SCALE PROPOSAL

NAKURU, AFRICA'S FIRST SPONGE CITY

Prepared by: MetaMeta Research/Kenya, VEI and NAWASSCO (WaterWorX)

In collaboration with: County Government of Nakuru

Date: 7 May 2021


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water for 10 million people
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SECTION 1: SPONGE INITIATIVE

Title of your initiative	Nakuru – Africa's first Sponge City
Name of lead applicant	MetaMeta Research
Optimy number	ID 20210041
Version number	9

This proposal based on an intensive incubation period describes how in Nakuru run-off and rainwater can be better retained to secure WASH services, improve public health and reduce local flooding events. This will help Nakuru become Africa's first sponge city! Sponge City is a very exciting and relatively novel approach – essentially applying 3R in a city context. It was first developed in parts of Asia, with now more and more countries taking it up. Nakuru could set the pattern for fast growing middle-sized urban centres in Kenya and Africa.

Nakuru Town (population of 533,800, 2019 census) is facing increasing threats to its water supply, largely because groundwater sources are dwindling, while it provides 90% of total water supply. Currently only 45,000m^3/d of water is available against a demand of 70,000m^3/d. The demand for water is expected to rise significantly, with demand for water reaching 191,000m^3/d in 2050 to serve an estimated population of two million. The aquifers, rivers and storm water drains in Nakuru town also feed Lake Nakuru, which sustains rich biodiversity, including pink flamingos that feed on algae blooms, and has been designated a Wetland of International Importance by the Ramsar Convention. In addition, the town is soon to be the 4th City of Kenya and is strategically positioned to serve its hinterland with developed transport corridors to other centres.

The applications for a sponge city combine Recharge, Retention and Reuse (3R) in and around the city, with WASH services, leading to more secure water supply and better public health. Sponge City Nakuru classifies as SCALE since it is based on successful cases and important lessons of Sponge Towns KwaVonza and Kajiado, it takes from sponge best practices globally and it is based on deep engagement and preparation in Nakuru that underlies the feasibility to work on this scale. Furthermore, County of Nakuru (CoN), Nakuru Water and Sanitation Services Company (Nawassco) and other stakeholders have already undertaken big steps on building urban climate resilience in the last two years. This project will leverage on existing policies and institutions in Nakuru County. The CoN is upfront in improving the enabling environment by opening opportunities for communities and private sector players to engage and improve the resilience of the city.

This proposal/action plan is a key outcome from the formulation phase, in which we aimed to reach a 'common understanding, a clear 'roadmap' and agreement on how to implement sponge city Nakuru.' It is supported by the County of Nakuru and Nawassco water utility; and is based on extensive consultation with private sector parties, financial institutions and citizens. A large part of this process has taken place at the neighbourhood level, to fully understand issues, ideas and contributions of the people making the city. This is the ground-laying step to move on to the next, the Scaling of Sponge City Nakuru, which will be described in this proposal.

The ‘formulation phase proposal’ is advised to be used as a reference document, to prevent repetition, the focus is on describing key findings that resulted from the formulation phase in this scale proposal. This first chapter on the initiative will give you a brief on what a Sponge City is all about. Starting off with an analysis of the underlying problems and the current challenges specific to Nakuru, but met in many cities in the world. Further we describe in broad outlines what sponge city Nakuru entails, who is involved and what we plan to do. The following chapters will elaborate from this broad outline.

1.1 THE PROBLEM

Main issue: Notice to customers from Nawassco: “Our water production capacity is 40,000 m^3 a day against a demand of about 70,000 m^3 a day. The gap is managed through rationing. During the dry period of 2021, production capacity reduced to 30,000 m^3// day, yet demand has increased. This has led to water shortage/lack in some areas as well as low pressure.” (see annex 1: note to customers Nawassco)

Other key issues that came out through baseline surveys and discussions:

- Nakuru is both fast growing and fast sprawling – big challenge for urban planning, water supply and sanitation.
- Especially in low-income areas (London, Kaptembwo and Free Area) connected (71%) water supply is not enough, and many (29%) are not connected at all. And buying additional water is difficult to the population due to high price levels.
- Myriad of technical issues: Lack of green spaces, blocked drainages, flooding, insufficient sanitation facilities, high fluoride levels groundwater, and poor solid waste management.
- Myriad of governance / financial issues: lack of timely spatial planning, ad hoc solving of issues in silos, insufficient investment capital, reliance on big dams, loads of well-written policy documents but little concrete action on the ground and lack of accountability.

For evidence see annex 2: inception report and annex 3: water resources in Nakuru, assessment and potential.

The target groups most affected are the poorest residents, those residing in basic rentals and/or unplanned areas. The most vulnerable are most often hit the hardest without any shockabsorber. They are not connected to water in the home, often do not have a proper toilet, are affected by flooding, experience insecurity in their neighbourhood, and no ‘powered voice’. However, they have a lot of good ideas and potential to contribute to place-making of their own neighbourhood. This is also a precious resource we must tap into.

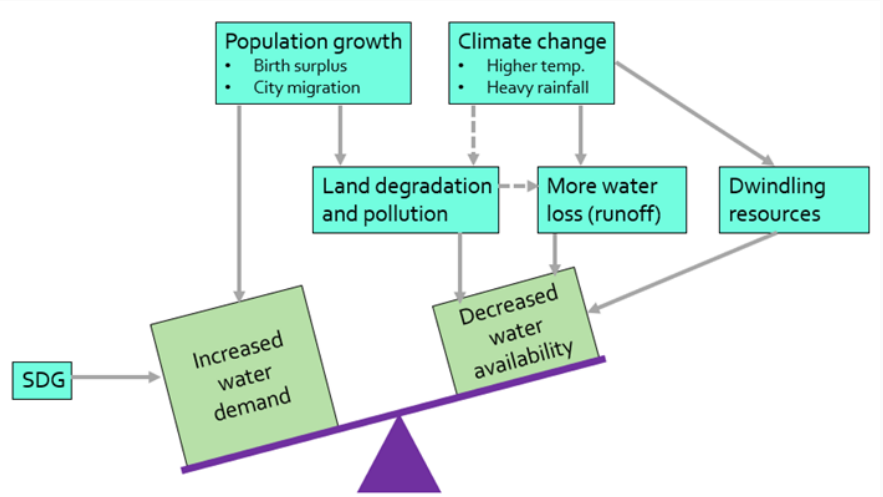

Figure 1 interconnected problems in Nakuru

Root causes lie primarily in inadequate management of the water resources, Nakuru urban area suffers a lot from climate change and urbanization patterns leading to flooding and erosion, see Figure 1. Furthermore, there is a bias toward large infrastructure projects rather than moderate

incremental improvements. The resulting gap in water supply is directly related to sanitation (insufficient water for operating and maintaining hygienic situation). Landcover change and dwindling groundwater sources, further exacerbate the situation. Furthermore, a root cause lies in shallow participation of community stakeholders, often plans are already developed in advanced stage and citizens have little say, sometimes a stakeholder participation process is completely lacking. Thereby there are specific target groups, such as people with disability, who are insufficiently included in the process, thus not catered for in the design and implementation. In the mapathon the citizens have voiced their challenges and ideas which can be seen through this Google Earth Story.

Figure 2 glimpse of online google earth story made by citizens

BOX I: HIGHLIGHTS CITIZEN ENGAGEMENT

Impervious pavements: "As a result of the developments taking place around London ward, some environmental factors have not been put into consideration as portrayed by these photo's of impermeable pavements that don't provide for infiltration. This causes large amounts of surface runoff in case of rainfall. This is one of the factors which leads to flooding in the lower parts of Nakuru. Therefore, we want to talk about the issue of trees. It has been a problem for the county government to plant trees."

"THE SOLUTION IS TO CONSTRUCT PAVEMENTS USING POROUS MATERIALS. WHEN THESE ROADS ARE MADE PLANNING SHOULD BE DONE IN A WAY THAT TREES CAN BE PLANTED ALONG THE ROAD SIDE."

Urban farming: "This is one of the good sites of London ward as seen on the site. Modern farming practices are being embraced to provide food security to the growing population within the limited spaces in the town. Gutters, waste plastic bottles, jerrycans, old tires and sacks are used for the planting of vegetables."

Figure 3 first glimpse of how the selected areas in Nakuru look like

There are many actors in Nakuru with each having a key role in the 'sponge value chain'. Since CoN and Nawassco have started programs on pro-poor coordination for WASH services, we could build upon those connections and community focal persons. We brought the various actors together in FGDs, Mapathon, and small meetings to hear their needs, challenges, ideas, solutions and contributions. We collected and bundled this, through the visual google earth story and inception report.

