TANZANIA

Land Use
DIALOGUE

BACKGROUND PAPER

Tanzania Land Use Dialogue

in the SAGCOT Ihemi Cluster

OCTOBER 31 - NOVEMBER 3, 2016 – SOUTHERN TANZANIA

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PARTNERS

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SAGCOT ▪ TPSF Building Mwaya Road, Masaki, P.O. Box 11313 ▪ Dar es Salaam, Tanzania
O: +255 (0) 22 260 1024 ▪ M: +255 655 691 510 ▪ info@sagcot.com ▪ W: www.sagcot.com

LUD ▪ Yale University, New Haven, CT, U.S.
O: + 1 203 432 5966 ▪ T: @forestsdialogue ▪ info@theforestsdialogue.org ▪ W: www.theforestsdialogue.org

Introduction

The development of SAGCOT

In 2010, the Government of Tanzania launched the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) initiative as a public-private partnership dedicated to ensuring food security, reducing poverty and spurring economic development in Tanzania's Southern Corridor. Stretching from the Indian Ocean to the Zambian border, the Southern Corridor encompasses nearly 300,000 square kilometres stretching along both sides of the infrastructure backbone that extends inland from Dar es Salaam. While the region has considerable agricultural potential, it currently suffers from low productivity, low levels of investment, and high rates of poverty.

To unlock the region's potential, the SAGCOT Initiative seeks to attract more than US $3 billion of investment to greatly increase food production, increase annual farming revenues by more than US $1.2 billion, benefit small-scale farmers and the rural poor, and establish southern Tanzania as a regional food exporter. Meeting these ambitious goals will require a targeted strategy and realistic action plan to deploy resources, engage partners, and coordinate activities and investments throughout the Corridor.

The Ihemi Cluster

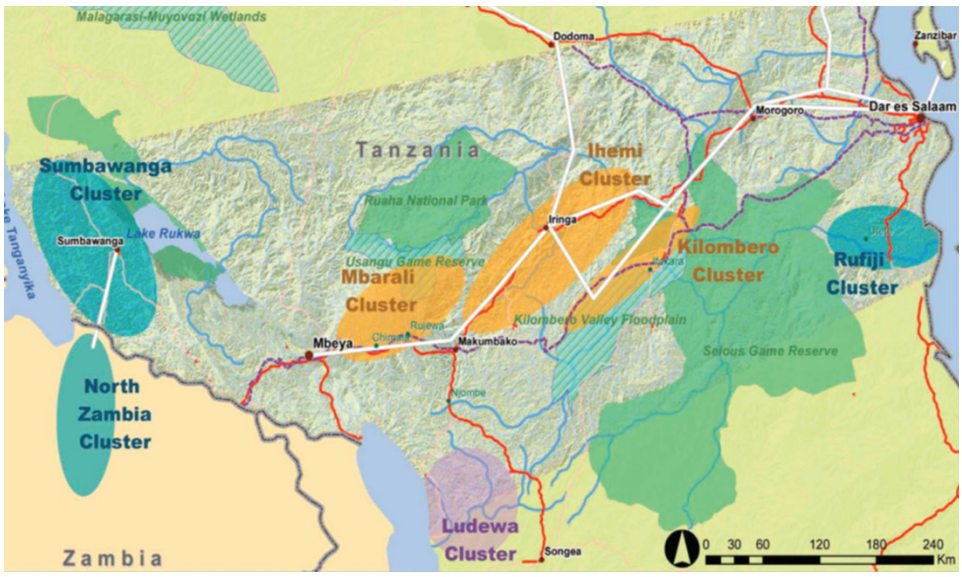

Figure 1: Map of SAGCOT Clusters[1]

1 Science for Nature and People Partnership (SNAPP). 2016. Encouraging Green Agricultural Development in the SAGCOT Region of Tanzania: Research Findings and Related Decision Support Tools. Report Submitted to SAGCOT Centre.

The SAGCOT strategy is centered on three key features: Public-private partnership, attention to benefits of smallholders and the Cluster approach. (See Figure 1 for a map of the SAGCOT clusters.) The Cluster approach is based on the idea that greater progress can be made by co-locating different types of investments in specified priority areas. SAGCOT defines the Cluster concept as 'geographic concentrations of interconnected companies, specialized suppliers, service providers, and associated institutions.'[2] Such Clustering creates vertical integration of agricultural production, processing, and marketing, while ensuring a critical mass of demand and supply to sustain full-service agricultural input supply chains, post-harvest value chains, and support functions. Of the six Clusters identified in the Blueprint as hubs for investment across the corridor, the SAGCOT Center has highlighted Ihemi as one in which opportunities are particularly promising.

The Ihemi Land-Use Dialogue and integrated landscape management

The Land-Use Dialogue (LUD) Initiative, launched in 2016, is being initiated by the SUSTAIN-Africa programme of IUCN which is designed to support action on sustainability and social inclusion in agricultural growth corridors in Africa. The LUD is designed to lead to tangible improvements on the ground by providing a space for constructive dialogue as the basis for exploring and reconciling stakeholder perspectives and priorities in the Cluster. It will facilitate a process to identify and ultimately implement key actions that promote Inclusive Green Growth (IGG).

A landscape approach is a conceptual framework whereby stakeholders in a landscape aim to reconcile competing social, economic and environmental objectives. It seeks to move away from the often-unsustainable sectoral approach to land management. A landscape approach aims to ensure the realisation of local level needs and action (i.e. the interests of different stakeholders within the landscape), while also considering goals and outcomes important to stakeholders outside the landscape, such as national governments or the international community. The LUD will seek to facilitate this process within the Ihemi Cluster by providing a space for constructive dialogue to reconciling stakeholder perspectives and priorities in the landscape and by providing programmatic support to the solutions identified by the dialogue process.

