

Financing Strategies for Integrated Landscape Investment

Case Study: Imarisha Naivasha,
Lake Naivasha, Kenya

Gabrielle Kissinger



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Financial Support Provided by



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Suggested Citation

Kissinger, Gabrielle. "Case Study: Imarisha Naivasha, Kenya," in Financing Strategies for Integrated Landscape Investment. Seth Shames, ed. Washington, DC: EcoAgriculture Partners, on behalf of the Landscapes for People, Food and Nature Initiative. 2014.

Cover Photo

Giraffe beside Lake Naivasha, Kenya. Photo by Krista Heiner/EcoAgriculture Partners.

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Acronyms

Acronym	Definition
CAAC	Catchment Area Advisory Committee
CFAs	Community Forest Association
EMCA	Environmental Management & Coordination Act (1999)
GOK	Government of Kenya
KWS	Kenyan Wildlife Service
LANAWRUA	Lake Naivasha Water Resource Users Association
LNB	Lake Naivasha Basin
LNB-3P-SDF	Lake Naivasha Basin PPP Sustainable Development Fund
LNFCs	Lake Naivasha Fisherman's Cooperative Society
LNGG	Lake Naivasha Growers Group
LNMC	Lake Naivasha Management Committee
LNRA	Lake Naivasha Riparian Association
MOA	Ministry of Agriculture
MoU	Memorandum of Understanding
NAKUWAS	Nakuru Water and Sewerage Services
NEAPs	National Environment Action Plans
NEMA	National Environmental Management Authority
PC ISU	Prince Charles' International Sustainability Unit
WRM	Water resource management
WRUA	Water Resource Users Association
WRMA	Water Resource Management Authority

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Fishing boats on the shore of Lake Naivasha



Introduction

The interconnections of the water-food-energy-climate nexus¹ play out in a variety of ways—with water security increasingly underpinning economic and community health, land degradation impacting food and bio-energy production, and trade-offs occurring between these often having negative consequences. The search for positive solutions is increasingly steering a range of actors and stakeholders towards Integrated Landscape Management (ILM), to support the interrelated objectives of agriculture production, ecosystem services and rural livelihoods, while avoiding the tradeoffs and conflicts inevitable with single-sector approaches. Financing these initiatives requires rethinking how more traditional sector-based land use finance can function to serve integrated approaches. Finance solutions are required that recognize the value of integrated problem-solving, and the unique financing needs these initiatives require.

This is one of three case studies of the Landscapes for People Food and Nature (LPFN) initiative's investigation into the landscape analysis component of the "Finance case and financing strategies for integrated landscape management." The case studies were chosen from the 29 different integrated landscape management initiatives (ILIs) that were identified in the scoping phase of this research. Based on the scoping ILIs, the follow-

ing *entry points for investment* were identified: biodiversity and conservation, production (agriculture, forests, water), and economic development (social, livelihoods). Institutional planning and coordination plays a role in every stage of this process, with each entry point, and is often a key attribute for actors to identify the trigger to pursue a landscape initiative. Once the identification of the need for integrated management solutions beyond the initial entry point occurs, multiple investments are pursued to support multiple outcomes. The scoping report also differentiated *major types of ILIs based on governance and leadership characteristics*: government-led or multi-lateral-led initiatives; regional initiatives or platforms; traditional, local or community-led initiatives; NGO, grassroots or civil society-led initiatives; and private sector-led initiatives. The various types appear to be financed differently (sources, share of public versus private finance, etc.) based on their governance and leadership characteristics. This case study phase of the research identifies three landscape initiatives that together exemplify the five typologies, in order to analyze the sources and structures of financial flows to landscape activities, the financial gaps and barriers for landscape actors, opportunities for innovations for action at the level of the landscape,

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1. World Economic Forum, 2011. Water Security: The Water-Food-Energy-Climate Nexus. Island Press.

“The drought of 2008-2009 was a defining moment that illustrated to the range of stakeholders in the watershed their environmental service exposure and risk.”

financial institutions and national and sub-national governments.

1. **Atlantic forest, Brazil:** Includes two scales of ILM activity—at the biome-scale with the PACTO Mata Atlântica (Atlantic Forest Restoration PACT, hereafter referred to as PACT) and state-level with activities in Espírito Santo. PACT is a stakeholder platform, and Espírito Santo is a government-led ILM approach at the state level.
2. **Lake Naivasha, Kenya:** A government-led ILM that represents a stakeholder platform, and very strong private-sector leadership. The ILI includes a range of agricultural uses (horticulture, livestock, smallholders, fisheries); a range of sectors finding solutions (agriculture, geothermal, municipal, forest). IFC performance standards were triggered due to landscape (water) risks.
3. **Namaqualand, South Africa:** While this started as a NGO-led initiative, it still contains portions which are led by NGOs, but is housed in a parastatal organization, which represents the stakeholder platform. ILM efforts have focused largely on bringing biodiversity perspectives into other sectors such as agriculture and livestock management, as well as mining and water use.

This case study investigates the Imarisha Naivasha public-private partnership that has formed in the greater Lake Naivasha, Kenya catchment. The evolution of this integrated landscape initiative started twenty years ago, with identification of risks from slash-and-burn agriculture in the Aberdares uplands, followed by rapid growth of the cut-flower industry in the lower catchment around Lake Naivasha. Stakeholders identified a need to collaborate to affect water quality and forest conservation. However, the drought of 2008-2009 was a defining moment that illustrated to the range of stakeholders in the watershed their environmental service exposure and risk. This experience motivated greater coherence of the integrated management needs between sectors, and Imarisha Naivasha was born as a response to this need. Imarisha Naivasha is a government-led ILM typology, as Imarisha Naivasha is the convening entity for all stakeholders. However, Lake Naivasha also demonstrates very strong private sector engagement, particularly with the large floriculture sector serving the European flower market and UK flower retailers.

This report investigates the evolution to a landscape approach in Naivasha, how integrated landscape management is currently financed, explores opportunities for integrated management and finance solutions, and finally, lessons learned and recommendations.

Lake Naivasha

The Lake Naivasha water catchment area, in the Rift Valley of Kenya, is a RAMSAR site, an Important Bird Area and on UNESCO's World Heritage tentative list. It stretches over 3,400 km² draining the Aberdare and Eburru forests. The area contains more than 350 species of birds, including some globally threatened, rare and migratory species, which depend on the region. Hell's Gate and Mt. Longonot National Parks are in the watershed, containing diverse wildlife. Lake Naivasha is an internationally-recognized tourist attraction, with roughly 1.8 million visitors per year (Pegasys, 2010). The catchments' natural abundance has attracted considerable settlement and development over the last twenty years, significantly degrading ecosystem services.

Between 1963 and 2011 the population in the region increased from 43,000 to almost 750,000 people, with the majority in Naivasha Town and the informal settlements, as well as increased density in the upper catchment areas (Imarisha Naivasha Board, 2012). The lower catchment area around the Lake contains a range of land uses including pastoralism, wildlife conservation, commercial horticulture, smallholder farming, horticultural irrigation, tourism, fishing, urban development, settlement and geothermal power generation. Lake Naivasha's ecosystem services are threatened by human induced



FIGURE 1. *Fisherman and water hyacinth, Lake Naivasha*

factors, including reduced lake levels, increased water abstraction, deterioration of lake and river water quality, deforestation, increased soil erosion

and siltation of rivers, increased lake sedimentation and turbidity, fish mortality and decreasing fish yields, encroachment and transformation of the lakeshore riparian zone, encroachment and transformation of the riverline buffer zones, increasing population and unplanned human settlements, poor waste management in the urban environment, inaccessibility to the lake by pastoralists, fishermen and general public and lake infestation by invasive species (NEMA, WRMA and KWS, 2010).