We saw that there is a big challenge in creating a level playing field for all stakeholders to take part in design, planning and decision making; with space for their own contributions and innovations. First steps are made by local authorities, although currently it lacks effective power (voice + execution) to residents and private sector actors. Another challenge is to get Sponge City high on the political agenda, and leveraging on financing options. Our task is to guide this process, endorsed by government and state actors, ensuring Nakuru actors are fully capacitated to make incremental steps in their own sphere of influence, and together build Sponge City step by step.

The main underlying systematic gaps include:

- Government programs focus on large scale interventions that are not connected to each other, take a long time to establish, and often are not as successful as planned.

Figure 4 second glimpse of how the selected areas in Nakuru look like

- The perception that the solution should come from 'the others' (community looks to the county government, the county government looks to the national government and donors, utilities wait for interventions from donors, national government and agencies).
- No clear problem holder: the problems affects us all and needs to be solved by all.
- Focus on tangible short-term issues like fighting COVID19, rather than long-term threats, like climate change.
- Water harvesting and sanitation structures are mostly done on individual basis rather than at a community level.
- Access to finance for citizens and SMEs is often not seen as a viable option due to a high-risk for both sides and limited trust.

- Ad hoc urban planning, while regulations exist on paper only.
- Some vulnerable groups are left behind in planning and catering for WASH services.
- High (youth)-unemployment in urban areas, though opportunities in providing services and products in WASH-sector through youth not yet enabled.

1.2 OUR SOLUTION

Our solution exists in creating a synergy between the technical issues and the people involved, between community, private sector and government authorities and mobilizing local (financial) resources. Technically, it means to stop complaining about stormwater & water demand, and instead use stormwater to solve water demand. A synergy among people entails to develop plans together in which each player has a role to play and contribution to make. The project will address the gaps by focusing on facilitating the process, we believe that >80% is on people management. So actively taking the stakeholders along in the process, designing ideas together, make it appealing to all, work out the financial envelope, guidance on doing the right things and doing the things right, and focusing on execution and compliance/enforcement. A Sponge City is a new approach, because it is based on many small measures to retain and reuse (storm) water, improve water quality and sustaining land and water resources. This will greatly improve the living environment, particularly in poor neighbourhoods. Furthermore, in sponge city a substantial part can be done by local community and business initiative. There is great opportunity and enthusiasm among the stakeholders, Sponge City is becoming the 'talk of town' among Government officials and citizens, while businesses indicate they are looking forward to expanding their products and services.

We will 'organize the dance floor', turn on the 'disco-lights', and get the people of Nakuru to dance!

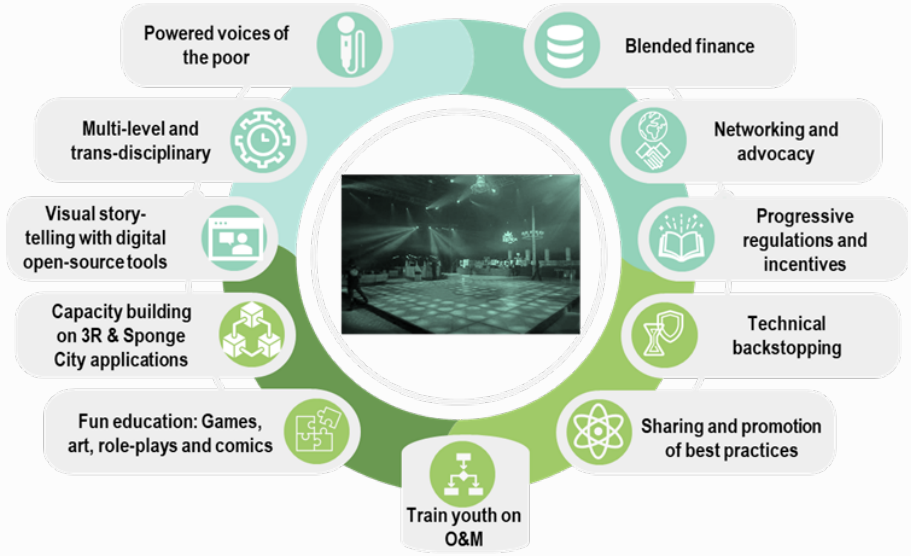

Figure 5 organizing the dancefloor components

The positive direct impact for target users will be real and manifold, amongst others resulting in improvement of: water supply and regular availability, sanitation hygiene, safety, green living and cooling climate, local (green) economy, job creation, and reduced flooding. The overall living conditions of this vulnerable group will be improved, by taking their issues serious, and including them in design and execution of solutions. In the pilot sponge town KwaVonza direct impact was felt by hundreds of households, especially through reliable and 'long-term-cheap' water supply at HH level. In the past, residents were not keen on loans, nor were businesses, however through Sponge team's intervention a check-off system with subsidy was set-up. We gained trust through time and by proving to do a good job, upon which many people took part. Currently, the hardware shops still sell around hundred RWH systems yearly, without subsidies. This exemplifies what we envision to reach at scale in Nakuru. Both towns also taught some

tough lessons, especially on sustaining partnerships and participatory planning from the very start. It showed the essential need for a strong base of support by all stakeholders, i.e. government, community and business, to make a holistic change. (For reference see MEL report KwaVonza & end-evaulation report Kajiado). Other key lessons we learned and which we integrated into our approach include: involve youth, ensure flexibility and continuous learning, patience is key, talk about past, present and future, keep it simple, what works, works, source from within, and transparency is very important when working with community.

For Nakuru especially since County of Nakuru (CoN) and Water utility (Nawassco) are on board, and it coincides with big steps from CoN on climate change, water supply and sanitation bills and policies, the much-required support from Government is already established and strong. Both CoN and Nawassco are involved deeply, both have taken action prior to MetaMeta/VEI involvement, and both show keenness to take the efforts a level up and transform Nakuru into a 'Sponge City', the first of its kind in Kenya/ Africa, take the required measures and to think and operate 'outside the box'. The demand from community, business and government regarding sponge uptake are all evident; communities need more water, safety and security; business need more business; and government needs a push and concrete, grounded ideas.

We envision to take incremental steps in the three selected areas, by focusing on social inclusion at multiple leves to drive change. And to ensure connect between WASH and WRM systems to advance sustainable urban living. The three areas we selected are Free Area, Kaptembwo and London, see Figure 6. Based on criteria of: % low-income households (see Table 1), community engagement, visibility, business interest, flooding issues, WASH functionality and established connections.

We provide exemplary figures on how many users we envision to reach, focusing on final beneficiaries. However considering the impact is expected to trickle down and improve living conditions for the entire population in the 3 areas, the numbers are provisional, see Table 2.

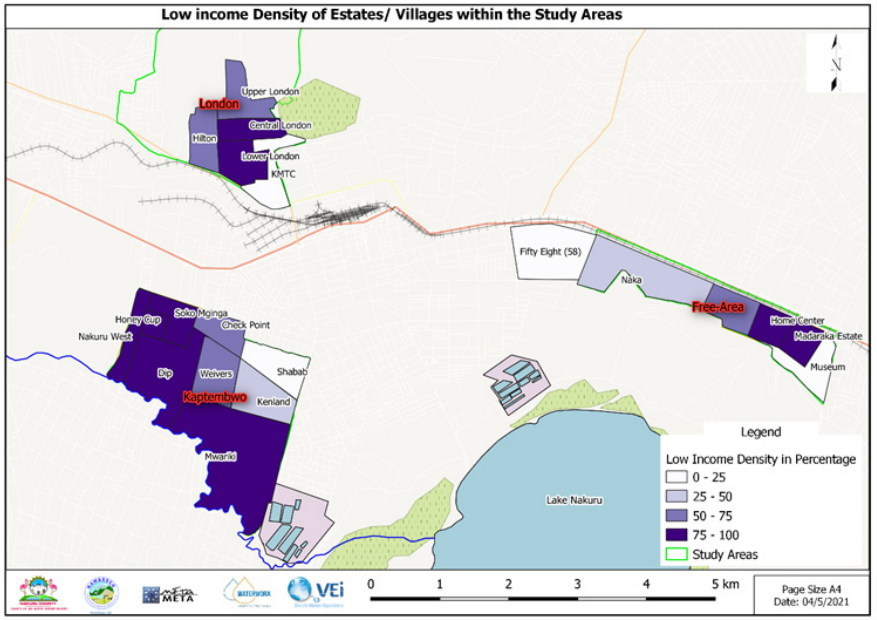

Figure 6 Map overview of Free Area, Kaptembwo and London and the density of low-income population

