strategy, participants also identified the potential negative impacts of their planned activities or desired outcomes. Thus, the strategies include a procedure for avoiding, eliminating or acceptably mitigating negative impacts.

To develop strategies, participants first conducted an in-depth situation analysis of each prioritised focal issue. As with the project level situation analysis, the priority focal issue 'conceptual models' demonstrate stakeholders' understanding of the factors contributing to the existence of the focal issue, and interlinks between factors. Using the conceptual model as the basis for evaluation, stakeholders identified the best entry points for a series of activities (i.e. strategies) that – if appropriately implemented – would convert unfavourable existing conditions to favourable. Feasible strategies were considered those that are within the human resource and financial capacity of communities, Project proponents, and Project Zone stakeholders. The outcome of this exercise was a result chain: an illustrative guide of the logical framework for implementing changes i.e., the strategy's "theory of change".

For all means and purposes, the results chains together describe the community development plans for the Project Zone. By specifying which conditions need to change and in what direction, the chain also identifies the activities that must be conducted to affect the change. Importantly, this impact assessment evaluates anticipated social and environmental impacts brought about by changes to the status quo attributed to the Project. For each strategy, communities identified factors that would support or prevent achievement of strategy objectives.

### **STRATEGY 1: PROVIDE DIRECT INCENTIVES FOR MANAGING FORESTS SUSTAINABLY**

Strategy one justifies development of a REDD Project in Kilosa District. It was developed in the stakeholder workshop to set the basis for a common understanding of the overarching objectives of the Project and to demonstrate how other strategies contribute to achieving these objectives.

The Kilosa REDD Project was developed to address chronic over-exploitation and under-valuation of forests in the area resulting in unsustainable extraction and use of forest resources. Village governments - through their village natural resource committees - are responsible for managing forest use, but management has been weak, non-existent or unsustainable. Lack of financial incentives to village

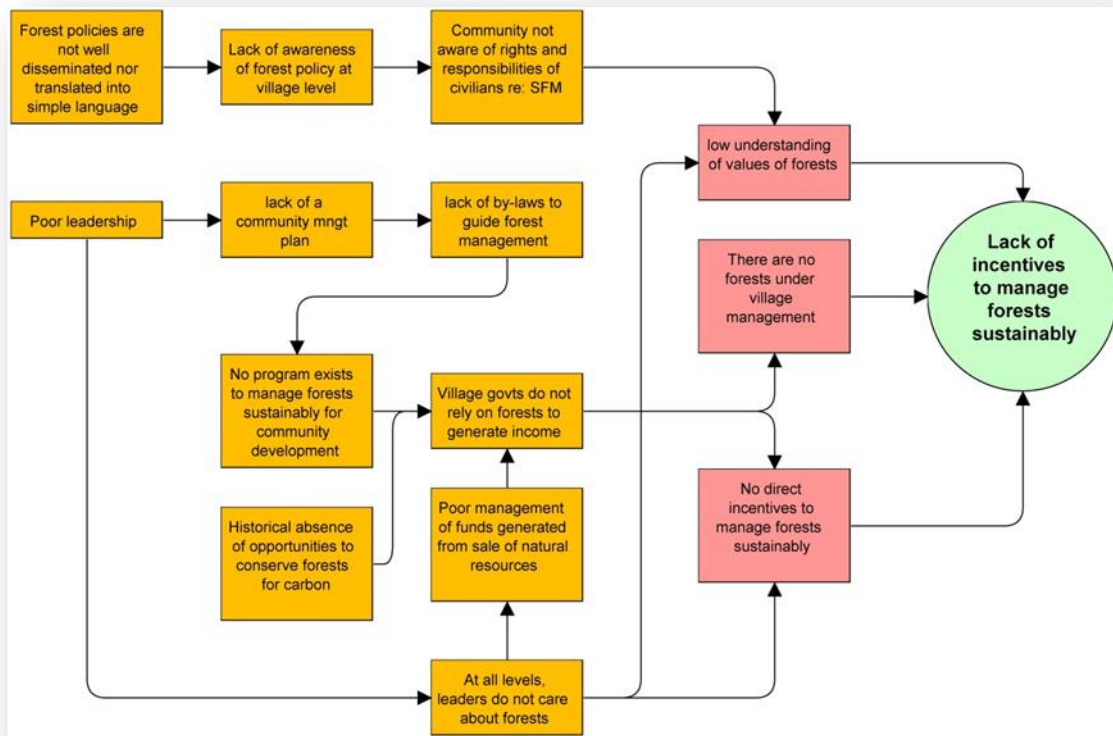
governments to manage forests sustainably was identified as one of the primary reasons for poor forest management. A key objective of the REDD Project is to develop such incentives by sale of carbon credits generated through improved management and forest enhancement.

Based on stakeholder understanding of the Project Zone, three main factors are directly linked to lack of incentives to sustainable forest management: general under-appreciation of the true (extractive and non-extractive) value of local forests, absence of forested land that is identified as “village forest” and which is handed over to village governments to manage, and absence of direct (monetary) incentives to manage forests. The underlying factors contributing to these three direct factors - and their interrelationships - are communicated by the ‘situation analysis’ diagram that was developed during the stakeholder SIA workshop (Figure 9).

Under-valuation of local forests was attributed to weak (and mostly non-existent) campaigns to raise awareness about the value of forests, poor dissemination of forest policies, absence of simple language policy translations for broader dissemination which has contributed to very little awareness of national forest policies at local level.

A series of additional underlying factors contribute to the absence of specific areas in the village recognised and designated as “village forest land” and to the lack of direct incentives to manage forests sustainably. These ranged from poor governance and leadership to an absence of landuse plans, and historical absence of opportunities to generate income through carbon markets (Figure 9).

**FIGURE 9: CONCEPTUAL MODEL FOR UNDERSTANDING WHY THERE IS A LACK OF DIRECT INCENTIVES TO MANAGE FORESTS SUSTAINABLY**



The success of the REDD Project in Kilosa hinges on the ability of communities to change current forest management and landuse practices so that they can claim carbon emissions reduction and/or carbon sequestration credits. The Project and community's plan for implementing Strategy 1 consists of:

- Initiate and undertake the participatory forest management (PFM) process in the Project Zone, so that specific areas in the village are gazetted as village forest land, and village governments are trained to manage these successfully for generating carbon credits and compatible other use.
- Developing a carbon trading cooperative that will facilitate accumulation and sale of carbon credits for its members who will consist of communities in Tanzania implementing PFM. Credits will be marketed through a carbon trading cooperative that will agglomerate the carbon credits generated across numerous communities and projects. On behalf of communities the cooperative will also conduct the administrative, entrepreneurship and promotional activities needed to ensure the best possible price for credits generated.
- Simultaneously conduct awareness raising on importance of forests locally, with implementation of Strategies 2 to improve local governance and communicate national forest policies locally.

The general approach for Strategy 1 in terms of the desired outputs, outcomes and impacts to be generated from activities conducted by Project proponents and communities are communicated by Figure 10 below.

The **theory of change** for how Strategy 1 will generate sufficient incentives for communities (village governments) to manage forests sustainably can be stated as follows:

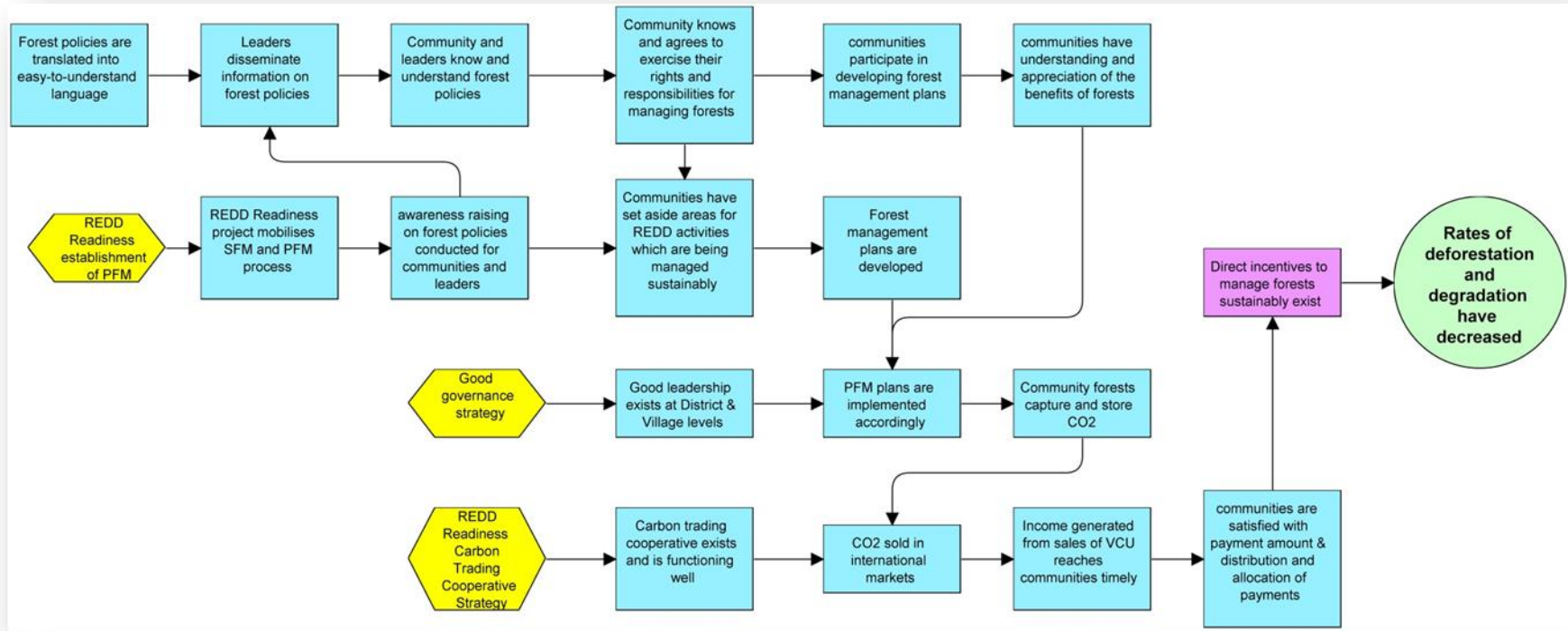
IF awareness raising is conducted on the importance of local forests and  
 IF communities are convinced that their forests need to be better managed, and  
 IF communities undergo the participatory forest management process, and  
 IF communities manage their forests sustainably, and  
 IF a carbon trading cooperative exists and functions appropriately  
 THEN  
 Communities will value local forests more, they will want to and be able to manage forests sustainably to generate carbon credits, they will be able to sell their credits through the carbon trading cooperative to generate income directly related to sustainable forest management (i.e., direct incentives).

For this theory of change to take effect, the following assumptions apply:

- Leadership is good (i.e. good governance strategy has been successful)
- The carbon trading cooperative (to be operated by MJUMITA) is the appropriate framework for aggregating VCUs and participating in C market.
- Payments for carbon that percolate to communities are attractive, reflect opportunity costs of alternative landuse, and that
- The bureaucracy of the National REDD strategy is streamlined so that communities (or the carbon trading cooperative) can participate effectively without being overwhelmed by red tape, delays and overly complex procedures.

Desired impacts and potentially undesirable outcomes generated from implementation of Strategy 1 are summarised in Table 11.

FIGURE 10: APPROACH FOR GENERATING DIRECT INCENTIVES TO MANAGE FORESTS SUSTAINABLY (STRATEGY 1)



**TABLE 11: POTENTIAL IMPACTS OF GENERATING DIRECT INCENTIVES TO MANAGE FORESTS SUSTAINABLY (STRATEGY 1)**

| Activity   | Intended positive outcomes or impacts  | Potential negative impacts  | Magnitude of negative impact   | Stakeholders affected   | Mitigation action Needed  |
|--|--|---|--|---|---|
| Forest policies are translated into easy-to-understand language            | - Policies are accessible for discussion and implementation at local level   | - None anticipated  | - Not applicable   | - Communities<br>- Forest extension officers<br>- Village natural resource committees       | - Check potential risks (Table 13)  |
| Awareness raising on forest policies conducted for communities and leaders | - Community knows and agrees to exercise its rights and responsibilities for managing forests  | - None anticipated  | - Not applicable   | - Community leaders<br>- Community members  | - Check potential risks (Table 13)  |
| Communities participate in developing forest management plans              | - Community ownership of plans;<br>- increased willingness to implement plans;   | - Less time available for other activities;<br>- Women participation is minimal because they cannot dedicate time to complete participation | - Medium to large;<br>- Short to medium term although with adaptive management, could be long term   | - Women<br>- Other community members unable to attend meetings due to other work duties     | - Planning meetings are conducted when the largest number of community members can participate;<br>- All plans are validated at village level with women as key stakeholders  |
| PFM plans are implemented accordingly                                      | - REDD objectives are achieved (carbon credits are generated);<br>- Jobs created locally for forest patrols;<br>- Woodlots are established;<br>- Additional income from sustainable timber & charcoal production | - Strict access & use of forest rules marginalize the landless and poorest;<br>- Patrol jobs are limited to men;                            | - High and long-term if forest access and use rules are not accommodating to those who are most highly dependent on forests for daily subsistence. | - Landless (youth, unmarried or single women, and newcomers);<br>- elders;<br>- handicapped | - Sensitivity to how women can be involved in patrolling activities (e.g. day patrols, or patrolling for certain types of forest infractions);<br>- Participatory development of management plans (high involvement of vulnerable groups) |
| A Carbon Trading Enterprises established (local communities join)          | - Reduce transaction costs for Local communities to market their VER units internationally   | - None anticipated  | - Not applicable   | - Communities in general  | - Check potential risks (Table 13)  |
| VCU income directed to PFM and community development funds                 | - communities are satisfied with payment amount & distribution and allocation of payments  | - direct allocation of funds to households will not occur (household income will not change)  | - medium and long term   | - all community members   | - Village governments need to ensure that community members can directly associate community improvements to carbon income;<br>- Ensure community participation in choice of projects to spend the carbon income on                       |

Several pre-existing **factors or conditions are favourable** for realisation of different aspects of Strategy 1. Similarly, factors exist that could derail achievement of Strategy 1. Factors opposing the success of Strategy 1 imply risks to project success. In some cases, when risks are generated by local conditions, project proponents, local stakeholders and communities can eliminate or lessen risks.

**Error! Not a valid bookmark self-reference.** summarises pre-existing and anticipated factors that could support or oppose successful implementation of Strategy 1. Where mitigation of risks is possible, or where additional action is needed to take advantage of a supporting condition, the responsible parties for mitigation were also identified (last column).

**TABLE 12: FACTORS SUPPORTING AND OPPOSING GENERATION OF DIRECT INCENTIVES FOR MANAGING FORESTS SUSTAINABLY (STRATEGY 1)**

| Activity or desired outcome  | Supporting factors  | Opposing factors (risks)   | Mitigation measure & Responsible parties  |
|--|---|--|---|
| Awareness raising on value of forests and relaying of national forest policies locally | - VNRC already exist to be able disseminate the information locally | - Risk that information is not uniform across different parties (conflicting messages) | - Project responsibility to ensure uniformity of information (via proper training of campaigners) and monitoring quality of campaigns |

| Activity or desired outcome   | Supporting factors  | Opposing factors (risks)   | Mitigation measure & Responsible parties   |
|---|---|--|--|
| <b>A community carbon cooperative exists</b>                                | - Existence of MJUMITA community forest network that has experience working with many communities and acting on behalf of >500 VNRCs across the country   | - Cooperative is ineffective, inefficient and abuses its control of communities link to carbon markets   | - MJUMITA and Village Governments to agree on administrative and operating structure of cooperative to ensure transparency and options to opt out;<br>- Alternatives to cooperative are communicated to communities so they can make a free, prior and informed decision of whether or not to join the cooperative |
| <b>CO2 sold in international markets via the Carbon Trading Cooperative</b> | - Income generated from attaining REDD objectives   | - Prices for VCUs vulnerable to international markets that may fluctuate unfavourably for communities;<br>- Prices may be lower than the opportunity costs of REDD   | - In 'good years' set aside insurance to buffer prices during 'bad' years;<br>- Diversity income from forest activities so that carbon credits are not the only source of income (e.g., sustainable timber harvesting and charcoal production)   |
| <b>There is equitable &amp; fair distribution of payments</b>               | - Concept of transparency generally understood and desired by community members   | - Some mistrust already exists as to how funds will be fairly distributed among participating communities.<br>- Communities trust project staff, but less so their own leaders   | - Concept of fair and equitable needs to be discussed for each community (this may vary);<br>- Transparency of income and expenditure of carbon credits closely followed up and publicised   |
| <b>Efficient allocation of payments to communities from higher level</b>    | - Transparency and efficiency generally improving trickling effect of national and regional funds and programs to community level   | - Bad experience with district and other funds originating from National Govt imply slow and excessively bureaucratic procedures for receiving payments  | - Consistent monitoring of transparency and efficiency<br>- Third party quality control checks   |
| <b>Communities are organized to use funds for community development</b>     | - Recognition and desire by communities to improve governance;<br>- Strengthening governance, leadership and civilian participation is addressed specifically by Strategy X.<br>- Governance identified as key components of other strategies (prioritised by Project proponents) | - Difficulty in identifying appropriate leaders for improving governance;<br>- Long history of passive acceptance of bad leadership<br>- No previous experience of good leadership to compare new leaders with;<br>- High reliance on good governance for success of project | - Improving governance a major priority in first stages of REDD project;<br>- Communities identify good leaders to receive training;<br>- Communities participate in promoting good governance (e.g., denounce bad leaders, participate in elections, etc.)  |

## STRATEGY 2: IMPROVE GOVERNANCE AT VILLAGE LEVEL

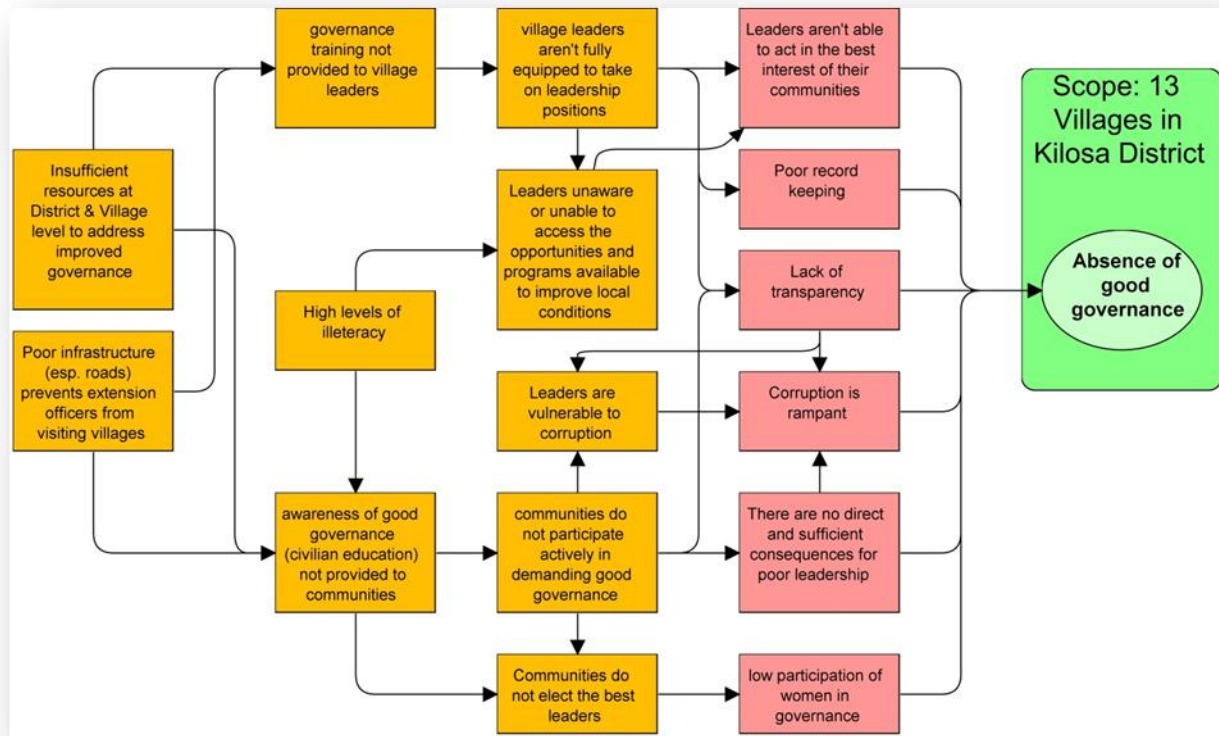
Improving governance at village level was identified as one of the main features of the current condition that had to change in the Project Zone for the project to be able to achieve REDD and related objectives. Governance improvements are needed in all participating communities. Due to the high risk poor governance poses to project success, improving governance was considered one of the main Project activities that would take place in the early phases of REDD readiness, alongside environmental (forest) awareness raising campaigns.

Figure 11 illustrates the outcomes of the situation analysis for absence of good governance in the Project Zone. Five factors directly contribute to poor governance: poor leaders, poor record keeping, absence of transparency, corruption and absence of effective consequences for poor leadership. Some of the underlying factors contributing to poor governance are high illiteracy levels which prevent village governments from keeping good records and a general lack of awareness of what constitutes good governance or how to attain it.

Stakeholders agreed that improving governance at village level can be addressed if the following activities are carried out:

- Existing leaders receive good governance training
- New leaders are identified and subsequently trained
- An awareness raising campaign is conducted on what good governance is and why it is importance
- Women are a key component to achievement of good governance (as leaders and active participants)

FIGURE 11: SITUATION ANALYSIS FOR ABSENCE OF GOOD GOVERNANCE IN PROJECT ZONE



The theory of change for Strategy 2 is thus:

IF awareness raising of good governance is conducted for leaders and communities, and  
 IF communities and leaders are convinced that drastic changes and improvements are needed to existing  
 governance styles and abilities, and  
 IF existing and future leaders receive good governance training, and  
 IF internal and external support exists to implement good governance,  
 THEN  
 Village governments will be well governed and many of the barriers to successful project implementation  
 (e.g., corruption, lack of transparency, poor record keeping, and inactiveness) will be eliminated or  
 drastically lessened.

**A key assumption** related to Strategy 2 is that there exists a clear and proven link between improved governance and reduction in deforestation and degradation of forests.

Studies have generally failed to demonstrate that there are direct beneficial impacts of improved governance on deforestation and degradation or sustainable forest management (Kishor & Belle 2004). Kishor and Belle (2004) conclude that “*if the main objective is to reduce deforestation especially in the short run then undertaking reforms directly related to the forest sector such as in the areas of forest policy, scientific forest management, and forest law enforcement and compliance are likely to be the most effective both in terms of cost and outcomes. Nonetheless, good governance is needed to ensure long-term benefits such as effective implementation of forest reforms*”.

Other assumptions related to this Strategy include:

- That women want to participate in leadership



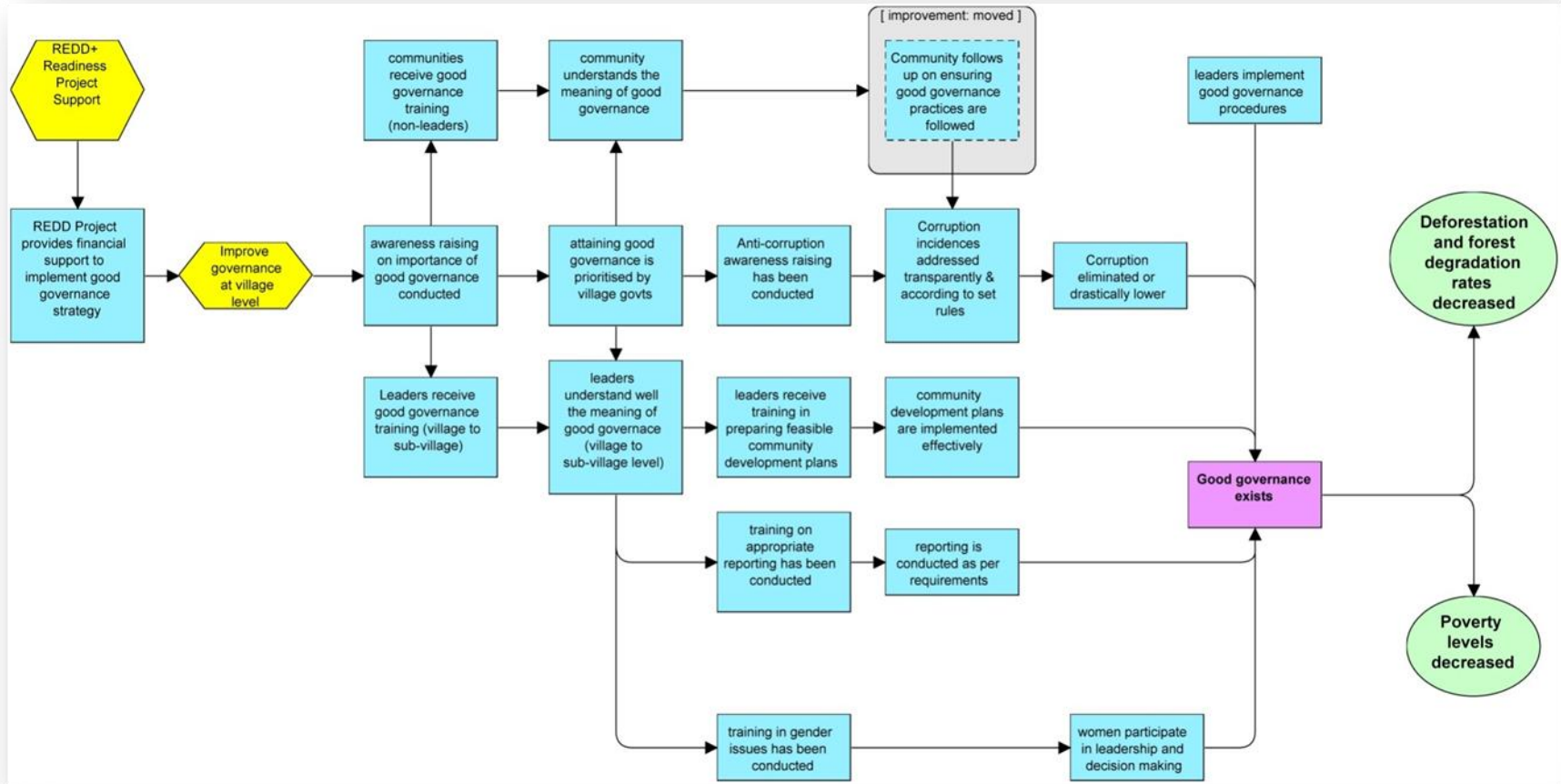
- That communities – in general – will transition peaceful into a governance structure that allows them more freedom of expression and participation (i.e. they will not abuse newfound rights)

Desired impacts and potentially undesirable outcomes generating from implementation of Strategy 2 are summarised in Table 13. A recurring concern of this Strategy is the potential reaction of existing leaders to what may be taken as direct accusations to their leadership abilities, fuelled by a community that is increasingly more aware of its rights and eager to exercise its right to ensuring good leadership. To minimise any potential negative impacts brought about by the good governance campaigns will require high sensitivity of the campaigns to ensure that they are diplomatic, respectful, do not accuse any specific individuals, and are approved by existing leaders. In fact, training of existing leaders should be conducted before public campaigns are held so that the campaign is well received by leaders and can be seen as part of increased transparency and participation of civil society.

Factors **supporting and opposing achievement** of Strategy 2 are summarised in Table 13.

A key threat to achieving good and effective governance in the Project Zone is continued isolation of pastoralist communities from leadership positions and participation in decision making processes. The absence of pastoralist stakeholders in the SIA workshops means that their inputs are missing from this process.