Stakeholder and public awareness of the risks to vulnerable ecosystem services reached a turning point in 2009, with the onset of a major drought that reduced Lake Naivasha's water levels to historic lows. The lake floriculture sector was particularly disrupted, with growers resorting to digging trenches to adequately irrigate farms, resulting in one child's death in a trench.² This crisis allowed stakeholders to understand their shared risks and see the connections between the forest, water, communities and economy. Stakeholders that were previously unwilling to work together to forge solutions now agreed to work together to conserve the basin for ecosystem function, sustainable economic development and livelihood improvements (WWF, 2012). Stakeholders realized that water conservation was key to survival of the economic success of Naivasha and the well-being of its inhabitants (Kariuki, 2012).

Key stakeholders and sectors with demands on Lake Naivasha ecosystem services

Floriculture industry: is centered around Lake Naivasha in the lower catchment and employs 50,000 people working on 55 farms, with thousands more moving to the region each year in search of work in this sector. When considering direct and indirect employment (such as packaging and related transport, within the region and beyond) 500,000 people are employed in the floriculture sector (Horticultural Crops Development Authority, 2013). More than 120 million tonnes of cut flowers are exported each year, accounting for 3.3% of Kenyan GDP and 9% of all exports.³ Roses dominate the export market, often headed to the Dutch wholesale markets at Aalsmeer, and account for roughly 70 % of the export volume (Horticultural Crops Development Authority, 2013). Kenya is now the fifth largest flower exporter in the world, with 30% of all Kenyan flowers exported to the UK, and supplying 25% of the cut flowers sold in the EU (Fairtrade Foundation, 2008).

However, the water footprint of cut-flower production around the lake is significant, with the water footprint of one rose flower estimated to be 7–13 litres (McKonnen et al, 2012). McKonnen et al identified that the commercial crops contribute 41% to the total water footprint related to crop production in the catchment, accounting for roughly 98% of the blue water footprint⁴ and about 61%

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2. Daniel Koros, WWF. Personal communication on 11-12-13.
 3. Presentation by Richard Fox, 2011. Imarisha Naivasha: A Public Sector – Private Sector – People Participatory Approach to Resource Management. Imarisha Naivasha.
 4. Defined as fresh surface and groundwater, according to: Hoekstra, A.Y., Chapagain, A.K., Aldaya, M.M. and Mekonnen, M.M., 2011. The water footprint assessment manual: Setting the global standard, Earthscan, London, UK.



FIGURE 2. Roadside markets for smallholder crops destined for Nairobi

of the grey water footprint in the catchment.

The Lake Naivasha Growers Group (LNGG) is a formal association of horticultural farmers, and has played a key role in organizing commercial growers. Many of the European, and particularly UK buyers specify that production standards should meet GlobalG.A.P.,⁵ Fairtrade,⁶ or Tesco Nurture⁷ certification. However, the assessment of shared risks and opportunities in the Naivasha catchment has identified that this on-farm focus does not provide the appropriate tools to enforce or encourage land-use behaviour at a catchment level, and is particularly unequipped to influence upstream small holder

farming impact on the hydrology of the basin (Pegasys, 2010).

Smallholder, small-scale (SME) and commercial outgrower farming: The upper catchment is mainly dominated by small-scale mixed farming focused on crops such as maize, cabbage, carrots, peas, fruit crops such as apples, dairy keeping and beekeeping. The middle catchment is mainly dominated by small scale and dairy farming, including maize, potatoes, cabbages, barley, dairy farming as well as widespread eucalyptus cultivation, which often converts native forest cover to exotics (NEMA, WRMA, KWS, 2010). Open grasslands and meadows covered just 50% of the plateau in 2000, thus grazing is limited (*ibid*). Smallholder agriculture also occurs in

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5. See: http://www.globalgap.org/uk_en/
 6. See: <http://www.fairtrade.net/>
 7. See: <http://www.tesco.com/nurture/?page=nurturescheme>

the lower catchment, often on small parcels with disputed tenure and ‘shambas.’ Smallholders and SME’s in the lower catchment are largely attempting to sell into the Nairobi market through road-side sales along the highway to Nairobi (See inset at right). Commercial vegetable farming in the Naivasha basin accounts for 20% of Kenya’s vegetable exports (KSh 3.2 billion (US\$37 million) or 16,500 tonnes) (Pegasus 2010).

Forest use: The Lake Naivasha catchment includes portions of two critical water catchment forest areas in Kenya—the Aberdare Ranges and Mau Complex—out of the five total, the remainder of which includes Mt. Kenya, Cherangani Hills and Mount Elgon (Kenya, 2010). Communities in the region derive significant tangible value from forest goods and services, including wood fuel, timber, non-timber forest products, water regulation and other services. However, the extraction of that value is largely unregulated and unplanned. Poor farm practices in the upper catchment, especially cultivation on steep slopes and on the riparian riverbanks, illegal logging and charcoal burning have resulted in widespread depletion of forests. Catchment forest cover has decreased significantly (NEMA, WRMA, KWS, 2010).

Less visible is the range of services that Kenya’s water tower forests provide which acts as an insurance policy for the economy. A recent UNEP assessment found that while timber and fuelwood harvests provided

the equivalent to a cash revenue of KSh 1,362 million (US\$15.8 million) in 2010, the profits came at a steep cost to the economy, through losses in regulating services such as water for agriculture and hydropower, and regulation of malaria. The cumulative negative effect of deforestation on the economy through this reduction in regulating services was an estimated KSh 3,652 million/yr (US\$42.3 million), which is more than 2.8 times the cash revenue of deforestation. However, when adding in the full costs that can be accounted for when considering supply chain impacts and interdependencies between sectors, the decrease of regulating services due to deforestation caused a total impact of KSh 5.8 billion (US\$67 million) in 2010 (UNEP, 2012). Kenya’s Vision 2030 identified the importance of forests to the national economy, setting a goal of increasing forest cover to 10% (Kenya, 2010). Great potential exists in the Naivasha catchment to deliver on that goal.

Fishery: The lake fishery is significant for local livelihoods and commercial production. The lake’s only endemic fish species, *Aplocheilichthys antinoni*, was last recorded in 1962. Since then, tilapia and bass have been introduced, and in 2001, the common carp (*Cyprinus carpio*) invaded the lake and now accounts for over 77% of the total commercial catch (Imarisha Naivasha Board, 2012). While the lake had supported fishery yields of over 500 tonnes of fish per year in the 1960s and early 1970s, the yearly

catch rarely exceeds 200 tonnes per year since the 1970s (NEMA, WRMA, KWS, 2010). The town of Naivasha derives its water from the lake and ground water sources. Due to the intense use of land and water in the catchment, and the unique closed basin water system, the lake is extremely susceptible to pollution from farmlands, settlements, industries and river inflows (NEMA, WRMA, KWS, 2010). The invasive water hyacinth (*Eichhornia crassipes*) has significantly affected the water quality of Lake Naivasha, decreasing oxygen and pH levels, and increasing free carbon dioxide levels, impacting fisheries, lake ecology and transportation (Mironga et al, 2012).

Pastoralism: While nomadic pastoral grazing patterns persist, pastoralists in the Lake Naivasha region are decreasing their ranges and shifting to more sedentary lifestyles, including agricultural cultivation. Pastoralists face dwindling land resources, overstocking, reducing water resources, limited pasture, land degradation and overgrazing, loss of corridors and access routes. Despite that change, it is estimated that over 35,000 head of nomadic cattle graze the area between Ndabibi, Suswa and Naivasha town, and are taken to the lakeshore for water at least once every 3 days during the dry season, along with thousands of heads of quality beef and milk-producing livestock by commercial operators on twenty-nine large-scale cattle/wildlife ranches in the basin (NEMA, WRMA,

KWS, 2010). Livestock and agriculture conflicts are common, with encroachment on forests, agricultural production and riparian lands. Livestock use has also impacted the lake's papyrus belt which acts as a natural filter system, and disease transmission between livestock and wildlife is problematic (ibid).