Table 1 demographics summary Free Area, Kaptembwo and London

	Free Area	Kaptembwo	London	Total	Average
Population Size	46,004	43,521	16,083	105,608	
Number of HHs	14,469	15,351	4923	34,743	
avg. HH size	3.18	2.84	3.27		3.09
Population of low income	21,137	36,695	3,133	60,965	
% low-income	45.95	84.32	19.48		49.91

Table 2 amount of users to be reached in the project

Type of intervention	Type of user	Number of users reached (year)		
		(1)	(2)	(3)
Rain Water Harvesting systems at HH level (hardware + Nawassco)	Residents (target groups)	>100 hhs	>300 hhs	>1000 hhs
	Hardware shops	>5	>10	>20
Regreening (road side tree planting, green spaces, quarry rehabilitation)	Residents (access to)	10%	25%	>50%
	Tree growers	>2	>4	>8
Stormwater collector drain in Free Area	Residents Free Area	>200 hhs		
	Hardwares, artisans	>15		
Urban farming	Residents (target groups)	>50 hhs	>200 hhs	>500 hhs
Well-field recharge	Residents	0%	5%	15%
Upgrade of water kiosks	Residents	0%	5%	15%
Green roads, soak pits, bioswales and rain gardens	Area coverage	5%	10%	20%
	Maintenance operators	>10	>20	>40
Community Environmental Volunteers (CEVs)	Residents	25%	50%	75%

The table above shows the number of users we aim to reach in 3 years' time, we expect that beyond the 3 years it can really come to scale, since it has been replicated densely within the areas, and from there can expand to other areas. Possible barriers to scale we identify include insufficient local engagement, unclear roles, failed interventions and change of leadership.

However, we foresee that with a strong inclusive stakeholder management process, sponge city platforms can become strong enough to absorb shocks and overcome the barriers. Additionally, an intensive trial-and-error process is followed to learn from failures and focus on what works best. Section 2 will give detailed explanation on the approach, an elaborate risk analysis is found in section 2.5. Our approach on how to reach scale and impact can be found in Section 3.

SECTION 2: SUSTAINABILITY

This section looks at the sustainability of our sponge city initiative and its ability to continue independently in the long-term. Here we describe our approach and roles, focusing on financial, institutional, environmental, technological and social sustainability. Four types of sponge city interventions may be discerned, and for each of them a different approach is required. Figure 7 presents an overview of the different categories of interventions, coupled with key financial, institutional and social notions. This section will elaborate on the different approaches.

2.1 FINANCIAL SUSTAINABILITY

Financial Sustainability refers to the establishment of local financial potential for the strengthening of sponge town initiatives. Financing is required to provide and sustain sponge city investments at town, private, public, community and business level. Market forces must be recognised, and appropriately considered, and small enterprises may have an opportunity to flourish when properly addressing water and sanitation in a locally regulated business sector. Sponge city builds its financial approach on a variety of strategies to promote mechanisms and introduce models that create incentives for various stakeholders to contribute to the financing of sponge city interventions.

Intervention	1. Large scale in public spaces	2. Small scale (incremental) in private spaces	3. Small scale (incremental) in public spaces	4. Creation of enabling environment
Technology	Land rehabilitation, stormwater collection, recharge,	Rain Water Harvesting, kitchen gardening	Regreening, permeable roads,WASH, myriad of 3R measures	CEVs, progressive legislation
Leading insitution	CoN	Local private sector + Nawassco	CoN + CBOs	CoN + Nawassco
Financial mechanism	Blended finance	Augmented private investment	Public + private	Public
Community engagement	Through CBOs and focal residents	Landladies, residents, CBOs	CBOs, private sector, residents	Focal residents

Figure 7 overview categories of interventions

We use a rights-based approach. Through local lobby, advocacy and budget tracking, communities will be empowered to express their needs and demands to the authorities for adequate budget allocation and use. Civil society organizations will be supported to translate needs and demands at grass roots level into advocacy messages to influence county government policies and budget allocations, and function as watchdog to hold responsible authorities accountable.

The main financial principle of sponge city is Local Finance First. We work towards models in which investment costs are covered as much as possible through local funding sources (consumers, public sector and private investors, through household contributions, recurrent tax revenue, fee systems, decentralized funds and loans from local finance institutions like banks and MFI's). Operation and maintenance (O&M) are always paid through local financing instruments. Below we give multiple examples of the type of interventions for the four categories previously mentioned. The business models differ per proposed intervention, we refer to the inception report for 3 examplary business models.

1. **Large scale interventions in public spaces:** Typically, large-scale interventions in public spaces are financed from the municipal/ county budgets, topped up by donor funding such as the EU and funding from the national government. O&M is typically financed by a combination of tariffs and taxes. Tariffs for O&M for the rehabilitated quarry at Kaptembwo; solid waste taxes for improved solid waste management and road taxes for improved stormwater management. Evidence that this works can be drawn from other Kenyan experiences: the national parks are operated and maintained by the entrance fees of the visitors. Solid waste tariffs in Nakuru are paid to the solid waste operators. It is likely that there will be several barriers to scale this initiative such as limited public funding and relatively low income of the community. Local private financers could step in, provided access and use of the community is guaranteed, Wasili taxis are good examples of private financing in Kenya. Government guarantee funding could be used to de-risk investments by private financiers. Listed interventions include:

1.1. **Flagship project:** Quarry rehab Kaptembwo ('Happy Quarry Kaptembwo')

1.2. Storm water collector drain in Free Area ('Draining drains')

1.3. Improvement dumpsite and improved solid waste management ('Solid waste that do not clog our drains')

1.4. Doubling well-field capacity Kabatini well field NAWASSCO ('200% Kabatini')

1.5. Clean industrial wastewater

1.6. Reuse of wastewater treatment effluent

2. **Small scale (incremental) interventions in private spaces:** For hardware investments it is foreseen that local funds will be inadequate. Additional to advocacy strategies for enhanced fund allocation, together with strategies for local fund mechanisms, we expect that substantial hardware funding will be required at this level. In cooperation with local banks, we can create revolving funds as these investments are to create income that can be used to repay loans. Evidence that this works can be drawn from FinishInK experiences in Kenya where demand is created for improved toilets. Local private

BOX II: EXAMPLE HAPPY QUARRY FROM MOMBASA

Haller Park is a nature park in Bamburi, Mombasa, on the Kenyan coast. It is the transformation of a quarry wasteland into an ecological area. Haller Park holds a variety of plant and animal species which serve as a recreation spot for tourists and locals. Up to March 2007 it held the attraction of Owen and Mzee – the friendship of a hippopotamus and a tortoise.

From wasteland to paradise, this is the story of how with time, dedication and local support a sanctuary for orphaned and lost wildlife was recreated from the ravages of an old quarry - the Haller Park, Mombasa.

Originally it was called the Bamburi Nature Trail, but has recently been renamed Haller Park in honour of Dr. Rene Haller in recognition for his work made in conjunction with Bamburi Portland Cement Company for transforming their abandoned quarry into the ecological wilderness it is today.

financers, such as hardware shops could step in, as this generates business on the long run. Government guarantee funding could be used to de-risk investments by private financiers in revolving funds. Listed interventions include:

2.1. Flagship project: RWH through landlords ('My landlady harvests rainwater')

2.2. Kitchen gardening ('My kitchen has a garden')

Figure 8 examples of kitchen garden and water re-use

3. **Small scale (incremental) interventions in public spaces:** For these investments, we promote a social marketing approach, aimed at three aspects:

- Enhancing Demand through a variety of campaigning methods
- Strengthening Supply through development and promotion of low-cost technology, and capacity support for enterprises for construction and distribution.

- Supporting the market mechanisms through market research, training in marketing techniques, and development and introduction of innovative finance mechanisms

The sponge city is to fund all activities related to the aspects mentioned above, and experimental activities for pilots and knowledge creation and management. We will not subsidize running costs or products but can provide capacity building and lobbying and networking support and can fund demand creation campaigns.