FIGURE 12: APPROACH FOR ACHIEVING GOOD GOVERNANCE IN PROJECT ZONE (STRATEGY 2)



**TABLE 13: POTENTIAL IMPACTS OF IMPROVING GOVERNANCE AT VILLAGE LEVEL (STRATEGY 2)**

| <i>Activity or direct output</i>   | <i>Intended positive outcomes or impacts</i>  | <i>Potential negative impacts</i>   | <i>Magnitude of negative impact</i>   | <i>Stakeholders affected</i>   | <i>Mitigation action Needed</i>   |
|--|---|---|---|--|---|
| <b>Awareness raising on importance of good governance is conducted</b>                       | <ul style="list-style-type: none"> <li>- community and their leaders understands the meaning of good governance (village to sub-village level);</li> <li>- interest and commitment generated to improve local governance</li> </ul>   | <ul style="list-style-type: none"> <li>- existing leaders feel unappreciated and insulted by project</li> <li>- communities feel within their rights to mistreat existing leaders they identify as 'poor leaders'</li> </ul>  | <ul style="list-style-type: none"> <li>- small to medium impact;</li> <li>- short to medium term</li> </ul>   | <ul style="list-style-type: none"> <li>- Leaders (existing and future) (Village and ward executive officers and others in village council)</li> <li>- Community as a whole</li> </ul>      | <ul style="list-style-type: none"> <li>- need to conduct the campaigns with high sensitivity for potential to insult existing leaders;</li> <li>- Conduct campaigns closely with approval of local leaders</li> </ul>   |
| <b>Attaining good governance is prioritized by village govts</b>                             | <ul style="list-style-type: none"> <li>- Subsequent training in good governance is based on genuine interest and conscious desire to improve local level governance</li> </ul>  | <ul style="list-style-type: none"> <li>- Other important items set aside (e.g. changes that are more directly linked to REDD objectives)</li> </ul>   | <ul style="list-style-type: none"> <li>- Small &amp; temporary</li> </ul>   | <ul style="list-style-type: none"> <li>- Village councils</li> </ul>   | <ul style="list-style-type: none"> <li>- None needed</li> </ul>   |
| <b>Community follows up on ensuring good governance practices are followed</b>               | <ul style="list-style-type: none"> <li>- An iterative and interactive process of improving governance is established;</li> <li>- community members exercise their power to make changes for the better;</li> <li>- leaders are reminded of who they serve</li> </ul>  | <ul style="list-style-type: none"> <li>- Potential to disrupt traditional structures (s.a. respect for leaders).</li> <li>- Scrutinized govt. leaders resign – creating an unbalanced and incomplete council;</li> <li>- discourages others from becoming leaders</li> </ul>                | <ul style="list-style-type: none"> <li>- Low &amp; short-term impact while community and leaders adjust to the practice of good governance and</li> </ul>   | <ul style="list-style-type: none"> <li>-</li> </ul>  | <ul style="list-style-type: none"> <li>- Cultural sensitivity to appropriateness of leaders chosen;</li> <li>- Care taken to ensure that leaders are democratically chosen;</li> <li>- Commitment by project proponents to respect and work with democratically elected leaders</li> </ul>  |
| <b>Corruption incidents are addressed timely, transparently &amp; according to set rules</b> | <ul style="list-style-type: none"> <li>- Community and leaders are aware of the various forms that corruption can manifest;</li> <li>- awareness exists on the negative effects on society of corruption;</li> <li>- community consciously decides to be non-tolerant to corruption;</li> <li>- Corruption incidents decrease;</li> </ul> | <ul style="list-style-type: none"> <li>- Whistle-blowers may be targeted by resentful offenders;</li> <li>- Corruption incidents become more clandestine and sophisticated (making it increasingly more risky for whistle-blowers to denounce corruption)</li> </ul>                        | <ul style="list-style-type: none"> <li>- Low to medium impact; will depend large on case by case basis;</li> <li>- Short to long-term</li> </ul>  | <ul style="list-style-type: none"> <li>- Whistle-blowers</li> <li>- Participants in corruption</li> </ul>  | <ul style="list-style-type: none"> <li>- A protocol is set in place for protecting identity of whistle-blowers;</li> <li>- Respect and implementation of protocol is conducted (monitoring)</li> <li>- Large and meaningful rewards are provided to all successful resolutions of corruption cases</li> </ul>   |
| <b>Community development plans are developed and implemented effectively</b>                 | <ul style="list-style-type: none"> <li>- Community has joint objectives and vision of improvements desired;</li> <li>- Generates ownership of project outcomes;</li> <li>- Development needs are met</li> </ul>   | <ul style="list-style-type: none"> <li>- Time, labour and financial commitment to executing plans may exceed local capacity, particularly of poor households;</li> </ul>  | <ul style="list-style-type: none"> <li>-</li> </ul>   | <ul style="list-style-type: none"> <li>- Poorest households;</li> </ul>  | <ul style="list-style-type: none"> <li>- Financial and time contribution are scaled to reflect affordability so that poor households are not disproportionately affected</li> </ul>   |
| <b>Reporting of village govt. activities is conducted as per requirements</b>                | <ul style="list-style-type: none"> <li>- Transparency of government activities to community;</li> </ul>   | <ul style="list-style-type: none"> <li>- Increase workload associated with leadership positions to prepare reports</li> </ul>   | <ul style="list-style-type: none"> <li>- Low &amp; short-term: the highest workload will be during transition period to better reporting. Subsequent councillors will be trained and have experience of good reporting</li> </ul>               | <ul style="list-style-type: none"> <li>- Village councillors:</li> </ul>   | <ul style="list-style-type: none"> <li>- Remuneration or incentives to village councillors for increased workload;</li> </ul>   |
| <b>Women participate in leadership and decision making</b>                                   | <ul style="list-style-type: none"> <li>- Women's needs are reflected in decision making and community development;</li> <li>- Men become increasingly more accustomed to women participation in leadership;</li> <li>- Gender balance</li> </ul>  | <ul style="list-style-type: none"> <li>- Community members opposed to or resentful of women participation mistreat women leaders;</li> <li>- Disrespect for women holding leadership positions;</li> <li>- Participation limited to women who have support with household chores</li> </ul> | <ul style="list-style-type: none"> <li>- Small and Short to medium term until society adjusts to more women in leadership positions.</li> <li>- NB: Women who are currently councillors in village govt. are not negatively affected</li> </ul> | <ul style="list-style-type: none"> <li>- Women in leadership positions (or interested in)</li> <li>- Their families (if leadership roles prevent them from attending to family)</li> </ul> | <ul style="list-style-type: none"> <li>- Monitor women leaders to determine how new roles are affecting their home and community lives;</li> <li>- Provide a safe environment for women to be able to communicate their concerns about being leaders;</li> <li>- Providing a supporting environment for men to accept the increased participation of women in leadership</li> </ul> |
| <b>Leaders implement good governance procedures</b>  | <ul style="list-style-type: none"> <li>- Good governance exists</li> </ul>  | <ul style="list-style-type: none"> <li>- existing power structures disrupted</li> <li>- Higher workload for</li> </ul>  | <ul style="list-style-type: none"> <li>-</li> </ul>   | <ul style="list-style-type: none"> <li>- Leaders</li> <li>- communities</li> </ul>   | <ul style="list-style-type: none"> <li>- Evaluate existing structures so that desirable and functioning components are</li> </ul>   |

| Activity or direct output | Intended positive outcomes or impacts | Potential negative impacts | Magnitude of negative impact | Stakeholders affected | Mitigation action Needed |
|---------------------------|---------------------------------------|----------------------------|------------------------------|-----------------------|--------------------------|
|                           |                                       | those in leadership        |                              |                       | maintained               |

**TABLE 14: FACTORS SUPPORTING AND OPPOSING ATTAINMENT OF GOOD GOVERNANCE (STRATEGY 2)**

| Detailed description of Vision   | Supporting factors  | Opposing factors (risks)  | Mitigation measures and Responsible parties  |
|--|---|---|--|
| <b>Good leadership in village governments</b>  | <ul style="list-style-type: none"> <li>- Many existing leaders do not have leadership skills or the interest of their communities at heart;</li> <li>- A lot of mistrust exists between communities and their leaders -- Need for drastic changes in how leadership is conducted</li> <li>- Good responsible people with the basic skills for leadership are locally available;</li> <li>- High willingness in communities to accept changes towards better governance;</li> </ul>  | <ul style="list-style-type: none"> <li>- Lack of initiators for affect change towards better leadership;</li> <li>- Fear of creating enemies or internal tension by public denouncing of current leadership;</li> <li>- Inexperience among potential leaders with leadership;</li> <li>- Absence of important leadership skills among potential leaders (e.g., literacy, governance, etc.)</li> <li>- Absence of pastoralists in leadership positions</li> </ul>  | <ul style="list-style-type: none"> <li>- Project practices high sensitivity to risk of offending is made clear;</li> <li>- Village council ensures involvement of pastoralists in village governance (special seats or formal invitations to participate).</li> </ul>  |
| <b>Every village government should have an office for meetings, storing documents and from which to serve and govern the community</b> | <ul style="list-style-type: none"> <li>- Currently, many village council meetings are held in space borrowed from schools or political parties;</li> <li>- Assembly meetings are held either in schools or in the open, limiting when meetings can be held;</li> <li>- In some villages, it is only a matter of completing unfinished buildings;</li> <li>- Ample land to construct buildings;</li> </ul>   | <ul style="list-style-type: none"> <li>- Lack of funds to start construction or complete it where construction was started</li> </ul>   | <ul style="list-style-type: none"> <li>- Government and community to contribute funds to finish the construction work where it has begun;</li> </ul>   |
| <b>Development and implementation of a landuse plan (LUP) in every village using participatory approaches</b>                          | <ul style="list-style-type: none"> <li>- Existing landuse zonation is informal – there are no strong bylaws to address those who use land contrary to common agreements;</li> <li>- Population increase requires more strict landuse planning and implementation;</li> <li>- Consistent conflicts with pastoralist communities about grazing issues – LUP will facilitate clear demarcation of grazing areas;</li> <li>- Leadership in some villages good enough to be able to undertake the LU planning process;</li> <li>- Community members are willing to accept changes in LU;</li> <li>- The REDD Readiness project is able to assist villages to develop LUPs</li> </ul> | <ul style="list-style-type: none"> <li>- In many villages, LU planning process started but stalled because there was no follow up;</li> <li>- Long-term and unresolved conflicts over land are commonplace;</li> <li>- Generally, Kilosa District has serious and unresolved conflicts between pastoralist and agriculturist communities;</li> <li>- LU planning is a long process – it requires commitment and participation of communities and their leaders;</li> <li>- District offices have not always been supportive of the process;</li> <li>- Good leadership is a necessary precondition for participatory LU planning– it is lacking in most villages</li> </ul> | <ul style="list-style-type: none"> <li>- Village government to collaborate with REDD project to have LUP</li> <li>- Communities to participate effectively;</li> <li>- Communities to commit to resolving once and for all existing LU conflicts;</li> <li>- District government to provide the LU planning experts &amp; commit to supporting communities obtain their Land certificates</li> </ul> |

### STRATEGY 3: DEVELOP LANDUSE PLANS IN EVERY VILLAGE

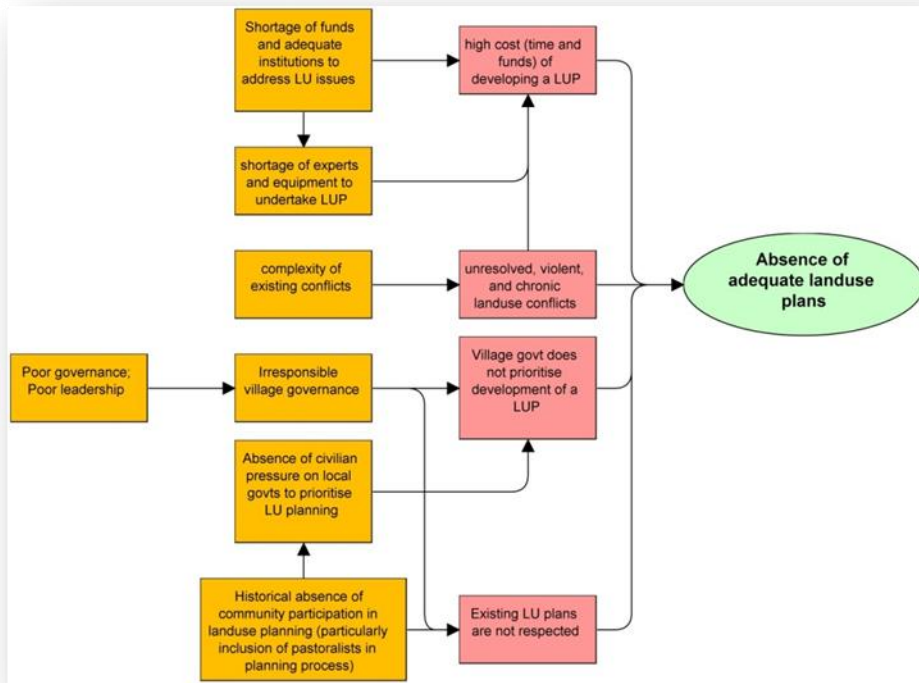
Landuse plans allow communities to identify where different activities will take place in their community land, and to set rules and regulations for how land should be used and managed in the different zones.

Communities in the Project Zone are at different stages of developing LUP. Some communities had started the process but the process had stalled for one reason or another, mostly due to unresolved border conflicts between neighbouring villages (refer to section BBB). Figure 13 summarises the situation analysis for complete absence LUPs or disrespect of existing plans. Today, the process of developing a LUP and subsequently obtaining a Village Land Certificate in Tanzania is participatory in nature and requires guidance by officers from the District Planning Office. In the past, however, the process was very much directed by district planning officers with little participation of local communities.

The absence of LUP in many of the villages is also due to the high cost in time and resources required to undertake the full process; most village councils are thus discouraged from prioritising acquiring of a Plan over other matters. In the few cases where LUPs exist, plans are not respected. This is attributed to historical absence of participation in developing such plans, and thus absence of community consensus of how community land should be used.

Underlying factors for absence or disrespect of LUP are very closely linked to the absence of good governance, a key focal issue that is addressed by Strategy 2.

**FIGURE 13: CONCEPTUAL MODEL FOR ABSENCE OF LANDUSE PLANS IN PROJECT ZONE**



The Project and communities have decided that for REDD to work in the Project Zone, every community must develop a LUP and implement it accordingly in and beyond the project zone (Figure 14). This Strategy is highly dependent on financial support from the REDD Readiness stages of the Project, and on resolving (once and for all) existing landuse conflicts.

**The theory of change for Strategy 3 is thus:**

IF REDD readiness funds are used to finance the LUP, and  
 IF landuse conflicts resolution committees are set up in every community where conflicts exist; and  
 IF committees resolve conflicts in mutually acceptable ways;  
 THEN  
 Village councils can develop LU management plans that reflect community input and land in the Project Zone can be managed in ways that are agreed upon.

**Key assumptions** related to achievement of Strategy 3 is that:

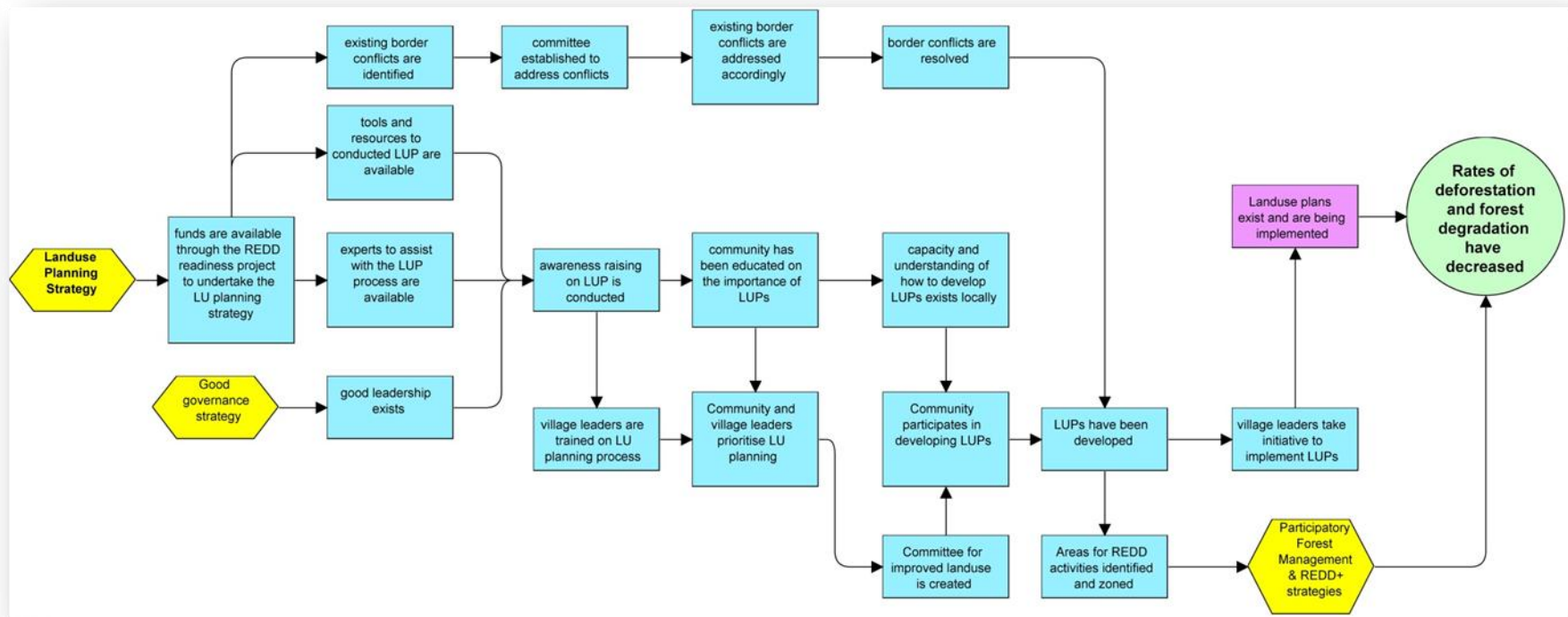
- Conflicts are resolvable
- Conflicts are resolvable in an acceptable timeframe (one year or less)
- Strategy 2 is operating and leaders have been trained in leadership and good governance and will be able to successfully implement the LUPs.

Potential impacts related to implementation of this strategy are summarised in Table 15. Potential negative impacts are mostly related to possible repercussions of either excluding pastoralist communities

from participating in the LU planning process or not accommodating their LU needs into the plans that are subsequently generated.

Existing conditions that are conducive to achievement of Strategy 3, and those that threaten the success of this Strategy are summarised in Table 16.

FIGURE 14: APPROACH FOR ENSURING EXISTENCE AND IMPLEMENTATION OF LANDUSE PLANS IN THE PROJECT ZONE (STRATEGY 3)



**TABLE 15: POTENTIAL IMPACTS OF DEVELOPING AND IMPLEMENTING LANDUSE PLANS (STRATEGY 3)**

| <b>Activity</b>   | <b>Intended positive outcomes or impacts</b>   | <b>Potential negative impacts</b>  | <b>Magnitude of negative impact</b>  | <b>Stakeholders affected</b>  | <b>Mitigation action Needed</b>   |
|---|--|--|--|---|---|
| <b>Existing conflicts are identified</b>  | <ul style="list-style-type: none"> <li>- Opportunity to resolve conflicts once and for all</li> </ul>  | <ul style="list-style-type: none"> <li>- New conflicts are generated due to disagreement on whether past conflicts were completely resolved</li> </ul>   | <ul style="list-style-type: none"> <li>- Potentially very high.</li> <li>- Experience exists in Kilosa District whereby conflicts have resulted in violence</li> </ul> | <ul style="list-style-type: none"> <li>- Pastoralists and farmers</li> </ul>            | <ul style="list-style-type: none"> <li>- Open discussions to identify a viable way forward;</li> <li>- May require intervention of conflict resolution experts</li> </ul>   |
| <b>Committees established to address conflicts</b>                                    | <ul style="list-style-type: none"> <li>- Mutually agreed upon protocols are set to channel and resolve</li> <li>- conflicts are resolved amicably and timely so that they do not stall progress of REDD Readiness;</li> <li>- Absence of land-related conflict reduces project's risk ranking for investors</li> </ul> | <ul style="list-style-type: none"> <li>- In the interest of time and external pressure to resolve conflicts, only 'easy' conflicts are resolved while deeper conflicts are not addressed</li> </ul>                | <ul style="list-style-type: none"> <li>- Medium to large</li> <li>- Long-term</li> </ul>   | <ul style="list-style-type: none"> <li>- Pastoralists and farmers</li> </ul>            | <ul style="list-style-type: none"> <li>- Memorandums of understanding are developed and signed between all parties;</li> <li>- Contents are communicated widely</li> <li>- Quality of resolution is prioritised over quantity</li> </ul>                                    |
| <b>Community participates in developing LUPs</b>                                      | <ul style="list-style-type: none"> <li>- capacity and understanding of how to develop LUPs exists locally;</li> <li>- participation ensures that variable interest in landuse are considered for the plans;</li> <li>- regulations are jointly developed (minimizes transgressions)</li> </ul>                         | <ul style="list-style-type: none"> <li>- More time allocated to community activities (divert time from other activities);</li> <li>- It takes longer to develop plans because there has to be consensus</li> </ul> | <ul style="list-style-type: none"> <li>- Small to medium</li> <li>- Short to long-term</li> </ul>  | <ul style="list-style-type: none"> <li>- All participating community members</li> </ul> | <ul style="list-style-type: none"> <li>- Develop system for encouraging participation and having directing incentives (making it worthwhile);</li> <li>- Make LU planning meetings effective and short (plan them well so that participants' time is not wasted)</li> </ul> |
| <b>Grazing and cultivation areas demarcated &amp; agreed upon by all stakeholders</b> | <ul style="list-style-type: none"> <li>- LU activities take place in areas that are most suitable for these activities; important pre-requisite for implementing sustainable LU management</li> </ul>  | <ul style="list-style-type: none"> <li>- None anticipated</li> </ul>   | <ul style="list-style-type: none"> <li>- Not applicable</li> </ul>   | <ul style="list-style-type: none"> <li>- Not applicable</li> </ul>                      | <ul style="list-style-type: none"> <li>- Check potential risks (Table 17)</li> </ul>  |
| <b>Village leaders implement LUPs</b>   | <ul style="list-style-type: none"> <li>- Small-scale leakage more easily identified</li> <li>- LU plans are in effect</li> <li>- Much easier to manage LU</li> </ul>   | <ul style="list-style-type: none"> <li>- None anticipated</li> </ul>   | <ul style="list-style-type: none"> <li>- Not applicable</li> </ul>   | <ul style="list-style-type: none"> <li>- Not applicable</li> </ul>                      | <ul style="list-style-type: none"> <li>- Not applicable</li> </ul>  |

**TABLE 16: FACTORS SUPPORTING AND OPPOSING DEVELOPMENT AND IMPLEMENTATION OF LANDUSE PLANS (STRATEGY 3)**

| <b>Detailed description</b>                        | <b>Supporting factors</b>   | <b>Opposing factors (risks)</b>  | <b>Mitigation measures &amp; Responsible parties</b>   |
|--|---|--|--|
| <b>Undertaking the LU planning process</b>         | <ul style="list-style-type: none"> <li>- REDD Project available to finance the process;</li> <li>- In some cases, government leadership is strong and eager to start the process;</li> <li>- Willingness of community to accept changes in LU;</li> <li>- Manpower exists locally to undertake the labour required</li> </ul> | <ul style="list-style-type: none"> <li>- Follow up on the plans has been poor in the past;</li> <li>- Existing LU conflicts</li> <li>- In some communities, there is poor village government support</li> </ul>  | <ul style="list-style-type: none"> <li>- Village government to collaborate with REDD project to have LUP</li> </ul>  |
| <b>Participation of communities in LU planning</b> | <ul style="list-style-type: none"> <li>- Requirements that LU planning process in Tanzania be participatory</li> </ul>  | <ul style="list-style-type: none"> <li>- Risk that views of pastoralists, women, vulnerable groups are not included because of the time of day and/or year that planning is conducted</li> </ul>   | <ul style="list-style-type: none"> <li>- Set targets for ensuring representation of historically under-represented groups in the planning process;</li> <li>- Conduct planning at time of year and day when maximum diversity of participants can participate</li> </ul> |
| <b>Implementation of landuse plans</b>             | <ul style="list-style-type: none"> <li>- Direct incentives of REDD project to at least identify the REDD project zone</li> </ul>  | <ul style="list-style-type: none"> <li>- Long history of landuse conflicts in the area, some of which were violent may persist</li> <li>- General tendency for non-pastoralist stakeholders to view pastoralists as 'temporary migrants' whose participation in governance and landuse decisions is not necessary</li> <li>- That villages develop LUPs that, at landscape level don't accommodate the migratory nature of pastoralist lifestyles</li> </ul> | <ul style="list-style-type: none"> <li>- Project staff and communities have to ensure participation of all stakeholders (and particularly livestock keepers) in the LU planning</li> </ul>   |



#### **STRATEGY 4: ESTABLISH AND IMPLEMENT PARTICIPATORY FOREST MANAGEMENT**

This strategy is based on assuring that forests in the Project Zone are managed sustainably, that forest bylaws are implemented and that a clear management plan exists. It is thus a strategy to address poor forest governance (Figure 15) which contributes to ineffective and poor forest management.

The process by which this will be conducted is through initiation and implementation of participatory forest management (PFM). PFM is a tried and tested approach to forest management in Tanzania. It is associated with increased benefit to communities from forest resources through increased power to decide how forests are managed. PFM is advocated in Tanzania's National REDD Strategy as the right approach for ensuring the success of REDD.

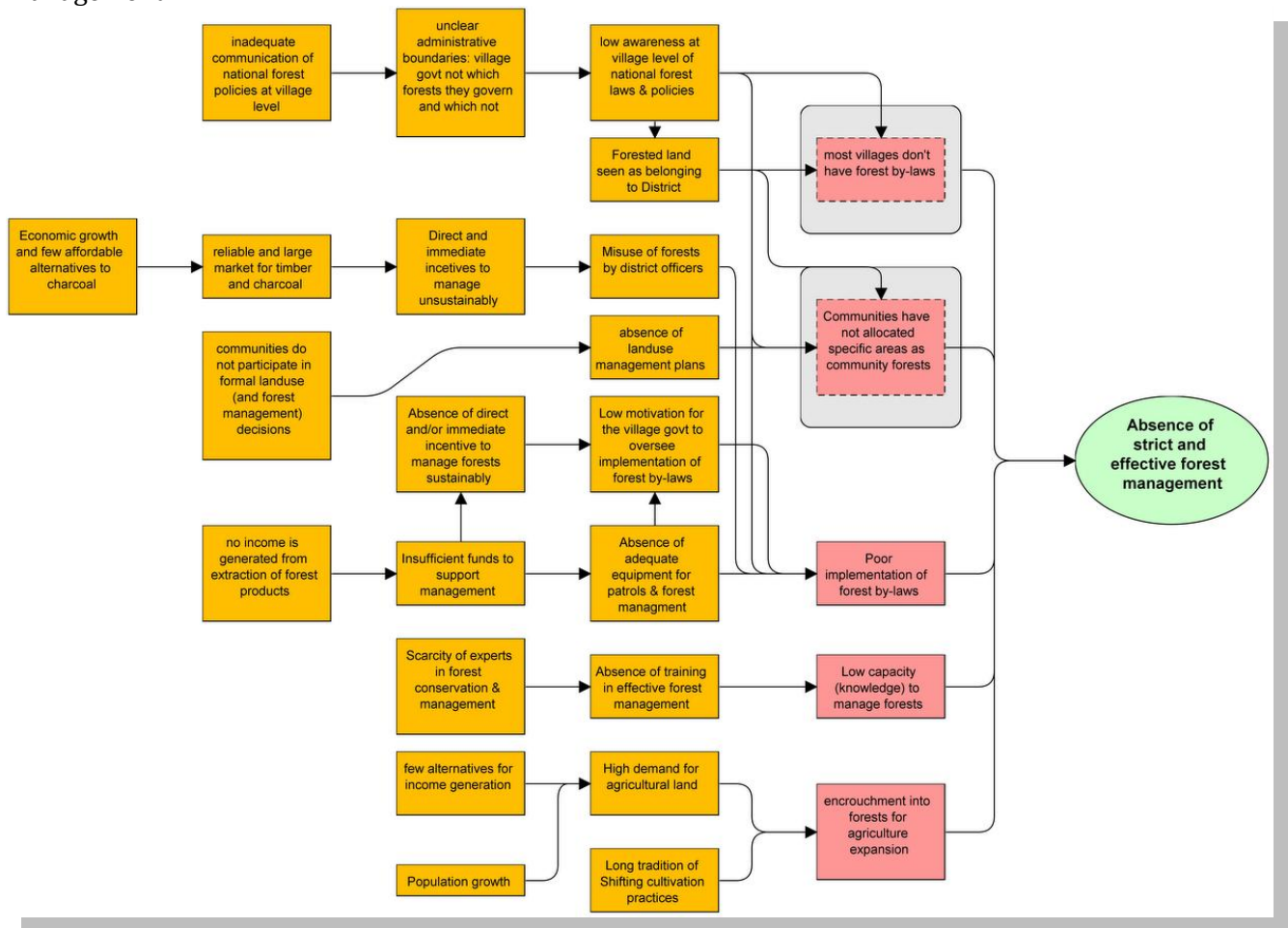
Developing PFM in a community or among several joint-communities is a long process. An important prerequisite of the PFM process is existence of landuse plans and strong and effective governance to develop the framework for forest use and access, and for developing and implementing by-laws. Since most villages do not yet have LUP, the PFM process has not yet begun in the Project Zone. The REDD Project is currently involved with developing LUPs.

The **theory of change** for Strategy 4 can be stated as follows:

IF village land use planning is carried out, and  
IF village leaders have been trained on good governance, and  
IF community members are aware of village land use planning, and  
IF participatory forest management is established in each community, and  
IF the carbon trading cooperative is established and functional,  
THEN

Communities will manage forests sustainably applying strict and effective forest governance and forest management strategies.

Figure 15: Situation analysis of priority focal issue "absence of strict and effective forest management"



Some **key assumptions** related to Strategy 4 are that:

- The carbon market will work to the advantage of communities (i.e, prices will be favourable)
- That all other strategies on which Strategy 4 depends are successful.

The impacts of desirable and potentially undesirable impacts are described in Table 17 along with viable mitigation measures to minimise and/or eliminate negative impacts. Supporting and opposing factors for achieving Strategy 4 are summarised in Table 18.



**TABLE 17: POTENTIAL IMPACTS OF IMPLEMENTING SUSTAINABLE FOREST MANAGEMENT (STRATEGY 4)**

| <b>Activity</b>  | <b>Intended positive outcomes or impacts</b>   | <b>Potential negative impacts</b>   | <b>Magnitude of negative impact</b>   | <b>Stakeholders affected</b>   | <b>Mitigation action Needed</b>  |
|--|--|---|---|--|--|
| <b>Communities participate in choosing sites for establishing village forests</b>      | - Sense of ownership and commitment to established forests areas is generated  | - Time required to participate defines who attends activities.  | - Medium to large; long-term (until forest area is established) because inputs of non-participants will not be reflected in determining where to locate village forests | - Risk of excluding women, elderly and those who are employed;<br>- Risk of excluding settled pastoralists | - Ensure that activities are conducted when the maximum number of people can participate;<br>- Must consider time of day, day of week, time of year.<br>- Conscious effort needs to be made to invite pastoralists to the activities                   |
| <b>Areas identified as community forests have been set aside</b>                       | - Area in which REDD activities are destined are allocated (i.e. Project Area is determined)   | - People conducting activities in Project Area required to evacuate or cease activities   | - Medium to large; short to long term depending on activities and agreements reached on how to compensate lost access to these areas                                    | - People conducting activities in set aside areas (e.g. farmers with farmland in PFM areas)                | - Open discussions on how to handle loss of access;<br>- Agreements should be reached on what kind of access is allowable in village forests;<br>- Zonation of forest area may be necessary to accommodate variable use and access needs of community. |
| <b>Natural resource committees have been formed</b>                                    | - All village councils have a NRC to oversee and undertake management of village forests   | - None anticipated  | - Not applicable  | - Not applicable   | - Not applicable   |
| <b>Village council &amp; VNRC receive training in sustainable forest management</b>    | - Generate local capacity to manage forests sustainably and to undertake activities needed to achieve REDD carbon objectives                   | - Development of an elite group that receives training and other opportunities not available to other community members                             | - Small impact, short to long term. Potential for trained people to abuse their role as 'experts' in the community  | - Members of the Council and NR committees;<br>- The rest of the community                                 | - None, except sensitivity to potential 'jealousy' mistreatment of trained people and abuse of power<br>- Include training in responsible use of power   |
| <b>Administrative boundaries between district, village govt. and NRC are clarified</b> | - Avoid gaps in administration; avoid conflicts; improve administrative efficiency   | - Increase in administrative responsibilities   | - Minor to none   | - Staff in administrative units  | - Appropriate incentives, if necessary   |
| <b>Community understands basic components of SFM</b>                                   | - Communities have similar visions of what constitutes SFM, can recognise counter-productive activities and can participate in decision making | - None anticipated  | - Not applicable  | - Not applicable   | - Not applicable   |
| <b>By-laws are developed</b>   | - Clear rules and regulations of use and access of forest area established   | - None anticipated  | - Not applicable  | - Not applicable   | - Not applicable   |
| <b>A committee to oversee effective implementation of by-laws exists</b>               | - Income is generated from fines on infringements;   | - Development of an elite group; Additional administrative responsibilities for local government; Risk of creating a potentially corruptible group  | - Minor to none   | - Staff in administrative units  | - Appropriate incentives, if necessary   |
| <b>Forest patrols are conducted</b>  | - Activities in Forest area are monitored;<br>- Illegal activities are identified early;<br>- Jobs are created locally                         | - Safety of patrollers during patrols and out of duty (because they are known to be policing) particularly if confronting high stake poachers; Risk | - Low to high   | - Patrol crew;   | - Ample training is conducted to ensure patrollers know how to react to confrontation and potentially dangerous infringers;  |

| <i>Activity</i>   | <i>Intended positive outcomes or impacts</i>  | <i>Potential negative impacts</i>   | <i>Magnitude of negative impact</i>                                | <i>Stakeholders affected</i>  | <i>Mitigation action Needed</i>   |
|---|---|---|--|---|---|
|   |   | of corruption;<br>Patrollers mistreated by communities  |  |   | <ul style="list-style-type: none"> <li>- Appropriate equipment is provided to form patrol duties;</li> <li>- Appropriate performance-based incentives are given to minimise risk of corruption;</li> <li>- Patrollers trained to handle all cases sensitively;</li> <li>- Awareness raising in communities for support of patrol activities (e.g., public announcements of how much income – in the form of trespassing fees - patrol duties have raised</li> </ul>               |
| <b>Infringement of by-laws is addressed timely and according to set rules</b> | <ul style="list-style-type: none"> <li>- Clear message is sent that by-laws will be respected, and that infringement will not be tolerated;</li> <li>- Some income is generated for the NRC and village council from fines;</li> <li>- Patrol duties can be self-financed from fines</li> </ul>         | <ul style="list-style-type: none"> <li>- By-laws marginalise vulnerable groups highly dependent on free and simplified access to forests</li> </ul>   | <ul style="list-style-type: none"> <li>- Low to high</li> </ul>    | <ul style="list-style-type: none"> <li>- Vulnerable groups: women, elderly, landless</li> </ul>   | <ul style="list-style-type: none"> <li>- During by-law formation, sensitivity towards marginal group access to forest recourses is accommodated;</li> <li>- Zonation of forest areas to include areas where some extractive use of forest resources is permitted;</li> <li>- Monitoring is done to evaluate types of infringement and adaptive management is applied to address inconsistencies</li> </ul>  |
| <b>Forest plantations or woodlots established</b>                             | <ul style="list-style-type: none"> <li>- Sustainable feedstock for firewood, building materials, and timber are produced;</li> <li>- Reduce dependency on natural and primary forests for woody biomass products;</li> <li>- Local job creation</li> </ul>  | <ul style="list-style-type: none"> <li>- More potential agriculture land directed towards forest or biomass generation;</li> <li>- RISK: tree species planted do not reflect preferred species</li> <li>- RISK: trees planted do not establish into plantations</li> <li>- RISK: droughts; unfavourable conditions for tree growth</li> </ul> | <ul style="list-style-type: none"> <li>- Low to medium</li> </ul>  | <ul style="list-style-type: none"> <li>- Farmers farming in areas allocated for plantations; Landless who cannot get land because more village land diverted to forest resources</li> </ul> | <ul style="list-style-type: none"> <li>- Consultation to jointly decide where to locate plantations and how to compensate existing users of area allocated;</li> <li>- Communities and experts consulted to determine the most appropriate species for uses anticipated of plantations;</li> <li>- Develop and implement a long-term management plan for plantation, including how to guarantee growth;</li> <li>- Plan should include safeguards against unfavourable</li> </ul> |
| <b>Anti-fire campaigns conducted</b>  | <ul style="list-style-type: none"> <li>- Communities are aware of the detrimental effect that fire can have on meeting REDD objectives;</li> <li>- Communities are motivated to take necessary precautions not to set fires;</li> <li>- Communities are aware of alternatives to use of fire</li> </ul> | <ul style="list-style-type: none"> <li>- None anticipated</li> </ul>  | <ul style="list-style-type: none"> <li>- Not applicable</li> </ul> | <ul style="list-style-type: none"> <li>- Not applicable</li> </ul>  | <ul style="list-style-type: none"> <li>- Not applicable</li> </ul>  |