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2 Southern Agriculture Growth Corridor of Tanzania (SAGCOT), 2011. Investment Blueprint. http://www.sagcot.com/uploads/media/Invest-Blueprint-SAGCOT_High_res.pdf

Objective of the paper

The purpose of this paper is to provide background for the initial Ihemi LUD engagements, explore the principles on which the LUD will be based, and - based on the suggestions of the LUD stakeholders - identify potential issue areas of focus for the process.

Methodology

This paper was guided by the substantial body of work that has been produced to identify key agro-ecological, socio-economic, institutional and political issues related to SAGCOT objectives within the Corridor broadly as well as within the Ihemi Cluster in particular. Its ideas were also shaped by members of the Tanzania Land Use Dialogue Advisory Group who identified key issues that the Dialogue should aim to address. Organisations represented on the Advisory Group include: SAGCOT; IUCN/SUSTAIN; FAO Tanzania; African Wildlife Foundation; Njombe Regional Secretariat; Iringa Regional Secretariat; African Wildlife Foundation; CARE International; WWF Tanzania; Haki Ardhi Institute; President's Office Regional Administration and Local Government (RALG); Ministry of Agriculture, Livestock and Fisheries - Dept. of Land Use and Planning; and Journalists Environmental Association of Tanzania.

SAGCOT broadly

- SAGCOT Investment Blueprint (2011) spells out the SAGCOT Vision and details strategies for scaling up productive, profitable commercial agriculture in the region: http://www.sagcot.com/uploads/media/Invest-Blueprint-SAGCOT_High_res.pdf
- SAGCOT Greenprint (2012) is a green growth strategy, appended to the Investment Blueprint, to guide the "greening" of the agricultural investments: http://www.sagcot.com/uploads/media/SAGCOT_Greenprint.pdf
- The SAGCOT Green Growth Leaders Workshop[3]
- Science for Nature and People Partnership (SNAPP) report: Encouraging Green Agricultural Development in the SAGCOT Region of Tanzania: Research Findings and Related Decision Support Tools

3 Buck, L. and J. Milder. 2012. SAGCOT Green Growth Leaders Workshop Report. SAGCOT. http://legacy.ecoagriculture.org/documents/files/doc_424.pdf

The Ihemi Cluster

- SAGCOT Ihemi Cluster Development Framework
- SUSTAIN Ihemi scoping
  - Context Analysis of Drivers of Growth in SUSTAIN. The case of SAGCOT in TZ
  - Baseline Assessment, Stakeholder Mapping and Situation Analysis for SUSTAIN-Africa
- Use of a Hydrological Model for Environmental Management of the Usangu Wetlands, Tanzania
- Great Ruaha Restoration Campaign Concept Note

Inclusive Green Growth and landscapes

The LUD will serve a broader effort to support Inclusive Green Growth within SAGCOT. To accomplish this, landscape approaches will need to be utilized in each of the Clusters.

Inclusive Green Growth in SAGCOT

Environmental considerations are not peripheral to SAGCOT or its farmers. Productive agriculture in the Southern Corridor is not possible without a suitable climate, sufficient water and fertile soils. Currently, the region's farmers are highly vulnerable to climate change, with the vast majority relying on rainfed agriculture and inadequate access to reliable input supplies or markets. Water scarcity is the most critical challenge facing agricultural and economic development, as well as environmental health, and it stands to worsen over the next decade in light of climate change, deforestation-related desertification and competition amongst water users. Where agriculture has been intensified, it often has had severe environmental impacts, undermining not only long-term productivity, but also the development of other important sectors like forestry, wildlife tourism and water.

The most sustainable and least risky farming systems will be those that build in agronomic, environmental, and social management practices resilient to climate change and other risks and shocks. The approach moves beyond environmental and social safeguards. Agricultural development in SAGCOT can leapfrog over conventional technologies to follow a new course in which farmers embrace technologies and management systems that produce more food with fewer inputs, less waste, and less pollution. The approach recognizes that society now looks to agricultural landscapes to provide a range of goods and

services—not just food—and that markets increasingly reward farmers for doing so. In this way, resource conservation, efficiency, and sustainability are not costs of doing business; on the contrary, they are woven into the core logic and business case of all new land-based investment.

85 per cent of the population relies on farming, forestry and nature tourism for their livelihoods. Smallholder farms have 70 per cent of the population in the Corridor and 28 per cent of the arable land. Women play a large and growing role as agricultural producers and resource stewards. Smallholder farmers and the conservation community hold a wealth of knowledge about their land and water resources, and the social and economic needs of communities, that inform SAGCOT strategies, along with cutting-edge innovations adapted from around the globe.

A landscape approach at the Cluster level to achieve IGG[4]

For the purpose of the LUD, each of the SAGCOT Clusters could be considered a 'landscape'. A 'landscape' is a socio-ecological system that consists of a mosaic of natural and/or human-modified ecosystems, with a characteristic configuration of topography, vegetation, land use, and settlements that is influenced by the ecological, historical, economic and cultural processes and activities of the area. The mix of land cover and use types (landscape composition) usually includes agricultural lands, native vegetation, and human dwellings, villages and/or urban areas. The spatial arrangement of different land uses and cover types (landscape structure) and the norms and modalities of its governance contribute to the character of a landscape. Depending on the management objectives of the stakeholders, landscape boundaries may be discrete or fuzzy, and may correspond to watershed boundaries, distinct land features, and/or jurisdictional boundaries, or cross-cut such demarcations. Because of this broad range of factors a landscape may encompass areas from hundreds to tens of thousands of square kilometers.