Evidence that this works can be drawn from WWX experiences with FinishInK where demand is created for improved toilets and the sponge city approach in KwaVonza and Kajiado. Local private financers, such as hardware shops could step in, as this generates business on the long run. Government guarantee funding could be used to de-risk investments by private financiers. NAWASSCO can be used to assure loans are being paid back in instalments on top of the piped water bill. Listed interventions include:

3.1 Flagship project: Tree planting and maintenance ('My tree, your tree, our tree')

3.2 Upgrading water kiosks ('Drink my water')

3.3 Permeable roads and walkways ('Green roads and green walkways')

3.4 Soak pits, bioswales and rain gardens ('Soaky pits, rainy gardens, bioswales')

4. **Creation of enabling environment:** Like the financing of Community Health Volunteers, by definition Volunteers do not require a salary. CHVs are funded on a project basis (KES500-1,000/day for meals, phone credit etc.). Hence, this should be budgeted for in project implementation. Evidence is the relative success of CHVs. Barrier might be the way the CHVs are being paid. Once this is done by a project on a large scale, there might be significant overhead to make this happen. Listed interventions include:

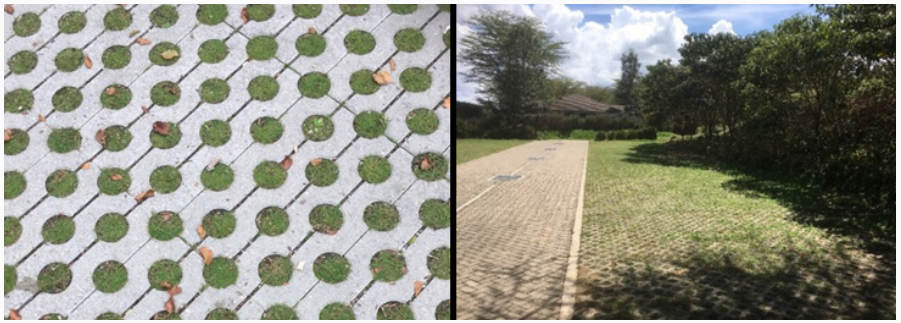

Figure 9 examples of permeable paving, the example on the right is found in Naivasha, Kenya.

Figure 10 on the left, example of Maji water tank, on the right example of bioswale at Elementaita

4.1. Flagship project: Setting up CEVs (Community Environmental Volunteers) ('From CHV to CEV')

4.2. Compliance ('Water sensitive construction permits')

2.2 INSTITUTIONAL SUSTAINABILITY

The project has already engaged the main stakeholders at the county level and they include: Departments of Water and Environment, Roads, Lands and Physical Planning, Nakuru County Municipal and NAWASSCO. Right now, the county is expressing great interest to take up Sponge and set an example as the first Sponge City in Africa. The various departments mention Sponge in their plans, devise water bills on the related topics, and are developing water resilience master plans. We aim to support the CoN with this process, focusing on: participatory design, planning and implementation, pro-active involvement of private sector, guidance on implementing the right things in the right way, rights-based approach, and progressive legislative options. We will work with county plans and budgets and gear this towards a 'big picture sponge city'. Furthermore, the gazetted committee will play a key role in monitoring and evaluation activities.

This project will leverage on existing policies and institutions in Nakuru County. The County is upfront in improving the enabling environment by opening opportunities for communities and private sector players to engage and improve the resilience of the city. The County recently assented The Nakuru County Water and Sanitation Services Bill, 2020 which seeks to provide a legal framework to guide water and sanitation service providers and to develop, regulate and manage county public works related to the provision of water and sanitation services, storm water management systems, water conservation, water harvesting and other connectivity. Sponge City is explicitly mentioned as intervention towards water sustainability and safety. Furthermore, an Integrated Water, Sanitation, Faecal Sludge and Wastewater Master Plan for Nakuru County is being developed. In addition, the County has passed The Nakuru County Climate Change Bill, 2020 which will put in place the framework and mechanisms on how to bring together all relevant stakeholders in responding effectively to climate change.

Notably, the County Government through the support of the WaterWorX project and the Water utilities through their Stakeholder Managers, gazetted Nakuru County Climate Resilient Water Management (CREWM) Steering Committee through Gazette Notice No. 8598. The overall objective of CREWM is to address the complex inter-linkages of water with other critical systems affecting security and economy and to provide an urgent imperative for the adoption of Climate-Resilient Water Management at scale. In Annex 4 find the 3 CoN bills and in Annex 5 the gazette Notice No. 8598 and ToR of the steering committee.

The County Government and specifically the Department of Water, Environment, Energy and Natural Resources has been supportive during the formulation phase and has taken active part in activities and meetings. For instance, when the project co-organized with the County for 3-day benchmarking and field excursion to KwaVonza and Kajiado, it was largely successful because of the good relationship the County has fostered with external stakeholders (see annex 6: back to office report exchange visit). This enabled for a diverse team of people to come together to learn from the two pilot sponge towns in Kenya and have good discussions on the approach for Nakuru. Furthermore, on initiative of CECM Festus we have had several digital meetings with a large team of stakeholders from departments of Roads, Planning, Water, Environment and Municipality amongst others.

Notwithstanding the COVID-19 pandemic, the Country as well as the County Government is already gearing for the General Election in 2022. With increased political activities and envisaged change of government, the project implementation might slow down during the period. However, the project will need to refresh its relations if a new County Administration is sworn. Another political activity foreseen is the much-hyped referendum which has far reaching constitutional reforms. In that scenario the project will need to update the project result chain in order to effectively realise the impact. See impact matrix in section 4. The current political support is conducive, evidently the WaterWorX project signed a Water Operators Partnership with the utilities and the County.

2.3 PRIVATE SECTOR SUSTAINABILITY

Find in Table 3 an overview of the businesses in Nakuru relevant to Sponge City who were either part of the survey, took part in FGDs or with whom separate meetings were held.

Table 3 overview local businesses interviewed in Nakuru

Type of business	#	Service and/ or product	Role/ expertise for Sponge	Preferred finance mechanism	What is required
Hard-ware	9	Construction materials	-Provision of construction materials like cement, water tanks, gutters etc at the community level.	Payment in cash on delivery -Using instalments system	Items to act as collateral Commitment from residents on how to repay loans Nawassco role: make investment, users pay back through water-bill.
Car-wash	16	Car wash services	Pilot on reusing waste water to clean cars and reduce pollution -Pilot on roof water harvesting and using it for their trade	Investment in waste water reuse and roof/ surface water harvesting. If they are de-risked, they can get loans for these investments	Collateral Business model showcasing benefit of harvesting + recycling water
Tree grower	8	Seedlings CIVs	Provide seedlings to be grown along the roads and other free spaces -Enroll them as CIVs to manage seedlings and walkways within Nakuru	Families to adopt a trees /road stretch where they tend them for a monthly allowance.	Signing an MoU? Demand from public/civil partners Also see this example plantation program
Water vendor	12	Water transport	-Transport water to areas not served by the existing network		Retraining to O&M services?
Water kiosk	13	Water supply	Selling water to the neigbourhoods where water is rationed	Money on loan to increase their capacity and storage facilities.	Nawassco role: do investment, kiosk owners pay back through water-bill
Plumber	7	Construct water lines, connection, expansion	-Making water connections to hhs -Installing fittings to new water harvesting systems/ expansions -Unblocking drains and constructing new		Training on new techniques Business model to expand
Mason	3	Construct water related structures	Construct new tanks, ponds and underground tanks -Unblocking drains and constructing new		Training on new techniques Business model to expand

We held separate meetings with two banks, Family bank and Sidian bank, because they already work through the Finish Ink program on delivering WASH services. The need for financial institutions to take part is big, since there is a significant demand for credit amongst customers and private sector. One of the ideas is to install a seed fund that can be used to de-risk the high risk of intended project beneficiaries, the bank currently sees them as unbankable. Potential products that can be financed include rain water harvesting systems and urban farming. The concept has to include service providers, such as manufacturers and wholesalers for technologies such as tanks. In principle loans can be channeled through companies, (like tank manufacturers), individuals and SMEs (like hardware shops). However, previous Finish Ink experience working with each SME directly attracts much administrative costs. Therefore other options, e.g. involving Nawassco to invest in water harvesting systems, upon which users pay back through the waterbill, will be explored. Throughout the project implementation we will be in touch with Finish Ink and the banks closely to device suitable financial mechanisms for the different clients.

2.4 ENVIRONMENTAL SUSTAINABILITY

One of the root causes why Nakuru Sponge City is needed are negative environmental impacts due to climate change, drought and flooding. Sponge City is fully geared to counter this negative impact and turn it around into opportunities for citizens to thrive in a safe, sustainable and secure city, see Table 4.

Sponge city is the embodiment of 3R (Retention, Recharge, Reuse) measures in the context of a city, aiming to secure the water base, reduce flooding, improve public health and create a more attractive urban environment for people and business).