**TABLE 18: SUPPORTING AND OPPOSING FACTORS FOR ATTAINING COMMUNITY BASED FOREST MANAGEMENT (STRATEGY 4)**

| Detailed description of vision or activity   | Factors supporting achievement of the vision  | Factors opposing achievement of the vision  | Responsible parties for achieving the vision   |
|--|---|---|--|
| <b>Introduction of income generating activities</b>                                      | <ul style="list-style-type: none"> <li>– Willingness of the community to switch from deforestation activities once they provided with other income generating activities</li> </ul>   | <ul style="list-style-type: none"> <li>– Lack of community involvement in other income generating activities</li> </ul>   | <ul style="list-style-type: none"> <li>– REDD project and the government to assists in the introduction of other income generating activities within the village area.</li> </ul>  |
| <b>Environmental education and</b>   | <ul style="list-style-type: none"> <li>– Willingness of community to participate;</li> <li>– Existence of natural resource committees in most villages (VNRCs)</li> </ul>   | <ul style="list-style-type: none"> <li>– Lack of environmental teachers on forest managements such as use of improved energy stoves and modern ways to prepare charcoal and bricks;</li> <li>– Lack of funds to buy nursery facilities such as fertilizers and herbicides</li> </ul>  | <ul style="list-style-type: none"> <li>– REDD Project will commission experts to train communities</li> <li>– Communities will commit to changing practices and widespread use of the new technologies</li> </ul>  |
| <b>Silviculture and beekeeping</b>   | <ul style="list-style-type: none"> <li>– Free availability of bees</li> </ul>   | <ul style="list-style-type: none"> <li>– Lack of equipment and inputs</li> <li>– Lack of technical expertise in communities</li> </ul>  | <ul style="list-style-type: none"> <li>– REDD Project to train communities in beekeeping and other silvicultural activities;</li> <li>– District Forest Services office to assist with extension services</li> </ul>   |
| <b>Fire management campaign</b>  | <ul style="list-style-type: none"> <li>– Most community members understand the detrimental effects of fire</li> </ul>   | <ul style="list-style-type: none"> <li>– Lack of education to community on the effects of wildfires;</li> <li>– Lack of community skills in farm preparation using fires</li> <li>– Strong tradition of using fire despite knowledge that it is not the best approach</li> <li>– Farmers too poor to afford fertilizers</li> <li>– Limited tools available to handle biomass removal from farms (hence burned)</li> </ul> | <ul style="list-style-type: none"> <li>– REDD project with VNRC members to conduct the campaign;</li> <li>– Campaign conducted alongside improved agriculture methods</li> <li>– Communities commit to applying new practices</li> </ul>   |
| <b>Establish Participatory forest management</b>   | <ul style="list-style-type: none"> <li>– Willingness of communities to participate</li> </ul>   | <ul style="list-style-type: none"> <li>– Lack of training to VNRC; Lack of working facilities for VNRC;</li> <li>– Illegal timber harvesting;</li> <li>– Charcoal production</li> </ul>   | <ul style="list-style-type: none"> <li>– REDD project to provide forest management skills to VNRC, Village council members and the whole community;</li> <li>– REDD in collaboration with the government to provide opportunities for establishment of IGAs so that community can switch off from the illegal forest destruction.</li> </ul> |
| <b>Fire management campaign</b>  | <ul style="list-style-type: none"> <li>– Willingness of community participation</li> </ul>  | <ul style="list-style-type: none"> <li>– Lack of education to community on the effects of wildfires;</li> <li>– Lack of community skills in farm preparation using fires</li> </ul>   | <ul style="list-style-type: none"> <li>– REDD project should assist in provision of publicity services.</li> </ul>   |
| <b>management of trees in the water sources</b>  | <ul style="list-style-type: none"> <li>– Trees availability in water sources;</li> <li>– Willingness of the community to participate on that;</li> </ul>  | <ul style="list-style-type: none"> <li>– Lack of by-laws;</li> <li>– Lack of management plan;</li> <li>– Lack of management knowledge to community, VLUMC and VNRC members;</li> <li>– Absence of patrol equipment</li> </ul>   | <ul style="list-style-type: none"> <li>– REDD project and government to provide management training on water sources;</li> <li>– provision of patrol tools.</li> </ul>   |
| <b>households, businesses and institutions are using energy efficient cooking stoves</b> | <ul style="list-style-type: none"> <li>– There are bricks and soil; Uses less fuel wood;</li> <li>– There are pipes for smoke controlling;</li> <li>– There is man power;</li> <li>– Community is willing to participate;</li> <li>– it is cheap</li> </ul> | <ul style="list-style-type: none"> <li>– Lack of skills;</li> <li>– No previous experience with stoves;</li> <li>– Poor awareness raising;</li> <li>– Lack of knowledge to make improved energy stoves</li> </ul>   | <ul style="list-style-type: none"> <li>– REDD project to provide technical skills;</li> <li>– REDD project to provide training on the use of improved energy stoves</li> </ul>   |

## STRATEGY 5: IMPROVE AGRICULTURE AND LIVESTOCK PRODUCTIVITY

Agriculture and livestock keeping are the principal subsistence and economic activities in the Project Zone. Expansion of agricultural land into forested areas is also one of the largest direct drivers of deforestation in the area, while unrestricted and large-scale grazing contributes to forest degradation. Recognising that low agriculture productivity in the form of low harvests and low meat and milk production from cattle and goats is a key underlying factor for unsustainable forest management, stakeholders identified improvement of agriculture and livestock productivity as a key element to be addressed by the REDD project in the short and long-term.

Four direct causes for low agricultural productivity were identified (Figure 17): insufficient technical expertise on how best to improve productivity; shortage of land for productive agriculture and livestock keeping; inappropriate landuse practices in the agriculture and livestock keeping sectors, and; lack of appropriate tools (e.g. tractors, ploughs) and inputs (fertilizers, pesticides) to increase output.

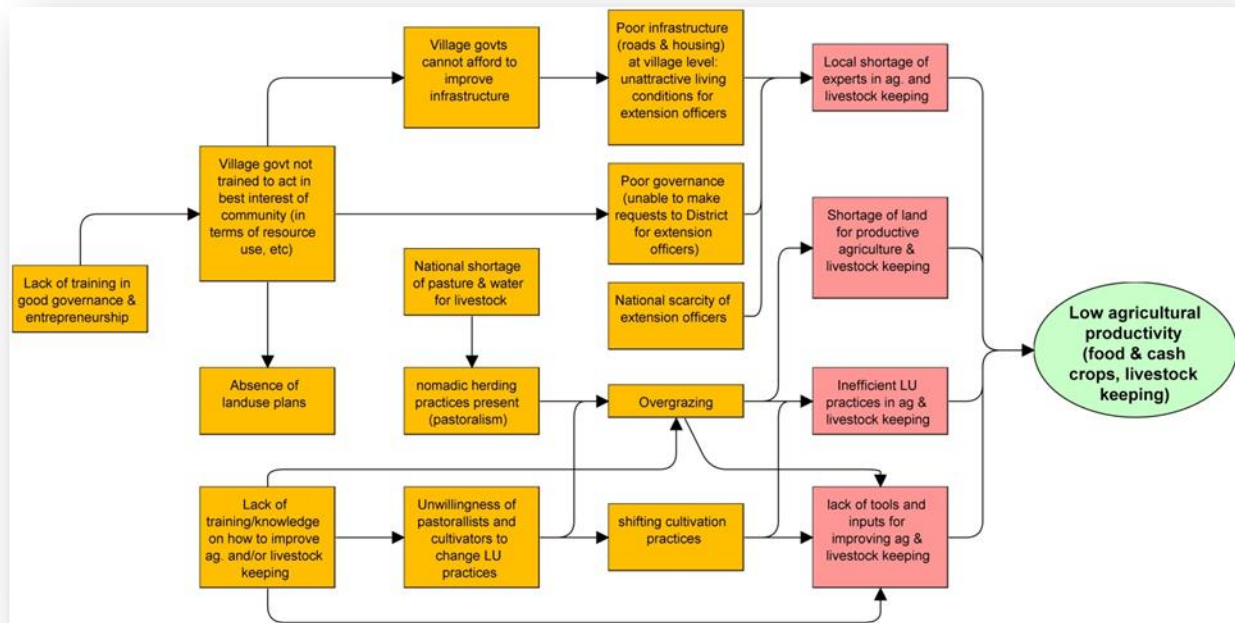
The REDD project will require some reallocation of existing agricultural land out of areas allocated for carbon management (enhancement, restoration, storage), or refraining from converting forests into agricultural land (i.e. avoided emissions). A key challenge for the Project will be to achieve REDD carbon

objectives while also increasing agricultural productivity i.e., increasing agricultural productivity while decreasing land under cultivation.

The **theory of change** for Strategy 5 can be stated as follows:

IF agricultural extension services to the Project Zone are improved and increased; and  
 IF communities develop LU management plans that clearly indicate where in the landscape agricultural activities should take place; and  
 IF hands on training is provided to farmers on agricultural techniques that do not involve deforestation; and  
 IF loans are available to assist farmers with start-up costs of implementing improved agricultural and livestock keeping activities,  
 THEN  
 Farmers will possess the knowledge and skills to improve agricultural and livestock productivity in ways that do not result in deforestation.

**FIGURE 17: CONCEPTUAL MODEL OF AGRICULTURAL AND LIVESTOCK PRODUCTIVITY IN THE PROJECT ZONE, KILOSA DISTRICT**

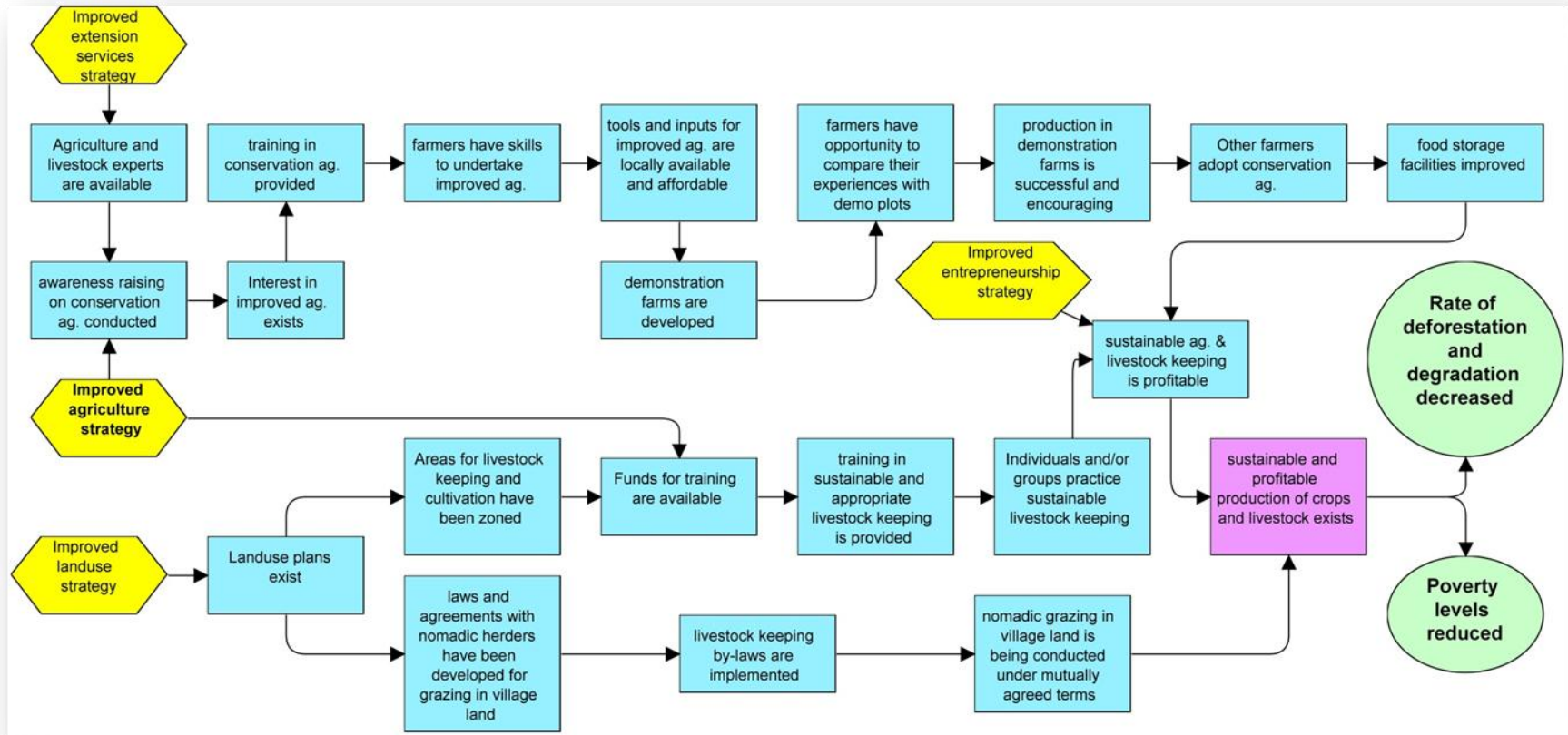


Increase of agricultural productivity will require a number of improvements in the agricultural sector, which will be achieved by following the logic described in Figure 18. The Strategy requires simultaneously improving extension services into the area from the District, while developing landuse plans and improving entrepreneurial skill. It calls for more intensive agriculture on less land, conservation tillage and agricultural practices, and more efficient animal husbandry. The Strategy also specifically advocates for hands-on training experiences with a lot of field visit to areas with successful programs.

**Key assumptions** of Strategy 5 are that:

- production in demonstration farms will be higher than on traditional farms;
- costs of new farming practices are deemed low or can be absorbed by increase in profits
- markets exist to absorb the increased productivity without lowering prices
- that environmental impacts of increased productivity (such as increased chemical inputs into agricultural system, or farming of vegetables on river banks) can be mitigated;

FIGURE 18: APPROACH FOR INCREASING AGRICULTURAL AND LIVESTOCK PRODUCTION IN REDD PROJECT ZONE, KILOSA DISTRICT





**TABLE 19: POTENTIAL IMPACTS OF INCREASING AGRICULTURAL AND LIVESTOCK PRODUCTION IN PROJECT ZONE (STRATEGY 5)**

| <b>Activity</b>   | <b>Intended positive outcomes or impacts</b>  | <b>Potential negative impacts</b>   | <b>Magnitude of negative impact</b>   | <b>Stakeholders affected</b>   | <b>Mitigation action Needed</b>   |
|---|---|---|---|--|---|
| <b>Training in conservation ag. provided</b>  | <ul style="list-style-type: none"> <li>– Farmers have skills to undertake improved ag.</li> </ul>   | <ul style="list-style-type: none"> <li>– Elite capture of training opportunities; Training is organized in such a way (time of day, time of year, location) that is excludes participation of women</li> </ul>  | <ul style="list-style-type: none"> <li>– Low to medium, long-term</li> </ul>  | <ul style="list-style-type: none"> <li>– Under-represented groups (women, workers)</li> </ul>  | <ul style="list-style-type: none"> <li>– Provide a variety of training opportunities so that it is convenient for women and other groups to participate.</li> </ul>   |
| <b>Demonstration farms are developed</b>  | <ul style="list-style-type: none"> <li>– Hands-on learning experience is provided with opportunity for farmers to assess the feasibility of adopting the same practices on their own farms;</li> <li>– Other farmers (having observed the success in demonstration plots) adopt conservation ag.</li> </ul> | <ul style="list-style-type: none"> <li>– Location of demonstration farms may not reflect the variety of farmland conditions in the area;</li> <li>– farmers who try the same practices in farmland with different abiotic and biotic conditions may not have the same success.</li> <li>– Farmers place too much hope on new practices and abandon traditional practices that are complementary to new practices, or which function just as well (devaluation of local practices &amp; traditions).</li> <li>– Unsuccessful harvests in demo farms generates resentment and mistrust of ag. improvement projects</li> </ul> | <ul style="list-style-type: none"> <li>– Medium to high</li> </ul>  | <ul style="list-style-type: none"> <li>– Farmers farming on farmland that has conditions different from conditions in the demonstration farms (usually coincides with farmers not living in the main sub-village where village offices are located)</li> </ul> | <ul style="list-style-type: none"> <li>– Ensure that demonstration farms are located in more than one area in the village/community to reflect the variability in farmland areas (slope, soil, humidity, etc.).</li> <li>– Ensure trainers have the necessary experience and knowledge to address the variability in conditions.</li> <li>– Ensure that introduction to improved ag. training incorporates existing practices that are complementary to existing practices (i.e. offer several alternatives rather than ideology of a single approach to achieving objectives)</li> </ul> |
| <b>Food storage facilities are renovated or rebuilt</b>   | <ul style="list-style-type: none"> <li>– Farmers can defray selling crops until market prices are more profitable;</li> <li>– Food security is improved (food is stored in dry and secure environment);</li> <li>– village gov't generates income from storage fees (if this applies)</li> </ul>            | <ul style="list-style-type: none"> <li>– Access rules to storage facilities may marginalize the poorest</li> </ul>  | <ul style="list-style-type: none"> <li>– Low to medium and short term: Depends on exclusivity of rules off access to facilities &amp; ownership arrangements of facilities</li> </ul> | <ul style="list-style-type: none"> <li>– Farmers; poor farmers; Women farmers</li> </ul>   | <ul style="list-style-type: none"> <li>– If access rules prevent everyone from using the facility, discuss options for non-participants (e.g. sliding scale system;</li> <li>– or training in building home-size storage facilities)</li> </ul>   |
| <b>Areas for livestock keeping and cultivation are delineated (zoned)</b>                       | <ul style="list-style-type: none"> <li>– Reduce conflict between livestock keepers and farmers; Improved regulation of landuse activities;</li> <li>– Facilitates development and implementation of landuse plans;</li> </ul>   | <ul style="list-style-type: none"> <li>– Potential for generating landuse conflicts if disagreements exist in which are the best lands for different landuse activities;</li> <li>– Potential for generating short-term solutions if the process is rushed and insufficient time is provided for discussion, reflection, and agreement</li> </ul>   | <ul style="list-style-type: none"> <li>– Low to high impact, short to long-term:</li> </ul>   | <ul style="list-style-type: none"> <li>– Farmers and livestock keepers</li> </ul>  | <ul style="list-style-type: none"> <li>– Ensure that the process is highly participatory so that final resolutions reflect agreements recognized and respected by all. The process should not be hurried.</li> </ul>  |
| <b>Laws and agreements with nomadic herders have been developed for grazing in village land</b> | <ul style="list-style-type: none"> <li>– Nomadic grazing in village land is being conducted under mutually agreed terms</li> <li>– Conflicts between pastoralists and farmers drastically reduced</li> </ul>  | <ul style="list-style-type: none"> <li>– Potential for non-compliant behaviour by those who do not participate or agree with agreed-upon by-laws.</li> </ul>  | <ul style="list-style-type: none"> <li>– Small to medium</li> </ul>   | <ul style="list-style-type: none"> <li>– Farmers and livestock keepers</li> </ul>  | <ul style="list-style-type: none"> <li>– Ensure highly participatory process for developing the by-laws;</li> <li>– record keeping of all agreements;</li> <li>– establish simple and transparent process defined for</li> </ul>  |

| <i>Activity</i>  | <i>Intended positive outcomes or impacts</i>   | <i>Potential negative impacts</i>  | <i>Magnitude of negative impact</i>                                | <i>Stakeholders affected</i>  | <i>Mitigation action Needed</i>   |
|--|--|--|--|---|---|
|  |  |  |  |   | communicating and resolving grievances  |
| <b>Training in sustainable and appropriate livestock keeping is provided (including entrepreneurship skills)</b> | <ul style="list-style-type: none"> <li>– Individuals and/or groups practice sustainable livestock keeping</li> </ul>   | <ul style="list-style-type: none"> <li>– Development of elite group of trained people</li> </ul> | <ul style="list-style-type: none"> <li>– None to small</li> </ul>  | <ul style="list-style-type: none"> <li>– Farmers and livestock keepers</li> </ul> | <ul style="list-style-type: none"> <li>– Consider “training of trainers” approach so that information and skills learned are shared widely and freely with those not trained</li> </ul> |
| <b>Sustainable and profitable production of crops and livestock exists</b>                                       | <ul style="list-style-type: none"> <li>– Diversified ag., low impact-high value livelihoods;</li> <li>– Improved markets for food and meat production</li> </ul> | <ul style="list-style-type: none"> <li>– None anticipated</li> </ul>                             | <ul style="list-style-type: none"> <li>– Not applicable</li> </ul> | <ul style="list-style-type: none"> <li>– Not applicable</li> </ul>                | <ul style="list-style-type: none"> <li>– Not applicable</li> </ul>  |

Factors supporting and opposing achievement of Strategy 5 are summarised in Table 20.

**TABLE 20: SUPPORTING AND OPPOSING FACTORS FOR ACHIEVING IMPROVED AGRICULTURE AND LIVESTOCK PRODUCTIVITY (STRATEGY 5)**

| <b>Detailed description of Vision</b>  | <b>Factors supporting achievement of the vision</b>   | <b>Factors opposing achievement of the vision</b>  | <b>Responsible parties for achieving the vision</b>  |
|--|---|--|--|
| <b>Diversification of cash crops to include high value crops such as beans, chickpeas, sunflowers and sesame &amp; vegetables</b>    | <ul style="list-style-type: none"> <li>– Need to increase household income from agriculture;</li> <li>– Need to reduce chronic low agricultural production</li> <li>– Potential to change cultivation practices away from shifting cultivation;</li> <li>– Ample land available</li> <li>– Ample water supply from year-round rivers</li> <li>– Markets available for the cash crops;</li> <li>– Communities are eager to improve their agricultural practices for higher yields of higher value crops</li> </ul> | <ul style="list-style-type: none"> <li>– Requires expensive agricultural inputs (such as improved seeds, fertilizers and power tillers/tractors);</li> <li>– Roads need to improve to transport agricultural inputs into the area and harvested crops to market areas;</li> <li>– Existing agricultural extension services are inadequate: too few officers to meet demand, or officers don't have the appropriate experience and solutions for addressing local challenges</li> </ul>   | <ul style="list-style-type: none"> <li>– REDD project in collaboration with the government to provide extension services;</li> <li>– Government to provide agricultural subsidies and loans to farmers;</li> <li>– Government to improve village roads;</li> <li>– Government to improve the quantity and quality of extension officers;</li> <li>– Village councils to identify local needs and make formal requests to district offices on their extension services needs</li> </ul> |
| <b>Use of high power tools such as tractors and/or power tillers to increase area cultivated and yields</b>                          | <ul style="list-style-type: none"> <li>– Hand-hoe drastically limits the total area that a single family can cultivate annually (and thus the potential yield);</li> <li>– Preparing land for cultivation with tractors avoids the need to use fire;</li> <li>– Would encourage permanent farms over shifting cultivation</li> <li>– Soil fertility is generally good in the area;</li> <li>– Communities are willing to adopt new practices associated with different ag tools;</li> </ul>                       | <ul style="list-style-type: none"> <li>– Communities do not have the funds to purchase or maintain this type of equipment;</li> <li>– Machinery cannot be used in some of the ag. areas (steep slopes);</li> <li>– Most families don't have access to land in areas that are ideal for ag. machinery;</li> </ul>   | <ul style="list-style-type: none"> <li>– Government to provide agricultural subsidies and loans to farmers [Government representative were not there to confirm this]</li> </ul>   |
| <b>Improved access to extension officers - more officers living in close proximity to areas of need -and more qualified officers</b> | <ul style="list-style-type: none"> <li>– Communities are interested in improving their ag. output and are willing to incorporate new practices and innovations on their farms;</li> <li>– Sufficient land to have experimental/demonstration farms;</li> <li>– Most villages don't have regular or reliable access to an officer;</li> <li>– Most officers do not have the experience and knowledge required to assist farmers</li> </ul>   | <ul style="list-style-type: none"> <li>– District has no funds to employ more extension officers;</li> <li>– Village councils not clear on what specific skills are needed of officers (no specific ag. improvement plan);</li> <li>– Few officers tolerate the harsh living conditions in villages (i.e., poor housing, no electricity, limited cell phone coverage; limited transportation, etc.);</li> <li>– Farmers have limited information on what are the best strategies for improving ag. in the area (markets, crop types, crop care, etc.)</li> </ul> | <ul style="list-style-type: none"> <li>– REDD project to train contact farmers</li> <li>– REDD project to assist with developing a LUP that contains a clear vision and direction for improving ag.;</li> <li>– Communities develop an ag. improvement plan and implement it;</li> </ul>   |
| <b>Farmers have access to fertilizers and use it to improve ag. output in their fields</b>   | <ul style="list-style-type: none"> <li>– Productivity of many farms is currently low</li> <li>– Will decrease the need to use fire to release nutrients into soils;</li> <li>– May reduce need to conduct shifting cultivation</li> </ul>   | <ul style="list-style-type: none"> <li>– Farmers cannot afford fertilizers (especially chemical ones);</li> <li>– Farmers have limited experience with fertilizers (risk of using them ineffectively);</li> <li>– Fertilizers imply pollution concerns of water, soils and air;</li> </ul>   | <ul style="list-style-type: none"> <li>– Government to provide agricultural subsidies on the fertilizers</li> </ul>  |

| Detailed description of Vision  | Factors supporting achievement of the vision   | Factors opposing achievement of the vision  | Responsible parties for achieving the vision  |
|---|--|---|---|
|   |  | <ul style="list-style-type: none"> <li>– Incorrect use of fertilizers implies health risks to farmers</li> </ul>  |   |
| <b>Use of better quality seeds</b>  | <ul style="list-style-type: none"> <li>– Seeds that are currently being used are of low quality (low productivity);</li> <li>– Soils are sufficiently fertile?</li> </ul>  | <ul style="list-style-type: none"> <li>– Improved seeds are usually more expensive;</li> <li>– Need to ensure that seeds are not GMO;</li> <li>– Risk of becoming dependent on purchasing seeds annually;</li> <li>– Risk that farmers undervalue local varieties that are more resistant to local diseases</li> </ul>  | <ul style="list-style-type: none"> <li>– Government to provide agricultural subsidies [Government representative was not there to confirm this]</li> </ul>  |
| <b>Development of irrigation schemes to allow crop diversification, particularly to enable cultivation of vegetables and ginger</b> | <ul style="list-style-type: none"> <li>– Adequate and year-round availability of water in local rivers;</li> <li>– Ample labour available locally (and freely?) to assist with construction of irrigation schemes;</li> <li>– Would allow year-round cultivation, especially of vegetables;</li> <li>– Local market for vegetables is large – could expand market to surrounding areas and beyond;</li> <li>– Could encourage farmers away from shifting cultivation practices;</li> <li>– Current vegetable farming limited due to lack of continuous water;</li> </ul> | <ul style="list-style-type: none"> <li>– Lack of funds to build irrigation schemes;</li> <li>– Lack of technical support on irrigation schemes;</li> <li>– Could promote cultivation along river banks – which will destroy riparian vegetation and cause erosion;</li> <li>– Would require complex organization and agreements between irrigating farmers to ensure fairness of use and access (no previous experience with this type of organization exists)</li> </ul> | <ul style="list-style-type: none"> <li>– Government to provide technical support for irrigation schemes;</li> <li>– Community to participate in man power for irrigation tasks</li> <li>– Communities can opt to use REDD funds for construction of irrigation facilities.</li> </ul>   |
| <b>Availability of reliable markets for ag. products</b>  | <ul style="list-style-type: none"> <li>– farmers rely completely on middlemen from cities to come purchase their crops ;</li> <li>– Farmers have very little information about the price of crops (they don't get the best prices possible);</li> </ul>  | <ul style="list-style-type: none"> <li>– lack of information on markets</li> <li>– High costs of transporting produce to market</li> </ul>  | <ul style="list-style-type: none"> <li>– Government to improve village roads.</li> </ul>  |
| <b>Loans for agriculture</b>  | <ul style="list-style-type: none"> <li>– No bank is loaning to farmers;</li> <li>– Farmers cannot purchase better seeds and other ag. inputs without upfront capital when it is needed;</li> <li>– Without better inputs, harvests are poorly and cannot generate sufficient capital for improvement at next cultivation period</li> <li>– Soils are fertile – small improvements to ag. would yield enough harvests to pay back the loans</li> </ul>  | <ul style="list-style-type: none"> <li>– Farmers don't have title deeds or equivalent for their land to use as collateral for loans;</li> <li>– The value of other assets are too low to act as collateral;</li> <li>– Inexperience with loans and how to maximize agricultural output (i.e., risk of failing to pay back loan due to under-performance)</li> </ul>   | <ul style="list-style-type: none"> <li>– Communities to develop village banks with the help of REDD project;</li> <li>– Government and REDD project to provide training on access and use of loans;</li> <li>– Development of LUPs for villages will pave way for farmers to eventually have title deeds on their land;</li> <li>– REDD Project will provide training on how to improve ag. output</li> </ul> |
| <b>Oil extraction machines for producing seed based cooking oils</b>  | <ul style="list-style-type: none"> <li>– Sesame and sunflower locally cultivated and ideal for producing cooking oils</li> <li>– [Private?] Milling machines for cereals already exist in the area (indicating that heavy machinery can be sourced and kept operational in the area);</li> <li>– Potential to operate the machine as a group or community income generating activity</li> </ul>  | <ul style="list-style-type: none"> <li>– Lack of funds to buy seed processing machines;</li> <li>– No local experience with seed processing</li> <li>– No guarantee of a market that will buy the oil for good profits (high competition with large vegetable oil industry)</li> </ul>  | <ul style="list-style-type: none"> <li>– Government to assist in provision of funds and loans for accessing machines for seed oil processing and technical support; [Government representative was not there to confirm this]</li> </ul>  |
| <b>Improved animal husbandry such as of goats, cows, chicken, fish and bees</b>   | <ul style="list-style-type: none"> <li>– Abundant fodder in the area available freely</li> <li>– Abundant areas suitable for grazing and building ponds;</li> <li>– Abundant water</li> <li>– High interest in communities to diversify and improve animal husbandry;</li> <li>– Sufficient local manpower available for construction of stalls, ponds, etc.</li> <li>– Sufficient local demand for meat and fish – local market for products available</li> </ul>   | <ul style="list-style-type: none"> <li>– Most of the animals people are interested in keeping are uncommon in the area (therefore limited local experience and need to source them from elsewhere);</li> <li>– Most households cannot afford to the start-up costs including purchase of the animals;</li> <li>– Scarcity of extension officers knowledgeable in livestock keeping;</li> </ul>  | <ul style="list-style-type: none"> <li>– REDD project to provide extension services;</li> <li>– Government to provide loans to communities to buy animals and other necessary requirements</li> </ul>   |

## STRATEGY 6: IMPROVE ENTREPRENEURSHIP SKILLS AND INCREASE INCOME GENERATING ACTIVITIES

In general, in all communities in the Project Zone (with the exception of communities that are in fact neighbourhoods of Kilosa Town) less than 10% of the population is involved in business activities. For the most part, the skills to keep a business running and profitable long-term are lacking. Consequently, there are very few business owners in the communities offering a limited diversity of services: kiosks selling basic necessities such as sugar, cooking oil, torches, and other grocery items; a milling machine can be

found in almost all villages; traditional beer vendors, and; some food stalls (*mgahawas*), mostly serving breakfast.

Lack of capital to start a business is not the only factor contributing to the current condition (Figure 19). Most people interested in starting a business lack the skills needed to study the local conditions and correctly identify the types of services most suitable, they have limited experience with more diverse options for income generating activities and thus limit their activities to those that are in direct competition with an existing business; they have no hands-on experience of having run a business and run the risk of running the business down soon after it starts.