A landscape approach is a long-term collaboration among different groups of land managers and stakeholders to achieve the multiple objectives required from the landscape. These typically include agricultural production, provision of ecosystem services (such as water flow regulation and quality, pollination, climate change mitigation and adaptation, cultural values); protection of biodiversity, landscape beauty, identity and recreation value; and local livelihoods, human health and well-being. Stakeholders seek to solve shared problems or capitalize on new opportunities that reduce trade-offs and strengthen

4 This section was adapted from. S. J. Scherr, Shames, S., and Friedman, R. 2013. Defining Integrated Landscape Management for Policy Makers. Ecoagriculture Policy Focus No. 10.

synergies among different landscape objectives. Because landscapes are coupled socio-ecological systems, complexity and change are inherent properties that require management. There are many different approaches to integrated landscape management, with different entry points, processes and institutional arrangements, but most share features of broad stakeholder participation, negotiation around objectives and strategies, and adaptive management based on shared learning.

Ihemi Cluster background: Key features, trends and challenges[5]

Located in the eastern-most part of the southern highlands, Ihemi Cluster is one of Tanzania's agricultural strongholds and an important region for forest and perennial crop production. Large-scale commercial operations for tea, pulpwood and timber, active in the highlands at the southern edge of the Cluster, are already investigating sustainable production systems that engage smallholders. The Cluster includes parts of six districts covering Iringa Urban District and part of Iringa Rural, Kilolo and Mufindi, Wanging'ombe and Njombe Urban and Rural Districts. It covers an area of about 2,830,290 ha out of which an estimated 2,066,000 ha is arable land. Of this, about 47% is under cultivation and about 24,080 ha is thought to be in irrigation.[6] The population of the Cluster is just over 970,000 with an average farm size of between 0.8-1.3 ha. Both irrigated and rain-fed field crop production is common in the lowlands at the northern end of the Cluster.

Iringa City, the main population centre, is located near the centre of the Cluster, at the confluence of the main Dar es Salaam-Mbeya road and the road to Dodoma. The backbone road and power infrastructure reach the main city but, farther out, infrastructure is poor. Limited access to year-round transportation routes and reliable power sources inhibit economic development and smallholder access to information and improved technologies and inputs. Along the southeastern edge of the Cluster, the diverse montane forests of the Udzungwa Mountains host critical biodiversity and forest resources. These forests are in high demand from commercial producers for pulpwood and tea plantations, while smallholders rely heavily on the forest for charcoal production. Wildlife also depends on the large tracts of forests as well as on forest reserves across the Iringa highlands to function as corridors between Udzungwa and Ruaha

5 This section was adapted from: Milder, J. C., Hart, A. K., and Buck, L. E. 2013. Applying an Agriculture Green Growth approach in the SAGCOT Clusters: Challenges and opportunities in Kilombero, Ihemi and Mbarali. Dar es Salaam: SAGCOT Centre.

6 Prorustica. 2015. Southern Agricultural Growth Corridor Of Tanzania: SAGCOT Ihemi Cluster Development Framework.

National Parks. In the case of the Ihemi Cluster, livestock production and charcoal production present the greatest threats to maintaining these corridors and halting further forest fragmentation.