We will adopt 3R in the activities set for implementation. The environment and the residents will benefit from these interventions either directly or indirectly. The interventions are envisioned to (i) Improve the water quality and quantity in town; (ii) contribute to the restoration of degraded/ abandoned landscapes and water sources, while increasing economic goods and services such as urban farming through the utilization of the harvested stormwater; (iii) increase urban community awareness on environmental issues such as climate change and waste management and their well being.

Table 4 Overview climate impact and possible threat of proposed measures

Measure	(Climate) impact	Threat
Rain and roof water harvesting	Sustaining natural resources and preventing loss of land through erosion. Reduced flooding Increases water availability at household level. Decreased depletion of the water resources	Water quality could be impaired due to e.g. air pollution, explore flushing/ purification integrated systems.
SMEs to invest in sustainable technologies	Increased supply of green technologies such as water harvesting tanks Increased income generation and creation of more green jobs	
Groundwater/ wellfield recharge	Increased ground water recharge Reduced flooding Reduced depletion of water resources	
Regreening (trees, shrubs, grasses)	Cooling down of city-heat Reduced air pollution from moto-vehicles Soaking more water- reduced flooding	Release of pollen which leads to allergies

Urban farming	Increased green areas and beautification Less solid waste disposed to the environment Boost in food supply within the city Reduced carbon emissions to the atmosphere Productive reuse of biodegradable household waste and waste water	Disease transmission if proper management is not taken Water logging if not well maintained/ managed
Water re-use and demand reduction	Less wastewater released to the environment Protection of the water resources from the wastewater released Improved quality of water bodies and soils	Recycling water can be expensive Higher energy consumption
Rehabilitating degraded lands	Reduced land and water pollution within the city Reduced flooding	

2.5 TECHNOLOGICAL SUSTAINABILITY

Sponge town technologies concern hardware facilities that recharge, retain and reuse water. Technologies in development programs often respond primarily to the expectations of the financing agencies and those of conventional counterparts, and seldom to direct demand of communities. This often results in the delivery of facilities that are not appropriate in the local context, not supported (or used) by local communities, and thus are not sustainable. Therefore sponge city involves community in the entire process to ensure technologies are most appropriate to their particular setting, and that they are informed on the available options, and the consequences of these choices on the long-term in terms of maintenance, safety and environmental impact.

Followingly, we aim to strengthen the capacity of key stakeholders to make informed technology choices. In order to avoid white elephants, we want to strike a balance between necessary safety and quality standards on the one hand and local resources and management capacity on the other hand. We also aim to strengthen the production, construction and maintenance capacities of local providers as to be capable to respond to demands, opportunities and ideas from consumers and investors. Blended in local building style, using local available material and skills, meeting the need of women, children, elderly and handicapped, sponge city service delivery will be simple and affordable, and first of all adequate, linked to what is practiced and available. In short, appropriate to the local setting. The activities that the sponge project team will undertake is to facilitate this process: strenhtening capacity of local stakeholders, ensuring inclusive multi-stakeholder co-design and fine-tuning to local needs, demands and markets.

Furthermore, we will engage in a dialogue on appropriate local standards with experts, policy makers and (educational) knowledge institutes in order to:

- Review national standards and eventually lobby for revision;
- Keep an eye on trends (change of standards based on international discussions);
- Facilitate construction by private sector based on real investment and O&M costs;
- Offer a range of appropriate sponge city options to stakeholders;
- Show progress on basic improvement through targets (set with beneficiaries);
- Train local artisans and operational managers (youth);
- Ensure that poor people, women, elderly, handicapped and children are included in the technology choice.

Examples of proposed technologies can be found in the region, in other

towns in Kenya and beyond. Through peer group visits, games, competitions and cross-learning we will disseminate the use in Nakuru.

2.6 SOCIAL SUSTAINABILITY

Social sustainability is based on making the Sponge City a broad-based, stakeholder driven movement. With this we expect that local location-specific solutions are identified and that activities are replicated. The specific needs of the target groups are: 1) to be heard, 2) to improve their living conditions. 3) to become responsible citizens. We will empower women, poor, youth and people with disability (PWDs) through the following approach:

- These categories of persons will form part of the community task force during the project period and beyond.
- Giving them a seat at the table from the very start.
- Fill knowledge gaps to ensure they have the technical capital to leverage on their ideas and to effectively co-design solutions in multi-level transdisciplinary setting.

o Furthermore this will empower them to monitor the progress and hold public/private sector accountable.

- Establish Community Environmental Volunteers (CEVs) who are based in the community, who know the neighbourhood well and can be focal persons to guide fellow neighbours on Sponge City measures.
- Support them to be able to oversee the implementation of various project components at a community level.
- Deploy horizontal learning, e.g. through videos and games, give citizens a responsible role in 'Sponge service centers' (hosted by Nawassco); to ensure practical lessons are shared at the level of the citizens, making it easy for them to learn and adapt.

This section has given you much of the content of how we approach the transformation of Nakuru into Africa's first sponge city. It has described the type of technologies, how to finance this, how to involve the people of Nakuru and how to leverage on local resources and make it move. Now follows the scaling pathway, highlighting our vision and strategy for Sponge City Nakuru in the next 5-15 years.

SECTION 3: SCALING PATHWAY

Sponge City Nakuru is a next step from the first 2 pilot towns in Kenya. Nakuru is a big town of above 500,000 inhabitants and is a soon to be the 4th city of Kenya. We selected three areas in Nakuru that are linked to each other topographically and have a large share of low-income population. During the formulation phase we have connected to a large number of target stakeholders (180 in baseline survey, app. 150 through FGDs with community target groups and SMEs, 24 in the citizen Mapathon, 45 in the exchange visit and 20 in government meetings). Each has shared various ideas, its own role to play and contribution to make.

With this solid base we will continue for the implementation phase where we support the different stakeholders in drafting sound plans, designs and business models; based on the initial ideas. Foremost, the project team (MM, VEI, Nawassco) will take an active facilitating role; to build capacity, ensure everybody is at the right knowledge, governance and financial level to take decisions, and to kickstart and promote best practices. Additionally, as much as the ideas are good, we recognize the need to keep our eye on the big sponge picture, to avoid stand-alone interventions. The project team will see to this, in a technical as well as a socially inclusive manner. Furthermore, in order to engage each stakeholder we must showcase how Sponge City will be of benefit to them in many ways: income, employment, water availability, safe living, flood mitigation, etc. We will provide this evidence through best practices/showcases, business models, and baseline survey and monitoring.

Additionally, the stakeholders themselves will be involved in setting their own specific targets and in assessing them.

The aim for these 3 years is to create a critical mass of local support, investments, knowledge, partnerships, innovation and commitment that will keep Sponge City running. In broad lines our vision is to organise the dancefloor, make it attractive to dance; and then let the people dance. We need the SCALE support for setting-up the dancefloor. Sponge city is still new to many people, although it becomes more and more part of the conversation, it is our cause to solidify integration of 3R into an urban area, tightly connecting WASH and WRM services through a common approach. After these 3 years of facilitating an iterative trial-and-error process, see Figure 11, stakeholders must be strong enough to continue, with ample options to make/collect revenue or cut on costs of living, while improving quality of living. With regards to a volatile political landscape, we focus on integrating law enforcement and a rights-based approach, ensuring government has concrete mechanisms in place, and that civil society will hold government accountable. Furthermore, we will incorporate past, present, future planning discussions at the multi-stakeholder platform to develop a future vision for Nakuru neighbourhoods and Nakuru Sponge City as a whole.

It is not easy to foresee how a city will evolve, especially not a fast-growing one in Kenya, therefore we don't want to get lost in future-blueprints, rather we ensure the building blocks are future-proof. Our approach is to kickstart ideas and focus on repetition (similar to Finish ink). We have succeeded as Sponge City Nakuru if local stakeholders are driving the change, using low-cost, high-impact technologies, having proper ways to attract investment, holding each other accountable and transparently working together. The overall impact we want to make is to have a succesful showcase of Sponge City at scale in Kenya, by and for stakeholders, that will also trigger other cities in Kenya and beyond to transform into sponge cities. Section 6 will specify the impact pathway through a results chain with KPIs.

The project partners VEI and MetaMeta Research/Ltd. Kenya are keen to promote Sponge City in many more cities in Kenya and beyond. Nakuru Sponge City will provide an excellent showcase for the 2nd, 3rd and more Sponge Cities of Africa to come. The partners have strong local presence, MetaMeta Ltd. Kenya has recently been formalized, therefore we can be involved by Nakuru stakeholders also after the project duration upon request. NB: for the long-term financing strategy and various financial modalities we refer to section 2.1.