Business potential in the area exists and could be broadened. If the Project is to improve agricultural output and farmers are expected to have surplus produce, basic skills to market surplus crops will be necessary. Strategy 6 is looked upon as a basic necessity needed to utilise the increased potential of communities to produce food, carbon and forest resources.

The **theory of change** for Strategy 6 is thus:

IF communities and the Project can reach understanding of what are acceptable income generating activities possible in the Project Zone that do not jeopardise local traditions and/or REDD objectives (i.e., forest resources); AND

IF a thorough study is conducted to identify viable business potential in the area; AND

IF community members receive hands on training in entrepreneurial activities that includes visits to other communities with successful business activities; AND

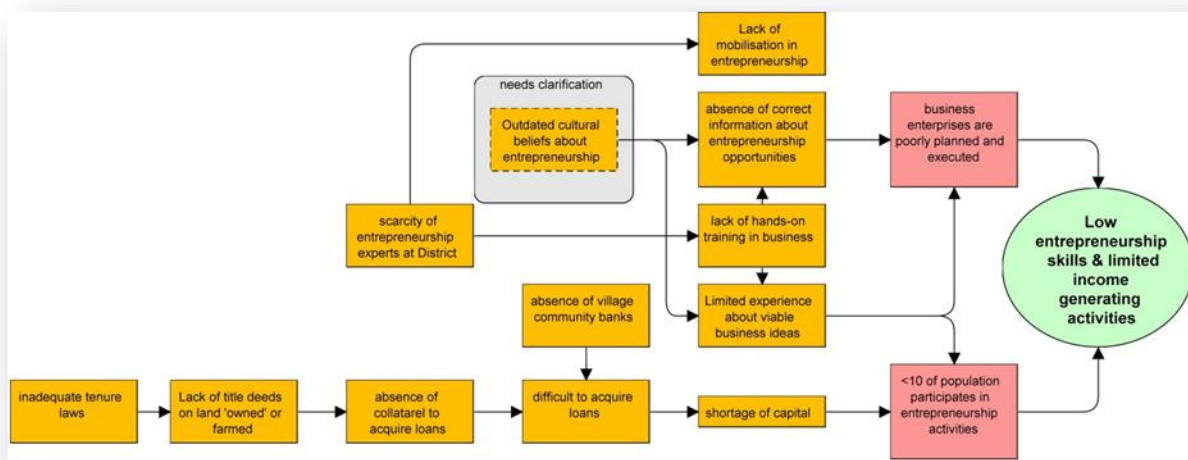
IF access to credit is available; AND

IF community members that are trained apply their training to obtain loans and start businesses in the Project Zone;

THEN

Successful entrepreneurship activities will increase and be of wider diversity in the Project Zone

**FIGURE 19: SITUATION ANALYSIS OF PRIORITY FOCAL ISSUE "LIMITED ENTREPRENEURSHIP SKILLS AND NEED TO DIVERSITY INCOME GENERATING ACTIVITIES"**



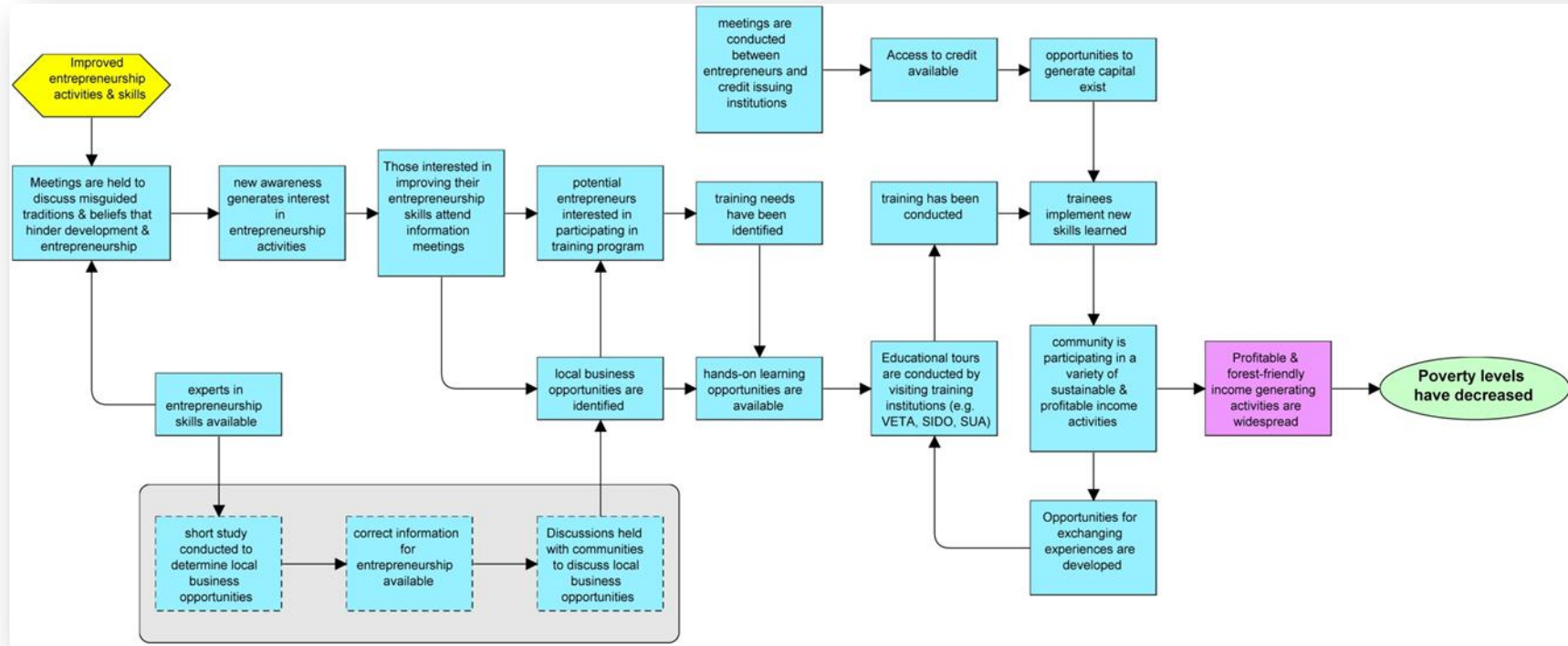
The Strategy to improve entrepreneurial skills and to diversify the range of income generating activities in the Project Zone (Figure 19) needs to overcome an important barrier: that of debunking myths and long-held traditions of what activities can and cannot be conducted in the area. Hence, the very first activity of the Strategy consists of awareness-raising in the form of discussion and meetings about 'misguided traditions and beliefs that hinder entrepreneurial activities'. These traditions, for example,

impose limitations on the types of crops that can be cultivated in the area. They can also discourage individuals from conducting activities that could improve household income.

There was general reluctance in the SIA workshop to discuss specific traditions as examples, implying that this is not an issue to address lightly and should be maintained as an important starting point for the Strategy. In fact, since one of the main REDD Project objectives is to improve local livelihoods, discussions and awareness raising will need to be conducted to ensure that the Project is not seen as dis-respectful of local tradition. The Project will need to take into account these traditions and be open to alternative approaches for meeting the same objectives.

Once this particular barrier is crossed, training, hands-on experience and exchange visits will be the main approach for improving entrepreneurial skills and exposing community members to the diversity of income generating activities possible. Since access to capital will persist being a barrier to establishing businesses even after training, workshop participants insisted that the issue of access to credit be addressed parallel to the training. Success of this Strategy is highly aided by the fact that MJUMITA and TFCG have ample experience assisting communities to establish village savings and loans associations.

FIGURE 20: APPROACH FOR ADDRESSING LOW ENTREPRENEURIAL SKILLS AND LACK OF WIDER DIVERSITY OF INCOME GENERATING ACTIVITIES IN PROJECT ZONE



**TABLE 21: POTENTIAL IMPACTS OF STRATEGY TO IMPROVE BUSINESS SKILLS AND INCREASE INCOME GENERATING ACTIVITIES**

| <b>Activity</b>   | <b>Intended positive outcomes or impacts</b>   | <b>Potential negative impacts</b>  | <b>Magnitude of negative impact</b>                                 | <b>Stakeholders affected</b>   | <b>Mitigation action Needed</b>   |
|---|--|--|---|--|---|
| <b>Conduct short study to determine local business opportunities</b>  | <ul style="list-style-type: none"> <li>– Obtain a realistic assessment of the local conditions to be able to propose viable business ventures given local limitations and opportunities (including long-held cultural beliefs, such as forbidden crops or activities)</li> </ul> | <ul style="list-style-type: none"> <li>– Potential business activities contradict or oppose locally held beliefs (e.g. participation of women, forbidden crops);</li> <li>– Binding the activities to ‘forest friendly’ limits business potential</li> </ul>   | <ul style="list-style-type: none"> <li>– Small to medium</li> </ul> | <ul style="list-style-type: none"> <li>– Community members interested in improving their entrepreneurial skills</li> </ul> | <ul style="list-style-type: none"> <li>– The study should consider locally held beliefs that may affect business opportunities;</li> <li>– Provide a wide range of ‘forest friendly’ business opportunities (e.g. beekeeping, sustainable extraction).</li> </ul>   |
| <b>Hold meetings to discuss misguided traditions &amp; beliefs that hinder development &amp; entrepreneurship</b> | <ul style="list-style-type: none"> <li>– new awareness encourages interest in entrepreneurship activities</li> </ul>   | <ul style="list-style-type: none"> <li>– Local traditions &amp; beliefs are undermined; Disruption of local power structures if influential community members are the ones maintaining misguided beliefs;</li> <li>– Potential to jeopardize acceptance of REDD project if it is seen to disrupt local established structures</li> </ul> | <ul style="list-style-type: none"> <li>– Small to medium</li> </ul> | <ul style="list-style-type: none"> <li>– All community members, particularly those who follow local traditions</li> </ul>  | <ul style="list-style-type: none"> <li>– Ensure sensitivity to local traditions;</li> <li>– Limit discussion to business opportunities that do not cause social disruption</li> </ul>   |
| <b>Interested community members discuss local business opportunities</b>  | <ul style="list-style-type: none"> <li>– Community jointly assesses local business potential based on their own knowledge of local conditions</li> </ul>   | <ul style="list-style-type: none"> <li>– None anticipated</li> </ul>   | <ul style="list-style-type: none"> <li>– Not applicable</li> </ul>  | <ul style="list-style-type: none"> <li>– Not applicable</li> </ul>   | <ul style="list-style-type: none"> <li>– Not applicable</li> </ul>  |
| <b>Training in entrepreneurship skills</b>  | <ul style="list-style-type: none"> <li>– A core group of community members can operate successful and sustainable businesses that serve local communities and improve local conditions</li> </ul>  | <ul style="list-style-type: none"> <li>– Development of elite group of trained people</li> </ul>   | <ul style="list-style-type: none"> <li>– Small to medium</li> </ul> | <ul style="list-style-type: none"> <li>– Community members not receiving training (majority)</li> </ul>                    | <ul style="list-style-type: none"> <li>– Select participants wisely; demonstrate transparency in selection process;</li> <li>– design training so that it is available yearly and continuously (so that it is not a once-off activity);</li> <li>– train local trainers to extend skills to others</li> </ul> |
| <b>Educational tours to training institutions (e.g. VETA, SIDO, SUA)</b>  | <ul style="list-style-type: none"> <li>– Opportunity to personally experience successful business ventures and assess viability at home;</li> </ul>  | <ul style="list-style-type: none"> <li>– Participation in tours may be limited to men especially if the trips are overnight;</li> <li>– Only those who can afford to have someone take care of home and work affairs can participate</li> </ul>  | <ul style="list-style-type: none"> <li>– Small to medium</li> </ul> | <ul style="list-style-type: none"> <li>– Women trainees</li> </ul>   | <ul style="list-style-type: none"> <li>– Limit tours to a) low farming season; b) short (1 day) trips; c) allow women to bring a caretaker for nursing babies)</li> </ul>   |
| <b>Arrangements for access to credit made between entrepreneurs and credit issuing institutions</b>               | <ul style="list-style-type: none"> <li>– opportunities to generate capital exist for business ventures requiring large loans</li> </ul>  | <ul style="list-style-type: none"> <li>– Elite capture: Access to credit limited to those with land or other “assets”</li> </ul>   | <ul style="list-style-type: none"> <li>– Medium to high</li> </ul>  | <ul style="list-style-type: none"> <li>– Landless, women, elderly, disadvantaged</li> </ul>                                | <ul style="list-style-type: none"> <li>– Develop other credit access alternatives for smaller business ventures (e.g. via Village Community Banks or SACCOS)</li> </ul>   |
| <b>Community is participating in a variety of sustainable &amp; profitable income generating activities</b>       | <ul style="list-style-type: none"> <li>– Uplift local monetary flow;</li> <li>– improve job opportunities (trickle-down effect);</li> <li>– reduce dependency on forests for lucrative activities (e.g. timber &amp; charcoal)</li> </ul>  | <ul style="list-style-type: none"> <li>– None anticipated</li> </ul>   | <ul style="list-style-type: none"> <li>– Not applicable</li> </ul>  | <ul style="list-style-type: none"> <li>– Not applicable</li> </ul>   | <ul style="list-style-type: none"> <li>– Not applicable</li> </ul>  |
| <b>Businessmen and women exchange their experiences regularly</b>   | <ul style="list-style-type: none"> <li>– Opportunity to learn from others and share common</li> </ul>  | <ul style="list-style-type: none"> <li>– Could create an ‘elite business associate’ group that</li> </ul>  | <ul style="list-style-type: none"> <li>– Low</li> </ul>             | <ul style="list-style-type: none"> <li>– Non-entrepreneurial community members: business</li> </ul>                        | <ul style="list-style-type: none"> <li>– Monitor to check for monopolies;</li> <li>– Discuss this threat</li> </ul>   |

| <i>Activity</i> | <i>Intended positive outcomes or impacts</i> | <i>Potential negative impacts</i>                   | <i>Magnitude of negative impact</i> | <i>Stakeholders affected</i>   | <i>Mitigation action Needed</i>           |
|-----------------|--|---|-------------------------------------|--|---|
|                 | challenges and viable solutions              | monopolizes local prices and business opportunities |                                     | options are limited to those in the 'business association'; commodity and service prices are not competitive | and risk and possible mitigation measures |

Assumptions of Strategy 6 are that:

- Communities will be willing to discard old-held beliefs that are counter-productive to improving community and individual welfare;
- Viable business opportunities exist in the area;

The desired impacts and potential negative impacts of implementing Strategy 6 – and the mitigation measures to avoid or minimise undesired outcomes are described in Table 21.

Factors supporting and opposing achievement of Strategy 6 are summarised in Table 22.

**TABLE 22: FACTORS SUPPORTING AND OPPOSING ACHIEVEMENT OF STRATEGY TO IMPROVE ENTREPRENEURIAL ACTIVITIES IN THE PROJECT ZONE (STRATEGY 6)**

| <b>Detailed description of Vision</b>  | <b>Factors supporting achievement of the vision</b>   | <b>Factors opposing achievement of the vision</b>  | <b>Responsible parties for achieving the vision</b>   |
|--|---|--|---|
| <b>Local markets that are built in designated and permanent buildings and which are operational year-round</b> | <ul style="list-style-type: none"> <li>• Many markets are in unprotected and undesignated areas susceptible to weather and difficult to keep sanitary;</li> <li>• Markets occur only once a week (or less);</li> <li>• Middlemen buy on farm instead of from a market making it difficult to control prices</li> <li>• Abundant commodities and entrepreneurs who bring commodities to the markets;</li> <li>• Most customers depend on the markets to get their supplies of basic household and everyday items including ag. tools;</li> <li>• Abundant space available in the villages to locate markets</li> </ul> | <ul style="list-style-type: none"> <li>• Lack of funds for communities to buy building materials to build the markets;</li> <li>• Lack of skilled architects and builders to construct market buildings</li> <li>• Poor road network to transport commodities from cities to market areas and vice versa;</li> <li>• Desperate need for cash requires some farmers to sell cheaply on farm instead of at markets</li> <li>• Absence of a cooperative that can guarantee purchase of crops and negotiate for higher prices</li> </ul> | <ul style="list-style-type: none"> <li>• Community members to contribute cash and labour to build markets;</li> <li>• Government to provide skilled architects with good market plan and professional builders;</li> <li>• Government to build and maintain roads;</li> <li>• The government to assist in improving crop market</li> <li>• [Communities to develop cooperatives or farmers groups for more power in negotiating crop prices]</li> </ul> |
| <b>Loans to improve businesses and entrepreneurship</b>  | <ul style="list-style-type: none"> <li>• Community members have expressed high interest in taking loans should they become available;</li> <li>• Ample business opportunities exist</li> <li>• Most people cannot start or improve a business due to lack of capital;</li> </ul>  | <ul style="list-style-type: none"> <li>• Absence of opportunities to obtain loans;</li> <li>• lack of assets to place as collateral;</li> <li>• Lack of experience in entrepreneurship – risk that businesses will fail and loans will not be repaid;</li> <li>• Low innovation in business: risk that everyone will try to do the same thing with their loans &amp; thus increase local competition</li> </ul>  | <ul style="list-style-type: none"> <li>• Through development of LUPs, the REDD project will assist in acquisition of land certificate</li> <li>• Project will provide training in entrepreneurship skills and in developing village savings and loans associations</li> </ul>   |
| <b>and diversification of income generating activities</b>   | <ul style="list-style-type: none"> <li>• Rising cost of living implies that it is increasingly impossible to depend on crops as single source of cash for year round expenses;</li> <li>• Few and similar IGAs are conducted in the communities (strong need to diversify);</li> <li>• Income from profitable IGAs could be sufficient incentive to leave deforestation and/or degradation activities</li> </ul>  | <ul style="list-style-type: none"> <li>• Inexperience with wider range of IGAs -- tends to be the same model repeated across communities;</li> <li>• Inexperience with running businesses successfully;</li> </ul>   | <ul style="list-style-type: none"> <li>• REDD project and the government to assist in the introduction of other income generating activities within the village area;</li> </ul>  |

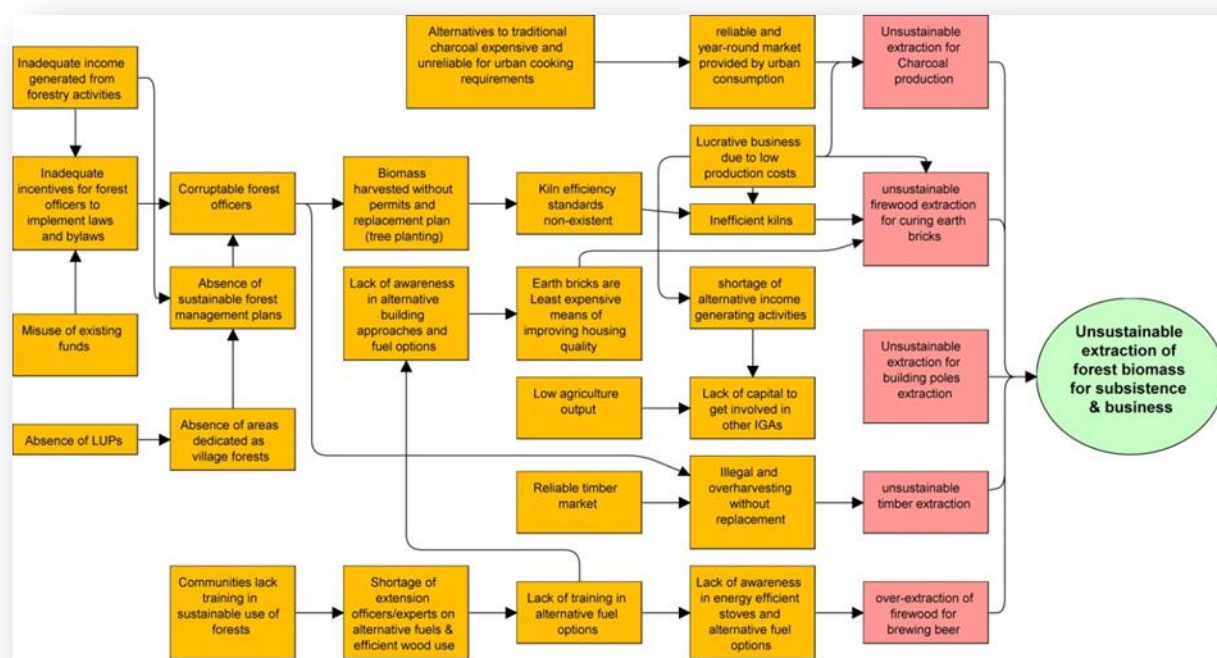


## STRATEGY 7: REDUCE UNSUSTAINABLE EXTRACTION OF FOREST BIOMASS FOR CHARCOAL, TIMBER AND FIREWOOD

Extraction of woody biomass for charcoal production, timber and firewood in the Project Zone has – for the most part - been unregulated. Alongside shifting cultivation, woody biomass extraction to provide fuelwood for local and commercial use, and timber have contributed to degradation and deforestation in the area. The strategy to improve agricultural productivity is aimed at gradually decreasing shifting cultivation activities in the area. Strategy 7 is aimed at addressing the fact that fuelwood and timber production will continue to be highly valuable forest resources for communities but need to be regulated and converted into sustainable production systems.

While firewood is used locally, charcoal and timber production is driven by external demand coming largely from Morogoro Town but also from more proximal semi-urban municipalities to the Project Zone such as Mikumi and Kilosa Towns. The largest volumes of firewood are consumed by beer brewers (almost exclusively a women’s occupation) and earth brick makers (for curing bricks, almost exclusively an occupation for young men). With an expected increase in standards of living in the Project Zone attributable to the REDD Project and other ongoing initiatives, it can be expected that local communities will gradually shift from firewood to charcoal consumption, and increase per capita timber consumption for building improved housing – an oft-cited desired improvement during the village-level SIA workshops.

FIGURE 21: FACTORS CONTRIBUTING TO UNSUSTAINABLE EXTRACTION OF WOODY BIOMASS FOR CHARCOAL, TIMBER AND FIREWOOD



In the case of firewood use at household level, concern lies not so much with the amount of firewood consumed as with the detrimental health effects of the smoke emitted from the types of stoves used (in most cases a three-stone setup). Consequently, transition to energy efficient firewood stoves that contain a chimney to carry away smoke comes up in Strategy 8 – a strategy to improve infrastructure and welfare, in general.

The general plan of communities as regards to extraction of woody biomass from local forests is two-fold:

- 1) to implement sustainable use of forest resources by implementing participatory forest management in which woodlots and sustainable harvest are key features (i.e., Strategy 4), and

- 2) to decrease local dependency on extractive use of forests particularly for charcoal and large-scale firewood production (i.e., Strategy 7).

Thus, Strategy 7 is strongly linked to other strategies that would either be occurring in parallel with Strategy 7 or whose successful implementation is needed for Strategy 7 to take effect (Figure 22). The Strategy aims to reduce woody biomass use in the brick industry and in the charcoal production process by increasing the efficiency of kilns and by promoting alternatives to fire-cured bricks and forest-produced charcoal. For most building purposes, bricks do not need to be cured with fire – sun curing is usually sufficient. This will require a lot of awareness raising, training and demonstration sites to change perceptions of the type of curing needed for bricks intended for normal construction. When fire-cured bricks are still desired, using agricultural waste such as rice husks and wood shavings will also be demonstrated.

For charcoal, in addition to improving kiln efficiency, it is expected that communities will develop woodlots specifically to produce wood for charcoal production. Where there is access to rice husks and wood shaving communities can also be trained to produce charcoal briquettes (i.e., eco-charcoal). Reducing firewood consumption in the beer brewing industry will be addressed by promoting more efficient stoves and sourcing firewood from woodlots instead of natural forests.

The project will also look at the opportunities that sustainable charcoal production from natural woodlands could offer. Subject to the findings on whether this could provide a better option, the project may proceed in that direction for example by introducing improved basic-earth kilns; harvesting using a coppicing approach; and establishing charcoal production forest management units within the village forest reserves. This requires more information than was available at the time of conducting the main social impact assessment.

The **theory of change** for Strategy 7 can be stated as follows:

IF awareness raising is conducted to inform brick makers, charcoal producers and beer brewers of alternative ways of improving energy efficiency in their production systems, AND  
 IF demonstration sites are set up to illustrate the different alternatives to improve kiln and stove efficiencies, AND  
 If new technology widely adopted and considered superior to traditional approaches, AND  
 IF wood is sourced from woodlots developed under Strategy 4,  
 THEN  
 Dependency on natural forests for wood energy will be drastically decreased in the Project Zone

The **underlying assumptions** of Strategy 7 are that:

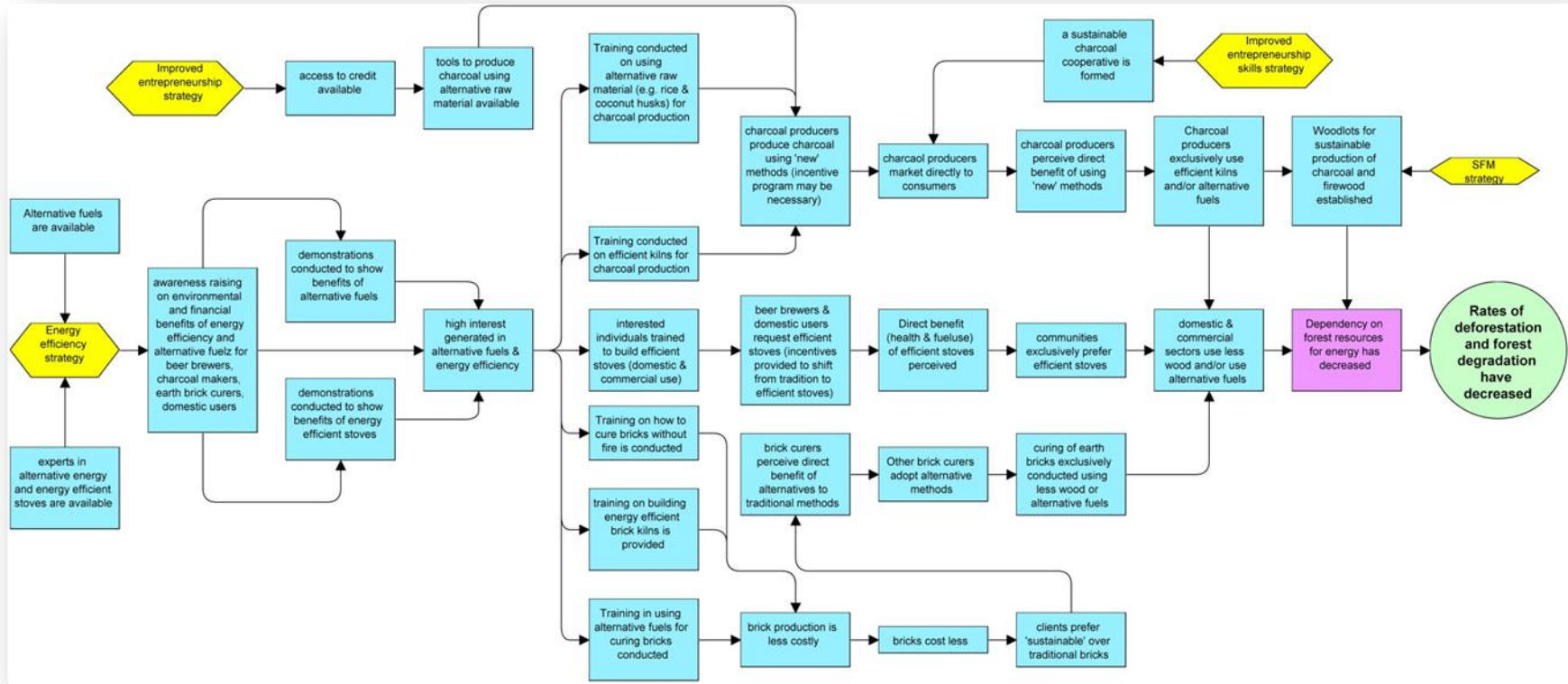
- All other strategies on which Strategy 7 depends will be successfully implemented e.g., establishment of woodlots under Strategy 4, or the strategy to improve entrepreneurship skills
- Producers of charcoal and brick-makers will find new technologies easy to use and profitable;
- There will be clear and straight forward advantages of using improved stoves for beer brewing

The potential impacts (desired or otherwise) of implementing Strategy 7 and viable mitigation measures for addressing negative impacts are presented in Table 23. For this particular Strategy participants did not discuss factors supporting and opposing the successful implementation of Strategy 7. However, supporting factors can be assumed to be related to the fact that there is:

- Financial savings possible from using less wood

- A real need to generate local employment
- Knowledge and experience in production of charcoal and bricks already exists – it will be much easier to train producers in improvement strategies

FIGURE 22: APPROACH FOR ADDRESSING HIGH DEPENDENCY ON FOREST RESOURCES FOR ENERGY NEEDS (STRATEGY 7)



**TABLE 23: POTENTIAL IMPACTS OF DECREASING UNSUSTAINABLE EXTRACTION OF WOODY BIOMASS FROM LOCAL FORESTS**

| <b>Activity or outcomes</b>  | <b>Intended positive outcomes or impacts</b>   | <b>Potential negative impacts</b>   | <b>Magnitude of negative impact</b> | <b>Stakeholders affected</b>  | <b>Mitigation action Needed</b>  |
|--|--|---|-------------------------------------|---|--|
| <b>Identification of locally available alternative fuel options</b>  | - Understand local potential to produce energy from sources other than forest-sources woody biomass  | - RISK: Not all villages will have a viable alternative: this will limit the alternative fuel program to communities with viable fuels                  | - Small                             | - Individuals in villages without potential interested in alternative   | - Clear and transparent information for why villages are selected or not and for how else they can be involved   |
| <b>Training conducted on how to build and use energy efficient charcoal kilns &amp; stoves</b>                 | - Charcoal producers perceive direct benefit of using 'new' methods  | - Development of 'elite' group of people who receive training   | - Small                             | - Community members interested in being trainees but not selected to participate in training                                    | - Transparent and clear process of selecting trainees;<br>- Introduce concept of 'training of trainers' to increase widespread transfer of skills learned  |
| <b>Communities &amp; beer brewers in particular exclusively prefer efficient stoves to traditional ones</b>    | - Widespread use of efficient stoves; gradual disuse of traditional (non-efficient) stoves   | - Risk: Fuel saving on efficient stoves does not lead to decrease in wood use because increased efficiency encourages ownership of additional stoves    | - Not applicable                    | - Not applicable  | - Monitoring of stove ownership (# stoves owned) alongside quantities of fuelwood used;<br>- Focus objectives on more important goal that wood is sourced sustainably even if per capita consumption does not decrease |
| <b>Curing of earth bricks exclusively conducted using less wood or alternative fuels</b>                       | - Overall decrease in wood used to cure bricks   | - Elimination or drastic reduction of service to provide firewood to brick makers   | - Small to medium                   | - People generating income from selling firewood  | - Target new job opportunities (in woodlots, in stove building, etc.) to those who will lose income source from this Strategy  |
| <b>Clients prefer 'sustainable' over traditional bricks</b>  | - Widespread use and increased demand for sun-cured bricks;<br>- Profitable outcomes for producers;<br>- Limited demand for traditional bricks   | - None expected   | - Not applicable                    | - Not applicable  | - Not applicable   |
| <b>Charcoal producers, brick makers, and efficient stove producers are trained in entrepreneurial skills</b>   | - In addition to producing bricks and stoves, producers are able to make this a viable and profitable income generating activity   | - None expected   | - Not applicable                    | - Not applicable  | - Not applicable   |
| <b>A sustainable charcoal cooperative is formed to aggregate charcoal and increase local control of prices</b> | - Eliminate low price of charcoal when bought 'at kiln';<br>- Better control of production process; Village able to obtain appropriate taxes;<br>- Can secure a constant supply and hoard charcoal for better prices in rainy season | - Eliminate middleman and transporter by cooperative taking on these sectors<br>- RISK: administrative red tape discourages participation of producers; | - Small to high                     | - Charcoal producers<br>- Charcoal buyers<br>- Charcoal transporters and middlemen  | - Establish simple but effective red tape  |
| <b>Woodlots for sustainable production of charcoal and firewood established</b>                                | - Generate local jobs for care-takers of nurseries and plantations;<br>- Less dependency on natural forests for wood energy production   | - Additional land not available for agriculture;<br>- RISK: biomass energy accumulates in natural forests and increases risk of forest fires<br>-       | - Small to medium                   | - Farmers   | - Establish woodlots in areas not currently forested and in non-prime ag. land;<br>- Implement controlled extraction of deadwood in natural forests to decrease risk of forest fires                                   |
| <b>High dependency on forest resources for energy has decreased</b>  | - Forests can regenerate to replenish lost C stock (forest enhancement)  | - RISK: after forests recuperate biomass, C stock peaks are reached such that net sequestration is zero or negative                                     | - Medium to high                    | - Natural resource committee;<br>- Communities (and the amount of income generated from C credits)<br>- National REDD Programme | - Advisable to have some level of extractive use permissible to keep forest as net absorber of CO2. Maintain only a few core conservation areas  |

## **STRATEGY 8: IMPROVE EXTENSION SERVICES AT VILLAGE LEVEL**

In Tanzania, extension services to villages are administered from District Councils. Although the services include direct funding, advice and/or provision of staff in the health, education, water, agriculture, roads, markets and governance sectors, communities tended to refer mostly to agricultural extension services. Such services remain almost entirely funded by the public sector, although increasingly it is common to have NGOs, local farmer's initiatives and other organisations participate in agriculture service provision (Rutatora & Mattee 2001). For villages, extension officers provide a direct link to National and Regional programmes administered from the District; the officers represent knowledge and information about how to improve local conditions.