Water withdrawals and horticultural irrigation: Kenya's Water Act was enacted in 2002, and the Water Resource Management Authority (WRMA) was established in 2005 to administer the Act. Water permits have been issued without an understanding of the carrying capacity of the rivers and lake, and without an understanding of whether the lake can sustainably support increased water demands. The decline in the lake level can be attributed mainly to the commercial farms around the lake, and both the commercial farms and the smallholder farms in the upper catchment are responsible for the lake pollution levels due to nutrient loading (McKonnen et al, 2012). As mentioned above in the floriculture section, McKonnen et al identified commercial crops as the largest contributor to the crop production water footprint (98% of the blue water footprint). Soil erosion and siltation along rivers and in the lake, caused during flush floods from arable farming in the middle and upper catchments, is exacerbated by the loss of protective vegetation such as papyrus around the lake. Mekonnen et al emphasize the importance of evaluating the

monthly variation in basin water footprints, given its highly fluctuating flow regime. Their findings indicate that in the dry period between January to March, the blue and grey water footprint is double the blue water availability. In other words, twice the blue water availability is appropriated for either consumptive water use or assimilation of pollution.

Tourism and wildlife conservation:

Lake Naivasha accounts for a small proportion of the total tourism industry in Kenya, but has a high profile due its proximity to Nairobi and Nakuru. Both Aberdare National Park to the north and the Hell's Gate National Park in the south of the catchment attract visitors, along with tourism opportunities around the lake. Wildlife include hippo, zebra, giraffe and topi. It is estimated that 4,000 accommodation beds exist in Lake Naivasha that cater across a range of domestic and international tourist markets, and the tourism sector in Naivasha contributed KSh 600 million/year (US\$6.9 million) in 2010 (Pegasys, 2010). It is estimated that monthly visitor numbers are roughly 200,000 (NEMA, WRMA, KWS, 2010).

Geothermal power generation: The two Olkari geothermal stations produce about 20% of the national power production, currently at 127 MW and expected to increase to 576 MW in the next 20 years (Imarisha Naivasha Board, 2012). The largest use of groundwater for geothermal energy occurs in the exploration

stage. In the operation phase, the power plants use freshwater drawn from Lake Naivasha. However an environmental impact assessment found that the quantities used are low enough that the project will not have an effect on the hydrology of the lake, and wastewater from steam will be re-injected so as to reduce surface water contamination (KenGen, 2012). Further, the depth of the aquifer from which the water is abstracted and the location of existing plants, means that geothermal activity is unlikely to have a direct bearing on water balance or quality issues in the Naivasha basin (Imarisha Naivasha Board, 2012). However, there are concerns over toxicity potentials in wastewater from geothermal wells at accumulated levels could pollute existing environments, if not properly monitored and managed, and hydrogen sulphide emissions are of concern (ibid).

Urban development and settlement:

The two largest urban centres are Naivasha and Gilgil, which contribute roughly the same amount to the blue water footprint (27% of the total) as the cut flower industry (28%) and vegetable/macadamia nut growers (28%) (Mekonnen et al 2012). The town of Naivasha operates a sewage treatment plant, recently re-commissioned, that is still unreliable and of inadequate capacity, thus it is estimated 650 m³ of sewage is still discharged daily into the lacustrine environment (Imarisha Naivasha Board, 2012). Further, some commercial areas and extensive informal

and unplanned settlements discharge wastewater and human waste into the lake directly, or as a result of storm run-off.

Enabling environment for an integrated landscape approach

The evolution to an integrated landscape management initiative started with recognition that the Aberdares forest fires in the late 1990's were a threat to forest, water and community health. Further, the horticulture industry was rapidly developing at that time around Lake Naivasha.⁸

The first Management Plan for Lake Naivasha was developed and gazetted in 2004. However, stakeholders could not agree on key issues to implement the plan. Perhaps more importantly, a critical shortcoming of the plan was the entire exclusion of the upper catchment stakeholders, which meant that unsustainable forest clearing and agricultural practices upstream were not included (NEMA, WRMA, KWS, 2010).

The 2009 drought brought about a new awareness of the interconnections between sectors and the shared risks. The recognition of risks went far beyond local stakeholders, rippling through the entire floriculture supply chain, to UK retailers and buyers. Growers recognized they needed to look beyond the farm-gate to address environmental and social risks (Lawrence, 2011). Louise Nicholls, Marks & Spencer's head of sustainable sourcing, said: "As climate change im-

pacts we will have to make some difficult choices about where we source food and flowers, especially if it's a water-vulnerable country. If you want a mandate to supply from a particular country, it will be very important to show the wider benefit of your trade there (*ibid*)."

Tesco also recognized its role in shifting the water footprint in its supply chain, committing funding and expertise to water stewardship in Naivasha, in order to address the pressures on biodiversity, water availability and water quality (Tesco, 2012).

Integrated landscape management solutions were required to address the range of pressures. In response, the Government of Kenya, with support from the Prince Charles' International Sustainability Unit (PC ISU),⁹ convened key international stakeholders, and cultivated the highest level of political commitment needed¹⁰ to align government ministries and key actors necessary to carry out a multi-sectoral approach for shared solutions. The Kenyan Prime Minister provided key political leadership, resulting in the creation of the Imarisha Lake Naivasha Management Board (gazetted on 20th May, 2011: Gazette Notice 5368). The mandate given to the Board was: a) collaboration with all stakeholders and development of a programme to coordinate the activities of various stakeholders and interests, b) monitor compliance with the laws and regulations governing the environment, c) develop and enforce codes of conduct, e) develop, adapt

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8. Daniel Koros, WWF. Personal communication on 11-12-13.
 9. See: http://www.huffingtonpost.co.uk/hrh-the-prince-of-wales/prince-charles-global-sustainability_b_3371842.html
 10. See: <http://www.capitalfm.co.ke/business/2012/06/prince-charles-trust-seeks-food-security-in-kenya/>

and execute a Trust to receive financial resources from within or outside Kenya to finance implementation. The Board reports to an Inter-Ministerial Technical Committee.

A new *Lake Naivasha and Catchment Management Plan (2010-2020)* was developed with a ten-year vision to include all stakeholders in the upper and lower catchments, begin the process to harmonize all sustainable natural resources and economic development initiatives, and address the diverse opinions and interests, uncoordinated efforts and often conflicting agendas in the promotion of sustainable development between the upper and lower catchment areas.

The Imarisha Naivasha Board prioritized “no regret” activities to engage, even while developing its five-year plan, in order to affect change on the ground immediately, raise awareness and demonstrate the need for catchment restoration. The “no regret”

projects were financed by funds from the Government of Kenya and from the PC ISU-convened UK retailer roundtable group, which included ASDA, Tesco, Marks and Spencer and Sainsbury’s. Activities funded included: a) preparation of the Imarisha Sustainable Development Action Plan (SDAP) and finalisation of the new Lake Naivasha and Catchment Management Plan (LNIMP), b) funding of “no regret” activities (identified by project sites in the map on the following page), including upgrading fish landing facilities, creation of small scale biogas production, pastoralist stock watering, creation of tree nurseries, planting, forest rehabilitation, support for water hyacinth handicrafts, bird count support, riparian mapping, and c) logistical support to the Imarisha Secretariat.