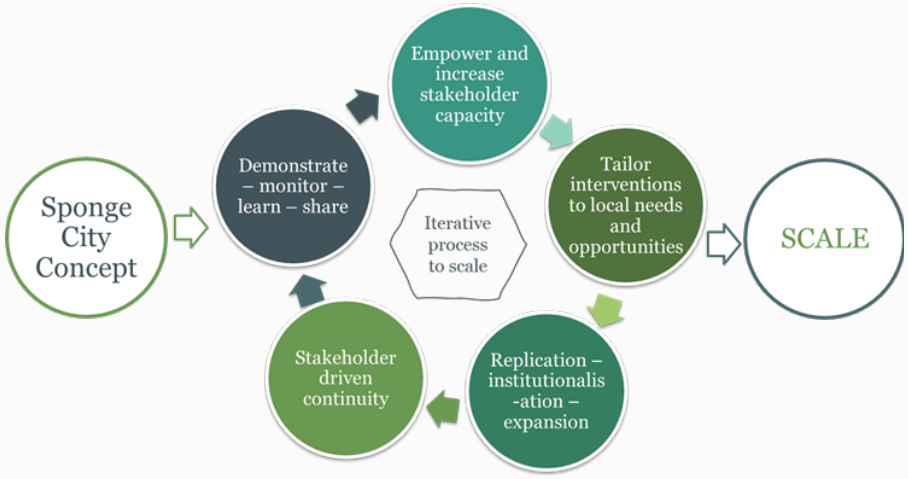

Figure 8 examples of kitchen garden and water re-use

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SECTION 4: RISK ANALYSIS

Our assessment of the risks associated with the plan failure and remedial actions is presented in Table 5. We have applied the following risk levels:

- Low level of risk (marked in green);
- Moderate risk (marked in yellow);
- High risk (marked in red).

The implementation of the risk mitigation measures is to reduce the risk level to 'low'.

Table 5 Risk assessment and mitigation matrix

Risk item	Risk	Risk level	Risk mitigation
Limited tangible short-term effects of the measures.	If the community of Nakuru do not see 'quick' results, they might lose interest.	Moderate	Dissemination and education of the community, e.g., with Egerton University; focus on income earning activities such as farming; focus on activities that beautify the town; aid in awareness and visibility activities
Corruption and land grabbing	Good ideas are hi-jacked by entrepreneurs and the community groups involved in the beginning are left behind.	Moderate	Transparency: providing ample opportunities to the current stakeholders to participate and disseminate ideas.

Covid pandemic	Continued threat from Covid-19 impeded gatherings and discussions and reduced ability to incorporate the views of the 'grassroot' level.	High	Use other media and communication options apart from face-to-face discussions: facebook, whatsapp, radio, television. Close contact with community via focal persons, e.g. the CHVs and CEVs
COVID pandemic	COVID19 having high impact on vulnerable households leading to reduced capacity to take part in Sponge activities.	High	Regular updates from CHVs on the local conditions. Work through CHVs and local groups on small incremental private interventions that can alleviate negative covid impact.
Improved services lead to higher prices.	Low-income groups do not harvest the benefits	Low	Rights-based approach through low-income groups, focus on long-term-low cost interventions, with highest level of transparency.
Elections result in change in political positions	We may lose the support we have and need to build up new relationships.	Moderate	Work through utilities and social enterprises so that political interference is minimized. Use the elections in our advantage and make Sponge City a key deliverable for the political leaders.

SECTION 5: PARTNERSHIP

In Table 6 we have listed the partnership composition and division of roles and responsibilities. It is based on the stakeholder analysis in the inception report and builds on the approach to leverage on and capacitate local partners as much as possible. We will add a number of activities in the workpackages that bring the discussion to a higher level, mainly through committee and other high-level meetings, if possible through twinning with municipalities from other cities e.g. Amsterdam or Shanghai. Furthermore, we will ensure that in the bottom-up engagement process we will have an interface with the CoN government, through regular cross-representation of community to government and vice versa. This has been the practice during the formulation phase and will be continued.

Table 6 partnership roles and responsibilities

Name	Role	Responsibility	Backup option in case party does not deliver
MetaMeta Research	Lead party for this proposal	• Financial and project administration • Facilitate participatory design process • Community engagement • Knowledge dissemination and promotion • Generating ideas and sharing examples from elsewhere • Technical backstopping and support • Overall hydrological analysis for the City	VEI B.V. as a backup option

VEI B.V.	• Co-lead party for this proposal • Secretary for implementation	• Content scaling proposal A4A • Mobilizing Kenyan partners • Mobilizing funds • Facilitating CoN to hand in EU proposal in time • Generating ideas and sharing examples from elsewhere • Streamlining activities: avoiding gaps and overlaps ('cement') • Technical backstopping and support	MetaMeta as a backup option
MetaMeta Ltd. Kenya	Project partner	• Project coordination • Set-up knowledge sharing platforms and visitor centres	Other consultancy or NGO as backup
Nawassco	• Implementing partner • Launching customer	• Hosting VEI and hosting MetaMeta • Bridge between the project and the CoN • Showcasing new sponge technologies at all offices and branch offices • Demonstrate successful collaboration amongst stakeholders	County as a backup option

County of Nakuru (CoN)	• This proposal: enabling partner • Implementation: lead for EU proposal and other financing • Budgets infra • Standards infra	• Endorsing and communicating Sponge City vision for Nakuru • Assuring all conditions for a successful proposal are met • Handing in the EU proposal with the City of Amsterdam on Friday 23/04/2021 • Public investment in infrastructure • Introduction of Sponge friendly infrastructure solution: launching customer • Introduction and enforcing building codes stating plotowners need to compensate for loss of permeable surfaces • Introduction of adequate urban planning	Work more on neighbourhood level Work through private sector Move to another county
Egerton University	Knowledge institute	Dissemination of knowledge developed in this process	Involve other universities
JKUAT	Knowledge institute	Msc and phd research projects on sustainable urban planning	Involve other universities

Community Groups	'Eyes and ears' on the ground Implementers of HH and community level implementations	• Forward with the 'real needs' of the population; • Taking roles and responsibilities (and generate income) during implementation • Assure that all voices are heard (inclusiveness: rich/poor, male/female, old/young, abled/disabled, etc.)	Work trough local NGOs
Local Financing Institutions	Finances	Local finances first: • Dissemination of the possibility of providing loans; • Assessing creditworthiness of loan applicants; • Disbursing loans; • Collecting debts.	Work with informal financing structures such as credit hardware shops
Private sector Nakuru	Provider of goods and services	Cost efficient and effective services and goods	Through utilities
EU	Financier	Disbursing finances if and when proposal is honoured	Other donors: GiZ, KfW, USAID
Aqua for All	Financier	Financial support + business development support	WWX
City of Amsterdam / Waternet	Co-creator	• Assessing whether we do the right things and doing the things right • Addressing the issues at hand at the right political and administrative level; • Sharing knowledge and experience on compliance.	UN Habitat: Shanghai

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Selection of partners. The partners are selected based on their expertise, presence in the country and interest in the topic and willingness and ability to spend time on it. All parties are up to their task and number one experts in the field.

Roles and responsibilities. Understanding each and every role is a dynamic process during the creation of this project.

Signed agreement. There are signed agreements between VEI, NAWASSCO, CoN and MetaMeta Research, between MetaMeta Research and Aqua for All and between VEI and Egerton University. As soon as funding becomes available other agreements will be signed.

Building and coordination Partnership. MetaMeta Research is in the lead.

Monitoring. This is done through bi-weekly skype meetings of the PT and through the gazetted Climate Resilient Water Management Committee (see WP5).

Additional expertise. If and when required, services will be hired from Acacia Water (https://www.acaciawater.com) and Water Resources Authority (https://wra.go.ke), or other consultancy firms on for instance visual urban design or strategic business management.

SECTION 6: PLANNING

6.1 INTERVENTION LOGIC AND THEORY OF CHANGE

Overall aim: Nakuru to become Africa's first Sponge City

Project duration: 2 years and 10 months (July 1 2021 – April 30 2024).

The reasons for this long time-frame are multifold. Firstly, gaining and expanding trust with many different partners takes time. Such a collaboration needs a solid approach with many steps to get everybody together with noses pointed in the same direction. Secondly, working with government needs time as well and it is good to have leeway with an eye on upcoming elections, if new people are installed we need time to build new relationships. Thirdly, Sponge City is a new approach to many, it is important to provide ample space for trial and error while providing sufficient guidance. Lastly, banks and financial institutions need a lot of time to assess applications and release money.

Total budget: € 4,283,675 (requested funding to A4A € 757,138.