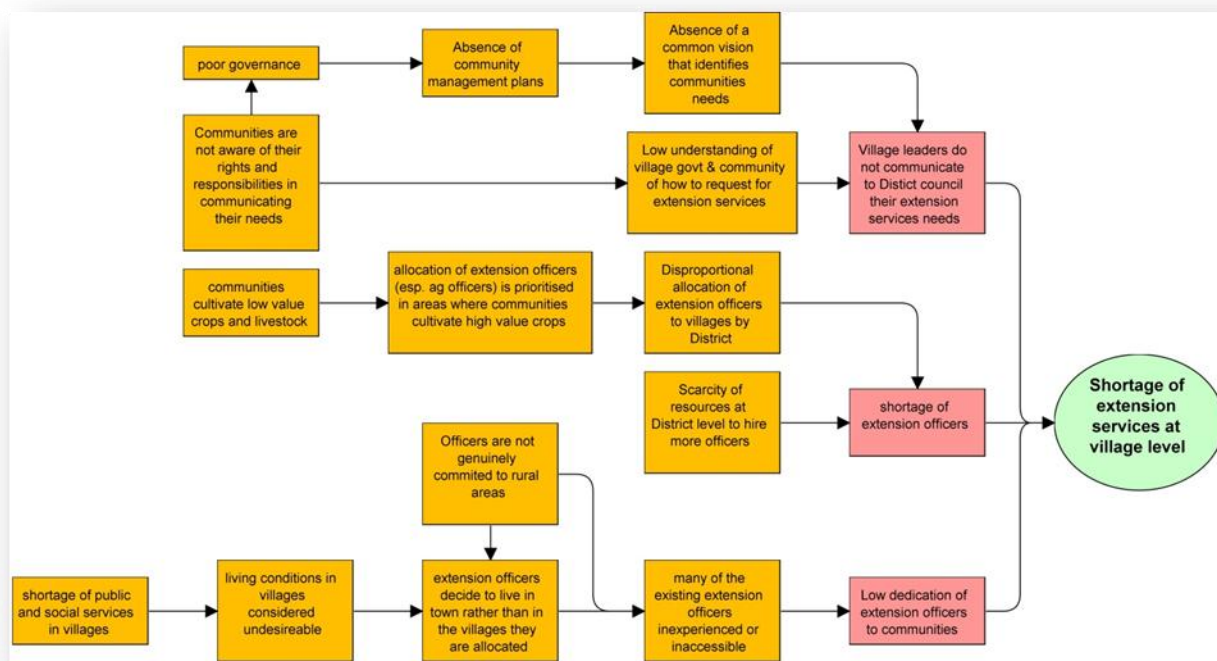
Figure 23 illustrates the direct and indirect factors contributing to the shortage of extension services at village level. According to communities, two factors are directly attributable to this: a general paucity of extension officer at District offices, and the low dedication and lack of interest in assisting communities of existing officers. During the stakeholder workshop in which District officers participated, an additional direct factor was identified: the lack of pro-active behaviour among communities in approaching District offices to express their extension service needs. Interestingly, community leaders were not aware that the District disseminated officers on a needs-based system and that it was leaders' responsibility to communicate their needs to the District.

Low dedication of extension officers to communities was described as unwillingness of officers to live in the communities they serve i.e., they preferred to live in towns and commute to villages. This has strong implications on the number of visits made to villages, the accessibility of officers, and their general availability. Participants attributed this reluctance to live in the villages to what they describe as sub-standard living conditions in villages, such as lack of electricity, poor network availability for mobile telephones, relatively large distances to the nearest town, and difficulty in acquiring basic necessities.

The **theory of change** for Strategy 8 is thus:

|   |
|---|
| <p>IF communities leaders are trained to identify extension service needs of their communities; AND<br/>IF community leaders make formal requests for extension services to District Councils; AND<br/>IF District Councils have the budget to hire the types of extension officers needed by communities; AND<br/>IF communities improve the housing and living conditions for officers;<br/>THEN<br/>Extension services that reflect local needs will be available locally and more accessible to communities</p> |
|---|

FIGURE 23: FACTORS CONTRIBUTING TO SHORTAGE OF EXTENSION SERVICES IN PROJECT ZONE



The Strategy to increase availability of extension services to the Project Zone is based on two parallel processes (Figure 24). The first is to take place at village level and includes empowering communities to be able to identify their needs, to make plans to improve their condition and to approach the District Council for services. It also includes improving the ‘desirability’ of living in the villages to officers, which in some cases, consists of providing adequate housing to officers.

The second process occurs at the level of the District Council. It requires the District to drastically increase the number of extension officers available to disseminate services to villages. To do this, the District needs to also assess local needs and approach the National government for an increase in budgets to employ more officers. In the early stages while communities are still identifying their needs, the District is to make requests for enough officers to ensure that the minimum standards (e.g. recommended doctor : patient, or teacher : student ratios) are met.

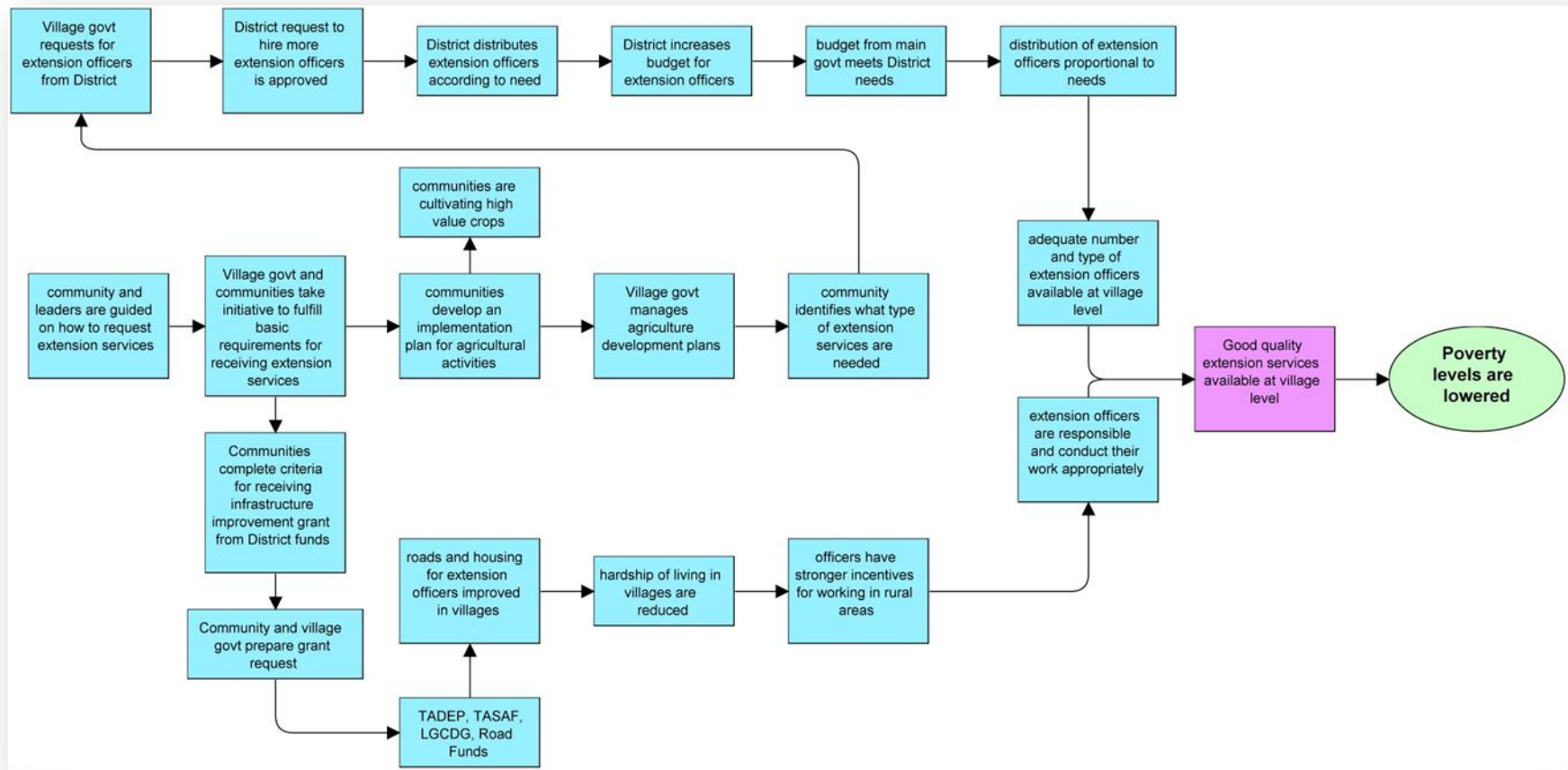
Some important **assumptions** are associated with Strategy 8. These are that:

- Requests for increased budgets to hire more extension officers will be approved (District officers participating at the stakeholder workshop seemed to suggest that this was highly likely)
- Communities will be able to provide sufficiently attractive living conditions for extension officers (this may require additional incentives)
- That extension officers hired and disseminated to villages will have the experience and knowledge needed to correctly advise communities (i.e. they will be high quality individuals)

Table 24 provides a description of potential negative and positive impacts of Strategy 8, the estimates magnitude of negative impacts, stakeholders that would be affected by negative impacts, and viable mitigation measures that can be taken to eliminate or minimise undesirable impacts.

In a list of factors that support or oppose achievement of Strategy 8 have been identified, as well as the stakeholder that would be responsible for ensuring that the Strategy is successfully implemented.

**FIGURE 24: APPROACH FOR IMPROVING EXTENSION SERVICES IN PROJECT ZONE**





**TABLE 24: POTENTIAL IMPACTS OF STRATEGY TO IMPROVE EXTENSION SERVICES IN PROJECT ZONE**

| <b>Activity</b>  | <b>Intended positive outcomes or impacts</b>   | <b>Potential negative impacts</b>   | <b>Magnitude of negative impact</b>   | <b>Stakeholders affected</b>   | <b>Mitigation action Needed</b>  |
|--|--|---|---|--|--|
| <b>Community and Village Council leaders are guided on how to request extension services from District offices</b> | <ul style="list-style-type: none"> <li>- Community and leaders aware of their rights &amp; responsibilities re: extension services;</li> <li>- Communities can become pro-active in improving local conditions</li> </ul>  | <ul style="list-style-type: none"> <li>- None anticipated</li> </ul>  | <ul style="list-style-type: none"> <li>- Not applicable</li> </ul>  | <ul style="list-style-type: none"> <li>- Not applicable</li> </ul>   | <ul style="list-style-type: none"> <li>- Not applicable</li> </ul>   |
| <b>Village govt and communities take initiative to fulfil basic requirements for receiving extension services</b>  | <ul style="list-style-type: none"> <li>- Village govt is able to apply for District grants to complete community projects;</li> <li>- Community has ownership over the project and its outcomes;</li> <li>- Community is proactive in improving local conditions</li> </ul>  | <ul style="list-style-type: none"> <li>- Households must contribute money and/or labour for community to meet minimum requirements to receive some services;</li> <li>- finance and labour diverted from other pressing needs</li> </ul>  | <ul style="list-style-type: none"> <li>- Low: Communities usually have working systems in place for distributing labour for community projects.</li> </ul>  | <ul style="list-style-type: none"> <li>- Poorest households; Households without a large work force (elderly, widowers, single-headed households)</li> </ul>                                    | <ul style="list-style-type: none"> <li>- Sliding scale for monetary contribution (better off household contribute more);</li> <li>- joint activities conducted during low agriculture season;</li> <li>- Provide option of contributing money or labour, but not both.</li> </ul>  |
| <b>Roads improved</b>  | <ul style="list-style-type: none"> <li>- Willingness of extension officers to live in villages given improved access and housing conditions;</li> <li>- Extension services are more easily available to communities;</li> <li>- improved roads encourages more frequent and better transportation services;</li> <li>- facilitates markets for ag. products</li> </ul> | <ul style="list-style-type: none"> <li>- Improved transport increases in-migration of entrepreneurs who 'take over' business prospects;</li> <li>- Increase in illegal timber harvesting;</li> <li>- Increase in unsustainable charcoal production</li> </ul>   | <ul style="list-style-type: none"> <li>- High: Improved road infrastructure almost always results in increased unsustainable extraction of forest resources;</li> <li>- community leaders are usually vulnerable to corruption</li> </ul> | <ul style="list-style-type: none"> <li>- All community members</li> </ul>  | <ul style="list-style-type: none"> <li>- Improved governance strategy, participatory forest management strategy and training in entrepreneurial skills ideally conducted before roads are improved to allow communities sufficient time to feel ownership over forests and develop joint agreements of how to manage local forests;</li> </ul> |
| <b>Housing suitable for extension officers built in villages</b>   | <ul style="list-style-type: none"> <li>- Incentive for extension officers to spend more time in communities providing their services;</li> <li>- Extension services more accessible to wider community</li> </ul>  | <ul style="list-style-type: none"> <li>- Maintenance costs of house add expenses for village council, and subsequently - communities</li> </ul>   | <ul style="list-style-type: none"> <li>- Small to medium</li> </ul>   | <ul style="list-style-type: none"> <li>- Village council</li> <li>- Communities (through additional taxes or contributions they will have to make towards paying maintenance costs.</li> </ul> | <ul style="list-style-type: none"> <li>- Cost of maintaining houses and other community buildings is included in annual budget;</li> <li>- Contracts are signed between occupants and village councils to protect community from paying for avoidable maintenance charges</li> </ul>   |
| <b>Communities cultivate high value crops</b>  | <ul style="list-style-type: none"> <li>- High value crops attract extension services due to vested interest of District in such crops;</li> <li>- Income from ag. improves</li> </ul>  | <ul style="list-style-type: none"> <li>- High value crops jeopardize subsistence food production – potential for local food shortage;</li> <li>- over-expectations of potential of high value crop jeopardizes importance of diversification;</li> <li>- Extension services are limited to farmers that cultivate high value crops - most farmers will still need advice and assistance for subsistence and traditional cash crops</li> </ul> | <ul style="list-style-type: none"> <li>- Medium to high</li> </ul>  | <ul style="list-style-type: none"> <li>- Farmers not cultivating high value crop (majority)</li> </ul>   | <ul style="list-style-type: none"> <li>- Careful market study is done to ensure a steady and reliable market for cash crop;</li> <li>- studies conducted to ensure area is suitable for the high value crop;</li> <li>- extension services are made available for traditional crops</li> </ul>   |
| <b>Village govt implements agriculture development plans (Strategy X)</b>  | <ul style="list-style-type: none"> <li>- Improvement in ag. productivity;</li> <li>- Decline and gradual shift away from shifting cultivation practices</li> <li>- Sustainable agriculture is practiced</li> </ul>   | <ul style="list-style-type: none"> <li>- Some currently forested areas converted into permanent agriculture areas;</li> </ul>   | <ul style="list-style-type: none"> <li>- Low to medium</li> </ul>   | <ul style="list-style-type: none"> <li>- Natural resource committee</li> </ul>   | <ul style="list-style-type: none"> <li>- Landuse plan zonation ensures that ag. improvement Strategy occurs in degraded or already cleared areas;</li> <li>- Soil improvement strategies need to be key component of ag. Strategy to ensure long-term use of farms</li> </ul>  |
| <b>Distribution of</b>   | <ul style="list-style-type: none"> <li>- Villages more</li> </ul>  | <ul style="list-style-type: none"> <li>- Risk that</li> </ul>   | <ul style="list-style-type: none"> <li>-</li> </ul>   | <ul style="list-style-type: none"> <li>-</li> </ul>  | <ul style="list-style-type: none"> <li>-</li> </ul>  |

| <i>Activity</i>  | <i>Intended positive outcomes or impacts</i>  | <i>Potential negative impacts</i>   | <i>Magnitude of negative impact</i>                              | <i>Stakeholders affected</i>                                     | <i>Mitigation action Needed</i>                                  |
|--|---|---|--|--|--|
| <b>extension officers to villages from District offices reflects needs</b> | <ul style="list-style-type: none"> <li>proactive in planning and identifying extension service needs;</li> <li>Extension services reflect local requirements</li> </ul>   | <ul style="list-style-type: none"> <li>communities that fail to identify their needs timely do not receive any extension services (increases inter-community gap);</li> </ul> |  |  |  |
| <b>Good quality extension services available at village level</b>          | <ul style="list-style-type: none"> <li>Communities have access to basic services to improve overall performance in education, health, agriculture and business</li> </ul> | <ul style="list-style-type: none"> <li>None anticipated</li> </ul>  | <ul style="list-style-type: none"> <li>Not applicable</li> </ul> | <ul style="list-style-type: none"> <li>Not applicable</li> </ul> | <ul style="list-style-type: none"> <li>Not applicable</li> </ul> |

**TABLE 25: FACTORS SUPPORTING AND OPPOSING ACHIEVEMENT OF STRATEGY TO IMPROVE EXTENSION SERVICES IN PROJECT ZONE (STRATEGY 8)**

| <i>Detailed description of Vision</i>   | <i>Factors supporting achievement of the vision</i>  | <i>Factors opposing achievement of the vision</i>  | <i>Responsible parties for achieving the vision</i>   |
|---|--|--|---|
| <b>Better Infrastructure</b>  |  |  |   |
| Year-round passable roads for safe and reliable communication between the Project Zone to major highways                                  | <ul style="list-style-type: none"> <li>Roads already exist – it is only a matter of improving them;</li> <li>Non-skilled labour locally available;</li> <li>Communities willing to contribute labour (freely?) towards improvements</li> </ul>   | <ul style="list-style-type: none"> <li>Existing roads lack bridges and culverts (implies high costs for improving roads to better standard);</li> <li>Lack of funds to for construction materials, equipment, and contractor fees;</li> <li>Technical skills are not locally available;</li> <li>No means to transport construction material (e.g. wheelbarrows and lorries)</li> </ul>  | <ul style="list-style-type: none"> <li>Government support needed in the form of direct monetary assistance and technical support;</li> <li>Community to assist (freely?) with transportation of construction material</li> <li>Government to provide heavy equipment for road construction;</li> </ul>  |
| Better telephone communication (to improve cell phone coverage in the Project Zone)   | <ul style="list-style-type: none"> <li>Many areas do not have access</li> <li>People in the area are already using mobile phones – many more consumers available with improved coverage</li> <li>Some towers already exist;</li> <li>A lot of land available on which to build additional towers;</li> </ul>   | <ul style="list-style-type: none"> <li>Local purchasing power may not be large enough to convince telephone companies to invest in additional towers or improved coverage</li> <li>In remote areas electricity not available to run the towers (existing towers maintained by diesel generators -- expensive and difficult to maintain constant supply)</li> </ul>   | <ul style="list-style-type: none"> <li>Cellular phone companies have to decide whether it is financially feasible to set up towers</li> <li>Communications companies to bear the cost and responsibilities of putting up and maintaining their towers.</li> </ul>   |
| Electricity in the form of Solar power or connection to the national grid. Mostly to operate household electronics and business machinery | <ul style="list-style-type: none"> <li>Households desire to have electricity in their homes</li> <li>Some households have already demonstrated buying power for electronics (T.V, radios and cell phones); these are currently operated by generators;</li> <li>Some households have the economic power to pay partial of full costs of installing solar energy</li> </ul> | <ul style="list-style-type: none"> <li>Insufficient local knowledge of how solar energy could meet local demand for electricity</li> <li>Nationwide, electricity supply via the national grid is inadequate, expensive and unreliable;</li> <li>Communities unable to pay for costs of installing grid-based electricity</li> <li>Unclear if households can absorb the full cost of installing solar panels [subsidies may be needed];</li> <li>Lack of local experts with the technical skills to repair solar energy devices when they break;</li> </ul> | <ul style="list-style-type: none"> <li>Village Councils and District offices need to investigate potential for communities to benefit from Rural Electrification Programmes.</li> <li>TANESCO to provide transmission poles, wires and supply electricity [NB: Tanesco representative not present to confirm this]</li> <li>TANESCO would need to provide technical support to REDD project to assists with training in installation of solar energy;</li> <li>Community would have to buy themselves solar energy devices</li> </ul> |
| Availability of milling and grinding machines for cereals   | <ul style="list-style-type: none"> <li>Cereals are widely produced locally and a staple food (i.e. there are many clients for the service);</li> <li>Distances to milling machines are long for most households (?);</li> <li>Grinding and milling by hand is difficult and imperfect—households are willing to pay cost of grinding by machines</li> </ul>                | <ul style="list-style-type: none"> <li>Machines are very expensive (difficult for a single person to afford it);</li> <li>Transportation to destined village-community difficult (many impassable roads);</li> <li>No electricity to run machines, so would depend on generators – high expense to run and maintain machines;</li> <li>Many households would still be located far away from nearest available machine</li> </ul>   | <ul style="list-style-type: none"> <li>Government to provide loans for people to buy them;</li> <li>Consideration should be made for joint ventures or farmer cooperatives to co-own and operate machines instead of individuals</li> </ul>   |
| Improved water services including wells with clean and safe water   | <ul style="list-style-type: none"> <li>Local sources of clean and safe water available;</li> <li>Abundant manpower available for construction (of pipelines or wells);</li> <li>Community willing to pay for water service [?];</li> <li>Availability of basic construction material</li> </ul>  | <ul style="list-style-type: none"> <li>Lack of technical support;</li> <li>Lack of funds to pay the contractors and construction materials (e.g. pipes, pumps, drilling machines);</li> <li>Lack of a local organization in committees overseeing and maintaining water services;</li> </ul>   | <ul style="list-style-type: none"> <li>Community to contribute fund in buying water pipes and cements;</li> <li>Government to support community in both fund and technical skills</li> <li>Village government to plan way for maintaining the wells once broken;</li> </ul>   |
| <b>Improved Healthcare services</b>   |  |  |   |
| A nearby Dispensary for each village that has the facilities, staff and equipment to provide high quality care                            | <ul style="list-style-type: none"> <li>Access to minimum healthcare is far or of low quality for most communities;</li> <li>Abundant land and basic construction material to build dispensaries;</li> <li>Communities need health care that is closer to where they live</li> <li>Willingness exists to provide free labour towards construction</li> </ul>                | <ul style="list-style-type: none"> <li>Scarcity of skilled labour to build the dispensaries;</li> <li>Absence of funds to finance construction;</li> <li>Remoteness and difficult living conditions make it hard to attract good nurses and doctors to come serve the dispensary – lack of staff to provide the health care;</li> <li>Keeping the dispensary staffed and with</li> </ul>   | <ul style="list-style-type: none"> <li>Government provide funds for construction materials and building costs if communities contribute labour and basic building materials;</li> <li>Government has obligation to staff and equip dispensaries once constructed;</li> <li>Government provides standard building plans</li> </ul>   |

| <b>Detailed description of Vision</b>   | <b>Factors supporting achievement of the vision</b>   | <b>Factors opposing achievement of the vision</b>  | <b>Responsible parties for achieving the vision</b>  |
|---|---|--|--|
|   |   | adequate and relevant supplies are additional challenges<br>- Poor transportation network for the materials  |  |
| Households, businesses and institutions are using energy efficient cooking stoves   | - Material to build stoves is locally available (clay)<br>- Using less fuelwood would be a desirable improvement in household economics for most households<br>- Building the stoves would provide local labour<br>- Improved stoves would be affordable to most households   | - Lack of local skills in building stoves;<br>- No previous experience in using such stoves (some adjustment in cooking behaviour may be needed);<br>- Limited awareness raising has been conducted on such stoves (very few people know about them – would require effort in this)  | - REDD project to provide technical skills;<br>- REDD project to provide training on the use of improved energy stoves   |
| <b>Improved Education Infrastructure and Services</b>   |   |  |  |
| Nursery and primary Schools in every village  | - High illiteracy rates in the area;<br>- Absence of schools in many villages; or schools too far away for children to go to;<br>- Enough school-aged children available to attend schools;<br>- High willingness among parents to send their children to school<br>- Abundant land on which to build the schools;<br>- Parents willing to provide labour freely for constructing the school;<br>- Basic construction material available locally (and freely);<br>- In some cases, bricks already exist to start off the construction | - Absence of funds to purchase additional building materials and pay construction workers<br>- Lack of skilled personnel to carry out construction activities;<br>- Village councils have not obtained the building plans for the schools;<br>- Scarcity of nursery school teachers  | - Government to produce standard classroom plans<br>- Village councils' education committees must follow up on school plans and other potential District funding to support school construction  |
| More buildings needed to ensure that each class has its own classroom   | - Classes have to share rooms, reducing quality of education that students receive;<br>- Basic construction materials are locally available (sand, rock, water, etc.);<br>- Community members are willing to contribute free labour towards construction<br>- In some cases, bricks are already there to start construction   | - Absence of fund to buy additional building materials (e.g. cement, roofing material, rods, paint, timber, etc.);<br>- Lack of funds to pay skilled builders;<br>- Absence of building plans  | - Government, community and REDD project to contribute funds;<br>- Government to provide standard building plans for schools and classrooms  |
| Adequate number of primary school Teachers to teach each subject that should be taught in primary schools                     | - High illiteracy rates in the area;<br>- Chronic deficiency of teachers in many schools – single teacher has to teach several classes at the same time;<br>- In some villages, there is sufficient accommodation for teachers and classrooms;<br>- Enough school-aged children available to attend schools;<br>- High willingness among parents to send their children to school   | - Deficiency of teachers is a district-wide problem;<br>- Remoteness of area and difficult living conditions in the villages provides low motivation for teachers to live and work there (i.e. poor social services, poor mobile networks, lack of electricity, etc.);<br>- In some villages, schools do not have housing for teachers | - REDD project to assist in improving water services;<br>- Government assistance with improving schools will enable housing for teachers;<br>- Government to increase incentives for teachers;<br>- Government to improve road network;<br>- Communities to contribute labour freely to improve accommodation for teachers |
| Schools have adequate housing for teachers so that they can live comfortably with their families                              | - Communities aware that housing is a basic necessity for attracting teachers to the area;<br>- Willingness to contribute towards building teachers' houses exists in most communities  | - Other services would still be lacking or considered inadequate by potential teachers, e.g., Lack of access to adequate health services, market, road access, clean and safe water, mobile phone network, electricity and transportation to nearest town  | - Community and government to contribute funds for buying construction materials;<br>- Other improvements will take place as part of different community development strategies;   |
| <b>Availability of credit and general improvement in standard of living</b>   |   |  |  |
| Availability of agricultural loans  | - Opportunity for utilization of the two types of loans : farms and businesses types such as mama and baba lische.  | - lack of proper assets for loans acquiring;<br>Lack of land certificate for loans acceptance;<br>- Lack of knowledge to community on how to perform well with loans.  | - Government to provide education on how to use loans and also loans provision.  |
| Availability of business loans  | - availability and readiness of the loan demanding groups<br>- there is business opportunities; willingness to community in borrowing   | - lack of loans<br>- lack of assets for bank borrowing   | - REDD project to assists in acquisition of land certificate for loans acquiring   |
| The village council has an office in which to hold meetings, store documents and from which to serve and govern the community | - Availability of unfinished building   | - Lack of funds to finish the construction   | - Government and community to contribute funds to finish the construction work   |

| <i>Detailed description of Vision</i>                            | <i>Factors supporting achievement of the vision</i>   | <i>Factors opposing achievement of the vision</i>   | <i>Responsible parties for achieving the vision</i>  |
|--|---|---|--|
| Better quality houses (brick vs. mud; corrugated iron vs. grass) | <ul style="list-style-type: none"> <li>- Material for building earth bricks is locally available</li> <li>- Desire by communities to have better housing</li> </ul> | <ul style="list-style-type: none"> <li>- lack of skilled labour to construct better housing (masonry skills, brick building skills, etc.)</li> <li>- Limited supply other materials from outside (e.g. cement, steel rods, corrugated iron sheets, paint, nails, ceiling boards and wire meshes)</li> <li>- High expense of acquiring material needed to improve housing quality</li> </ul> | <ul style="list-style-type: none"> <li>- Community members need to prioritise housing improvement in their own household budgets;</li> <li>- Government or Project could provide skilled training for building improved housing if there are sufficient participants to implement training in the Project Zone (Hence, most likely to occur at later stages when improved income has been achieved)</li> </ul> |

## **PART FOUR: COMMUNITY MONITORING PLAN**

As the Project progresses, communities, stakeholders, Project proponents and evaluators need to be assured that social objectives are indeed being achieved and that negative social impacts are being mitigated as planned. Time constraints during the village and landscape level SIA workshops did not permit development of indicators to monitor social impacts nor did it allow for development of a monitoring plan. Developing a monitoring plan can become a highly technical undertaking, leading the SBIA Manual to recommend that it should be undertaken as an exercise apart from the SIA workshops, conducted with some key participants and the project proponents.

A Community Monitoring Plan (CMP) has four main objectives:

- To monitor whether negative impacts are being felt and whether the mitigation measures put in place sufficiently address the impacts;
- To monitor whether desired impacts are in fact being achieved and if there are additional synergistic benefits that the Project can claim. This is to ensure that the project's social objective of poverty alleviation is realistically achieved
- To ensure that the social framework needed for communities to participate successfully in carbon markets and REDD initiatives is thoroughly developed; and
- To maintain goodwill and good relations between the project, local communities, district government and national government.

In 2010 MJUMITA commissioned a consultant to develop a monitoring plan for its REDD projects. Key processes in developing the MEC Plan included extensive document review, field visits to a sub-sample of villages in Lindi and Kilosa Districts, focus group discussions and meetings with selected stakeholders, drafting of the plan, incorporating stakeholder comments to the plan and producing a revised version of the MEC plan. Communities and local stakeholders were involved in the process of developing the MEC Plan at two levels. Firstly during the group discussions and meetings described above, and later in the landscape level SIA workshops.

### **INDICATORS TO EVALUATE SOCIAL IMPACTS**

For the most part, community-specific indicators identified in the MEC Plan can be used to monitor the performance of proposed strategies. Indicators in the MEC Plan, however, were developed before the Community Development Plans were established and specific strategies were identified and developed. The existing MEC Plan needs to incorporate additional indicators that specifically target strategy-relevant objectives. Once the SIA report has been validated with stakeholders, and submitted, the Project has six months to develop a thorough Monitoring Plan for Kilosa.

Monitoring of social impacts will be conducted in the context monitoring of other variables relevant to the REDD+ Project. The guiding document for monitoring SIA variables will be the MEC Plan developed for the Project.

### **POLICY AND ORGANIZATION:**

Implementation of the community monitoring plan will fall under the responsibility of: MJUMITA, village councils and the Community-based carbon trading cooperative. They will interact with partner organizations, district and local governments. A Community development officer (CDO) will be hired for

the project specifically to administer the Community Development Plan. The CDO will need to ensure that monitoring is conducted.

**ROLES AND RESPONSIBILITIES:**

The details of the roles and responsibilities of the project stakeholders for post-2014 CMP activities has not yet been thoroughly discussed nor negotiated. Roles and responsibilities will be refined during negotiations and consultations that will take place during Phase 1.