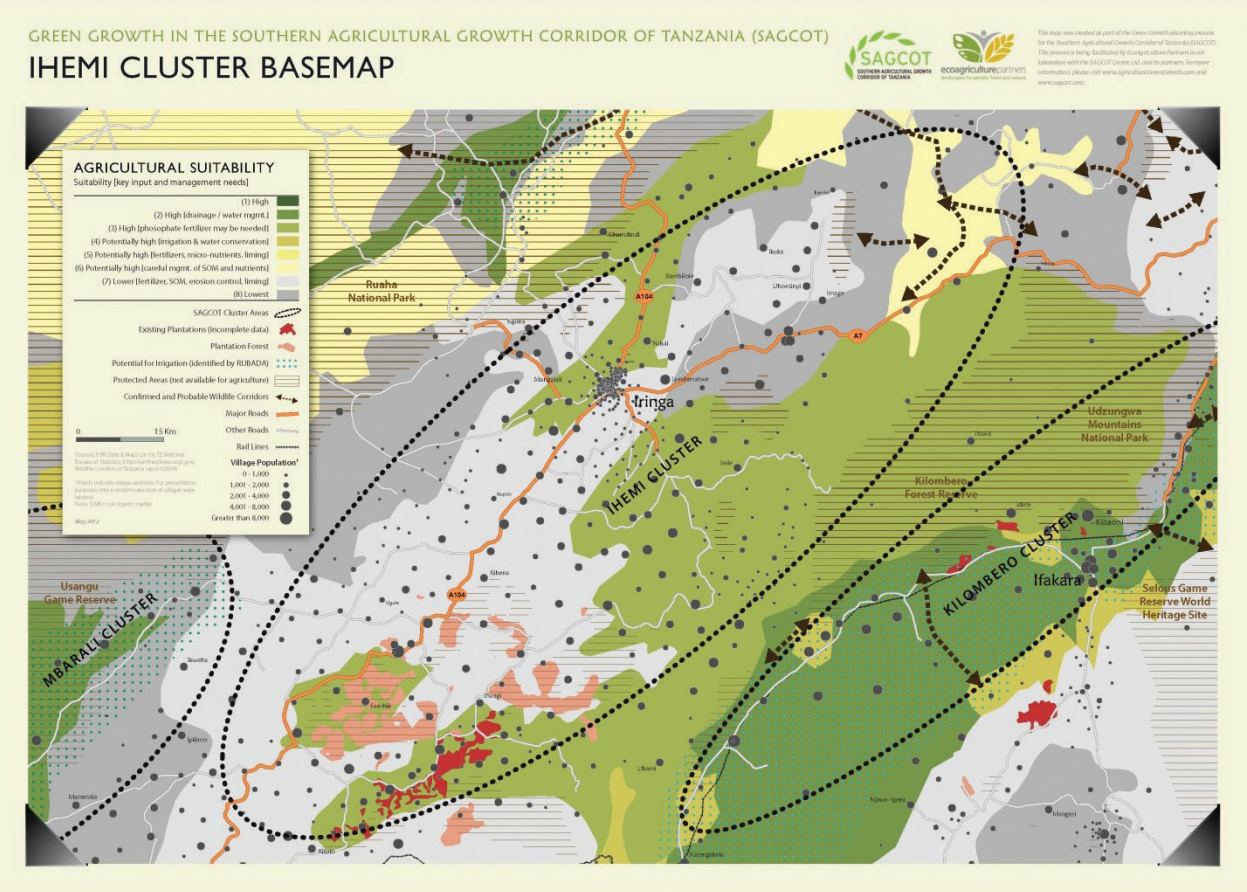

Figure 2: Ihemi Cluster Thematic Map[7]

Land use patterns

The Ihemi Cluster is up on the plateau of the southern highlands. The region's climate is unique in its heterogeneity, varying between the bimodal and unimodal rainfall patterns, which in turn results in diverse land uses. Forests, woodlands and mosaic cropping systems are the largest land uses in the Cluster. Forest types vary from managed to natural across the Cluster from more than 160,000 ha of montane forests high up the Udzungwa escarpment in Kilolo District to the lowlands in Iringa Rural

7 Milder, J. C., Hart, A. K., and Buck, L. E. 2013. Applying an Agriculture Green Growth approach in the SAGCOT Clusters: Challenges and opportunities in Kilombero, Ihemi and Mbarali. Dar es Salaam: SAGCOT Centre.

District in the Northwest toward Ruaha National Park. Most of the large-scale commercial tea and pulp wood plantations are in Mufindi District along the main highway from Iringa to Mbeya. Cropland mosaics are found throughout the Cluster with more drought resistant crops in the lowlands.

Table 1: Land cover in the Ihemi Cluster[8]

Land cover	Area (sq. km.)	Percent of total land
Artificial areas	18.1	0.1%
Croplands (crops occupy >70% of area)	213.8	1.5%
Mosaic croplands (crops occupy <70% of area)	3,529.7	24.4%
Evergreen forest	738.7	5.1%
Deciduous forest	2,753.7	19.1%
Woodland	2,724.0	18.8%
Shrubland	3,232.4	22.4%
Grassland	1,114.6	7.7%
Wetland	115.0	0.8%
Total land area	**14,451.3**	**100.0%**

Agriculture, livestock and commercial forestry

Besides being one of Tanzania's major regions for maize, Iringa is the country's leading region for potatoes (70 per cent of national production) and tomatoes and an important producer of timber, tea, sunflower and processed fruits and vegetables. Although there is generally enough water for two planting seasons, the region is very heterogeneous and increases in temperature and rainfall variability are affecting maize yields in some parts. Sunflower seed is an alternative crop that grows under similar conditions to maize but is less sensitive to climatic variability. The area under sunflower production has more than doubled over the last five years as farmers seek alternatives to maize in places where it is perceived as too risky. Farmers are exploring simsim (sesame) as another alternative to maize that could take advantage of the existing infrastructure for processing sunflower seeds.

Mufindi district is the second largest producer of tea in Tanzania. Most production takes place on large commercial tea estates, with smallholders participating through outgrower arrangements. Tea is processed

8 Milder, J. C., Hart, A. K., and Buck, L. E. 2013. Applying an Agriculture Green Growth approach in the SAGCOT Clusters: Challenges and opportunities in Kilombero, Ihemi and Mbarali. Dar es Salaam: SAGCOT Centre.

in Mufindi and exported to both conventional and fair trade international markets. The Cluster also supplies national markets with potatoes, tomatoes and onions. Most of these products are transported to Dar es Salaam for sale with the exception of tomatoes, most of which are sold to Dabaga, one of the largest fruit and vegetable processors in Tanzania. Irrigation is important for all of these crops. Many smallholders rely on traditional irrigation systems like vinyungu, which makes use of river valley bottoms for dry season production. Some commercial tea growers have modern, efficient irrigation systems, but economies of scale make these systems too costly for most smallholders.

Livestock is the second most important economic activity in the Cluster. In 2003, the region had a herd of nearly 500,000 head of cattle, managed primarily for meat. Dairy cattle make up less than 1 per cent of Iringa's herd, although the highlands are considered high potential for livestock development and dairy in particular because of the year-round availability of fodder, relative low prevalence of tick-born diseases and high demand for dairy products. Only 3 per cent of the cattle in the region are improved breeds. At this point, infrastructure is insufficient to support sector development. Investments in veterinary services, watering facilities and dairy processing facilities would be necessary to scale-up production.

Commercial forestry has been an important part of the region's past and is expected to play a role in encouraging economic development through reforestation. The original owner of the area's paper mill, Southern Paper Mills, a subsidiary of a national company, was installed in 1965 with investments from domestic and international partners, however operations ceased in 1992 due to lack of national demand and inadequate energy resources to power the mill. Since then, Mufindi Paper Mills has taken over operations and plans to steer the business into sustainable production in partnership with the Sao Hill Plantations which will supply the pulp wood. Most commercial plantations are owned by large companies, however recent efforts have been made to involve smallholders in commercial forestry as a means of incorporating them into carbon trading markets.

