UGANDA WATER & SANITATION NETWORK

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WASH, Environment and Natural Resources Civil Society Position Paper on the National Development Plan IV Development Priorities

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Executive Summary

As Uganda develops the fourth NDP (NDP IV) for the period 2025 - 2030, UWASNET has engaged its members to develop this Position paper as an initial step in influencing the process to ensure increased prioritisation of Uganda's development aspirations in the Human Capital Development (HCD) and Natural Resources, Environment, Climate Change, Land, and Water Management (NRECCLWM) programmes.

The National Development Plan (NDP) outlines Uganda's strategic direction, development priorities, and implementation strategies, detailing the country's current development status, challenges, and opportunities. Uganda has planned six five-year NDPs, with the first three already implemented, focusing on sustainable socioeconomic transformation, and aligned with Uganda Vision 2040.

UWASNET's analysis of the performance of Uganda's National Development Plans (NDPs) outlines a history of challenges and achievements over the past 14 years. Despite efforts to prioritize sectors like agriculture, tourism, and infrastructure, inter-sectoral coordination remains a persistent issue. While notable progress has been made in areas such as maternal mortality reduction and forest cover increase, challenges like limited agricultural production and productivity, low domestic revenue generation and limited application of science, technology and innovation persist. These challenges are exacerbated by factors like environmental degradation, climate change impacts, and weak regulatory frameworks, hindering economic growth and private sector investment.

This position paper underscores the need for holistic approaches and improved coordination to address Uganda's development challenges effectively. It highlights the importance of sustainable resource management, enhanced investment in science, technology, and innovation, and bolstered human capital development. Additionally, it emphasizes the critical role of private sector engagement and stronger regulatory frameworks in fostering economic growth and resilience against environmental and climate-related risks.

The proposed recommendations summarised in the matrix below aim to address critical challenges in Uganda's development landscape from the HCD and NRECCLWM programmes perspective.

NDP IV Priority Programmes and Projects	Proposed High Impact Interventions	Responsible Agencies	How proposed interventions will create impact in the NDP IV
Agro-Industrialization	Promote public-private partnerships in watershed protection	Uganda Investment Authority (UIA), MWE, NEMA	Wider engagement and increased funding from corporate sectors for catchment and watershed protection efforts will increase production and productivity through sustainable water management.
	Develop sustainable water use systems for agriculture	DWD, DWRM and MAAIF	Reduced famine, improved food security and nutrition will increase household income through sustainable water use, and pollution monitoring to safeguard water sources, increasing agriculture production and productivity.
Human Capital Development	Integration of WASH in Health Services	Ministry of Health (MOH), Ministry of Education and Sports (MOEST), MWE	Improved WASH service delivery at the household level and sustainable investments in hygiene education will contribute to improved human capital development by enhancing health and education outcomes.
	Targeted investment in climate-resilient Water Supply and Sanitation technologies	DWD, Directorate of Environmental Affairs (DEA), DWRM, MOH, MOES	Targeted investment in innovative WASH technologies that ensure efficient water management in collaboration with the private sector will promote the application of science, technology, and innovation while reducing the cost of WASH services.
	Prioritise investment in full life cycle costs for WASH infrastructure emphasizing operation and maintenance	DWD, DEA, DWRM, MOH, MOES	Efficient use of resources through the Operation and Maintenance (O&M) framework will increase employment opportunities through rehabilitation and maintenance of WASH infrastructure, enhancing weak human capital development and creating jobs for graduates, Area Service Providers (ASPs), hand pump mechanics and local

			masons while ensuring sustained service provision
Parish Development Model (PDM)	Integrate investment in rural water supply infrastructure in the PDM under the social services pillar	MWE, Area Service Providers (ASPs), Ministry of Local Government (MoLG), Local Governments (LGs)	The service chain for provision and sustainability of safe drinking water will contribute to job creation, high functionality of community water systems, revenue generation from taxes paid by ASPs, reinvestment into the WASH sector, employment opportunities for youth, and income for Water and Sanitation Committees, addressing low domestic revenue collection and weak human capital development at the parish level.
Digitalizing Government	Implement real-time WASH data management	Ministry of Information and Communications Technology (MICT), MWE, MOH, MOES, DHIS2	Increasing investment in real-time WASH data management using science, technology, and innovation will improve planning and investment decision-making in agro industrialization, creating jobs for the youths
Greater Kampala Metropolitan Area	Promote Private Sector investment in Sewerage Management	Ministry of Lands, Housing, and Urban Development (MLHUD), NWSC, MWE, NEMA	By working with the private sector such as real estate developers to co-finance micro sewerage systems such as lagoons in collaboration with relevant government agencies such as NWSC and NEMA to provide regulation and technical oversight will increase low private sector investment in WASH and environmental protection.
Petrochemical Industry	Invest in hazardous waste management	MoH, NEMA, LGs, MWE-ATC	Implementing proper segregation, transportation, and disposal of hazardous medical waste can significantly enhance public health and environmental management. Additionally, waste recycling will generate alternative energy options, contributing to addressing low domestic revenue collection, food security and human capital development.