Monitoring of social impacts will be conducted in the context monitoring of other variables relevant to the REDD+ Project. The guiding document for monitoring SIA variables will be the MEC Plan developed for the Project.

**POLICY AND ORGANIZATION:**

Implementation of the community monitoring plan will fall under the responsibility of: MJUMITA, village councils and the Community-based carbon trading cooperative. They will interact with partner organizations, district and local governments.

**ROLES AND RESPONSIBILITIES:**

The details of the roles and responsibilities of the project stakeholders for post-2014 CMP activities has not yet been thoroughly discussed nor negotiated. Roles and responsibilities will be refined during negotiations and consultations that will take place during Phase 1 and after the basic framework of developing good governance, establishing PFM, and enhancing the capacity of VNRCs has been achieved.

1. MJUMITA and TFCG
2. Partner organisation
3. Local village governments
4. Village natural resource committees
5. District government
6. Partners
7. Other NGOs

**TABLE 26: EXAMPLE OF INDICATORS TO MONITOR AND EVALUATE SOCIAL IMPACTS OF REDD PROJECT IN KILOSA DISTRICT**

| <b>Strategy or Project objective/Output</b>   | <b>Relevant Indicators from the MEC Plan</b>  | <b>Additional indicators proposed</b>   |
|---|---|---|
| <b>Strategy 1: Develop direct incentives for managing forests sustainably</b>                     | <ul style="list-style-type: none"> <li>- Number and type of community development projects supported by the project and / or using a proportion of the revenue from the sale of carbon credits</li> <li>- Revenues in TZS from the sale of carbon credits reaching each village</li> <li>- Legal status of the cooperative or association including its legal relationship with MJUMITA as an</li> <li>- % of members attending various association meetings disaggregated by gender;</li> <li>- Number of villages with registered members in the cooperative and number of Districts and Regions represented;</li> <li>- Number of people disaggregated by wealth rank and gender receiving financial benefits from the project</li> <li>- % of community members who view revenue distribution mechanism as being fair</li> </ul>  | <ul style="list-style-type: none"> <li>- Number of communities that have joined the cooperative relative to those selling carbon without the cooperative;</li> <li>- Surveys of members to assess perception of effectiveness of cooperative relative to expectations</li> </ul>  |
| <b>Strategy 2: Improve governance at village level;</b>   | <ul style="list-style-type: none"> <li>- Number of Village Council meetings, Village assembly meetings and Village Natural Resources Committee meetings conducted and number of participants, disaggregated by gender, per meeting;</li> <li>- % of village assembly meetings where the VNRC presents a report per village and overall for all villages;</li> <li>- Number of VNRCs with annual work plans;</li> <li>- % of villages in which strategies to ensure free, prior and informed consent have been implemented</li> <li>- % of VNRC members who are women in all project villages</li> <li>- % of Village Council members who are women in all project villages</li> <li>- % of VNRC members from the lowest category of wealth ranking</li> <li>- % of village Council members who are from the lowest category of wealth ranking.</li> <li>- Changes in the results of governance score cards for participating villages.</li> <li>- Changes in the scores for constituent stakeholder groups on a standardized questionnaire on knowledge, attitudes and practices in relation to REDD, forest conservation, forest governance and pro-poor approaches to REDD</li> </ul>   | <ul style="list-style-type: none"> <li>- Survey of communities satisfaction with local government performance</li> <li>- Number of community initiated projects in course and completed</li> <li>- Extent of community participation in government (% participating in local elections, coming to assembly meetings, etc)</li> </ul>  |
| <b>Strategy 3: Develop landuse plans in each village</b>  | <ul style="list-style-type: none"> <li>- Number of communities with land use plans and land certificates</li> <li>- Capacity enhancement for bylaw formation and enforcement at the village level as part of the leakage strategy</li> </ul>  | <ul style="list-style-type: none"> <li>- Number of resolved and unresolved conflicts related to land;</li> <li>- Number of infringements of landuse bylaws by type of infringement</li> <li>- Number of livestock keepers vs cultivator conflicts</li> <li>- Proportion of pastoralists participating in LU committee</li> </ul>  |
| <b>Strategy 4: Establish and implement Participatory forest management (PFM)</b>                  | <ul style="list-style-type: none"> <li>- Number of communities with village forest reserves;</li> <li>- Number of people who have received training related to REDD, PFM and forest governance at the community level</li> <li>- % of management plans for village forest reserves that have been reviewed to ensure that gender issues are adequately covered and that barriers to participation for the poorest members of the communities are reduced.</li> <li>- Status of the design of the revenue sharing mechanism;</li> <li>- Number of benefit sharing agreements signed with local communities for CBFM and JFM arrangements</li> <li>- % of the costs incurred by VNRCs in implementing participatory forest management that were paid for by REDD revenues;</li> <li>- Changes in rates and extent of drivers of deforestation and forest degradation within the project area.</li> <li>- Number of people disaggregated by wealth rank and gender receiving financial benefits from the project</li> <li>- Changes reported by community members in the availability of water attributable to the project and relative to a reference scenario;</li> <li>- Changes reported by community members in the availability of fuel wood attributable to the project and relative to a reference scenario;</li> <li>- Changes in the availability of building poles attributable to the project and relative to a reference scenario;</li> <li>- Changes in the availability of (bush) meat attributable to the project and relative to a reference scenario;</li> <li>- Capacity enhancement for bylaw formation and enforcement at the village level as part of the leakage strategy;</li> </ul> | <ul style="list-style-type: none"> <li>- Changes in access of vulnerable groups to forest resources</li> <li>- Number of tree nurseries developed</li> <li>- Number of local people employed in the forest sector</li> <li>- Number of area planted with trees (woodlot establishment)</li> <li>- Forest disturbance transects to monitor adherence to forest use by-laws</li> <li>- Amount of revenue generated from infringement of bylaws</li> </ul> |
| <b>Strategy 5: Improving agriculture and livestock productivity</b>                               | <ul style="list-style-type: none"> <li>- Number of households in each village receiving support for improved agriculture from the REDD project</li> <li>- Changes in average yields as a result of adopting improved agricultural techniques;</li> <li>- List of other initiatives taken to improve agricultural productivity and sustainability and increase farmers' profits within the landscape;</li> <li>- % of households in all constituent socio-economic or cultural groups who have moved from the lowest wealth rank to a higher rank as a result of benefits from this project</li> </ul>   | <ul style="list-style-type: none"> <li>- Area of land under shifting cultivation;</li> <li>- Number of farmers practicing conservation ag. and sustainable livestock keeping</li> </ul>   |
| <b>Strategy 6: Improve entrepreneurship skills and viable income generating activities (IGAs)</b> | <ul style="list-style-type: none"> <li>- Number per type of training and capacity boost activities provided by the project in enhancing adoption of alternative IGAs</li> <li>- % of households in all constituent socio-economic or cultural groups who have moved from the lowest wealth rank to a higher rank as a result of benefits from this project</li> </ul>   | <ul style="list-style-type: none"> <li>- Number of people participating in training</li> <li>- Number of local businesses</li> <li>- Variety of income generating activities</li> <li>- Number of people conducting some form of income generating activity</li> <li>- % of activities related to forest resources</li> </ul>   |
| <b>Strategy 7: Reduce unsustainable extraction</b>  | <ul style="list-style-type: none"> <li>- Number of main users adopting energy saving stoves and kilns;</li> <li>- Number of trees planted by community members for fuel wood;</li> </ul>  | <ul style="list-style-type: none"> <li>- Amount of charcoal and firewood consumed by</li> </ul>   |

| <b>Strategy or Project objective/Output</b>                      | <b>Relevant Indicators from the MEC Plan</b>  | <b>Additional indicators proposed</b>  |
|--|---|--|
| <b>of biomass from forests</b>                                   | <ul style="list-style-type: none"> <li>- Number of villages with fire prevention and fire fighting strategies</li> <li>- Number of villages actively implementing fire prevention strategies;</li> <li>- Number of people trained in fire prevention techniques</li> </ul>  | <ul style="list-style-type: none"> <li>- major consumers</li> <li>- Creation of a charcoal cooperative</li> <li>- % of users using alternative fuel sources (rice husks, wood shavings, etc);</li> <li>- Number of people employed building improved stoves</li> </ul> |
| <b>Strategy 8: Improving extension services at village level</b> | <ul style="list-style-type: none"> <li>- Changes in the public services available in villages (including primary schools, secondary schools, clinics, meeting places, village offices, improved water points) and transport infrastructure (quality and quantity of roads).</li> <li>- % of households in all constituent socio-economic or cultural groups who have moved from the lowest wealth rank to a higher rank</li> <li>- Number and type of community development projects supported by the project and / or using a proportion of the revenue from the sale of carbon credits</li> </ul> | <ul style="list-style-type: none"> <li>- Local perception of changes in availability of extension services;</li> <li>- Number of new staff employed to provide extension services</li> </ul>   |

## GRIEVANCE PROCEDURES

It is necessary to have a mechanism to solve issues/grievances that are attributed to implementation of Project activities. The mechanism should allow all parties/stakeholders involved to find immediate solutions for conflicts and disagreements arising between the Project (i.e. project proponents or MJUMITA staff responsible for implementing the Kilosa REDD Project) and communities.

Formal and informal conflict resolution mechanisms and associated institutions already exist in the Project Zone. They include the Village Natural Resource Committees, Village Councils, Village elders, Village Land Council, Village Assembly and Ward Development Committees. The REDD Project has no intention of changing existing and functional procedures.

Existing mechanisms, however, are heavily community based and do not represent a neutral party that has no vested interest in the Project. At the stakeholder workshop, participants were asked to identify a neutral party to liaison between TFCG/MJUMITA and communities. The criteria for selecting such a party were:

- The availability of the Party,
- Mutual trust by both sides (i.e. s/he should be free from strong association with political or religious groups;
- Should have the respect of the community

It was decided that each community identifies its own neutral party.

Procedures to communicate and resolve grievances between communities and the Project were also discussed in 10 of the 13 villages. Participants were divided into three groups each of which discussed the type of information that could cause grievance and how it would be communicated within the community and from the community to the Project. The outcomes of these discussions are unclear, however. Most participants expressed that existing procedures were sufficient to handle Project-related grievances.

During the village-level meetings some villages selected the DED and DC to be the neutral party for conflict resolution (e.g. Chabima) whilst other villages suggested that conflicts could be resolved at Ward level (e.g. Nyali).

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## ANNEX 1: LIST OF PARTICIPANTS IN SIA WORKSHOP

TABLE 27: PARTICIPANTS IN VILLAGE-LEVEL SIA WORKSHOPS

| SN | LOCATION        | NAME OF PARTICIPANT | MALE | FEMALE | GROUP WHICH REPRESENTING    |
|----|-----------------|---------------------|------|--------|-----------------------------|
| 1  | Nyali Village   | Damasi Mahanza      | 1    |        | Village Council (VC)1       |
| 2  | Nyali Village   | Juma Pume           | 1    |        |                             |
| 3  | Nyali Village   | Michaeli Mkwavi     | 1    |        |                             |
| 4  | Nyali Village   | Hadija Maboga       |      | 1      |                             |
| 5  | Nyali Village   | Janeth Salum        |      | 1      |                             |
| 6  | Nyali Village   | Abdalah Lukwambe    | 1    |        |                             |
| 7  | Nyali Village   | Moleni Kinyanya     |      | 1      |                             |
| 8  | Nyali Village   | Mabaya Njambile     | 1    |        |                             |
| 9  | Nyali Village   | Habiba Kissagala    |      | 1      |                             |
| 10 | Nyali Village   | Lukasi Nikolausi    | 1    |        |                             |
| 11 | Nyali Village   | Ramadhani Hamisi    | 1    |        |                             |
| 12 | Nyali Village   | Alli Lusanilo       | 1    |        |                             |
| 13 | Nyali Village   | Ibrahim Mangwela    | 1    |        |                             |
| 14 | Nyali Village   | Alphonc Sidani      | 1    |        |                             |
| 15 | Nyali Village   | Mathiasi Joseph     | 1    |        | VNRC 1                      |
| 16 | Nyali Village   | Tukae Athumani      |      | 1      |                             |
| 17 | Nyali Village   | Agripina Degewala   |      | 1      |                             |
| 18 | Nyali Village   | Anthony Method      | 1    |        |                             |
| 19 | Nyali Village   | Julietha Petro      |      | 1      |                             |
| 20 | Nyali Village   | Jackson Meshack     | 1    |        |                             |
| 21 | Nyali Village   | Veronika Njambila   |      | 1      |                             |
| 22 | Nyali Village   | James Mwamba        | 1    |        |                             |
| 23 | Nyali Village   | Emanuela Kigaila    |      | 1      |                             |
| 24 | Nyali Village   | Anna Stephani       |      | 1      |                             |
| 25 | Nyali Village   | Alphonc Sindani     | 1    |        | Traditional healer          |
| 26 | Nyali Village   | Paulo Mgina         | 1    |        | Timber dealer               |
| 27 | Nyali Village   | Salima Mshamu       |      | 1      | elder                       |
| 28 | Nyali Village   | Fikiri Maliwa       | 1    |        | elder                       |
| 29 | Nyali Village   | Josephati Msule     | 1    |        | Charcoal maker              |
| 30 | MJUMITA         | Bettie Luwuge       |      | 1      | PM REDD                     |
| 31 | MJUMITA         | Bosco Vitalis       | 1    |        | TFCG driver                 |
| 32 | MJUMITA         | Josephati Lyombo    | 1    |        | Community Dvt Officer (CDO) |
| 33 | MJUMITA         | Hezron Swago        | 1    |        | Project driver              |
| 34 | MJUMITA         | Wilfred Pima        | 1    |        | Field Coordinator (F.C)     |
| 35 | Chabima Village | Shera Ahamadi       |      | 1      | VC                          |
| 36 | Chabima Village | Mlonga S. Mlonga    | 1    |        |                             |
| 37 | Chabima Village | Ahamadi Ngwambi     | 1    |        |                             |
| 38 | Chabima Village | Bertha Paulo        |      | 1      |                             |
| 39 | Chabima Village | Danieli Kasimu      | 1    |        |                             |
| 40 | Chabima Village | Martini Dengwa      | 1    |        |                             |
| 41 | Chabima Village | Epimaki Kassimu     | 1    |        |                             |
| 42 | Chabima Village | Lusia Petro         |      | 1      |                             |
| 43 | Chabima Village | Julitha John        | 1    |        |                             |
| 44 | Chabima Village | Damasi Chambeho     | 1    |        |                             |
| 45 | Chabima Village | Filimoni Magungu    | 1    |        |                             |
| 46 | Chabima Village | Hassani Alli        | 1    |        | VNRC                        |
| 47 | Chabima Village | Honolina Joseph     |      | 1      |                             |
| 48 | Chabima Village | Jastini Martini     | 1    |        |                             |
| 49 | Chabima Village | Julius Magungu      | 1    |        |                             |
| 50 | Chabima Village | Piasoni Mwihenga    | 1    |        |                             |
| 51 | Chabima Village | Mawazo Kipanda      | 1    |        |                             |
| 52 | Chabima Village | Anna Jonas          |      | 1      |                             |
| 53 | Chabima Village | Ignas Midoe         | 1    |        |                             |
| 54 | Chabima Village | Melikili Mwegamile  | 1    |        |                             |
| 55 | Chabima Village | Saimoni Mzenga      | 1    |        |                             |
| 56 | Chabima Village | Peter Boma          | 1    |        |                             |
| 57 | Chabima Village | Rozadina Chambeho   |      | 1      |                             |
| 58 | Chabima Village | Benedict Mwagula    | 1    |        | Religion leader christian   |
| 59 | Chabima Village | Issa Alli           | 1    |        | Islamic leader              |
| 60 | Chabima Village | Jonas Maganga       | 1    |        | elder                       |
| 61 | Chabima Village | Ameria Malifedha    |      | 1      | elder                       |

| SN  | LOCATION           | NAME OF PARTICIPANT | MALE | FEMALE | GROUP WHICH REPRESENTING |
|-----|--------------------|---------------------|------|--------|--------------------------|
| 62  | Chabima Village    | Salum Sadala        | 1    |        | Charcoal maker           |
| 63  | Chabima Village    | Elias Daudi         | 1    |        | Timber dealer            |
| 64  | Munisagara Village | Anjelo Sekeni       | 1    |        | VC                       |
| 65  | Munisagara Village | Mohamedi Kasanga    | 1    |        |                          |
| 66  | Munisagara Village | Constatini Mwamba   | 1    |        |                          |
| 67  | Munisagara Village | Francis Mikaeli     | 1    |        |                          |
| 68  | Munisagara Village | Shabani Ngoja       | 1    |        |                          |
| 69  | Munisagara Village | Shera Adam          |      | 1      |                          |
| 70  | Munisagara Village | Eliza Tengeneza     |      | 1      |                          |
| 71  | Munisagara Village | Seki Athumani       | 1    |        |                          |
| 72  | Munisagara Village | Anna Ambros         |      | 1      |                          |
| 73  | Munisagara Village | Mohamedi Omari      | 1    |        |                          |
| 74  | Munisagara Village | Salum J. Chali      | 1    |        |                          |
| 75  | Munisagara Village | Yustini mkoba       | 1    |        |                          |
| 76  | Munisagara Village | Hamisi Temigunga    | 1    |        |                          |
| 77  | Munisagara Village | Izack Kingamkono    | 1    |        | VNRC                     |
| 78  | Munisagara Village | Helena George       |      | 1      |                          |
| 79  | Munisagara Village | Abubakari Kisegere  | 1    |        |                          |
| 80  | Munisagara Village | Ernest Ngadaya      | 1    |        |                          |
| 81  | Munisagara Village | Ramadhani mlawa     | 1    |        |                          |
| 82  | Munisagara Village | Josephina Omari     |      | 1      |                          |
| 83  | Munisagara Village | Kasimu Omari        | 1    |        |                          |
| 84  | Munisagara Village | Hidaya Salumu       |      | 1      |                          |
| 85  | Munisagara Village | Veneranda Gabrieli  |      | 1      |                          |
| 86  | Munisagara Village | Agripina Augustino  |      | 1      |                          |
| 87  | Munisagara Village | Sharifu Selemani    | 1    |        |                          |
| 88  | Munisagara Village | Damiani John        | 1    |        | Christian rep            |
| 89  | Munisagara Village | Hamza Rashidi       | 1    |        | Islamic rep              |
| 90  | Munisagara Village | Tausi Hamisi        |      | 1      | Traditional healer(TH)   |
| 91  | Munisagara Village | Halima Omari        |      | 1      | Elder                    |
| XX  | Ibingu Village     | Damasi Msavi        | 1    |        | VC                       |
| 92  | Ibingu Village     | Gabrieli Bahati     | 1    |        |                          |
| 93  | Ibingu Village     | Maria Jeremia       |      | 1      |                          |
| 94  | Ibingu Village     | Veska Paskali       |      | 1      |                          |
| 95  | Ibingu Village     | Lustick Benard      | 1    |        |                          |
| 96  | Ibingu Village     | Frenk Eduard        | 1    |        |                          |
| 97  | Ibingu Village     | Binaus Lukasi       | 1    |        |                          |
| 98  | Ibingu Village     | Anjelina Adriani    |      | 1      |                          |
| 99  | Ibingu Village     | Eleneus Eliasi      | 1    |        |                          |
| 100 | Ibingu Village     | Eliasi Mahala       | 1    |        |                          |
| 101 | Ibingu Village     | Dominick Leo        | 1    |        |                          |
| 102 | Ibingu Village     | Enyasi Jeremiah     | 1    |        | VNRC                     |
| 103 | Ibingu Village     | Gabrieli Mohamedi   | 1    |        |                          |
| 104 | Ibingu Village     | Liana Gasi          |      | 1      |                          |
| 105 | Ibingu Village     | Malino Mtwale       | 1    |        |                          |
| 106 | Ibingu Village     | Patrick Yohani      | 1    |        |                          |
| 107 | Ibingu Village     | Lusia Mkunda        |      | 1      |                          |
| 108 | Ibingu Village     | Monika Salum        |      | 1      |                          |
| 109 | Ibingu Village     | Bertha Rafaeli      |      | 1      |                          |
| 110 | Ibingu Village     | Maneno Balalu       | 1    |        |                          |
| 111 | Ibingu Village     | Siwema Kasiani      |      | 1      |                          |
| 112 | Ibingu Village     | Bahati Mtalima      | 1    |        | T.H (??)                 |
| 113 | Ibingu Village     | Karoli Mgana        | 1    |        | Timber dealer            |
| 114 | Ibingu Village     | Salima Makudali     |      | 1      | Elder                    |
| 115 | Ibingu Village     | Jeremia Eleza       | 1    |        | Elder                    |
| 116 | Ibingu Village     | Thomas Nkunda       | 1    |        | Christian rep            |
| 117 | Ibingu Village     | Hamis Kilanza       | 1    |        | Islamic rep              |
| 118 | Ibingu Village     | Salum Mandela       | 1    |        | Charcoal dealer          |
| 119 | Kisongwe Village   | Mayenga Nyanda      |      |        | VC                       |
| 120 | Kisongwe Village   | Lauriani mkuchu     | 1    |        |                          |
| 121 | Kisongwe Village   | Thomasi Chiduo      | 1    |        |                          |
| 122 | Kisongwe Village   | Gerald Mahungo      | 1    |        |                          |
| 123 | Kisongwe Village   | Faustini Luciani    | 1    |        |                          |
| 124 | Kisongwe Village   | Patris Dominick     | 1    |        |                          |
| 125 | Kisongwe Village   | Yuvinus Epimaki     |      | 1      |                          |
| 126 | Kisongwe Village   | Monica Joseph       |      | 1      |                          |
| 127 | Kisongwe Village   | Leoniam Mkwama      |      | 1      |                          |
| 128 | Kisongwe Village   | Sesilia Simoni      |      | 1      |                          |

| SN  | LOCATION         | NAME OF PARTICIPANT | MALE | FEMALE | GROUP WHICH REPRESENTING |
|-----|------------------|---------------------|------|--------|--------------------------|
| 129 | Kisongwe Village | Thomas Paskali      | 1    |        | Elder                    |
| 130 | Kisongwe Village | Tecla Filipino      |      | 1      | Elder                    |
| 131 | Kisongwe Village | Andrea Vikta        | 1    |        | T.H                      |
| 132 | Kisongwe Village | Hamisi Kalistande   | 1    |        | Timber dealer            |
| 133 | Kisongwe Village | George Raphaeli     | 1    |        | Christian rep            |
| 134 | Kisongwe Village | Maria Dudi          |      | 1      | Charcoal maker           |
| 135 | Kisongwe Village | Maria John          |      | 1      | Christian rep            |
| 136 | Kisongwe Village | Alfani Chamoto      | 1    |        | VNRC                     |
| 137 | Kisongwe Village | Thomas Sehoya       | 1    |        |                          |
| 138 | Kisongwe Village | Odilia Cosmas       |      | 1      |                          |
| 139 | Kisongwe Village | Leonce Dominick     | 1    |        |                          |
| 140 | Kisongwe Village | Joseph Danieli      | 1    |        |                          |
| 141 | Kisongwe Village | Keneth Mikaeli      | 1    |        |                          |
| 142 | Kisongwe Village | Selina Jeradi       |      | 1      |                          |
| 143 | Kisongwe Village | Teofili Gome        | 1    |        |                          |
| 144 | Kisongwe Village | Fokasi Valentini    | 1    |        |                          |
| 145 | Kisongwe Village | Festo Charles       | 1    |        |                          |
| 146 | Kisongwe Village | Femia Dominick      |      | 1      |                          |
| 147 | Kisongwe Village | Ezekieli Mkuchu     | 1    |        |                          |
| 148 | Mfuluni Village  | Gerald Pita Lui     | 1    |        | VC                       |
| 149 | Mfuluni Village  | Esteria Fabiani     |      | 1      |                          |
| 150 | Mfuluni Village  | Agnes Paulo         |      | 1      |                          |
| 151 | Mfuluni Village  | Elizabeth Ludovick  |      | 1      |                          |
| 152 | Mfuluni Village  | Eliasi Joackim      | 1    |        |                          |
| 153 | Mfuluni Village  | Meresiana Nikola    |      | 1      |                          |
| 154 | Mfuluni Village  | Festo Sehoya        | 1    |        |                          |
| 155 | Mfuluni Village  | Ernest Paskali      | 1    |        |                          |
| 156 | Mfuluni Village  | John Alofini        | 1    |        |                          |
| 157 | Mfuluni Village  | Agnetha Modesti     |      | 1      |                          |
| 158 | Mfuluni Village  | John Benard         | 1    |        |                          |
| 159 | Mfuluni Village  | Anthony Pita        | 1    |        |                          |
| 160 | Mfuluni Village  | Bonfasi Benwa       | 1    |        | VNRC                     |
| 161 | Mfuluni Village  | Alex Paulo          | 1    |        |                          |
| 162 | Mfuluni Village  | Frenk Alofini       | 1    |        |                          |
| 163 | Mfuluni Village  | Ernest Mariseli     | 1    |        |                          |
| 164 | Mfuluni Village  | Joseph Isaya        | 1    |        |                          |
| 165 | Mfuluni Village  | Clemence Selestini  | 1    |        |                          |
| 166 | Mfuluni Village  | Kandida Remy        | 1    |        |                          |
| 167 | Mfuluni Village  | Mariam Zakaria      |      | 1      |                          |
| 168 | Mfuluni Village  | Bonifasi Paskali    | 1    |        |                          |
| 169 | Mfuluni Village  | Benadetha William   |      | 1      |                          |
| 170 | Mfuluni Village  | Monika Mikaeli      |      | 1      |                          |
| 171 | Mfuluni Village  | Isaya Mageni        | 1    |        |                          |
| 172 | Mfuluni Village  | William Mathias     | 1    |        | Christian rep.           |
| 173 | Mfuluni Village  | Kulwa Mbawe         | 1    |        | Islamic rep              |
| 174 | Mfuluni Village  | Alfred Kadwe        | 1    |        | Timber dealer            |
| 175 | Mfuluni Village  | Damas Jonasi        | 1    |        | Charcoal maker           |
| 176 | Mfuluni Village  | Josephine Lazaro    |      | 1      | T.H                      |
| 177 | Mfuluni Village  | Veronica Pita       |      | 1      | Elder                    |
| 178 | Mfuluni Village  | Paskali Sudi        | 1    |        | Elder                    |
| 179 | Mfuluni Village  | Eliasi Mikaeli      | 1    |        | T.H                      |
| 180 | Mkadage Village  | Mohamedi Hamisi     | 1    |        | VC                       |
| 181 | Mkadage Village  | Challo Vicenti      | 1    |        |                          |
| 182 | Mkadage Village  | Eliasi Manusa       | 1    |        |                          |
| 183 | Mkadage Village  | Tamba Omari         | 1    |        |                          |
| 184 | Mkadage Village  | Odilia Alfonsi      |      | 1      |                          |
| 185 | Mkadage Village  | Juma Mohamedi       | 1    |        |                          |
| 186 | Mkadage Village  | Athanasi Gabrieli   | 1    |        |                          |
| 187 | Mkadage Village  | Mwajuma Chamuma     |      | 1      |                          |
| 188 | Mkadage Village  | Mage Joseph         |      | 1      |                          |
| 189 | Mkadage Village  | Anesia John         |      | 1      |                          |
| 190 | Mkadage Village  | Daudi Makwaya       | 1    |        |                          |
| 191 | Mkadage Village  | Joseph Mathias      | 1    |        | VNRC                     |
| 192 | Mkadage Village  | Salum Mkopi         | 1    |        |                          |
| 193 | Mkadage Village  | Rashidi Hussein     | 1    |        |                          |
| 194 | Mkadage Village  | Maria Michaeli      |      | 1      |                          |
| 195 | Mkadage Village  | Kasere Hassan       | 1    |        |                          |
| 196 | Mkadage Village  | Shida Ismaili       |      | 1      |                          |

| SN  | LOCATION           | NAME OF PARTICIPANT  | MALE | FEMALE | GROUP WHICH REPRESENTING |
|-----|--------------------|----------------------|------|--------|--------------------------|
| 197 | Mkadage Village    | Farida Ramadhani     |      | 1      |                          |
| 198 | Mkadage Village    | Petro Dimu           | 1    |        |                          |
| 199 | Mkadage Village    | Hussein Sulemani     | 1    |        |                          |
| 200 | Mkadage Village    | Yustini John         | 1    |        |                          |
| 201 | Mkadage Village    | Christina Chaheka    |      | 1      |                          |
| 202 | Mkadage Village    | Nesto Joseph         | 1    |        |                          |
| 203 | Mkadage Village    | Amina Nzumari        |      | 1      | elder                    |
| 204 | Mkadage Village    | Petro Fabiani        | 1    |        | Elder                    |
| 205 | Mkadage Village    | Shukuru Bryton       | 1    |        | Timber dealer            |
| 206 | Mkadage Village    | Amina Kizi           |      | 1      | T.H                      |
| 207 | Mkadage Village    | Selenesta Petro      | 1    |        | Christian rep            |
| 208 | Mkadage Village    | Alli Kamwaya         | 1    |        | Islamic rep              |
| 209 | Lunenzi Village    | Maulidi Hamisi       | 1    |        | VC                       |
| 210 | Lunenzi Village    | Benjamini Kingunya   | 1    |        |                          |
| 211 | Lunenzi Village    | Damian Adrea         | 1    |        |                          |
| 212 | Lunenzi Village    | Petronia Danieli     |      | 1      |                          |
| 213 | Lunenzi Village    | Agostino Kobwa       | 1    |        |                          |
| 214 | Lunenzi Village    | Agnesi Maliki        |      | 1      |                          |
| 215 | Lunenzi Village    | Ekaristi Makoba      | 1    |        |                          |
| 216 | Lunenzi Village    | Saimoni Mwagula      | 1    |        |                          |
| 217 | Lunenzi Village    | Emiliani Mdoma       | 1    |        |                          |
| 218 | Lunenzi Village    | Luka Hassani         | 1    |        |                          |
| 219 | Lunenzi Village    | Damiani Lusembe      | 1    |        |                          |
| 220 | Lunenzi Village    | Maria Gaitani        |      | 1      |                          |
| 221 | Lunenzi Village    | Sophia Mkada         |      | 1      |                          |
| 222 | Lunenzi Village    | Saidi Adam           | 1    |        | Timber dealer            |
| 223 | Lunenzi Village    | Paulo Kimwaganja     | 1    |        | Elder                    |
| 224 | Lunenzi Village    | Hassan Madabuka      | 1    |        | Islamic rep              |
| 225 | Lunenzi Village    | Joackim Ngoliga      | 1    |        | Christian rep            |
| 226 | Lunenzi Village    | Anitha Thomasi       |      | 1      | T.H                      |
| 227 | Lunenzi Village    | Katarina Ramadhani   |      | 1      | elder                    |
| 228 | Lunenzi Village    | Paulina Hassan       |      | 1      | VNRC                     |
| 229 | Lunenzi Village    | Isaya Chikaba        | 1    |        |                          |
| 230 | Lunenzi Village    | Joseph Jenga         | 1    |        |                          |
| 231 | Lunenzi Village    | Eliasi Madabuka      | 1    |        |                          |
| 232 | Lunenzi Village    | John Mtomo           | 1    |        |                          |
| 233 | Lunenzi Village    | Emilia Chalahani     | 1    |        |                          |
| 234 | Lunenzi Village    | Silivano Paulo       | 1    |        |                          |
| 235 | Lunenzi Village    | John Maandaji        | 1    |        |                          |
| 236 | Lunenzi Village    | Salum Omari          | 1    |        |                          |
| 237 | Lunenzi Village    | Sabina Malonga       |      | 1      |                          |
| 238 | Lunenzi Village    | Elisha Nyaumba       | 1    |        |                          |
| 239 | Lunenzi Village    | Janeth Taribo        |      | 1      |                          |
| 240 | Masugu Juu Village | Philipo Nyambuya     | 1    |        |                          |
| 241 | Masugu Juu Village | Selemani Saidi       | 1    |        |                          |
| 242 | Masugu Juu Village | Mwinyimkuu Ramadhani |      |        |                          |
| 243 | Masugu Juu Village | Juma Simba           | 1    |        |                          |
| 244 | Masugu Juu Village | Tina Rashidi         |      | 1      |                          |
| 245 | Masugu Juu Village | Maiko Maliganza      | 1    |        |                          |
| 246 | Masugu Juu Village | Madina Yusuph        |      | 1      |                          |
| 247 | Masugu Juu Village | Zainabu Alli         |      | 1      |                          |
| 248 | Masugu Juu Village | Godi Yahaya          | 1    |        |                          |
| 249 | Masugu Juu Village | Shabani Pilipili     | 1    |        |                          |
| 250 | Masugu Juu Village | Kondo Omari          | 1    |        |                          |
| 251 | Masugu Juu Village | Haji Ramadhani       | 1    |        |                          |
| 252 | Masugu Juu Village | Mohamedni Omari      | 1    |        | VNRC                     |
| 253 | Masugu Juu Village | Salum Saidi          | 1    |        |                          |
| 254 | Masugu Juu Village | Omari Pilipili       | 1    |        |                          |
| 255 | Masugu Juu Village | Shahibu Rajabu       | 1    |        |                          |
| 256 | Masugu Juu Village | Anna Kushoka         |      | 1      |                          |
| 257 | Masugu Juu Village | Edina Nyambuya       |      | 1      |                          |
| 258 | Masugu Juu Village | Julius Mzula         | 1    |        |                          |
| 259 | Masugu Juu Village | Juma Omari           | 1    |        |                          |
| 260 | Masugu Juu Village | Kassim Mabomba       | 1    |        |                          |
| 261 | Masugu Juu Village | Fatuma Suleimani     |      | 1      |                          |
| 262 | Masugu Juu Village | Emmanuel Samweli     | 1    |        |                          |
| 263 | Masugu Juu Village | Asha Hussein         |      | 1      |                          |
| 264 | Masugu Juu Village | Hussein Hassan       | 1    |        | Islamic rep              |