Conservation areas and issues

The Iringa Cluster is part of the Great Ruaha River catchment. Competing demands for the Ruaha's water abound with a large regional population, important wildlife areas and highly productive irrigated agriculture downstream. Over-abstraction of water for irrigation and climatic changes has resulted in more frequent drying of the upper reaches of the basin. Just as the seasonal variability presents a challenge to rain fed agriculture, the periodic drying of surface water is a challenge to building and maintaining irrigation systems that provide regular access to water for agriculture without threatening the needs of downstream

water users. While water shortages may be caused by misuse in the upper reaches of the basin outside of Ihemi Cluster, downstream users look toward upstream users immediately above the Mtera reservoir when water levels in the reservoir drop.

Unlike in some of the other SAGCOT Clusters, deforestation in Ihemi Cluster is not driven primarily by conversion to agriculture, but rather by charcoal, fuelwood, timber and pulp harvesting. Thanks to national policies on tree harvesting residents recognize the importance of maintaining tree cover for protection of water resources as well as the timber and pulp industries. In an effort to decrease deforestation, some communities are beginning to explore the use of biogas as an alternative for household cooking fuel. Perhaps it is due to the abundance of forest resources or dependence of villages on forest resources, Iringa region has dedicated large areas of land to Participatory (PFM). It leads the country in area under Joint Forest Management (JFM) (274,193 ha) and has another 166,057 ha under Community-based Forest Management (CBFM). Forest reserves compose 9 per cent of the region's area and forest plantations for timber and pulp another 4 per cent. Apart from Udzungwa Mountains National Park and Ruaha National Park, which are managed by the Tanzanian National Parks Authority (TANAPA), more than 120 villages are involved in CBFM and more than 50 villages have Village Land Forest Reserves (VLFRs) formally recognized by the government compared to the occasional one or two VLFRs gazetted in other regions.

Table 2: Designated conservation areas in the Ihemi Cluster[9]

Conservation areas	Description	Area (sq.km.)	Percent of total land
Forest Reserves	Kilombero Forest Reserve, and other forest reserves are often managed through participatory forest management across the Cluster	1,605.1	11.1%
Game Controlled Area	Lunda-Mkwabi Game Controlled Area, adjacent to the southeastern border of Ruaha National Park. Although formally gazette, the area is not actively managed as a game controlled area	5.9	0.04%
Total conservation area		**1,611.0**	**11.2%**
Total land area		**14,451.3**	**100.0%**

9 Milder, J. C., Hart, A. K., and Buck, L. E. 2013. Applying an Agriculture Green Growth approach in the SAGCOT Clusters: Challenges and opportunities in Kilombero, Ihemi and Mbarali. Dar es Salaam: SAGCOT Centre.

Social and economic trends

The abundant resources, established infrastructure, and high agriculture and forestry potential put this Cluster in a position to attract partners that are looking for quick wins. The government has invested in Export Processing Zones (EPZs), similar to free trade zones, to encourage investors from many sectors including agro-processing and agricultural equipment manufacturers. Additionally, an international airport is being built not far away in Songwe, with plans to devote a terminal to agricultural and horticultural exports, serving as a dry port for regional producers.

Socio-economic conditions in the Cluster are mixed. Given that the labour force is overwhelming involved in agriculture just as in other Clusters (70-90 per cent outside of Iringa Urban district), incomes are higher here than in most other parts of Tanzania except Dar es Salaam. In 2008 regional per capita GDP was 861,564 Tz Shs compared to the national average of 627,787 Tz Shs.10 This is most likely due to the productivity and diversity of the region's agriculture and forestry industries. However, HIV/AIDS prevalence is a serious challenge. The precise numbers are contested, but the infection rate is significantly higher than the national average of 5.7 per cent. The unbalanced sex ratio (89 males to 100 females) and age distribution of the population (45 per cent of the population less than 14 years old) are products of this higher incidence of HIV/AIDS in combination with emigration to urban centres. Promoting access to quality health care will be critical in enabling residents to take advantage of employment opportunities, participate in land use planning and management and engage in new partnerships with investors.

Learning questions and the Ihemi Land Use Dialogue

The SUSTAIN-Africa programme and the LUD envision a learning process that will link its work on the ground to national policies and action. The initiation of the Ihemi LUD process is expected to be organised around key learning questions that will be linked to SUSTAIN's overall Knowledge-to-Impact framework. In advance of the Ihemi LUD, SUSTAIN identified a set of programmatic learning questions around which the specific LUDs might be organized. (See Annex 1 for the full list of potential learning questions.) In this section, we highlight a few of the learning questions that could be most relevant at the beginning of this Ihemi LUD process and give an introduction to the context for these issues in the Ihemi Cluster.

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10 National Bureau of Statistics and Iringa Regional Commissioner. 2011. Iringa Region GDP Report 2008. Dar es Salaam: National Bureau of Statistics.

What does inclusive green growth look like to different stakeholders?

The terms 'inclusive' and 'green' may hold different meanings for business groups, government ministries and agencies, NGOs, and producer organizations, among others, dialogue around these terms and what the implementation of an inclusive, green growth vision looks like in practice will help to promote understanding, commitment and action. By engaging in discussion around this question and developing a shared vision, stakeholders can help to mediate traditional conflicts between economic growth and conservation interests which can be a substantial impediment to landscape-scale management.

What institutional foundations are needed for inclusive green growth?

Local institutions will be largely responsible for stimulating economic development and livelihood security while also controlling forest conversion, water abstraction and pollution. Furthermore, effectively engaging with existing governance structures both within and beyond the Cluster level, will be important to effectively scale up the impacts of these partnerships and ensure their sustainability in the long-term. Examples of effective local institutions and multi-level governance systems, and the strategies used to strengthen and support them, need to be documented, analysed and shared in order to enrich the work in Ihemi and to scale it up throughout SAGCOT. The LUD understands that there are already partnerships functioning in the area working to support an IGG agenda. The LUD does not seek to develop a new platform if one is not needed, but rather to support landscape-level work among existing institutions. The LUD could also potentially serve as a 'convener of conveners' and provide a platform for these groups to coordinate their activities and communicate the lessons they are learning.