The Imarisha Naivasha Board is anchored to the government through the Ministry of Environment, Water and Natural Resources. The Imari-

Outcome	
1	Lake Naivasha and its Riparian Zone (as legally defined) are protected and managed according to “wise use” principles and showing significant, measurable improvements in ecosystem restoration and resilience.
2	Land use and management in the wider Basin and catchment of Lake Naivasha contribute to sustainable development and climate change resilience through water and soil conservation, rehabilitation of forests, improved agriculture and livestock practices, sustainable nature and culture-based tourism, increased use of renewable energy/ reduced energy use, sustainable livelihoods and improved governance.
3	Water resource institutions, mechanisms and facilities across the Basin function to regulate water use sustainably and to improve community access to clean water and sewerage, through increased knowledge, capacity and effective monitoring, sub-catchment management planning, payments for water services, water resource stewardship and conservation, urban planning and implementation
4	Imarisha Naivasha recognized and functioning effectively as the coordinating institution for Lake Naivasha Basin restoration, wise use and sustainable development.

TABLE 1. *Imarisha Naivasha Imarisha Sustainable Development Action Plan (SDAP) (2012-2017)*



FIGURE 3. *Imarisha Naivasha: Early-phase of integrated landscape management approach*

sha Naivasha Board is responsible for coordination of all projects and programmes in the basin. The board has developed coordination mechanisms that include: a) a multi-sectoral Project Monitoring Committee, b) a Research and Monitoring Committee, c) researcher and stakeholder consultative conferences, d) inter-ministerial steering committee, e) a district technical committee, and f) each project has its own project management and coordination committee. The integration and coordination is done through joint project development and im-

plementation processes, workshops, meetings, communication, quarterly/half-yearly/annual progress reports submitted to the government and all stakeholders.¹¹

The early phase of the Naivasha integrated landscape management approach is characterized by three distinct interventions: restoration of ecosystem services and creation of mechanisms to deliver socio-economic benefits; creation of the public-private-partnership and governance and institutional strengthening; and integrated framing of solutions and

11. Anderson Koyo, Imarisha Naivasha, personal communication.

Lake Naivasha Basin Imarisha Project Sites

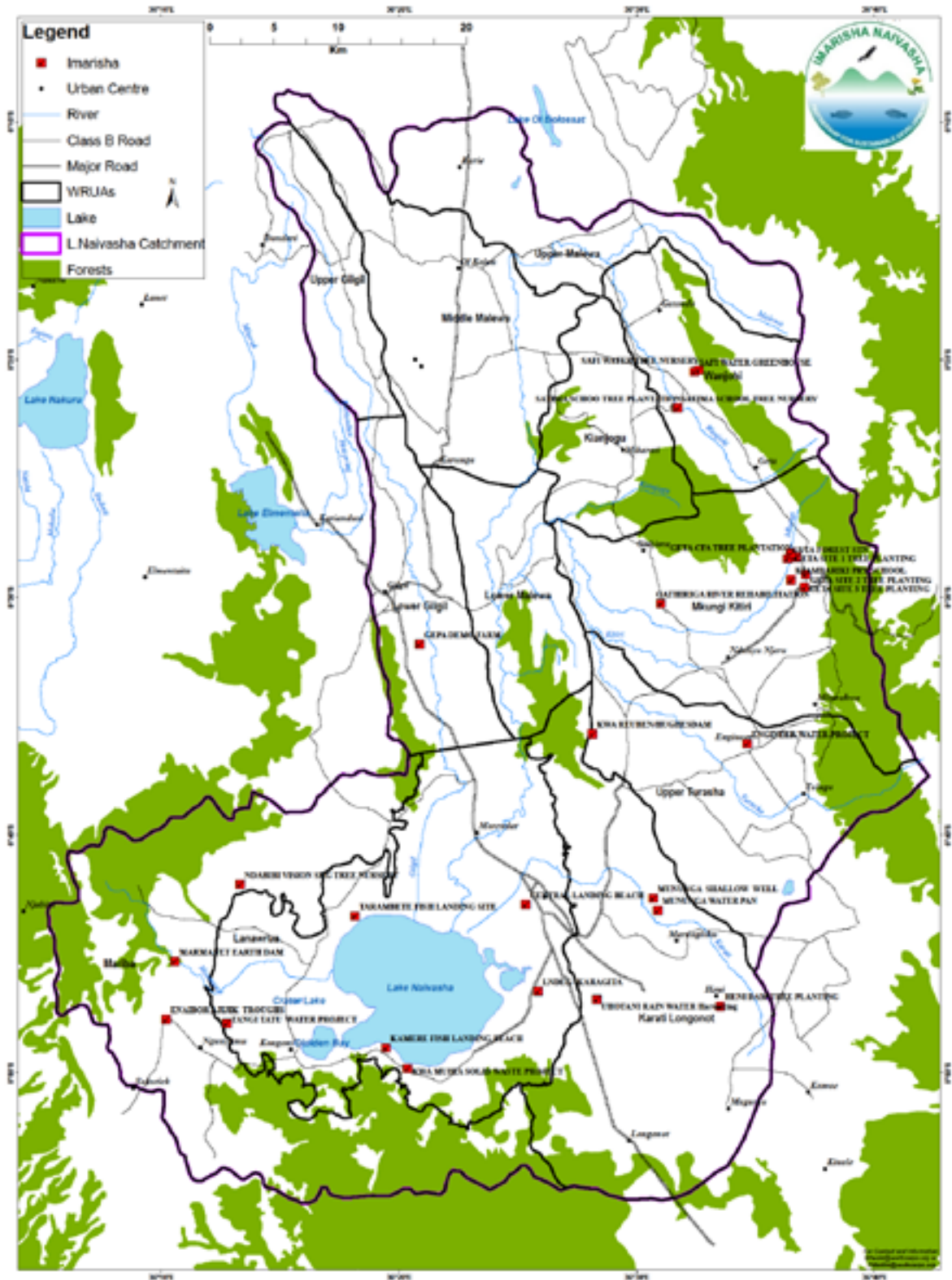


FIGURE 4. Lake Naivasha Catchment Area

the necessary platforms to deliver a multi-sectoral and participatory approach, as depicted in Figure 3. This approach will likely evolve and shift over time as the initiative matures and broadens its activities.

The Imarisha Sustainable Development Action Plan (SDAP), identified four priority outcomes to achieve within five years (from 2012-2017), summarized in Table 1, above.

To deliver on key SDAP outcomes, Imarisha Naivasha partnered with WWF to create a four year (2013-

2016) action plan—the Integrated Water Resource Action Plan (IWRAP)—the purpose of which is to create the essential enabling conditions for water regulation and governance, sustainable land and natural resource use and sustainable development in the Lake Naivasha Basin. Financing for the IWRAP came through the Dutch Embassy in Nairobi. The seven key outcomes or results are summarized in Table 2, below.

Outcome	
1	Increased capacity and improved governance in WRM institutions (WRMA and WRUAs) for water resource management in LNB
2	Increased knowledge and technical capacity for quantitative water resource management and monitoring in LNB
3	Increased headwater protection and security of water flows through improved participatory forest management and income-generation in the catchment
4	Conservation and sustainable development of riparian farmland in the catchment through improvement and institutionalization of PES mechanism
5	Increases in levels of sustainable production and good stewardship in LNB floriculture through development and adoption of national standards and certification
6	Strengthened institutional capacity of Imarisha Naivasha for execution of the SDAP (monitoring impacts, compliance, oversight and communication functions)
7	Partner consultation and finalization of the Lake Naivasha Basin PPP Sustainable Development Fund project and funding proposal

TABLE 2. Naivasha Integrated Water Resource Action Plan (IWRAP) (2013-2016)

Financing integrated landscape management in Naivasha

Imarisha Naivasha is a participatory public-private partnership, acting as a hub to coordinate and orchestrate financing through the development of proposals for cross-cutting objectives, helping to align sectoral activities into the integrated plan and finance framework, and engaging the government and development partners to seek financing. Each project and/or programme may be funded through a multi-sectoral financial pool raised through the leadership of Imarisha, or separately through sector funding mechanisms. The latter is the most common. All projects and programmes are designed to contribute to the implementation of the LNIMP and the SDAP outcomes.