| SN  | LOCATION           | NAME OF PARTICIPANT   | MALE | FEMALE | GROUP WHICH REPRESENTING |
|-----|--------------------|-----------------------|------|--------|--------------------------|
| 265 | Masugu Juu Village | Sospita Madole        | 1    |        | Christian rep            |
| 266 | Masugu Juu Village | Saidi Alli            | 1    |        | Elder                    |
| 267 | Masugu Juu Village | Halima Mazalika       |      | 1      | Elder                    |
| 268 | Masugu Juu Village | Gabrieli Udoba        | 1    |        | T.H                      |
| 269 | Masugu Juu Village | Mohamedi .O. Pilipili | 1    |        | Charcoal maker           |
| 270 | Masugu Juu Village | Haji Ramadhani        | 1    |        | Timber dealer            |
| 271 | Idete Village      | Modesta Martini       |      | 1      | VC                       |
| 272 | Idete Village      | Edesi Ferdinandi      | 1    |        |                          |
| 273 | Idete Village      | Selestini Selili      | 1    |        |                          |
| 274 | Idete Village      | Stivini Mdeo          | 1    |        |                          |
| 275 | Idete Village      | Charles Kidama        | 1    |        |                          |
| 276 | Idete Village      | Stephania Martini     |      | 1      |                          |
| 277 | Idete Village      | Anastasia Kasiani     |      | 1      |                          |
| 278 | Idete Village      | Revina Anthony        |      | 1      |                          |
| 279 | Idete Village      | Patrick Madege        | 1    |        |                          |
| 280 | Idete Village      | Modesta Martini       |      | 1      |                          |
| 281 | Idete Village      | Anna Raphaeli         |      | 1      |                          |
| 282 | Idete Village      | Walibodi Ndijila      | 1    |        |                          |
| 283 | Idete Village      | Jackson Mkunda        | 1    |        |                          |
| 284 | Idete Village      | Christopha John       | 1    |        |                          |
| 285 | Idete Village      | Sesilia Pius          | 1    |        |                          |
| 286 | Idete Village      | Benedicti Martini     | 1    |        |                          |
| 287 | Idete Village      | Julius Nyato          | 1    |        | Timber dealer            |
| 288 | Idete Village      | Magreth Pita          |      | 1      | elder                    |
| 289 | Idete Village      | Faresi Chidugo        | 1    |        | T.H                      |
| 300 | Idete Village      | Ferdinandi Ndijila    | 1    |        | elder                    |
| 301 | Idete Village      | Sebastiani Xsaveri    | 1    |        | Christian Rep            |
| 302 | Idete Village      | Ally Salehe.          | 1    |        | Islamic Rep              |
| 303 | Idete Village      | Rene Fransis          | 1    |        | VNRC                     |
| 304 | Idete Village      | Martin Michaeli       | 1    |        |                          |
| 305 | Idete Village      | Petrina Petro         |      | 1      |                          |
| 306 | Idete Village      | Selina Damiani        |      | 1      |                          |
| 307 | Idete Village      | Agata Kasiani         |      | 1      |                          |
| 308 | Idete Village      | Ludovick Pius         | 1    |        |                          |
| 309 | Idete Village      | Patric Simoni         | 1    |        |                          |
| 310 | Idete Village      | Alfred Joseph         | 1    |        |                          |
| 311 | Idete Village      | Amoni Lazaro          | 1    |        |                          |
| 312 | Idete Village      | John Christofa        | 1    |        |                          |
| 313 | Idete Village      | Charles Kerioaba      | 1    |        |                          |
| 314 | Idete Village      | Paulo Alberti         | 1    |        |                          |
| 315 | Idete Village      | Karolina Eliasi       |      | 1      |                          |
| 316 | Idete Village      | Merina Sebastiani     |      | 1      |                          |
| 317 | Idete Village      | Geradi Ibrahimu.      | 1    |        |                          |
| 318 | Ilonga Village     | Rose Matulu           |      | 1      | VC                       |
| 319 | Ilonga Village     | Grace Maksime         |      | 1      |                          |
| 320 | Ilonga Village     | Neema Manege          |      | 1      |                          |
| 321 | Ilonga Village     | Matola Paskali        | 1    |        |                          |
| 322 | Ilonga Village     | Alice Semwenda        |      | 1      |                          |
| 323 | Ilonga Village     | Deo Gothadi           | 1    |        |                          |
| 324 | Ilonga Village     | Yahaya Ally           | 1    |        |                          |
| 325 | Ilonga Village     | Zuberi Omari          | 1    |        |                          |
| 326 | Ilonga Village     | Ludovick Kombania     | 1    |        |                          |
| 327 | Ilonga Village     | Cesilia Peter Zangiro |      | 1      |                          |
| 328 | Ilonga Village     | Mariselina Pita       |      | 1      |                          |
| 329 | Ilonga Village     | Juliana Stefano       |      | 1      |                          |
| 330 | Ilonga Village     | Danieli Francis       | 1    |        | VNRC                     |
| 331 | Ilonga Village     | Canisius Vicent       | 1    |        |                          |
| 332 | Ilonga Village     | Siwatu Shomvi         |      | 1      |                          |
| 333 | Ilonga Village     | Peter Edmundi         | 1    |        |                          |
| 334 | Ilonga Village     | Raymondi chack        | 1    |        |                          |
| 335 | Ilonga Village     | Colettha Petrol       |      | 1      |                          |
| 336 | Ilonga Village     | Mwanaidi Juma         |      | 1      |                          |
| 337 | Ilonga Village     | Celisiana Gothadi     |      | 1      |                          |
| 338 | Ilonga Village     | Moses John            | 1    |        |                          |
| 339 | Ilonga Village     | Matias Bernadi        | 1    |        |                          |
| 340 | Ilonga Village     | Lucy Kilumbi          |      | 1      |                          |
| 341 | Ilonga Village     | Christophina Joseph   | 1    |        |                          |
| 342 | Ilonga Village     | Nebati Mgoya          | 1    |        |                          |

| SN  | LOCATION              | NAME OF PARTICIPANT | MALE | FEMALE | GROUP WHICH REPRESENTING |
|-----|-----------------------|---------------------|------|--------|--------------------------|
| 343 | Ilonga Village        | Laurent Benard      | 1    |        |                          |
| 344 | Ilonga Village        | Wille Ngito         | 1    |        |                          |
| 345 | Ilonga Village        | Ray mondi Ezekieli  | 1    |        | Timber Dealer            |
| 346 | Ilonga Village        | Salum Mkindu        | 1    |        | Elder                    |
| 347 | Ilonga Village        | Zainab Mlonge       |      | 1      | Elder                    |
| 348 | Ilonga Village        | Paskali Msanga      | 1    |        | T.H                      |
| 349 | Ilonga Village        | Mwinyi Ramadhani    | 1    |        | Islamic rep              |
| 350 | Ilonga Village        | Martini Zongo       | 1    |        | Christian rep            |
| 351 | Masugu Kati Village   | Asha Saidi          |      | 1      | VC                       |
| 352 | Masugu Kati Village   | Anna Jakson         |      | 1      |                          |
| 353 | Masugu Kati Village   | Andrea Kibiliti     | 1    |        |                          |
| 354 | Masugu Kati Village   | Paulo Meshaki       | 1    |        |                          |
| 355 | Masugu Kati Village   | Pembe Hasani        | 1    |        |                          |
| 356 | Masugu Kati Village   | Jakson Karonga      | 1    |        |                          |
| 357 | Masugu Kati Village   | Yahaya Adam         | 1    |        |                          |
| 358 | Masugu Kati Village   | Simoni Yoeli.       | 1    |        |                          |
| 359 | Masugu Kati Village   | Joseph Aranus       | 1    |        |                          |
| 360 | Masugu Kati Village   | Alfodi L. Mkwama    | 1    |        |                          |
| 361 | Masugu Kati Village   | Jofrey Tomasi       | 1    |        |                          |
| 362 | Masugu Kati Village   | Lucia Maiko         |      | 1      | VNRC                     |
| 363 | Masugu Kati Village   | Suzana Pita         |      | 1      |                          |
| 364 | Masugu Kati Village   | Alex Rigazio        | 1    |        |                          |
| 365 | Masugu Kati Village   | Filimati Filimini   | 1    |        |                          |
| 366 | Masugu Kati Village   | Athumani Omari      | 1    |        |                          |
| 367 | Masugu Kati Village   | Ramadhani Yusuph    | 1    |        |                          |
| 368 | Masugu Kati Village   | Stivini Andrea      | 1    |        |                          |
| 369 | Masugu Kati Village   | Sofia Masamla       |      | 1      |                          |
| 370 | Masugu Kati Village   | Pholian Paul        | 1    |        |                          |
| 371 | Masugu Kati Village   | Lukasi Tobiasi      | 1    |        |                          |
| 372 | Masugu Kati Village   | Agatoni Nikodemu    | 1    |        |                          |
| 373 | Masugu Kati Village   | Miriamu Mtalazi.    |      | 1      |                          |
| 374 | Masugu Kati Village   | Mathiasi Malechela  | 1    |        | Christian Rep            |
| 375 | Masugu Kati Village   | Mwanahamisi Hamadi  |      | 1      | Islamic Rep              |
| 376 | Masugu Kati Village   | Tobiasi Lukasi      | 1    |        | Elder                    |
| 377 | Masugu Kati Village   | Halima Mfaume       |      | 1      | Elder                    |
| 378 | Masugu Kati Village   | Mohamed Salehe      | 1    |        | Charcoal Maker           |
| 379 | Masugu Kati Village   | Mussa Magwaza       | 1    |        | T.H (??)                 |
| 380 | Dodoma Isanga Village | Joseph Ernesti      | 1    |        | VC                       |
| 381 | Dodoma Isanga Village | Ashura Mraji        |      | 1      |                          |
| 382 | Dodoma Isanga Village | Stivini Sadala      | 1    |        |                          |
| 383 | Dodoma Isanga Village | Alex Chindie        | 1    |        |                          |
| 384 | Dodoma Isanga Village | Maria Msamamba      |      | 1      |                          |
| 385 | Dodoma Isanga Village | Abedi Msamamba      | 1    |        |                          |
| 386 | Dodoma Isanga Village | Onesmo F. Magota    | 1    |        |                          |
| 387 | Dodoma Isanga Village | Lusticki Kanisa     | 1    |        |                          |
| 388 | Dodoma Isanga Village | Mwajuma Ramadhani   |      | 1      |                          |
| 389 | Dodoma Isanga Village | Donatusi Bazili.    | 1    |        |                          |
| 390 | Dodoma Isanga Village | Theodori Komba      | 1    |        |                          |
| 391 | Dodoma Isanga Village | Hamisi Abiria       | 1    |        | VNRC                     |
| 392 | Dodoma Isanga Village | Erasto Ngunwa       | 1    |        |                          |
| 393 | Dodoma Isanga Village | Joseph Mhagama      | 1    |        |                          |
| 394 | Dodoma Isanga Village | Idd Juma            | 1    |        |                          |
| 395 | Dodoma Isanga Village | Lusia Msamamba      |      | 1      |                          |
| 396 | Dodoma Isanga Village | Aroni Mshani        | 1    |        |                          |
| 397 | Dodoma Isanga Village | Hasani Saidi        | 1    |        |                          |
| 398 | Dodoma Isanga Village | Selina Mkinga       |      | 1      |                          |
| 399 | Dodoma Isanga Village | Frola Donatusi      |      | 1      |                          |
| 400 | Dodoma Isanga Village | Magreti Patrisi     |      | 1      |                          |
| 401 | Dodoma Isanga Village | Juliana Bruno.      |      | 1      |                          |
| 402 | Dodoma Isanga Village | Chalesi Tendega     | 1    |        |                          |
| 403 | Dodoma Isanga Village | Silvanusi Kanisa.   | 1    |        | Christian Rep            |
| 404 | Dodoma Isanga Village | Saidi Hamisi        | 1    |        | Islamic Rep              |
| 405 | Dodoma Isanga Village | Ibrahimu Kamwaya    | 1    |        | Timber Dealer            |
| 406 | Dodoma Isanga Village | Alufani Salumu      | 1    |        | Charcoal Maker           |
| 407 | Dodoma Isanga Village | Waziri Jafari       | 1    |        | Elder                    |
| 408 | Dodoma Isanga Village | Anzigary Komba      | 1    |        | Elder                    |
| 409 | Dodoma Isanga Village | Idi Mkoma           | 1    |        | T.H                      |

Participants in landscape-level workshop  
(25 – 28 July, 2011 in Morogoro, Tanzania):

|    | Name of Participant | Gender |      | Primary occupation<br>(Group which representing)     | Village/District |
|----|---------------------|--------|------|--|------------------|
|    |                     |        |      |  |                  |
| 1  | John Mwanzemo       |        | Male | Farmer   | Kisanga          |
| 2  | Hemed S. Bakhamis   |        | Male | Farmer   | Dodoma Isanga    |
| 3  | Rahel John          | Female |      | Farmer   | Zombo            |
| 4  | Julius S. Magingi   |        | Male | Natural Resource Committee                           | Chabima Village  |
| 5  | Lustik D.Kanisa     |        | Male | Chairperson - Village Council                        | Dodoma Isanga    |
| 6  | Abel A. Mhcome      |        | Male | District Agricultural Officer                        | Kilosa District  |
| 7  | Wilfred Pima        |        | Male | F.C-REDD   | Kilosa Site      |
| 8  | Radegunda Ngowi     | Female |      | Community Development Officer                        | Kilosa District  |
| 9  | Stephen R.Mtuta     |        | Male | Ward Executive Officer                               | Mbuga Mpupwa     |
| 10 | Bilali Msabaha      |        | Male | Ward Executive Officer                               | Chanzuru         |
| 11 | Amer Mbarak         |        | Male | Chairperson - Village Council                        | Kilosa           |
| 12 | Harold Chabonga     |        | Male | Village Executive Officer                            | Ilonga           |
| 13 | Laulian Mkuchu      |        | Male | Chairperson - Village Council                        | Kisongwe         |
| 14 | Magreth Patrick     | Female |      | Natural Resource Committee                           | Dodoma Isanga    |
| 15 | Mezea Said          |        | Male | Representative of UMIZOMA Network (what network?)    | Dodoma Isanga    |
| 16 | Feruzi S. Kiulah    |        | Male | Forest Development Officer, Forest & Beekeeping Div. | Dar-Es-Salaam    |
| 17 | Rehema R. Akida     | Female |      | District Agriculture Development Officer             | Kilosa           |
| 18 | Juliana Mwenda      | Female |      | MJUMITA Eastern zone board member                    | MJUMITA          |
| 19 | Laurent Kadenguka   |        | Male | Researcher   | Are Ilanga       |
| 20 | Juma Naweke         |        | Male | Ward Executive Officer                               | Lumbiji          |
| 21 | Faustine L. Kamili  |        | Male | Farmer   | Kisongwe         |
| 22 | Othmar Haule        |        | Male | Natural Resource Officer                             | Kilosa District  |
| 23 | Kilian Razalo       |        | Male | Traditional healer                                   | Idete            |
| 24 | Agneta M. Chuma     | Female |      | Farmer   | Mfuluni          |
| 25 | Falenki Olfen       |        | Male | Natural Resource Committee                           | Mfuluni          |
| 26 | Gerald P.Lui        |        | Male | Chairperson - Village Council                        | Mfuluni          |
| 27 | Mohamed Pilipili    |        | Male | Farmer   | Masugu Juu       |
| 28 | Sikudhan Y. Magawa  | Female |      | Natural Resource Committee                           | Malolo           |
| 29 | Abdalla Lukwambe    |        | Male | Village Executive Officer                            | Nyali            |
| 30 | Jeremia Maberege    |        | Male | Secretary - of ?                                     | Msimba/M         |
| 31 | Angelo Sekeni       | Female |      | Chairperson - Village Council                        | Munisagara       |
| 32 | Odilia Cosmas       | Female |      | Chairperson - VNRC                                   | Kisongwe         |
| 33 | Simon Rusahila      |        | Male | Charcoal producer                                    | Dodoma ISANGA    |
| 34 | Salehe Kamwaya      |        | Male | Chairperson of MAJUKU network for forest convs.      | Kilosa Town      |
| 35 | Yustin Mkoba        |        | Male | Village Council Member                               | Munisagara       |
| 36 | Asilumba Athumani   |        | Male | Village Council Member                               | Munisagara       |
| 37 | Adrian Kisani       |        | Male | Village Executive Officer                            | Ibingu           |
| 38 | Enyasi J.Eleza      |        | Male | Village Council Member                               | Ibingu           |
| 39 | Mlonga S. Mlonga    |        | Male | Chairperson - Village Council                        | Chabima          |
| 40 | Shela Hamadi        | Female |      | Farmer   | Chabima          |
| 41 | Maria Gaitani       | Female |      | Farmer   | Lunenzi          |
| 42 | Maria Michael       | Female |      | Farmer   | Mkadima          |
| 43 | Emilian D. Mdoma    | Female |      | Village Executive Officer                            | Lunenzi          |
| 44 | Salumu Omari        |        | Male | Village Council Member                               | Lunenzi          |
| 45 | Oliver B. Ngasana   | Female |      | Forest Officer                                       | Kilosa District  |
| 46 | Deo Lisanga         |        | Male | Ward Executive Officer                               | Lumuma           |
| 47 | Lucy D. Kilumbi     | Female |      | Village Council Member                               | Kilosa           |
| 48 | Siwatu Abdallah     | Female |      | Village Council Member                               | Ilonga           |
| 49 | Agrey Chidesa       |        | Male | Village Council Member                               | Idaho            |
| 50 | Charles W.Keroba    |        | Male | Farmer   | Idete            |
| 51 | Beatus D.Mgimba     | Female |      | Chairperson - Village Council                        | Mpwapwa          |
| 52 | Costansia Malenda   | Female |      | Accountant   | Kizi Mpwapwa     |
| 53 | Michael P.Kusakali  |        | Male | Farmer   | Mpwapwa          |
| 54 | Salestin Silili     |        | Male | Village Executive Officer                            | Idete            |
| 55 | Anyesi Kinoza       |        | Male | Village Council Member                               | Mpwapwa          |
| 56 | Charles Leonard     |        | Male | REAP/TKG PM (provide complete name of org.)          | Mbuga            |
| 57 | Chikira H.S.        |        | Male | Participatory Forest Management Coordinator          | Kilosa           |
| 58 | Godson Y. Chiduli   |        | Male | Ward Executive Officer                               | Masanze          |
| 59 | Tuyeni Mwampamba    | Female |      | Facilitator/Consultant                               | Morogoro         |
| 60 | Joyce Mzava         | Female |      | Teacher  | Ilonga           |
| 61 | Hezron Swago        |        | Male | Driver - REDD Project Kilosa                         | Kilosa Site      |
| 62 | Bettie Luwuge       | Female |      | Project Manager MJUMITA-TFCG REDD Project            | Dar Es Salaam    |
| 63 | Gerald Alphonse     |        | Male | Driver- REAP   | Mbuga            |
| 64 | Athmani Nchimbi     |        | Male | Driver-District Council                              | Kilosa           |



## ANNEX 2: SUMMARY OF VILLAGE SPECIFIC ORIGINAL CONDITIONS

### Brief history:

|                      | Chabima   | Dodoma Isanga   | Ibingu   | Idete | Ilonga  | Kisongwe   | Lunenzi | Masugu Juu | Masugu kati | Mfuluni | Mkadage | Munisagara | Nyali |
|----------------------|---|---|--|-------|---|--|---------|------------|-------------|---------|---------|------------|-------|
| <b>Brief History</b> | <p>Village was established during the <i>villagisation</i> Act of 1974 and registered in 1993.</p> <p>Chabima Village is named after an old man called "Mpima" of the Vidunda tribe who came to the area around 1900.</p> | <p>Dodoma Isanga was established before the <i>villagisation Act</i>. It used to be a sisal estate owned by a Greek. In the early days, most people living in Dodoma Isanga were of the Manamba tribe and were employed by the sisal estate.</p> <p>The village is named after an old man of the Gogo tribe (from Dodoma Region). When drunk he would say "I am going home to Dodoma" i.e., to his house. The name is the unification of Dodoma and Isanga - the name of the sisal Estate</p> | <p>This village was established in 1974 during the <i>villagisation Act</i>. It was registered in the same year.</p> <p>The native tribemen are the Sagara originally from Malolo on the Morogoro-Iringa border.</p> <p>The village name originates from the Sagara word "Ibingula" which means "famous for witchcraft".</p> |       | <p>Established before the <i>villagisation Act</i> and registered in 1976.</p> <p>The native tribemen are the Kaguru. The name "Ilonga" is a Kaguru word meaning "talk".</p> <p>The village was named after an incidence in which a patient suffering from mental health was taken for treatment down to Mission health centre in Bustani area. When the doctor asked him to tell him where he came from, the patient did not respond until his relatives told - in Kaguru - to speak "longa". Misunderstanding, the doctor thought that he came from a place called Longa.</p> | <p>This village was established during <i>villagisation Act</i> and registered in 1976.</p> <p>The village is named after an old man called Kisongo who founded the community. The name was changed to Kisongwe because it is easier to pronounce.</p> |         |            |             |         |         |            |       |

**Public and Social services:**

|                         | <b>Chabima</b>  | <b>Dodoma Isanga</b>   | <b>Ibingu</b>  | <b>Idete</b>  | <b>Ilonga</b>   | <b>Kisongwe</b>  | <b>Lunenzi</b>  | <b>Masugu Juu</b>  | <b>Masugu Kati</b>  | <b>Mfuluni</b>   | <b>Mkadage</b>  | <b>Munisagara</b>   | <b>Nyali</b>   |
|-------------------------|---|--|--|---|---|--|---|--|---|--|---|---|--|
| <b>Nursery school</b>   | No nursery school; children wait until they are old enough to go to primary school    | No nursery school; children wait until they are old enough to go to primary school | No nursery school; children wait until they are old enough to go to primary school | No nursery school; children wait until they are old enough to go to primary school  | Three (3) nursery schools, all less than 1 km                                       | No nursery school; children wait until they are old enough to go to primary school                     | One nursery school  | No nursery school; children wait until they are old enough to go to primary school                                 | No nursery school; children wait until they are old enough to go to primary school  | No nursery school; children wait until they are old enough to go to primary school | No nursery school; children wait until they are old enough to go to primary school  | No nursery school; children wait until they are old enough to go to primary school  | No nursery school; children wait until they are old enough to go to primary school |
| <b>Primary school</b>   | One school; Buildings are dilapidated ; only three teachers.                          | One school; dilapidated buildings; six teachers.                                   | One school; dilapidated buildings; six teachers.                                   | One school; only three classrooms for all levels; five teachers                     | Three primary schools in the village with sufficient number of classes and teachers | Two schools: Mlenga and Kisongwe. Mlenga School has one room and one teacher; Kisongwe has 6 teachers. | There is no school; Children attend the Ibingu Primary School about 13 km away  | There is no school; Children attend either Lamlilo, Misufini, Magomeni and Dinima Primary schools, about 4 km away | There is no school; Children attend Magomeni (4 km away) or Dinima (2 km), or Kipekenya (4 km) Primary Schools                        | One school in the village with 3 classrooms and 2 teachers; buildings dilapidated. | One school with dilapidated buildings and 8 teachers.                               | One school with 5 teachers and insufficient classrooms. Buildings dilapidated       | One school with dilapidated buildings and 6 teachers.                              |
| <b>Secondary school</b> | No secondary school; attend Changarawe Secondary School ( 40 km away in Masanze Ward) | No secondary school; attend Changarawe Secondary School (15km away)                | No secondary school; attend Lumuma Secondary School (10 km away in Lumuma Ward)    | No secondary school; attend Chanzuru Secondary School (45 km away in Chanzuru Ward) | No secondary school; attend Chanzuru Secondary School (1 km away in Chanzuru Ward)  | No school; attend Chanzuru Secondary School (30 km away in Chanzuru Ward)                              | No secondary school; attend Lumuma Secondary School (20 km away in Lumuma Ward) | No secondary school; attend Kutukutu Secondary School (19 km away in Magomeni Ward)                                | No secondary school; attend Kutukutu and Changarawe Secondary Schools (19 and 18 km away, respectively in Magomeni and Masanze Wards) | No secondary school; attend Chanzuru Secondary School (30km away in Chanzuru Ward) | No secondary school; attend Kutukutu Secondary School (12 km away in Magomeni Ward) | No secondary school; attend Kutukutu Secondary School (23 km away in Magomeni Ward) | No secondary school; attend Zombo Secondary School (3 km away in Zombo Ward)       |
| <b>Health services</b>  | No health   | No health  | No health  | No health   | Two health  | No health  | No health   | No health  | No health   | No health  | No health   | No health   | No health  |

|                                      | <b>Chabima</b>  | <b>Dodoma Isanga</b>  | <b>Ibingu</b>   | <b>Idete</b>  | <b>Ilonga</b>  | <b>Kisongwe</b>  | <b>Lunenzi</b>  | <b>Masugu Juu</b>   | <b>Masugu Kati</b>  | <b>Mfuluni</b>  | <b>Mkadage</b>  | <b>Munisagara</b>   | <b>Nyali</b>   |
|--------------------------------------|---|---|---|---|--|--|---|---|---|---|---|---|--|
|                                      | service; attend Magomeni Health Centre (50 km away)   | service; attend Magomeni Health Centre (50 km away)   | service; attend Luma Health Centre (12 km away)   | service; attend Msimba Health Centre (40 km away)   | centres in Msimba and Gongon subvillages (2 km away from village centre); services are moderate      | service; attend Lumbiji Mission Dispensary (5 km away); Facilities and quality of service are moderate | service; attend to Luma Health Centre (12 km away)  | service; attend Magomeni Health Centre (11 km away)   | service; attend Magomeni Health Centre (10 km away)   | service; attend Msimba Health Centre (20km away)  | service; attend Magomeni Health Centre (10 km away)   | service; attend Magomeni Health Centre (22km away)  | service; attend Zombo Health Centre (8 km away)  |
| <b>Roads</b>                         | roads are unpaved and almost impassible during the rainy season   | roads are unpaved and almost impassible during the rainy season   | roads are unpaved and almost impassible during the rainy season   | no road; only walking paths   | roads are unpaved and almost impassible during the rainy season                                      | roads are unpaved and almost impassible during the rainy season  | roads are unpaved and almost impassible during the rainy season   | roads are unpaved and almost impassible during the rainy season   | roads are unpaved and almost impassible during the rainy season   | roads are unpaved and full of rocks   | No roads; They walk along the railway lines to get to other villages  | No roads; They walk along the railway lines to get to other villages  | roads are unpaved and almost impassible during the rainy season                          |
| <b>Water services</b>                | Water sourced from rivers, and one well; No water fees; River water of poor quality; Well water of better quality | Water sourced from rivers, and one well; No water fees; River water of poor quality; Well water of better quality | Water sourced from rivers, and one well; No water fees; River water of poor quality; Well water of better quality | Water sourced from rivers, and one well; No water fees; River water of poor quality; Well water of better quality | Well water is available in the sub-villages; no water fee charged; water is of moderate quality      | Tap water available from the Mission; water fees charged; water quality is good                        | Water sourced from rivers, and one well; No water fees; River water of poor quality; Well water of better quality | Water sourced from rivers, and one well; No water fees; River water of poor quality; Well water of better quality | Water sourced from rivers, and one well; No water fees; River water of poor quality; Well water of better quality | Water sourced from rivers, and one well; No water fees; River water of poor quality; Well water of better quality | Water sourced from rivers, and one well; No water fees; River water of poor quality; Well water of better quality | Water sourced from rivers, and one well; No water fees; River water of poor quality; Well water of better quality | Water sources are downstream, no water fee charged; water quality is poor                |
| <b>Meeting space/community space</b> | No official meeting space; Meetings conducted under shade trees   | No official meeting space; Meetings conducted under shade trees   | No official meeting space; Meetings conducted under shade trees   | No official meeting space; Meetings conducted under shade trees   | No official meeting space; Meetings conducted under shade trees                                      | No official meeting space; Meetings conducted under shade trees  | No official meeting space; Meetings conducted under shade trees   | No official meeting space; Meetings conducted under shade trees   | No official meeting space; Meetings conducted under shade trees   | No official meeting space; Meetings conducted under shade trees   | No official meeting space; Meetings conducted under shade trees   | No official meeting space; Meetings conducted under shade trees   | No official meeting space; Meetings conducted under shade trees                          |
| <b>Market place or building</b>      | One market place in Shuleni sub-village; Space is too small and has not toilet facilities and water;              | No market place, people sell their commodities from their homes or at local brew places.                          | No market place, people sell their commodities from their homes or at local brew places.                          | No market place, people sell their commodities from their homes or at local brew places.                          | One small market place in Msalabani sub-village; lacks toilet facilities, water; market is conducted | No market place, people sell their commodities from their homes or at local brew places.               | No market place, people sell their commodities from their homes or at local brew places.                          | No market place, people sell their commodities from their homes or at local brew places.                          | No market place, people sell their commodities from their homes or at local brew places.                          | No market place, people sell their commodities from their homes or at local brew places.                          | No market place, people sell their commodities from their homes or at local brew places.                          | No market place, people sell their commodities from their homes or at local brew places.                          | No market place, people sell their commodities from their homes or at local brew places. |

|   | Chabima  | Dodoma Isanga   | Ibingu   | Idete  | Ilonga  | Kisongwe   | Lunenzi  | Masugu Juu  | Masugu Kati   | Mfuluni  | Mkadage  | Munisagara   | Nyali   |
|---|--|---|--|--|---|--|--|---|---|--|--|--|---|
|   | Market day is on Sundays   |   |  |  | along the road; Market day is on Sunday   |  |  |   |   |  |  |  |   |
| <b>Village administrative office and areas where Assembly meetings are held</b> | Have a small office; Assembly meetings are held at the primary school or under trees.                                  | Rent an office hired, but it is small and insufficient; Assembly meetings are held under trees                    | Have an incomplete office. Once completed it will provide sufficient space for admin.                                  | Rent an office, but it is small and insufficient; Assembly meetings are held at the primary school.                    | Rent an office, but it is small and insufficient; Council meetings are held in individual's compounds             | Have an incomplete office. Once completed it will provide sufficient space for admin                                   | Don't have an office; Council meetings are held in individual's compounds  | Don't have an office; Council meetings are held under trees   | Don't have an office; Council meetings are held under trees   | Rent an office; it is small and insufficient; Meetings are held at the primary school.                                 | Rent an office; it is small and insufficient; Meetings are held at the primary school.                                 | Rent an office; it is small and insufficient; Meetings are held at the primary school.                                 | Rent an office; it is small and insufficient; Meetings are held at the primary school.                            |
| <b>Communal food Storage facility</b>   | Don't have a communal storage facility; Everyone stores in their own homes in traditional storage units and sacks      | Don't have a communal storage facility; Everyone stores in their own homes in traditional storage units and sacks | Don't have a communal storage facility; Everyone stores in their own homes in traditional storage units and sacks      | Don't have a communal storage facility; Everyone stores in their own homes in traditional storage units and sacks      | Don't have a communal storage facility; Everyone stores in their own homes in traditional storage units and sacks | Don't have a communal storage facility; Everyone stores in their own homes in traditional storage units and sacks      | Don't have a communal storage facility; Everyone stores in their own homes in traditional storage units and sacks      | Don't have a communal storage facility; Everyone stores in their own homes in traditional storage units and sacks | Don't have a communal storage facility; Everyone stores in their own homes in traditional storage units and sacks | Don't have a communal storage facility; Everyone stores in their own homes in traditional storage units and sacks      | Don't have a communal storage facility; Everyone stores in their own homes in traditional storage units and sacks      | Don't have a communal storage facility; Everyone stores in their own homes in traditional storage units and sacks      | Don't have a communal storage facility; Everyone stores in their own homes in traditional storage units and sacks |
| <b>Communication with relatives living elsewhere</b>                            | Communicate with relatives via letters, physical visits, send messages through Radio Jamii, and some, via mobile phone | Communicate with relatives via letters, physical visits, send messages through Radio Jamii,                       | Communicate with relatives via letters, physical visits, send messages through Radio Jamii, and some, via mobile phone | Communicate with relatives via letters, physical visits, send messages through Radio Jamii, and some, via mobile phone | Communicate with relatives via letters, physical visits, send messages through Radio Jamii,                       | Communicate with relatives via letters, physical visits, send messages through Radio Jamii, and some, via mobile phone | Communicate with relatives via letters, physical visits, send messages through Radio Jamii, and some, via mobile phone | Communicate with relatives via letters, physical visits, send messages through Radio Jamii,                       | Communicate with relatives via letters, physical visits, send messages through Radio Jamii,                       | Communicate with relatives via letters, physical visits, send messages through Radio Jamii, and some, via mobile phone | Communicate with relatives via letters, physical visits, send messages through Radio Jamii, and some, via mobile phone | Communicate with relatives via letters, physical visits, send messages through Radio Jamii, and some, via mobile phone | Communicate with relatives via letters, physical visits, send messages through Radio Jamii,                       |
| <b>Transport between villages in Project Zone</b>                               | By foot, motor bicycles taxis, bicycles and cars   | By foot, motor bicycles taxis, bicycles and cars  | By foot, motor bicycles taxis, bicycles and cars   | By foot, motor bicycles taxis, and bicycles  | By foot, motor bicycles taxis, bicycles and cars  | By foot, motor bicycles taxis, bicycles and cars   | By foot only   | By foot, motor bicycles taxis, bicycles and cars  | By foot, motor bicycles taxis, and bicycles   | By foot, motor bicycles taxis, and bicycles  | By foot, motor bicycles taxis, and bicycles  | By foot, motor bicycles taxis, and bicycles  | By foot, motor bicycles taxis, and bicycles   |
| <b>Religious infrastructure</b>   | 1 mosque<br>2 churches   | 2 mosque<br>6 churches  | No mosque<br>1 church  | No mosque<br>3 churches  | 3 mosques<br>11   | No mosque<br>3 churches  | No mosques   | No mosques  | No mosque<br>2 churches   | No mosque<br>1 church  | 1 mosque<br>1 church   | 1 mosque<br>3 churches   | 2 mosques<br>4 churches   |

|  | Chabima | Dodoma Isanga | Ibingu | Idete | Ilonga   | Kisongwe | Lunenzi     | Masugu Juu  | Masugu Kati | Mfuluni | Mkadage | Munisagar a | Nyali |
|--|---------|---------------|--------|-------|----------|----------|-------------|-------------|-------------|---------|---------|-------------|-------|
|  |         |               |        |       | churches |          | No churches | No churches |             |         |         |             |       |