To do this, the LUD will need to first identify and engage with the key institutions who are already working in partnership to support a landscape approach. First and foremost, the LUD will need to understand the objectives of those groups and the key sensitive and contested issues that these groups are working to resolve. They will need to understand how these partnerships function, incentives for stakeholder participation, rules of decision-making, roles and responsibilities, as well as their strategies for negotiating trade-offs and identifying synergies among the stakeholders. Here are some of the key organizations who will need to be part of these discussions:

National level institutions

- **The National Land Use Planning Commission** was established to harmonise and coordinate all land use related policies, legislation and capacity building on land use planning. Its objective is to ensure sustainable, long-term utilisation of land to promote socio-economic development. Towards this end, it coordinates participation of all stakeholders in land resources management at all levels including the national level (ministries, NGOs, and companies), regions, districts and villages.

- **The National Land Use task force** is an inter-sectoral government group focusing on the implementation of Tanzania's land use policy and speeding up the rates at which these plans are developed and applied. The task force has identified some the central bottleneck issues that have been inhibiting land use planning. They are also working to link initiatives throughout the country which are facilitating land use planning.

- **The Agriculture Sector Development Programme (ASDP)** is also a nation-wide government program backed by multiple development partners, was developed jointly by the five Agricultural Sector Lead Ministries and provides the overall framework and processes for implementing the Tanzania's agricultural strategy. (See more on the ASDP under the next question.)

- **The Water Sector Development Programme (WSDP)** is a nation-wide government program backed by multiple development partners, which focuses on strengthening Integrated Waters Resources Management (IWRM) institutions at all levels, designing and implementing Integrated Water Resources Management and Development Plans (IWRMDPs), rainwater harvesting and water use efficiency in agriculture;

- **The SAGCOT Centre** recently launched its Ihemi Cluster team in the first half of 2016, and has begun to put its SAGCOT Ihemi Field Team (SIFT) into action. The main activities of SIFT within the Cluster will be to help partners identify opportunities for investment. Advice will focus on opportunities for the greatest value and suitability to Ihemi. However, it does not plan to develop a detailed long-term development plan on its own separate from the other stakeholders in the Cluster. Rather, it will use an empirical, flexible approach that is responsive to local conditions. Building on what is there, it will identify new opportunities to bring actors and actions together, circulate information and forge new linkages between value chains. To start the field based operations, an initial set of actions has been developed based on field work and discussions with commercial and smallholder farmers as well as partner donors and local government.

- **The Ihemi Green Reference Group (IGRG)** is a multi-stakeholder platform established by the SAGCOT Centre and its partners to coordinate and monitor the environmental aspects of SAGCOT activities in the Ihemi clusters. It will help to implement the agenda of a SAGCOT-wide group called the Green Reference Group (GRG). In May of this year, the IGRG was launched in Njombe. The IGRG brings together representatives of the local government, the private sector (including businesses and farmers), the development partners, civil society organizations, and research institutions. The aim is to advise SAGCOT Centre's Management and its partners on sustainability issues at the Cluster level and provide input to the National GRG.

- **Great Ruaha Restoration Campaign** aims to create an implementation platform that will mobilise, coordinate, leverage and enhance available resources, opportunistically and following the priorities of the contributing partners, within the canvas set by the new IWRM plan, and building on the existing institutional framework. Championed by the Rufiji Basin Water Board, this initiative is being promoted by the 2030 Water Resources Group (2030 WRG) together with a range of partners, notably the CEO Roundtable of Tanzania, SAGCOT and WWF-Tanzania. In June 2016, a first workshop was held in Iringa with a broad selection of catchment stakeholders, including representatives from the public sector, private sector and civil society. Essentially, the functions of the Campaign will be to: Provide a platform for action-oriented multi-stakeholder collaboration; Jointly prioritise measures to restore the Great Ruaha, building on the recommendations of the IWRM plan and on partners' interests; Identify and mobilise partners to contribute to the campaign through their own activities and resources; Coordinate actions and report on progress against joint campaign objectives; Raise awareness about the water and environmental challenges and disseminate lessons and best practices to stakeholders.

- **MVIWATA** is a national network of farmers' groups formed in 1993 that works to foster communication, information exchange and sharing of experience. The organization serves as a locally based, nationally engaged farmers' organization who aims to ensure representation and advocacy of their members' interests in decision-making at all levels and to provide agronomic and marketing services including access to financial resources. MVIWATA farmers' groups have pioneered the adaptation and adoption of sustainable agricultural production practices.

- **Land Tenure Assistance (LTA)** is a USAID-DAI programme based in Iringa that is working to implement a low-cost, participatory land registration process. Initial LTA efforts will support

approximately 41 communities and local government authorities in the Iringa and Mbeya districts of Tanzania to clarify, document and certify land ownership for an estimated 50-60,000 parcels. The programme combines an existing tool for mapping smallholdings—Mobile Application to Secure Tenure (MAST), which USAID has piloted in Tanzania—with the low-cost land registry tool called Technical Register Under Social Tenure (TRUST). The programme assists villages and district administrations in Kilombero and Iringa in understanding the laws, completing the land-use planning process, and delivering Certificates of Customary Right of Occupancy (CCROs). It also builds the capacity of village and district land governance institutions to continue to implement these tools. The programme will work to build the capacity to use MAST throughout Tanzania.