Enabling incentives for integrated landscape management

The bulk of finance currently is for interventions in the water sector. External donors in particular show a preference for focusing on water (refer to Table 3 below). Part of the reason for this is likely to serve the needs identified in the integrated water resource action plan (IWRAP) and build capacity for water resource stewardship through government agencies and the water resource user

associations (WRUAs). However, the LNIMP and SDAP identifies a much broader integrated management agenda, and Imarisha Naivasha, its members and partners, are working to diversify and grow the resources available to meet these needs.

The four UK retailers—ASDA, Tesco, Marks and Spencer and Sainsbury's—provide the largest amount of funding for Imarisha activities, at over US\$300,000 per year (it is unknown for how long this commitment will last). The UK retailers' commitments are based on recognition that risks to their businesses based on reputational exposure and reliability of sourcing of products procured from an unsustainable environment are very real and worth mitigating. Other private sector contributions have been targeted to key needs. For instance, in 2010 the LNGG horticultural companies agreed to pay a new tax to the town of Naivasha, based on acreage, to tackle infrastructure problems (Lawrence, 2011). LNGG members have also contributed payment for ecosystem service (PES) voucher payments to smallholders in the upper catchment to address erosion and agricultural practices, and while it is a relatively small pilot (around 1000 farmers reached, out of a pool of 250,000; funded at

US\$21,000) it is an important model for addressing the pressures in the upper catchment. In all, corporate social responsibility contributions from all Kenya-based and international horticulture companies stands at over €4 million (US\$6.5 million) per year.¹²

Partnerships provide the primary means through which Imarisha initiatives access finance, either as collaborative multi-sectoral proposals developed and coordinated by the board or direct access by individual organizations and community groups. The amount of funding varies from project to project and is usually spread across several institutions and organizations. The most comprehensive example of this is the financing for the Integrated Water Resource Action Plan (IWRAP), which seeks to carry out critical enabling elements in order to operationalize the Imarisha Sustainable Development Plan (SDAP). The Kenyan Embassy of the Kingdom of the Netherlands has committed KES 420 million in 2012 to carry out a four year plan. The funds are shared between implementation partners, including WWF Kenya, Imarisha Naivasha, the Government of Kenya Water Resources Management Authority (WRMA) and technical assistance partners from the Netherlands (ITC/ University of Twente and two Regional Water Authorities in the Netherlands (Waterschap Noorderzijlvest (NZV) and Waterschap Hoogheemraadschap (HDSR)), the 12 Lake Naivasha Basin WRUAs (Water Resource User Associations), 4 Com-

munity Forest Associations (CFAs) (Community Forest Associations) and other community groups that are implementing partners and beneficiaries on the ground.

The integration of sector-based activities does occur at local levels, and the sub-catchment management plans and related finance offer a clear mechanism for this integration. For instance, the WRUA Development Cycle taps the Water Services Trust Fund for finance, which gets its funds from donor organizations. Canada's CIDA has been the primary donor to the Water Services Trust Fund, though this may change given recent changes to CIDA, and it is unknown what funds will be available in 2014. The Water Services Trust Fund acts like a shopping basket—donors can choose which activities they intend to support. The challenge however, is that fickle donor finance is not consistent year to year, and also favours specific sector-based activities (water, in this case). Hence, less attractive activities and those that require multi-year finance may go unfunded.

Though short-timeframe investments have their drawbacks, they can also be catalytic. Germany's GIZ seeks to complement IWRAP and the Water Trust Fund to fund institutional and organizational support to the 12 WRUAs to help implement sub-catchment management plans. Short-term funding of US\$534,000 was granted in September 2013, and intended and to be spent within

12. Presentation by Richard Fox, 2011. Imarisha Naivasha: A Public Sector – Private Sector – People Participatory Approach to Resource Management. Imarisha Naivasha.

TABLE 3. *Primary sources of finance for integrated landscape management in Naivasha*

Source	Finance intent/purpose	Finance amount/type
Government (national, district, local)		
Government of Kenya	Imarisha operational support, dedicated funding through line ministries. Ministries also source funds for activities within their sectors	\$3,500,000-dedicated operating funds
District (newly created, largely federally funded at this time)	Recently created devolved county governance requires basic institution building and consolidation	\$ 1,200,000 Devolved gov't operating funds per/yr
Local (Town of Naivasha) - Dutch embassy to Naivasha water company (Naivawass)	Sewage treatment and water provision and management in Naivasha town	\$5 million (grant)
Multi-lateral and bi-lateral sources and related partnerships		
Kenyan Embassy of the Kingdom of the Netherlands	IWRAP programme on integrated water resources management and capacity building of institutions.	KES 420 million (US\$4.8 million) requested (grant)
Regional Water Authorities in the Netherlands- Waterschap Noorderzijlvest and Waterschap Hoogheemraadschap	Supporting WRMA and WRUAs in technical, institutional, legal and financial aspects; assist Twente University/ITC-Deltares to customize hydrological models to the WRMA user levels	In-kind: 1100 hours of technical assistance
CIDA - Canada	Water Services Trust Fund – funds WRUA development/ operations and sub-management plans (SMP's)	\$47,000 - Has been a primary source of funds, but given major changes at CIDA, unknown after Dec 2013.
GIZ - Germany	Water stewardship in Lake Naivasha basin	US\$534,000/Grant
UK DfID	Support to WWF- Climate change scoping and adaptability	\$230,000 per year
NGO and development partners (pass-through grants/investments)		
WWF	For IWRAP	Part of the \$5million grant from the Dutch government
SNV	Grant via WASH for needs assessment and project design - water and sanitation for informal settlements + support to WRUAs and sub-catchment mgmt. plans	Grants
Twente University (ITC)	Leading implementation of IWRAP outcome 2 Annual hydrological studies for over ten years	Funded by University of Twente (amount unknown)
Private sector		
UK retailers: ASDA, Tesco, Marks and Spencer and Sainsbury's	Finalization of plans (SDAP and LNIMP), 'no-regret' activities, Imarisha operating funds	US\$570,000/yr
LNGG	PES for smallholders in upper catchment	US\$29,000 over three years (Negotiated on a yearly basis)

Source	Finance intent/purpose	Finance amount/type
LNGG (including Finlay's contributions as a LNGG member)	Community and civic projects around Lake Naivasha	\$ 78,000 over the last 4 years. Contribution to LNGG and Levies to Naivasha Municipal council (Lawrence, 2011).
German-Austrian supermarket REWE together with Swiss Coop	Funded University of Leicester to explore plastic floating islands containing papyrus plants for natural filtration. Funded University of Leicester for research related to sustainable water usage (link to their purchase of Max Havelaar roses) ¹³	\$24,000
Equity Bank, Kenya	Loans for farmers groups to construct small-scale dams to assist in water usage in dry periods	Low-interest loans (8%) + 4-month grace period

Table 3 continued.

three months. It may provide the basis for a longer-term commitment. The short-term funding agreement requires that Imarisha demonstrate a 20%-25% private sector contribution to the project. This was achieved with funding from the UK Retailers, thus helping to mobilize other key sources of investment.