Definition of success: Equal say in engagement, better water retention, reduced flood risk, improved water supply, better public health, safe and secure living conditions and replicability to other geographies.

Strategy: Organise a very attractive dancefloor for the people of Nakuru to dance the 'Sponge City Dance'. In other words, we prepare a solid foundation, upon which the actors can build a sponge city. The core of the Sponge City approach is co-designing the city, where implementation runs intertwined with engagement, capacity building and communication activities. Furthermore, design and construction are expected to be an iterative process of construction, measurements, adjustment/redesign, etc. Therefore, we provide space for trial-and-error. See Table 7.

Table 7 Theory of change

Theory of change				
Outputs	Increased number of stakeholders aware of Sponge City solutions and capacitated on how to act	Increased participation and inclusion of women, poor, youth and PWDs and powered to voice	Improved cost-effective development and implementation of low-cost and high-impact Sponge City Interventions	Improved financial options for public/ private and blended finance
Outcomes	Better informed and collaborative decision-making, co-designing	Recognition and meaningful participation in city-shaping	Local businesses are capacitated on provision of cost-efficient Sponge City interventions	Private and public sector can use financial models to sustain Sponge City interventions
Impact	Wide support base and high demand for Sponge City measures, with big sense of accountability, recognized in Nakuru City planning vision	Enhanced quality of life for the most vulnerable people in society	Locally sourced solutions, services and products are provided by Nakuru business society	Augmented local economy which is not dependent on help from outside

6.2 SOCIAL SUSTAINABILITY

We have divided the project into 6 work packages and have assigned lead and co-lead partners for smooth and succesful execution. See section 6.3 for an overview of the result areas and KPIs, and a detailed activity plan as a gantt chart in section 6.4.

WP1: Engagement & participatory design (Lead: MetaMeta Research, co-lead: Nawassco). The first and most important work package since it all starts with facilitating the process where people come together, and plans are made. We take a facilitating role, stakeholders and key partners like Nawassco and CoN are the main implementers.

- Strengthening / Campaigning / 'brainwashing': Eye-opener and campaign to create / develop more enthousiam / backing for the overall idea like 'Nakuru, Africa's 1st Sponge City', and/or 'Return of the pink flamingo': big campaign on radio, tv, Facebook; launching competition (e.g. youth trophy): what ward in Nakuru becomes the greenest? (e.g. with SafariCom).
- Developing a Sponge City Nakuru vision with the various stakeholders. Discussing past, present and future situation at stakeholder platforms, involve visualizer/drawer to draw during the discussions, feeding it back into discussions. Ultimately creating a visual future-vision, supported by stakeholders.
- Ongoing engagement with community, business and government platforms – bring various multi-level stakeholders together in discussions where appropriate.
- Set up service centers (key role Nawassco) where community is educated through participatory engagement, games, horizontal learning and visual story telling.
- Involve Community Environmental Volunteers (CEVs) as local leaders to take community along in tackling environmental issues, e.g. clean-up solid waste (Nawassco and county).

- Organise regular mapathons for: implementing Open Street Map (OSM), monitoring and upgrade of plans.
- Public involvement in knowledge development and training for various group interests in Nakuru, e.g. landscapers, tree growers, car-washers, etc.
- Networking and creating synergies for cooperation between different actors.

WP2: Co-design support to public and private sectors and civil society (Lead: VEI, co-lead: CoN). The second work package focuses on guiding the partners and stakeholders on developing sound plan based on technologies of 3R coupled with WASH in an urban setting. It can be developed into a business plan, campaign, community program or new legislation for instance.

2.1: civil society

- Youth involvement in activities for income generation, such as urban farming and doing operation and maintenance of WASH systems.
- Develop solutions together with residents for long-term sustainability, connect them to FIs and SMEs.
- Campaigns on community managed programs, such as tree planting, street cleaning and urban farming. For example: pocket paradises in Harlem.

2.2: Business development:

- • Local finance first: provide financial consultancy service to SMEs to work out detailed 3R inspired business models (Joshua or other financial consultant), plus a fund to implement measures that attract interest of business, such as rainwater harvesting tanks, permeable pavement, car-washes, etc.
- Connect financial institutions to citizens and SMEs, device mechanisms for de-risking the investment.
- Work out strategies on blended finance options and likewise mechanisms for CoN and Nawassco (with help from strategic finance consultant).
- Identification of various private sectors' investors interest.

2.3: Policy, regulations and advocacy:

- Take part in Committee meetings by Governor / CoN for decision-making, feedback sessions and M&E. Discuss uptake in wider Nakuru City + future vision.
- Support the County + other authorities, people with vision development, technical expertise/engagement on adoption of the interventions in a sustainable and environmental friendly way.
- Take part in actualization of policies, regulations and guidelines on climate resilience through community and county capacity building (advocacy).
- Facilitate twinning process between Municipality of Amsterdam and Nakuru. Put it high on the agenda.
- Exchange visits to other Sponge Cities, host interested parties in Nakuru once project progresses.
- Think along with CoN on regulations around social and green housing, green levies, taxes etc.
- Advocacy and networking with CoN, County of governors, National planning departments, and other urban planning institutions.
- Promotion of Nakuru as Africa's first Sponge City.

WP3: Education and Technical backstopping (Lead: VEI, co-lead: Nawassco). Many good ideas are shared, although to ensure the connect between WASH and WRM, high and low areas, flooding and scarcity, buildings and regreening we will provide tailored workshops on technical issues that come up during the participatory planning. It will be demand-driven and focused to promote and support local innovation.

- Tailored workshops and training sessions to stakeholders on technical issues.
- Development of technological and educational materials, fit for local SMEs and artisans.

- Provide technical backstopping on the plans generated, ensure right things are done the right way, and that the urban water catchment is addressed holistically.
- Provide services on technical design where required.
- Hold events to share and promote innovative ideas and designs.
- Hire/train team of youth and/or local SMEs on operation and maintenance of the developed interventions, so whenever there is a breakdown it can be fixed, to reduce down-time and increasing costs.
- Exchange visits to innovative businesses in Kenya (VIA water programme).
- Hire consultancy where needed, for instance from Acacia (groundwater, geohydrology) and WRA.

WP4: Knowledge sharing and promotion (Lead: MetaMeta Research, co-lead: CoN) Sharing knowledge and lessons learned through this project will be done at different levels, namely at a community level, county level and macro level. This will be done through interactive tools such as Google Earth, showcasing events, policy briefs and games. For each of the proposed activities we will develop knowledge outputs and products.

- Showcasing events with horizontal learning and awareness creation to encourage community members to take up sponge city initiatives, such as urban farming, rainwater harvesting or building soak pits. The events will be low-key, organised at community centers where diverse stakeholders get the chance to share their products, and showcase what they have been doing, and find potential new clients.
- Visual story telling through google earth for vertical learning, outreach and M&E purposes. To allow decision-makers to digitally travel to neighbourhoods and 'experience' what is happening on the ground. These stories will be updated by the residents to share the results and visualize the change.
- Conferences and policy briefs, will be used to share lessons from the project with a wider audience and to influence decision-making at national level.
- Games, art, and videos are used to reach out to multiple levels of stakeholders of all ages through learning that is fun, engaging and sensitive to socio-cultural perceptions, and stimulates people to think in new directions. For example, the WASH quartet game, developed by 'Games with a heart' can developed into a 'Sponge City game' in which the different components come out in the game.
- Social media, tv/radio and posters and billboards are all deployed to attract a diverse audience, they are main sources of information for residents and good to ventilate events, campaigns, best practices etc. Especially facebook/twitter are important channels to regularly update to inform and invite stakeholders to join in.
- We will work with schools and universities to host internships, keep each other up to date on latest knowledge and to provide opportunities for student to gain practical knowledge on Sponge City co-creation.

WP5: Monitoring, Evaluation and Learning (Lead: MetaMeta Research, co-lead: CoN). The project will utilize innovative digital tools to capture data by using technologies designed to improve the quality, availability, and timeliness of the information such as kobo collect, surveys and google stories and physical visits. The monitoring tools will build on the methodology used during the formulation phase and the implementation plan developed. Monitoring will be done continuously through two approaches. MEL will be coordinated with the steering committee and the implementers.

- Conduct yearly surveys using the same methodology as the baseline. Present yearly report on the progress made. Comparing it to the M&E values set and captured in the baselines study. Additionally, giving an account of the progress in achievement of outputs and results. This will also be informed by data from monitoring visits and othe discussions with stakeholders.
- Together with committee undertake bi-yearly monitoring through site-visits and platform meetings.

o During this exercise we include an evaluation meeting with the key stakeholders.

o It will also include internal review in order to compare the work plan with the actual performance made, this will be a moment to evaluate and if necessary change course.