- **USAID SHARP Program** recently started USD 8.2 million conservation program encompassing the Great Ruaha catchment aiming to improve community-based natural resources governance and management, educate and raise awareness, and promote alternative livelihoods supportive of conservation.

- **USAID WARIDI** anticipated new USD 50 million USAID initiative focused on the Rufiji and Wami-Ruvu basins and expected to include strengthening of multiple-use water and sanitation services, improved governance of water resources, and improved livelihoods through private sector investment.

- **World Bank REGROW program** upcoming new program by the World Bank targeting the Great Ruaha, including a USD 30 million component on restoring flows in the river through interventions such as physical infrastructures, payment for ecosystem services, and improved planning and decision-making tools and capacity.

- **DFID's regional CRIDF programme** is anticipated to deploy efforts in designing and implementing water-related infrastructures, with an emphasis on the Rufiji and Pangani basins.

Selected private sector support and coordination programs

- **PASS (Private Agriculture Sector Support Ltd)** is a commercial entity that stimulates investment and growth in commercial farming, and is active in coordinating loans between farmers and Tanzania banks, most of which have financing windows for producer associations' agricultural activities. PASS provides entrepreneurship training through farmers' associations who demonstrate promise in commercialization. With adequate orientation to sustainable investment opportunities, PASS could assist farmer organizations develop business plans to finance IGG activity.

- **The CEO-Roundtable of Tanzania** is rallying private sector support and advocate for the restoration of the Great Ruaha, as well as efforts by a wide range of individual businesses in the catchment to improve their own water use efficiency, restore and protect critical water sources and habitats, and engage broader communities in water use efficiency and catchment restoration efforts (agribusinesses and tourism operators mainly).

What national and sub-national policies are needed to enable inclusive green growth?

Public policy frameworks provide the foundation for interactions between various stakeholders, as they define the incentives, rules, and resources that various institutions use. Understanding what policies are needed to enable a landscape approach will be essential to the Ihemi Cluster's long-term objectives. However, because formal, written policies and laws often cannot be changed quickly, it will also be important to understand how to work within the existing policy framework to accomplish the LUD objectives. These are some the key policy issues that will be relevant to the LUD.

- **Village land use planning:** Effective land use planning is needed to reduce conflict, attract beneficial investment, and maintain a productive resource base for agriculture and protect environmental assets. Land use and land rights in Tanzania are governed by a complex and sometimes contradictory mosaic of policies, institutions, and planning processes. Too often, this situation results in a lose-lose scenario that provides too little certainty for investors, too little protection for communities, and too little coordination among different sectors and investors that are each making their own plans. Land conflicts between agricultural communities, pastoralists, and commercial farms continue to escalate, and serve as a disincentive to outside investment.

  Village land use planning (VLUP) is one strategy currently being implemented to support economic development and help guarantee that smallholders and pastoralists benefit from growth. The Village Land Act No. 5 of 1999 outlined detailed guidelines for implementing VLUP, giving authority to district governments to manage the VLUP process. VLUP provides a legal mechanism for reducing conflicts over land and natural resources, while securing smallholder tenure, designating conservation areas, and identifying areas for investment. In most cases, VLUP is a necessary step along the way, but not the final step to achieving these goals. The nation's process for participatory Village Land Use Planning has yielded positive results in many places where it has been applied, but plans for only about 10 per cent of Tanzania's villages. The

implementation of this planning process and the plans themselves requires financial and human resources that are lacking in many cases.

Furthermore, these planning process require coordination among ministries. Sectoral land use planning (for agriculture, forestry, watersheds, wildlife, etc.) is also conducted through various ministries under multiple statutory authorities, but such plans are rarely integrated or harmonized to a meaningful degree. In the water sector, the National Water Policy of 2002 provides for comprehensive, multi-sectoral water planning and allocation at the basin level, but for various reasons this approach has not yet been fully implemented.

- **District level planning:** The SAGCOT Centre believes that it has a role in stimulating policy improvements at the local and national levels, and the LUD could be one of the vehicles for these efforts. A land use policy review will be coming soon in Tanzania, and the outcome of this review could be impactful on the ability of the Ihemi Cluster to reach its goals. At the district level, SAGCOT stakeholders could help local governments to support the commercial development of small scale farmers through District Agricultural Development Plans (DADPs), which receive finance from the Agriculture Sector Development Programme (ASDP).

  The districts, in collaboration with villages, are also authorized to develop District Land Use Plans that outline priority areas for agricultural production, forest conservation, protection of water resources, as well as strategies for dealing with growing and migrant populations. With such a plan, districts would be in a better position to advise villages and establish a coherent vision for IGG. They would also be better positioned to create partnerships with CSO facilitators who have vested interests in seeing different parts of the District developed in ways that support their interests.

  Additionally, the National Land Use Policy allows for districts to link together to form zonal land use plans that could cover an area of particular importance by the districts that would benefit from a coordinated planning. This provision could potentially be used to cover the area of a SAGCOT cluster.

- **Agriculture Sector Development Programme (ASDP):** The Government of Tanzania (GoT) has launched important initiatives to support increased agricultural productivity. In 2006, the GoT unveiled its Agriculture Sector Development Strategy (ASDS) and corresponding Agriculture Sector Development Programme (ASDP). This Programme is targeted to meet

local needs—identified through participatory priority-setting exercises at the district level. It is also backed by participatory priority-setting exercises at the district level and by major financial commitments. A Phase 2 of ASDP is currently under development and the LUD could advocate for elements of this new phase that would support a landscape approach.