Innovations in Lake Naivasha finance

Interviews and assessment of current finance pathways indicates that the largest pressures on water quality and ecosystem functionality from smallholder agriculture production, deforestation and forest degradation, and need for local biomass solutions for energy generation are largely under-financed. These are complex interventions with potentially high transaction costs, and yet are not the first priority for funders and investors. Imarisha Naivasha is looking at a range of innovative solutions to this issue, ranging from scaling up the PES scheme, water user fees, and other sector-based approaches. Imarisha

Naivasha also envisions a funding mechanism to serve the long-term financial sustainability of natural resource management interventions and governance (the LNB-3P-SDF proposal), which could amalgamate the sector-based ones and provide finance for the integration and non-market-based activities.

Water use fees: WRMA, WWF and the WRUAs are investigating the capacity requirements and mechanisms necessary for WRUAs to take on more responsibility, including collecting water user fees, and be compensated for that role.¹⁴ This could provide more operational funding directly to WRUAs and also help with monitoring activities that are a priority for WRMA. However, not all users are paying fees, and those that do feel they are carrying a greater share of the financial burden. Commercial farms argue that WRMA would be able to generate more funding if they could register and hence charge the currently unregistered water users in the upper catchment. Commercial farmers also argue that they are

13. Swiss-Coop CSR report: http://www.coop.ch/pb/site/nachhaltigkeit/get/documents/coop_main/elements/nachhaltigkeit/grundsaeetze/coop-fonds-nachhaltigkeit/downloads/Fonds%20Projekte%202012-en.pdf

14. John N. Munyao, WRMA, personal communication 10-12-13.

complying with the water resource regulations, paying for their water use, and a portion of these funds should be used for improving the water resource management in the upper catchment (Pegasys, 2010). Imarisha Naivasha is investigating how a surcharge on all water use fees could support basin sustainability (see LNB-3P-SDF proposal, below).

Forest restoration fund: A forest restoration fund will be established, managed by KFS, to promote sustainable forest management and improved livelihoods of forest adjacent communities. KFS and the programme will support CFAs to develop proposals (for example, for funding from Green Zones (ADB funding) project and any other funding mechanisms such as CDTF), with a target of Ksh 4 million raised for CFA projects by the end of 2015. Eligible projects will be based on sustainable income-generating activities and Participatory Forest Management Plans.

Local commercial farmers- Payments for Environmental Services (PES):

LNGG flower companies and other businesses contributed US\$21,000 over three years, benefitting 784 farmers by 2012 (Kariuki, 2012), with 'payments' of US\$17 as a voucher that can be exchanged at local stores for inputs such as improved seed varieties and fertilizers. The PES scheme has also coordinated technical and extension support to farmers from the Ministry of Agriculture for planting advise, the Kenya Agricul-

tural Research Institute, Kenya Forest Service for tree-planting, and Nature Kenya to support stronger links between farmers and markets. Farmers who first enrolled are now being phased out, with new farmers being brought into the scheme. Anecdotal evidence suggests that participating farmers have experienced improved yields and diversification of income, while the quality of land stewardship has increased.¹⁵ Commercial growers in the lower catchment that are participating in the scheme are aware of their benefits from environmental services, and are willing to invest in improved practices in the upper catchment. However, constraints exist with the PES scheme:

- Not all flower farmers subscribe to the PES scheme, as some believe they are already paying for improved farm practices upstream through their water use fees.
- PES vouchers and support have been targeted to the farmers creating the worst impacts, in order have greatest effect on land use practices. However, forest dwellers higher up in the catchment who are the real ecosystem providers feel left out.
- There are different perceptions about the control of the PES scheme. The horticulture sector appears to want to keep PES as a private-sector initiative, without any government control. Government control of the PES

15. Anderson Koyo and Mbogo Kamau of Imarisha Naivasha. Personal Communication 9-12-13.

scheme would change its perception as a market-mechanism to a tax.

- This PES scheme was a pilot. The gap between a pilot servicing >1000 farmers and the scale needed to shift a significant number of farmers in a region containing 250,000 smallholders is enormous, particularly considering the capacity of organizations and government agencies operating in the region.

Equity Bank (low-interest loans and extended grace period): WWF recently negotiated a low-interest loan of 8% (less than the standard 20%+) and extended grace period of four months with Kenyan Equity Bank for farmer groups willing to construct small-scale dams to assist with water usage in the dry periods. Pursuit of micro-finance was precipitated by the recognition that extension services to promote dam construction with individual farmers were limiting the ability to scale and reach a larger number of farmers. This micro-finance approach allows WWF to group farmers into groups of five individuals who pool their own funds, contributing a set amount each month to build group equity. When ready, they can deploy their capital to qualify for a loan. WWF will provide farmers six weeks of training

on financial management, and then will begin the loans.

Lake Naivasha Basin PPP Sustainable Development Fund (LNB-3P-SDF)

proposal: Seeks to address a key constraint—the long-term financial sustainability of natural resource management interventions and governance in order to scale or maintain interventions in the Basin that are not by nature an economic business case but necessary, and to provide operational costs of implementation bodies. The Fund would receive revenues from a price premium from Naivasha flowers sold in the EU, water user fees, and other revenues. Partners have presented a proposal for partial funding to the Sustainable Water Fund in The Hague, the Netherlands. This Fund will be jointly financed by actors in the flower and vegetable value chain with groups such as Ahold and LNGG, LNRA and the Naivasha Tourism and Business Community and the Dutch Government. Albert Hein (Ahold) have already committed to € 0.001 per stem per year to this fund. IDH has committed to assist in helping to improving the standards for flowers and mainstream in the EU, and GIZ (through the Water Future Initiative) will assist in setting-up the fund itself for LNB-3P-SDF. This complements the support to Imarisha from the UK retailers.

Opportunities for integrated management and finance solutions

The Imarisha Naivasha partnership is seeking solutions to the single-sector and more narrowly focused approaches in order to attain stronger integrated management outcomes.

Cross-sectoral and integrated management components to achieve land use management objectives

As part of this case study, Imarisha Naivasha staff explored what critical cross-sectoral and integrated management components are necessary in order to achieve land use management objectives. For instance, lake water quality requires interventions in the forest and agriculture sector in order to succeed. These are summarized in Table 4. For more detail on each of the sector management objectives, such as those for afforestation or water quality, please refer to the *Sustainable Development Action Plan*, the *Lake Naivasha Watershed - Five Year Development Plan*, and associated *Development Plan Matrix* (dated 25 January 2012).

Table 4 demonstrates the range of actors necessary to carry out, or in some cases to invest in, integrated solutions. The right hand column

features key integrated management components that are necessary to achieve success of each of the sector management objectives, and is the result of the one-day planning exercise held in December 2013 as part of this case study research. For instance, the avoided deforestation management objectives in the *Five Year Development Plan*¹⁶ describe a set of activities that focus on strengthened capacity of CFAs and of land owners and farmers to undertake on-farm forestry and agro-forestry activities, development of management plans, climate change mitigation and adaptation strategies, and alternative sources of forestry resources i.e. energy, timber, fodder, fruit trees, medicinal plants and non-timber products. However, in more explicitly focusing on the key integrated management components, livelihood options for forest users and farmers becomes more explicit objective, highlighting the importance of technology and innovation (energy use: firewood and charcoal), promotion of compatible economic activity such as NTFPs, strategies to ensure water quality and quantity (which could include specific incentives paid by ecosystem service users to those upstream providing the service. Biodiversity conservation and the impor-

16. Described as, “By 2016, forest management strategy developed and forest cover increases by 1%.”

TABLE 4. Lake Naivasha, Kenya: Cross-sectoral and integrated management components to achieve land use management objectives