- Utilize mapathons and OSM to monitor and show the change on the map and on the ground
- Support government in setting up data centers and smart monitoring
- The final evaluation will entail two surveys – Baseline/formative evaluation and the end-line evaluation.

WP6: project coordination (Lead: MetaMeta Ltd. Kenya, co-lead: MetaMeta Research) This work package is led by the lead applicant responsible to ensure smooth execution of the project in terms of day-to-day management, administrative infrastructure of each partner, steering of the project and interacting with the donor entity.

- Day-to-day project management tasks
- Kick-off event with project team and partners
- Conduct coordination and communication between partners and managing authority
- Quarterly performance updates based on KPIs

6.3 RESULT AREAS AND KPIS FRAMEWORK

Table 8 Result areas, KPIs and verification

WP	Target group	KPIs	Verification/ Unit of measure	Frequency of measuring	When achieved?
Result Area 1/ Inclusive engagement: people take opportunity to enhance quality of life.					
1, 2	Low-income residents, women, youth, PWDs	• Big opening event and campaign starting off Nakuru Africa's first Sponge City	Headcount + publicity	One-off	Start of project
		• Quarterly multi-stakeholder engagement platforms	No of stakeholders in attendance (lists)	Half-yearly	During project
		• Nakuru Sponge City Vision initiated and developed	Presentation of vision	One-off	Year 1
		• Service center up and running (Nawassco + residents).	Physical service center	One-off	Year 1
		• >4 mapathons & open-cinema screenings.	No of attendance (lists)	Event-based	During project
		• >5 'clean-up' neighbourhood campaigns led by CEVs.	% area cleaned	Event-based	During project
		• On-the-job training to >100 local youth, women, PWDs on Sponge activities.	Training attendance + evaluation	Yearly	Year 1
		• >100 citizens deploy urban farming/mini-parks or get involved in business-activities.	M&E report	Yearly	Year 2
		• > 30% of target groups improve HH water supply and reliability.	M&E report	Yearly	Year 3
Result Area 2/ Implementation of diverse cost-effective 3R/WASH solutions.					
2, 3	Public & private sector	• 20% of urban area in each neighbourhood has sponge city functions.	M&E (OSM/map)	Yearly	Year 3
		• 30% of stormwater runoff is possible to be retained, recharged, or reused.	M&E (hydro-study)	End-term	Year 3
		• 25% reduction of flooding hazard for residents	M&E	Yearly	Year 3
		• 10% of roads regreened.	M&E (OSM/map)	Yearly	Year 3
		• >2 public large-scale interventions implemented.	M&E (committee)	End-term	Year 3
		• >2 progressive legislations enforced.	M&E (committee)	End-term	Year 3
		• >3 successful showcases of different finance mechanisms, e.g. de-risking and blended finance.	Investments	Case-based	Year 2
		• Exchange visits to and from Nakuru.	No of visits/attendants	Event-based	During project
		• On-demand training to >100 local SMEs, artisans, youth entrepreneurs.	Training attendance + evaluation	Yearly	During project
		• >30 youths capacitated on operation and maintenance works.	Training attendance + evaluation	Event-based	Year 1

Result Area 3/ Increased demand for Sponge City interventions by stakeholders and enhanced business climate.					
4, 5	Stakeholders from all levels	Events where entrepreneurs and residents can share & learn from each other.	No of attendance + M&E on quality of learning	Event-based	During project
		• Change visualized and monitored through visual storytelling and OSM.	Visual mapping + M&E report	Yearly	During project
		• >4 national conferences/meetings attended to put Sponge City high on the national agenda.	No of conf/meetings + strategic document	Yearly	During project
		• Sponge City Game developed and implemented at service center.	Game popularity, players feedback	Yearly	Year 2
		• >2 student internship positions filled	No of internships + reports	Internship based	Year 3
		• (Social) media outreach	No of social media posts + followers	Yearly	During project
		• Progress reports, baseline and end-line evaluation.	M&E reports	Yearly	During project

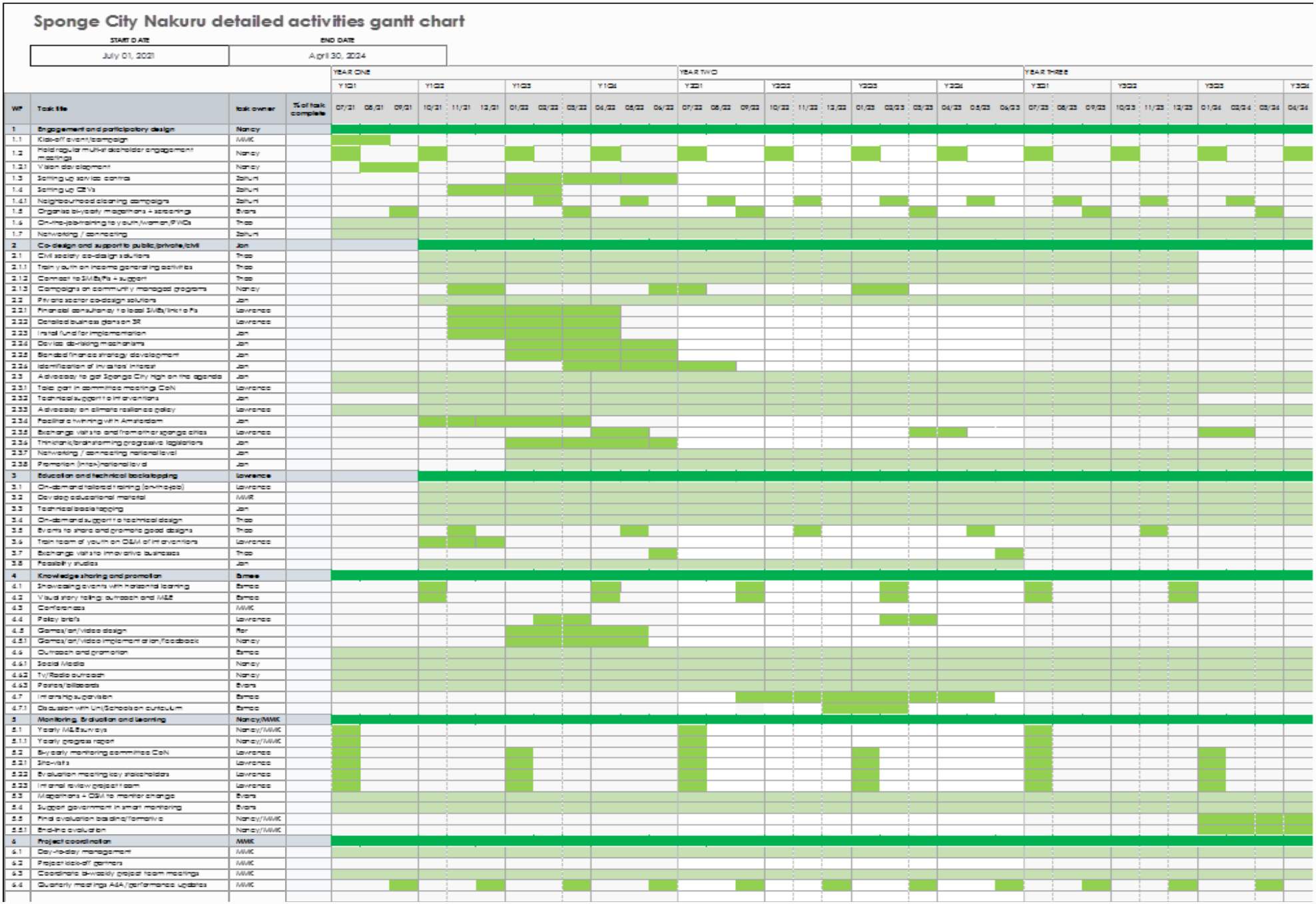
6.4 DETAILED ACTIVITY PLAN AS GANTT CHART

The detailed activity plan is drafted as gantt chart and is also uploaded as excel file. There are task owners per work package and per specific activity, the task owners are responsible to make a specific plan per work package which will directly guide the activities. The gantt chart is more of an overview, since many activities are on-demand and dependent on the needs/opportunities during the project. Note that MetaMeta Ltd. Kenya will recruit a new staff member who will function as project coordinator for Sponge City Nakuru, to date Nancy Kadenyi is fulfilling this role.

Sponge City Nakuru detailed activities gantt chart

START DATE: July 01, 2021

END DATE: April 30, 2024



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