## Governance

|  | Chabima  | Dodoma Isanga  | Ibingu   | Idete  | Ilonga  | Kisongwe   | Lunenzi  | Masugu Juu     | Masugu Kati   | Mfuluni   | Mkadage        | Munisagar a                                   | Nyali   |
|--|--|--|--|--|---|--|--|----------------|---|---|----------------|---|---|
| <b>Village Council (Is it full and functional)</b>   | Councils is fully formed and functional  | Councils is fully formed and functional  | Councils is fully formed and functional  | Councils is fully formed and functional  | Councils is fully formed and functional   | Councils is fully formed and functional  | Councils is fully formed and functional  | Not applicable | Not applicable  | Councils is fully formed and functional   | Not applicable | Councils is fully formed and functional       | Councils is fully formed and functional   |
| <b>Village Gov't committees</b>  | All required committees formed and functional  | All required committees formed and functional  | All required committees formed and functional  | All required committees formed and functional  | All required committees formed and functional   | All required committees formed and functional  | All required committees formed and functional  | Not applicable | Not applicable  | All required committees formed and functional   | Not applicable | All required committees formed and functional | All required committees formed and functional   |
| <b>Gender balance in Council (Does council have required # of females or close? Do women hold leadership positions?)</b> | Gender balance achieved as required per by law: 8 out of 25 members are women in Council. Two of the women are leaders | Gender balance achieved as required per by law: 8 out of 25 members are women in Council. One woman is a leader (security) | Gender balance achieved as required per by law: 8 out of 25 members are women in Council. Two are leaders (secretaries of construction & security) | Gender balance achieved as required per by law: 8 out of 25 members are women in Council. None is a leader | Gender balance achieved as required per by law: 8 out of 25 members are women in Council. One is a leader of security committee | Gender balance achieved as required per by law: 8 out of 25 members are women in Council. Two are leaders. | Gender balance achieved as required per by law: 8 out of 25 members are women in Council. None is a leader | Not applicable | Not applicable  | Gender balance achieved as required per by law: 8 out of 25 members are women in Council. | Not applicable |   | Gender balance achieved as required per by law: 8 out of 25 members are women in Council. One woman is a leader |
| <b>Village meetings (No. Meetings held in last 12 months; attendance rates; challenges regarding meetings)</b>           | Four meetings held<br><br>Satisfactory attendance rate<br><br>Challenges: Low financial contribution                   | Four meetings held<br><br>Satisfactory attendance rate<br><br>Challenges: in formations acceptance                         | Two meetings held<br><br>Satisfactory attendance rate<br><br>Challenges: Council unable to provide the   | Four meetings held<br><br>Unsatisfactory Attendance rate<br><br>Challenges: community does not get         | Three meetings held<br><br>Unsatisfactory attendance rate<br><br>Challenges: People are too busy                                |  | Two meetings held<br><br>Satisfactory rates of attendance<br><br>Challenges: late attendances, low         |                | Seven meetings held<br><br>Satisfactory rates of attendance<br><br>Challenges: Communities demand developme |   |                |   | Three meetings<br><br>Unsatisfactory attendance rates<br><br>Challenges: Low attendance.                        |

|   | Chabima  | Dodoma Isanga  | Ibingu  | Idete   | Ilonga  | Kisongwe  | Lunenzi  | Masugu Juu   | Masugu Kati  | Mfuluni  | Mkadage  | Munisagara   | Nyali  |
|---|--|--|---|---|---|---|--|--|--|--|--|--|--|
|   | n from the community for community projects (building materials for dispensary)  |  | community timely reports of income and expenditures   | any assistance from the District & National govt  | trying to make ends meet to attend meetings   |   | participation during the meetings; need to threaten people to gather for meetings                                    |  | nt projects  |  |  |  |  |
| <b>Organisational capacity of the VC (do meetings have agendas? Is reporting done correctly?)</b> | Yes. Meetings have agendas and reporting is done correctly   | Yes. Meetings have agendas and reporting is done correctly                                 | Yes. Meetings have agendas and reporting is done correctly  | Yes. Meetings have agendas and reporting is done correctly  | Yes. Meetings have agendas and reporting is done correctly  | Yes. Meetings have agendas and reporting is done correctly  | Yes. Meetings have agendas and reporting is done correctly   | Yes. Meetings have agendas and reporting is done correctly | Yes. Meetings have agendas and reporting is done correctly | Yes. Meetings have agendas and reporting is done correctly | Yes. Meetings have agendas and reporting is done correctly | Yes. Meetings have agendas and reporting is done correctly | Yes. Meetings have agendas and reporting is done correctly                           |
| <b>Work plans for village government</b>  | They are making bricks for various planned construction projects; Constructing village office; Are completing school toilet at primary school; Establishing an irrigation scheme | Making earth bricks for community development projects: Construction of village dispensary | Constructing: village govt office, 2 teachers houses, maintenance of two water wells, construction of village dispensary, construction of butchery and market | Completing one class building; Providing man power to build village govt office (REDD project finance); Constructing road from Ilonga to village,; Following up with Central govt offices on construction of village dispensary | Completing construction of a ward secondary school within the village; Building and three primary school classes at Mazoezi primary school; Constructing village govt office; Installing tap water system | Completing constructions of Lumbiji primary school toilet, one secondary teacher house, one class room and one office in Mlenga and Kisongwe sub-villages | Constructing road from Kokoto-Lunenzi; Building village govt office and primary school (one office & two classrooms) | NA: arranged by the district                               | NA: arranged by the district                               |  | NA: arranged by the district                               |  | Constructing village dispensary, govt office and teachers' housing                   |
| <b>Income &amp; expenditures</b>  | Largest expenditure is TSH 40,000,000 to be spent on establishing irrigation   | largest expenditure was TSH 1,700,000 for construction of two classrooms at secondary      | Largest expenditure was TSH 5,900,000 for construction of irrigation  |   | Largest expenditure was TSH 500,000 for construction of nursery school  |   | Largest expenditure was TSH 500,000/= for the construction of nursery  | NA: arranged by the district                               | NA: arranged by the district                               |  | NA: arranged by the district                               |  | Largest expenditure was TSH 1,500,000 spent on construction of teachers' housing and |

|  | <b>Chabima</b>  | <b>Dodoma Isanga</b>  | <b>Ibingu</b>  | <b>Idete</b> | <b>Ilonga</b> | <b>Kisongwe</b> | <b>Lunenzi</b> | <b>Masugu Juu</b> | <b>Masugu Kati</b> | <b>Mfuluni</b> | <b>Mkadag e</b> | <b>Munisagar a</b> | <b>Nyali</b>  |
|--|---|---|--|--------------|---------------|-----------------|----------------|-------------------|--------------------|----------------|-----------------|--------------------|---|
|  | scheme;<br>Inform the village assembly about VC income & expenditures | school. procedures for expenditure is<br>Inform the village assembly about VC income & expenditures | schemes.<br>Inform the village assembly about VC income & expenditures |              |               |                 | school         |                   |                    |                |                 |                    | two classrooms at secondary school.<br>Inform the village assembly about VC income & expenditures |

## Formal & informal institutions in village:

|   | Chabima   | Dodoma Isanga  | Ibingu  | Idete  | Ilonga   | Kisongwe   | Lunenzi   | Masugu juu  | Masugu kati   | Mfuluni  | Mkadage   | Munisagara  | Nyali   |
|---|---|--|---|--|--|--|---|---|---|--|---|---|---|
| <b>Formal Microfinance facilities/schemes</b>                                 | None exist  | None exist   | None exist  | None exist   | None exist   | None exist   | None exist  | None exist  | None exist  | None exist   | None exist  | None exist  | None exist  |
| <b>Informal credit institutions (how do individuals obtain credit/loans?)</b> | Village community banks (VICOBA)  | VICOBA   | None exist  | VICOBA   | VICOBA   | None exist   | None exist  | VICOBA  | None exist  | VICOBA   | None exist  | None exist  | VICOBA  |
| <b>Pastoralists (does community share area with pastoralist?)</b>             | Community shares area with pastoralists. No formal arrangements exist   | Community shares area with pastoralists. No formal arrangements exist  | No pastoralists graze their livestock in the village area | No pastoralists graze their livestock in the village area  | Community shares area with pastoralists. No formal arrangements exist  | No pastoralists graze their livestock in the village area  | No pastoralists graze their livestock in the village area | Community shares area with pastoralists. No formal arrangements exist | Community shares area with pastoralists. No formal arrangements exist   | No pastoralists graze their livestock in the village area  | No pastoralists graze their livestock in the village area   | No pastoralists graze their livestock in the village area | Community shares area with pastoralists. No formal arrangements exist   |
| <b>Existing local organisations (CBO, credit groups, etc)</b>                 | REDD Project of TFCG/MJUMI TA: Forest management<br><br>HUDESA: supports vulnerable children at school and in homes | REDD Project of TFCG/MJUMI TA: Forest management<br><br>WODESA: supports vulnerable children at schools and in homes.<br><br>TASAF: District programme supporting cow husbandry for milk production<br><br>SEMLESA: supporting chickpeas cultivation | REDD Project of TFCG/MJUMI TA: Forest management          | REDD Project of TFCG/MJUMI TA: Forest management<br><br>Village Community Bank (VICOBA): Savings and credits services<br><br>CAMFED: supports vulnerable children at school and in homes<br><br>Ginger project: Ginger cultivation (in initial implementation phase) | REDD Project of TFCG/MJUMI TA: Forest management<br><br>HUDESA and CAMFED: support education for vulnerable children<br><br>DADEPS: support for agriculture through irrigation systems<br><br>Ruvu Water Basin: conservation of water sources<br><br>ASA: Agricultural Seed Agency | REDD Project of TFCG/MJUMI TA: Forest management<br><br>Village SACCOS: Savings and credits services<br><br>WODESA: supports vulnerable children at school and in homes<br><br>Mission (RC) Hospital: support health services and clean and safe water | REDD Project of TFCG/MJUMI TA: Forest management          | REDD Project of TFCG/MJUMI TA: Forest management                      | REDD Project of TFCG/MJUMI TA: Forest management<br><br>HUDESA: supports vulnerable children at school and in homes | REDD Project of TFCG/MJUMI TA: Forest management<br><br>Village Community Bank (VICOBA): Savings and credits services<br><br>CAMFED: supports vulnerable children at school and in homes<br><br>Ginger project: Ginger cultivation (in initial implementation phase) | REDD Project of TFCG/MJUMI TA: Forest management<br><br>HUDESA: supports vulnerable children at school and in homes | REDD Project of TFCG/MJUMI TA: Forest management          | REDD Project of TFCG/MJUMI TA: Forest management<br><br>VICOBA: Savings and credits services<br><br>HUDESA: supports vulnerable children at school and in homes |



## Agriculture and Natural Resources:

|   | Chabima                                 | Dodoma Isanga   | Ibingu                                  | Idete   | Ilonga                                  | Kisongwe                      | Lunenzi                                 | Masugu juu  | Masugu kati                                       | Mfuluni                                 | Mkadage  | Munisagara                                  | Nyali                                |
|---|---|---|---|---|---|-------------------------------|---|---|---|---|--|---|--------------------------------------|
| <b>Average farm size per household</b>  | 1-2 acres                               | 1-2 acres   | 1 acre                                  |   | 5 acres                                 |                               | 2 acres                                 | 1-2 acres   |   | 2.5 acres                               | 1-3 acres  |   | X – Y acres                          |
| <b>Length of time that a field is used before abandoning</b>                          | 2-3 yrs                                 | Do not practice shifting cultivation  | Do not practice shifting cultivation    | 5 yrs   | 2 yrs                                   | 2 yrs                         | Do not practice shifting cultivation    | Do not practice shifting cultivation  | Do not practice shifting cultivation              | 3yrs                                    | 3yrs   | 3yrs  | Do not practice shifting cultivation |
| <b>Length of fallow period</b>  | 3 yrs                                   | Do not practice shifting cultivation  | Do not practice shifting cultivation    | 2-3 yrs   | 3 yrs                                   | 4 yrs                         | Do not practice shifting cultivation    | Do not practice shifting cultivation  | Do not practice shifting cultivation              | yrs                                     | 3yrs   | 2yrs  | Do not practice shifting cultivation |
| <b>Land use plan (does LUP exist? If in progress, how far along? Any challenges?)</b> | LUP process completed                   | LUP process not yet initiated   | LUP process completed                   | LUP process not yet initiated   | LUP process not yet initiated           | LUP process not yet initiated | LUP process not yet initiated           | LUP process not yet initiated   | LUP process not yet initiated                     | LUP process not yet initiated           | LUP process not yet initiated  | LUP process not yet initiated               | LUP process not yet initiated        |
| <b>Land certificate (does village have one?)</b>                                      | Do not have certificate                 | Do not have certificate   | Do not have certificate                 | Do not have certificate   | Do not have certificate                 | Do not have certificate       | Do not have certificate                 | Do not have certificate   | Do not have certificate                           | Do not have certificate                 | Do not have certificate  | Do not have certificate                     | Do not have certificate              |
| <b>Participatory Forest Management (is PFM established)</b>                           | Established                             | Established   | Established                             | Not yet established   | Not yet established                     | Not yet established           | Not yet established                     | Not yet established   | Not yet established                               | Not yet established                     | Not yet established  | Not yet established                         | Not yet established                  |
| <b>Any Government forest reserves in or adjacent to the village</b>                   | No National or District forest reserves | No National or District forest reserves   | No National or District forest reserves | No National or District forest reserves   | No National or District forest reserves | Mamiwa FR                     | No National or District forest reserves | No National or District forest reserves   | No National or District forest reserves           | No National or District forest reserves | No National or District forest reserves  | No National or District forest reserves     | Ukwiva FR                            |
| <b>Fuel wood (Quantity, quality, distance, fees, etc)</b>                             |   | Still plentiful; Preferred species: brachystegia, msani and mlama.                      |   | Available close to living area. Preferred species: msani, miyombo, mlama, mtalawanda and mtarula.                       |   |                               | Still plentiful;                        | Still plentiful;  | Still plentiful;                                  | Still plentiful;                        | Still plentiful;   | Preferred species: msani, mlama and miyombo | Available only in forest area        |
| <b>Timber availability (quantity, quality, access)</b>                                |   | Found far from the village centre:<br><br>Preferred spp: mtondolo, msungwi and muninga. |   | Found far from the village centre:<br><br>Preferred spp: mvule, zambarau pori, mpilipili, mmanga, muninga and mkangazi, |   |                               | Still plentiful                         | Found far from the village centre:<br><br>Preferred spp: msungwi, mkangazi, myenye, msani, mtondoro, mwembeti | Sparely available<br><br>Preferred species: msani |   | Found far from the village centre:<br><br>Preferred species: msani, mkenge, msenad, mkundi. Mvule, | found only in the village                   |                                      |

|  | Chabima | Dodoma Isanga   | Ibingu  | Idete   | Ilonga | Kisongwe | Lunenzi   | Masugu juu  | Masugu kati  | Mfuluni   | Mkadage  | Munisagara   | Nyali |
|--|---------|---|---|---|--------|----------|---|---|--|---|--|--|-------|
|  |         |   |   | llage   |        |          |   | and mkundi  |  |   | mkangazi and muninga finished  |  |       |
| <b>Charcoal &amp; other use of wood products</b>   |         | Charcoal produced;<br><br>Preferred species: mlama,   |   |   |        |          | Charcoal produced;<br><br>Plentiful forest available to continue production   |   |  |   |  | Charcoal is not produced   |       |
| <b>Food from forests and non-ag areas (availability, contribution to diet, financial contribution to household, etc)</b> |         | Many different mushroom varieties collected: kitofu, ulelema, yunyungu, fisi, chuguu, uhinda, upoa,             |   | Many different mushroom varieties collected: luduo, kikuli, msani, ulelema, midan'golo, gologolo, kigutwi, mchuzi wa kuku, mafunda and chuguu.<br><br>Collection is done by youths and women. |        |          | Many different mushroom varieties collected   | Many different mushroom varieties collected: yunguyungu, fisi, chuguu, berege, mtogo and, ulelema .   | Many different mushroom varieties collected: yunguyungu, fisi, chuguu, kitofu, berege, mtogo and, ulelema .  | Many different mushroom varieties collected: luduo, kikuli, masi, mafunda, ulelema, ulimi wa kondoo, gologolo and chuguu.                               | Many different mushroom varieties collected: ulelema, kikuli, mshale, luduo, sape, mndulla, mbelega and chuguu   | Many different mushroom varieties collected: msandi, mwamwali, chuguu, kikuli, mbelega and, ulelema .  |       |
| <b>Medicinal plants</b>  |         | Collect; plentiful  | Collect: mkwambek wambe, mng'unungu, mtugutu, Masada, msakala | Collected but found far from the village  |        |          | Collect: plentiful  | Collected but found far from the village  | Collected but found far from the village   | Collected but found far from the village  | Collected but found far from the village   | Collected: found near the village  |       |
| <b>Wild fruits (availability, economic importance,</b>   |         | Collect: Furu, maguhu, Masada, pera, mpingi, ng'ongo, tongatonga and topetope pori;<br><br>Considered plentiful | Collect: mafuru, Masada                                       | Collect: mabungo, vitolwe, msambia, msungwe, tongatonga, wild anona, zambarau pori, tundwe, Furu, Masada and manjakwe<br><br>Availability and quantity has decreased                          |        |          | Collect: mabungo, matolwe, msambia, wild anona, zambarau pori, tundwe, Furu, maguhu, Masada, manjakwe and meremre<br><br>Considered plentiful | Collect: Furu, maguhu, Masada, msambia, mafiga, ukwaju, tongatonga, ng'ongo, kitolwe, mtundwe, topetope and buyu.<br><br>Considered plentiful | Collect: Furu, maguhu, Masada, msambia, mafiga, ukwaju, tongatonga, ng'ongo, kitolwe, mtundwe, topetope and buyu.<br><br>Availability and quantity has decreased | Collect: mabungo, matolwe, msambila, wild anona, zambarau pori, tundwe, Furu, maguhu, Masada, manjakwe and meremre<br><br>Availability and quantity has | Collect: Furu, maguhu, Masada, msambia, mafiga, ukwaju, tongatonga, ng'ongo, kitolwe, manjakwe, pera, makole, msulupi, mkwata, mkuyu mtundwe, topetope and buyu. | Collect: Furu, maguhu, Masada, msambia, mafiga, ukwaju, tongatonga, ng'ongo, kitolwe, mtundwe, topetope and buyu<br><br>Considered plentiful |       |

|   | Chabima  | Dodoma Isanga  | Ibingu   | Idete  | Ilonga                                       | Kisongwe  | Lunenzi   | Masugu juu   | Masugu kati  | Mfuluni  | Mkadage  | Munisagara  | Nyali  |
|---|--|--|--|--|--|---|---|--|--|--|--|---|--|
|   |  |  |  |  |  |   |   |  |  | decreased                                      | Considered plentiful   |   |  |
| <b>Bush meat (type, restrictions, market)</b> |  | Hunt: dik dik wild pigs, ndezi, monkeys, hares, panyabuku, nungunungu, kima, kware and kanga | Hunt: mbawala, digidigi, nguruwe, sungura      |  |  |   | Hunt: dik dik wild pigs, ndezi, mbawala, funo, mbawala, wild pig, kololo, kware and panya buku. | Hunt: nguruwe, mbawala, haluzi, funo, digidigi, ngiri, muhanga<br><br>less plentiful than previous years | Hunt: nguruwe, funo, ngiri, panya buku and ndezi<br><br>less plentiful than previous years |  | Hunt: mbawala, fungo, nungu, mbuzi mawe, funo, digidigi, ngiri, panya buku and ndezi<br><br>less plentiful than previous years | Hunt: palahala, kima, nguruwe, mbawala, haluzi, funo, digidigi, ndezi, ngiri, pimbi kanga<br><br>less plentiful than previous years |  |
| <b>Building Poles</b>                         |  | Use: mpingo, mtundwe, muhanga, mkambala, muhungu and msola<br><br>Considered plentiful       |  | Use; Are less available                        | Use; Are less available                      | Use; Are less available                         | Use: mihamvi, mmanga, mwiza, mkunju and mlama.<br><br>Considered plentiful                      | Use: msani, mwamvi, mung'we, mgumba, kisunga, mlama, msati and mperara mwitu                             | Use, but scarce  |  | Use: mihawi, muhe and mlama mweusi<br><br>Considered plentiful   | Use: msani, mwamvi, mung'we, mgumba, kisunga, mlama, msati and mperara mwitu. But found far from village                            |  |
| <b>Wild honey</b>                             | Do not harvest wild honey                      | Do not harvest wild honey  | Do not harvest wild honey                      | Do not harvest wild honey                      | Do not harvest wild honey                    | Harvest   | Do not harvest wild honey   | Harvest, not common  | Harvest a little bit   | Do not harvest wild honey                      | Harvest  | Harvest   | Do not harvest wild honey                    |
| <b>Bee hives (private or group-owned)</b>     | Do not practice beekeeping                     | 8 traditional beehives; owned privately, found at Mtarulani                                  | Do not practice beekeeping                     | Do not practice beekeeping                     | Keep bees in Gongoni and TTC muhenda         | Traditional beekeeping by individual and groups | Do not practice beekeeping  | 3 private traditional beehives kept  | 3 private traditional beehives kept  | Do not practice beekeeping                     | 200 modern beehives, owned by group, used commercially   | Do not practice beekeeping  | Do not practice beekeeping                   |
| <b>Procedure for timber harvesting</b>        | no procedure, medium level of illegal activity | no procedure, high level of illegal activity   | no procedure, medium level of illegal activity | no procedure, medium level of illegal activity | no procedure, high level of illegal activity | no procedure, medium level of illegal activity  | no procedure, medium level of illegal activity  | no procedure, high level of illegal activity   | no procedure, high level of illegal activity   | no procedure, medium level of illegal activity | no procedure, medium level of illegal activity   | no procedure, medium level of illegal activity  | no procedure, high level of illegal activity |
| <b>Mining (artisanal)</b>                     | No mining conducted                            | No mining conducted  | No mining conducted                            | Artisinal mining of gold conducted             | No mining conducted                          | No mining conducted                             | No mining conducted   | No mining conducted  | No mining conducted  | No mining conducted                            | No mining conducted  | No mining conducted   | No mining conducted                          |
| <b>Problem animals</b>                        | Monkeys (destroy crops)                        | Monkeys (destroy crops)  | Monkeys (destroy crops)                        | Monkeys (destroy crops)                        | No problem animals                           | Monkeys (destroy crops)                         | Monkeys (destroy crops)   | No problem animals   | No problem animals   | No problem animals                             | Monkeys (destroy crops)  | Monkeys (destroy crops)   | Monkeys (destroy crops)                      |

## Conflicts & Challenges to development and meeting REDD objectives

|  | Chabima  | Dodoma Isanga  | Ibingu   | Idete  | Ilonga   | Kisongwe   | Lunenzi  | Masugu juu   | Masugu kati  | Mfuluni  | Mkadage  | Munisagara   | Nyali  |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>Boundary conflicts (existing, past, how resolved)</b>       | No boundary conflicts exist  | No boundary conflicts exist  | No boundary conflicts exist  | Boundary conflicts exist; consist of neighbouring village accused of moving the bicons; still unresolved                         | Boundary conflicts exist between Msimba and Ilonga; unresolved   | No boundary conflicts exist  | No boundary conflicts exist  | No boundary conflicts exist  | Boundary conflicts exist between Masugu Kati and Dodoma Isanga; unresolved   | No boundary conflicts exist  | No boundary conflicts exist  | No boundary conflicts exist  | No boundary conflicts exist  |
| <b>Fire: Main reasons for setting fires</b>                    | Ndezi hunting and farm preparation, Accidental (cigarette smoking); clearance of forest to access trees for timber and firewood, | Ndezi hunting and farm preparation, Accidental (cigarette smoking); clearance of forest to access trees for timber and firewood, | Ndezi hunting and farm preparation, Accidental (cigarette smoking); clearance of forest to access trees for timber and firewood, | Ndezi hunting and farm preparation, Accidental (cigarette smoking); clearance of forest to access trees for timber and firewood, | Ndezi hunting and farm preparation, Accidental (cigarette smoking); clearance of forest to access trees for timber and firewood, | Ndezi hunting and farm preparation, Accidental (cigarette smoking); clearance of forest to access trees for timber and firewood, | Ndezi hunting and farm preparation, Accidental (cigarette smoking); clearance of forest to access trees for timber and firewood, | Ndezi hunting and farm preparation, Accidental (cigarette smoking); clearance of forest to access trees for timber and firewood, | Ndezi hunting and farm preparation, Accidental (cigarette smoking); clearance of forest to access trees for timber and firewood, | Ndezi hunting and farm preparation, Accidental (cigarette smoking); clearance of forest to access trees for timber and firewood, | Ndezi hunting and farm preparation, Accidental (cigarette smoking); clearance of forest to access trees for timber and firewood, | Ndezi hunting and farm preparation, Accidental (cigarette smoking); clearance of forest to access trees for timber and firewood, | Ndezi hunting and farm preparation, Accidental (cigarette smoking); clearance of forest to access trees for timber and firewood, |
| <b>Fire: Attitudes towards fires</b>                           | Belief that setting fire provides insight to life expectancy "testing hand"<br><br>Ndezi meat important protein source           | Belief that setting fire provides insight to life expectancy "testing hand"<br><br>Ndezi meat important protein source           | Belief that setting fire provides insight to life expectancy "testing hand"<br><br>Ndezi meat important protein source           | Belief that setting fire provides insight to life expectancy "testing hand"<br><br>Ndezi meat important protein source           | Belief that setting fire provides insight to life expectancy "testing hand"<br><br>Ndezi meat important protein source           | Belief that setting fire provides insight to life expectancy "testing hand"<br><br>Ndezi meat important protein source           | Belief that setting fire provides insight to life expectancy "testing hand"<br><br>Ndezi meat important protein source           | Belief that setting fire provides insight to life expectancy "testing hand"<br><br>Ndezi meat important protein source           | Belief that setting fire provides insight to life expectancy "testing hand"<br><br>Ndezi meat important protein source           | Belief that setting fire provides insight to life expectancy "testing hand"<br><br>Ndezi meat important protein source           | Belief that setting fire provides insight to life expectancy "testing hand"<br><br>Ndezi meat important protein source           | Belief that setting fire provides insight to life expectancy "testing hand"<br><br>Ndezi meat important protein source           | Belief that setting fire provides insight to life expectancy "testing hand"<br><br>Ndezi meat important protein source           |
| <b>Fire: Visible effects of fires</b>                          | Drying up of water sources; Killing of wild animals, Tree damage and destruction; Loss of property (houses)                      | Drying up of water sources; Killing of wild animals, Tree damage and destruction; Loss of property (houses)                      | Drying up of water sources; Killing of wild animals, Tree damage and destruction; Loss of property (houses)                      | Drying up of water sources; Killing of wild animals, Tree damage and destruction; Loss of property (houses)                      | Drying up of water sources; Killing of wild animals, Tree damage and destruction; Loss of property (houses)                      | Drying up of water sources; Killing of wild animals, Tree damage and destruction; Loss of property (houses)                      | Drying up of water sources; Killing of wild animals, Tree damage and destruction; Loss of property (houses)                      | Drying up of water sources; Killing of wild animals, Tree damage and destruction; Loss of property (houses)                      | Drying up of water sources; Killing of wild animals, Tree damage and destruction; Loss of property (houses)                      | Drying up of water sources; Killing of wild animals, Tree damage and destruction; Loss of property (houses)                      | Drying up of water sources; Killing of wild animals, Tree damage and destruction; Loss of property (houses)                      | Drying up of water sources; Killing of wild animals, Tree damage and destruction; Loss of property (houses)                      | Drying up of water sources; Killing of wild animals, Tree damage and destruction; Loss of property (houses)                      |
| <b>Fire: Reaction by Village govt to address fire problems</b> |  | Enforce by-law on fire   |  | Have by-laws on fire management  | Conduct awareness campaigns on the effect of fires   |  | law enforcement and fines TSH 5000 to10000   |  |  |  |  |  |  |

### ANNEX 3: PHOTO GALLERY



Chabima Village workshop to collect data on current conditions, future scenarios and community plans.



Group member presenting her groups vision in Ibingu Village.



Participants in the Idete village workshop to prepare a 10 year vision for the village