Management objective	Actors implementing or investing in objective	Key integrated management components in order to achieve success
Afforestation/restoration of degraded lands	KFS, CFA, farmers, civil society (WWF, SNV, Imarisha, etc.), landholders, MoA, MoE, research (KEFRI), international agencies (transboundary), county govt	Where: Protected forests, on-farm, riparian areas, public lands, recreational lands, parks. Requires engagement of smallholder and SME farmers, also pastoralists. Planning/zonation, institutional development
Avoided deforestation	KFS, CFA, farmers, civil society (WWF, SNV, Imarisha, etc.), landholders, MoA, MoE, research (KEFRI), county govt	Control of use + livelihood options for forest users and farmers; technology and innovation (energy use: firewood and charcoal); compatible economic activity: NTFPs; water quality and quantity; biodiversity conservation; monitoring, compliance, enforcement
Water quality	WARMA, WRUAs, farmers (small and large), water service boards, industries, infrastructure, health and sanitation, county govt	Standing forest, protection of catchments, soil erosion and farm practices, + alternative water sources; industrial standards; monitoring and information access; innovation and technology; water recycling and waste management; water treatment standards for all users
Water quantity	WARMA, WRUAs, farmers (small and large), water service boards, industries, infrastructure, health and sanitation, county govt	Need to demonstrate water balance—research on integrated water management; enforcement of obstruction permits, also conditions under which permits are granted; compliance and self-regulation (current engagement with all sectors that impact water is minimal); land protection (riparian and uplands); understanding climate change impacts on water
Agricultural sustainability (smallholder)	MoA, small-scale farmers, MoLands, county govt, water permitting authority, MoE, market and value-chain, co-ops, farmer associations, SME finance institutions and banks	Institutional frameworks to serve integrated goals, peer to peer influence; codes of conduct, BMPs, co-ops providing technical information/extension and collective collateral; infrastructure, water harvesting technologies, market access (outgrowers), capital access and link to financial institutions; capacity-building in soil, water, agronomy; climate change impacts
Agricultural sustainability (commercial)	NEMA, WARMA, MoA, county govt, Horticulture Crop Development Authority, KFC, municipal council, large growers, LNGG, markets, finance institutions	Standardization, codes of conduct, compliance (EIA and EAA), water permits and regulations; land, soil, and water management geared towards engaging forest, agricultural and pastoral land users; technology for enviro protection, energy use and alternative energy sources; waste (solid and liquid) recycling and reuse; addressing conflicting land use (human and human conflicts); invasives and IPM
Pastoral and pasture health	CBOs, CEPAD, Pastoralist Outreach, MoLivestock and Fisheries, WRUAs, MoCommerce, county govt	Establish carrying capacity; climate change impacts; overcome livestock, water (riparian), biodiversity conflicts; address shift from nomadic lifestyle to sedentary by reducing livestock #'s and improving breed quality, supplemental feedstock, disease control, and shift to agric cultivation practices; forest encroachment or grazing (Eburro/Mau forest); reduce pasture conflict and human/wildlife conflicts

Management objective	Actors implementing or investing in objective	Key integrated management components in order to achieve success
Fisheries	MoA, Livestock and Fisheries, Beach Management Units, WARMA and WRUAs, fish traders, MoLands (riparian), MoE (pollution), public health, county govt	Water quality and quantity; forest, agriculture (pesticides, fertilizers, pollution), pastoral, municipal sectors; waste management, riparian land management, shift to sustainable energy; climate change impacts; integrated land use planning and zonation (laws, codes of conduct, address illegal poaching), restoration of degraded areas, invasives (plant and animal); value-addition (markets, finance, credit, post-harvest processing, participatory research and monitoring)
Energy (geothermal, charcoal, woodlots, wind/solar)	MoE, KENGEN, CBOs, NGOs, KFS, CFAs, MoE, MoA (woodlots on farms), research institutions, county govt, NGOs, industry, MoF (tax rebates)	Promote alternative sources, forest conservation, woodlot development, agroforestry, animal waste, biogas, briquettes, innovation and technology; geothermal in greenhouses; credit facilities + strong government policy and finance support; integrated planning, citing standards to overcome trade-offs
Biodiversity	MoE, KWF, NEMA, research, MoA, Livestock and Fisheries, Tourism, NGOs, CBOs, Mo Health, county govt	Protection of habitat and species, zonation and integrated planning, controlling invasives; indigenous knowledge, benefit-sharing, protecting cultural values; tourism; climate change impacts; controlling plant and animal populations, avoid overstocking; wise-use of genetic resources (research, technology, innovation)
Tourism	MoTourism, MoA, MoE, KFS, WARMA, municipal gov, county gov, M of Information, Communications and Technology	Integrated planning to inform all sectors; maintaining high-quality ecosystem services and landscape diversity (biodiversity, cultural, historic, natural); assess climate change impacts; public, community and private sites; integrate into tourist circuits; infrastructure
Infrastructure	All government agencies and all sectors, though emphasis is on local and county govt (recently devolved governance structures)	Sustainable siting and development; integrate with all other sectors and management objectives

Table 4. Lake Naivasha, Kenya: Cross-sectoral and integrated management components to achieve land use management objectives, continued.

tance of monitoring, compliance, and enforcement are also emphasized.

Focusing on the key integrated management components necessary for achieving success among single sector management objectives helps to, a) demonstrate what interventions outside the target sector are necessary to achieve success, and b) highlights the cross-cutting and en-

abling elements that are necessary to affect change across multiple sectors for integrated management components to achieve sustainable land use management and development objectives.

Key cross-cutting and enabling elements

Cross-cutting and enabling elements that were cited by staff frequently within each sector, identified as critical to achieve integrated landscape objectives that can balance multiple demands and uses include a range of activities. The first, and perhaps most elementary, is integrated land use planning, which has not yet occurred to the degree required. Assessing climate change impacts and opportunities for climate resilience is lacking and yet of great need for agricultural production, reliance on water supplies, and even infrastructure and municipal services. Livelihood issues are a focus within and across all sectoral interventions, and must be a focus area for investment decisions.

Governance and capacity building are a large priority, ranging from the ability of Ministry of Agriculture extension staff to have the transport necessary to reach smallholders in the upper catchments to the ability of Imarisha Naivasha to effectively liaise between agencies. Governance and capacity building also relates to Imarisha Naivasha's activities to integrate sustainable and management objectives into planning and capacity development occurring with new county governments, formed as a result of recent changes in devolved governance structures. Importantly,

staff noted that integrated policies are lacking, and a much greater need exists to identify through legislation and ministry operating mandates how greater integration can be mandated and operationalized. Narrow sectoral codes, regulations and programmes will not achieve the desired results alone, and linkages are necessary. Monitoring, enforcement, compliance, and codes of conduct are cross-cutting, and while identified within most sector-approaches, there are benefits in efficiency and shared information systems that could serve multiple sectors simultaneously.

Technology and innovation is required across all land use practices to shift from low-yield and inefficient production to higher-yield systems with fewer externalities. Research is identified as a large need across the range of natural resource uses, but particularly on better understanding potential gains from integrated approaches and integrating research outcomes into basin organizations (as opposed to institutions outside of the basin such as foreign universities). Due to the significant changes necessary from business as usual land use practices to achieve sustainable land management in the basin, significant effort is needed to increase awareness and sensitize stakeholders to how they can benefit from improved management practices.