What are the most promising technical solutions for advancing inclusive green growth?[11]

For the LUD to succeed it will require quick wins for communities and investors that can help to make progress on the path toward IGG. These innovations can be technical, like infrastructure to improve water use efficiency, tools to improve the integrated management of water, land and ecosystems, or practices to implement climate smart agriculture. The innovations can also be institutional, like the development of more gender inclusive water resource users association or the development of local bylaws or covenants to improve the management of forests. In addition to identifying innovations, it will also be important to have a transparent process for prioritizing, piloting, and then, if they are successful, scaling them up throughout the corridor. The success of each of these innovations will require substantial capacity building efforts for key actors. Here are some of the most promising innovations in the Cluster:

- **Sustainable agricultural intensification:** The diversity of Ihemi's natural and economic resources is likely one reason for the higher incomes seen in this Cluster compared to others. However, this diversity makes coordinating action and investment among actors in the Cluster particularly challenging. Several of the sustainable intensification strategies could effectively leverage major new investments in infrastructure and value chain facilities by making more efficient use of new irrigation through precision technologies, reusing crop residues as field cover or livestock fodder, and improving the yields of unaffiliated smallholders, thereby establishing greater and more stable input supplies for local processors. Similarly, sustainable intensification of mixed crop and livestock systems in the highland region could lower producers' input costs and reduce the potential for conflict over resources. The Sao Hill Cattle Ranch, Kitulo Dairy Farm, ASAS Dairy Farms and other large commercial livestock producers are ideally situated to begin introducing improved dairy and beef breeds, and serve as nuclei for extension of intensive livestock systems, inputs, range management and intensive fodder production.

11 This section was adapted from: Milder, J. C., Hart, A. K., and Buck, L. E. 2013. Applying an Agriculture Green Growth approach in the SAGCOT Clusters: Challenges and opportunities in Kilombero, Ihemi and Mbarali. Dar es Salaam: SAGCOT Centre.

Farmers and businesses in Ihemi Cluster can benefit from the many knowledge, technology, and input supply resources available in Iringa City, particularly if local expertise and knowledge hubs can be established in the rural areas. For instance, some of the commercial tea plantations already use efficient modern irrigation systems. Concerted efforts to educate producers across the escarpment could lead to increased efficiency of both existing and new irrigation systems, thereby reducing costs and conserving water. In the lowlands, some producers are already experimenting with transitioning some of their land from maize to sunflower to mitigate drought related crop failure and access oil seed markets. The management systems and processing facilities established for sunflower could be broadened to pilot production and value addition activities with other oilseeds. Rapid roll-out of an enhanced agricultural extension programme would be a cost-effective way of linking actors throughout the Cluster and facilitating rapid exchange of information on IGG practices.

- **Sustainable community forestry:** Actors in the Ihemi Cluster have been actively involved in participatory forest management (PFM) since the passing of the Forestry Act in 2002. However, villages are only one of many actors in the forests. Tea and pulpwood producers manage large areas of forest land and contract with many villagers to augment their raw material supplies. The Sao Hill and Mufindi Paper Mills both have the potential to attract REDD+ financing by pursuing sustainable harvest and afforestation strategies. A bigger challenge is to design PFM arrangements that link communities and commercial producers to bring REDD+ and other carbon finance to help reduce rural poverty and provide finance to catalyse village-level development. One option is to train local communities and develop nurseries to enable community members to plant and maintain high-biodiversity, carbon-rich mixed species plantations on both private and village lands. Conversely, large forestry companies can work with villages under the purview of PFM to commercialize new forest products for additional income streams. Expertise from the public, civic, and private sectors can be combined to develop appropriate extension systems.

- **Bioenergy production:** Because of the high biodiversity value of its forests—and the intense pressure from wood fuel demand— Ihemi Cluster should be considered as a high priority for finance and technical assistance related to biogas development. There are additional opportunities to generate energy and fertilizer from recycling agricultural residues on large estates and processing wastes from the existing and planned processing facilities in and around Iringa town.

- **Linking IGG to human health and well-being:** Finally, Ihemi requires an integrated strategy that is sensitive to the social and health conditions in the Cluster. Extension services for agriculture, livestock and forestry need to take into account the prevalence of HIV/AIDS in the region and adjust their programming accordingly. Coordinating extension activities with public health recommendations will be crucial. In specific terms, this may entail working with local extension teams to promote the IGG strategies that help increase household nutritional diversity and require less labour (or provide more flexibility in the timing of labour requirements); conservation agriculture is one example that has been successfully promoted to help households in other regions with a high disease burden. From a risk management perspective, it should be recognized that, although household income in Ihemi Cluster is higher on average, producers may not be willing to incur economic risk related to agricultural activities if they perceive the need to reserve large portions of their income for health costs.

Annex 1: Sustain programmatic learning questions

Theme 1: What does inclusive green growth look like to different stakeholders?

Theme 2: What is the business case for investment in inclusive and sustainable growth?

Theme 3: How can the evidence base for integrated approaches best be developed and communicated?

Theme 4: What institutional foundations are needed for inclusive green growth?

Theme 5: What national and sub-national policies are needed to enable inclusive green growth?

Theme 6: How can capacities for integrated and inclusive green growth best be developed?

Theme 7: What are the most promising technical and institutional innovations for advancing inclusive green growth?

Theme 8: How can knowledge and action that supports inclusive green growth best be scaled up in the Corridors and beyond?

Theme 9: What are strategic and effective roles for IUCN and other lead partners in SUSTAIN?

LUD
Yale University
New Haven, CT, U.S.
O: + 1 203 432 5966
T: @forestsdialogue
info@theforestsdialogue.org
W: www.theforestsdialogue.org

SAGCOT
TPSF Building Mwaya Road, Masaki, P.O. Box 11313
Dar es Salaam, Tanzania
O: +255 (0) 22 260 1024
M: +255 655 691 510
info@sagcot.com
W: www.sagcot.com