Cross-cutting and enabling elements	Description
Integrated land use planning and action	The Sustainable Development Action Plan/5-Year Development Plan is the foundational plan for the region. More work is required to strengthen integration between sectors in carrying out the land use plan for the Lake Naivasha basin, particularly for tourism and infrastructure, small-and large-scale agriculture, water and forests, and biodiversity, and how to promote afforestation/restoration of degraded lands.
Climate change	Very little research has been done on future impacts of climate change on water quantity, small-and large-scale agriculture production, smallholder resilience to climate change, crop diversity, carrying capacity for pastoral use and pasture health, fisheries, tourism, biodiversity
Livelihoods	Related to need for integrated land use planning and carrying capacity assessments; avoided deforestation; smallholder agriculture co-ops as a means to provide technical information/extension and collective collateral; pastoralists shifting from nomadic lifestyles to more sedentary ones (requires reducing livestock #'s and improving breed quality)
Governance, capacity (including Imarisha Naivasha)	Critical for all sectors, but also relates to new devolved country government; key for determining water permitting and regulations for commercial agriculture, fisheries, energy, forestry, afforestation/restoration of degraded lands
Monitoring, enforcement, compliance, codes of conduct (drawing from local, national and international best practices)	Need to demonstrate water balance and define conditions under which water permits are granted, enforcement of obstruction permits; avoided deforestation, water quantity, smallholder and commercial agriculture
Technology and innovation	Critical to increase yields while avoiding extensive practices or overuse of resources. Key for improving water quality, agricultural sustainability (for smallholders- water harvesting, soil, water and agronomy; and for commercial is technology for environmental protection); biodiversity; energy including geothermal, charcoal, woodlots, wind/solar; livestock to improve breed quality, supplemental feedstocks and control disease
Research	Fisheries, biodiversity, carrying capacity of the landscape given demographic, economic and climate shifts, define the water balance and integrated water management to set conditions under which permits are granted
Sensitization and awareness	Related to integrated land use planning, carrying capacity assessments, governance, incentives and enforcement—need stakeholders and the public to understand risks of inaction and value of integrated approaches.

TABLE 5. *Cross-cutting and enabling elements for integrated landscape management*

Funding is largely not in place or currently available for the cross-cutting and enabling elements described in Table 5. Coherent focus on these can positively impact cross-sectoral and integrated management components. This may provide a basis for donors and investors to assess future opportunities for investment and support to Imarisha Naivasha to achieve these goals.

Lessons Learned and recommendations

A significant priority exists to address the unsustainable land use practices in the upper catchment, particularly in the Aberdare Ranges and Mau Escarpment, which continue to pose a threat to water quality, carbon sequestration, forest cover and soil health. The scale of the challenge is enormous—250,000 smallholder farmers in the region, with land degradation pressures ranging from charcoal production to soil erosion.

New innovations, partnerships, research and technical capacity, and significant new sources of funding to support integrated outcomes are required to address these pressures.

Interventions must promote less extensive agricultural practices, yield increases, access to markets and integration in the value chain, and local biomass solutions for energy generation, among other integrated approaches.

While the 2008/2009 drought crisis precipitated commitment to integrated solutions after years of dialogue and planning, the momentum needed to keep all stakeholders engaged and committed to invest in solutions has been a challenge. **The strength of the Imarisha Naivasha Board is crucial in order to maintain a broad vision of integrated management**, particularly as the role of the Central government has diminished since the last election.

This is also particularly important as the new county-level government takes shape, in order to integrate Imarisha Naivasha objectives into these new institutions. The Board is the key entity to bringing all sectors in, to coordinate between necessary institutions and to build the motivation for them to invest in integrated outcomes.

A strong stakeholder platform is essential, however integrated landscape management and associated investments benefit from stakeholders thinking beyond their own sectoral interests. Early on, it was important for each sector to see that involvement in the stakeholder platform could serve their sectoral interests, and trust was built in the process. However, as the initiative matured, the need grew for sectors to think beyond their interests in order to see that their own success in realizing Sustainable Development Action Plan goals fundamentally relied on other sectors achieving their goals simultaneously, and through coordinated action. While the basis exists for this integration, it has not yet fully been realized. This has restricted contributions and investments from key sectors that have a direct stake in the Action Plan goals and outcomes (such as tourism).

Given the **focus on sector-based funding, and funding for the Imarisha Naivasha secretariat to carry out largely sector-based activities, funding and investment is lacking for integrated management planning and action, and largely does not exist for the cross-cutting and enabling elements**. Coherent focus on these can positively impact cross-sectoral and integrated management components. This may provide a basis for donors and investors to assess future opportunities for investment and support to Imarisha Naivasha to achieve these goals.

Integrated policies are lacking, and a much greater need exists to identify through legislation and ministry operating mandates how greater integration can be mandated and operationalized. Narrow sector-based approaches are ill-equipped to address the range of activities with influence in other sectors that have direct impact on Imarisha land management goals.

Imarisha Naivasha's external donors are largely sector-based, and yet these are the largest sources of funding, as domestic government finance is limited. The focus on the Integrated Water Resource Action Plan (IWRAP) in order to deliver on key SDAP outcomes may have shifted the focus too narrowly on the water sector and away from achieving integrated approaches, although smallholder agriculture is to be addressed to some degree through IWRAP. This highlights

the challenge of implementing broader integrated objectives, when donor interest is more sector-focused.

Imarisha Naivasha is interested to **identify viable options for attracting finance for all components of the landscape**, and is particularly interested in the role of multi-laterals to help achieve this integrated approach. One option is creation of a development platform to channel and pool funds from sector-based donors. However, this will still require Imarisha's global partners and investors be sensitized to their need for broader land use intervention strategies, and to consider windows for landscape finance.

Another option for integrated finance is to leverage climate finance, which is a priority cross-cutting element for Imarisha Naivasha. The future impacts of climate change on key basin sectors is largely undocumented and yet can have significant impacts, particularly on critical ecosystem services, such as water, forests and biodiversity, which each sector depends on. An integrated approach based on climate finance could also draw tangible connections between existing national priorities, such as Kenya's national adaptation plan¹⁷ and its national REDD+ plan (Kenya, 2010), which prioritizes the Mau catchment. The Eburru portion of the Mau forest is within the Lake Naivasha catchment. Leveraging integrated finance from climate-focused sources can help identify priority risks and

17. See Kenya's National Climate Change Action Plan 2013- 2017 and also the Medium Term Plan (MTP) 2013-2017

opportunities, and can also better inform private sector and development partner investment decisions.

Identification of how to improve the orchestration of all sources of finance to serve integrated outcomes is necessary. This requires mapping all flows of finance in order to identify where synergies can occur, overcome redundancies (if any) and to how to steer adequate finance to the highest priority interventions. This includes the full range of flows of finance, including that allocated to carry out government programmes to that which is directed to producers and land users at the landscape scale. The latter would include PES, access to credit and low-interest loans, strategic infrastructure investments, to investments to improve value-addition of agricultural products, and improved market access.

More demonstration of the financial viability and value of landscape approaches is needed. Financial

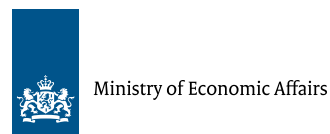
value can be equated as reduced risk, as in the example of the International Finance Corporation (IFC) performance standards raising caution about investments until a Lake Naivasha business could demonstrate mitigation of regional water security risks in business planning. However, local banks and lenders do not apply similar environmental and social screens to evaluate risks. Business management skills based on sustainable use of natural resources need to be enhanced to reduce risks on investments. But financial value can also relate to the increased farm-level and regional income derived from better-managed landscapes. Lake Naivasha could be an important testing ground for finance institutions, ranging from local banks to multi-lateral finance institutions and private sector investors, to test and demonstrate the economic viability of landscape financing.

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Appendix A: List of Interviewees

Name	Organization
Anderson Koyo	Imarisha Naivasha
Mbogo Kamau	Imarisha Naivasha
James Chomba	Imarisha Naivasha/GIZ
Richard Fox	Finley's Horticulture Kenya Ltd
John N. Munyao	WARMA
Daniel Koros	WWF
David Edwards	Prince's International Sustainability Unit



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