African Cup of Nations	Implement comprehensive WASH and waste management strategies to ensure clean and sustainable environments AFCON	LGs/ Municipalities, KCCA, MoES, MWE, NEMA	Improved waste management practices, and promotion of eco-friendly initiatives such community clean-ups and tree planting will enhance the national image, contribute to hosting a successful AFCON tournament while creating jobs for the youths.
	Promote Eco-Tourism Initiatives during AFCON	Ministry of Tourism, UTB, LGs, MoES, MWE,	Investing in sustainable eco-tourism initiatives targeting women and the youths during the AFCON tournament will create jobs and promote tourism thus boosting revenue generation even after the tournament
Knowledge Economy	Promote innovative WASH research and Knowledge Management	Public universities, Economic Policy Research Centre (EPRC)	Innovative WASH research to inform planning, generate revenue, and create employment opportunities especially for the youths thus addressing the unemployment burden and the limited application of science, technology, and innovation

Firstly, prioritizing catchment and watershed protection through public-private partnerships (PPPs) will enhance water resource management, benefiting both the environment and agro-industrialization efforts. Secondly, targeted investment in grassroots human capital development systems, particularly in sanitation and hygiene promotion, will create a healthier and more productive labor force, fostering economic growth. Additionally, integrating rural water supply infrastructure into the Parish Development Model (PDM) and investing in real-time WASH data management systems will further enhance service delivery, economic stability, and sustainable development at the local level.

These initiatives, alongside promoting private sector investment in sewerage management and eco-tourism, demonstrate a comprehensive approach to addressing Uganda's developmental challenges and achieving long-term prosperity.

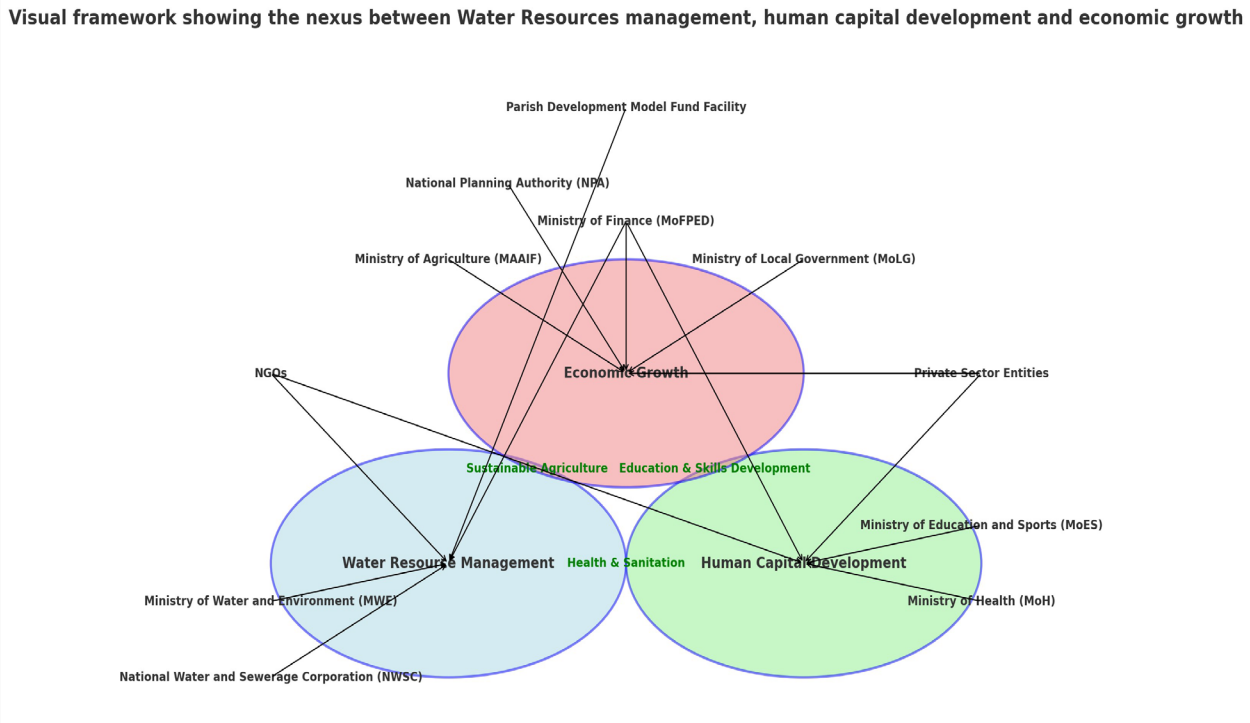


Figure 1: *IWRM, HCD and Economic growth nexus (Source: Consultant's analysis)*

In the framework above, it is crucial to recognize that sustainable agricultural production relies on integrated water resources management (IWRM) while and economic growth/transformation depends on human capital development, particularly education and skills development. However, the sustainability of education and skills development also depends on the availability of adequate and quality water resources to ultimately achieve economic transformation. Given this complex interdependence, UWASNET urges government to address the fundamental bottlenecks affecting IWRM and climate resilient WASH in the upcoming NDPIV as a pathway to sustainable economic transformation.

The UWASNET Position paper on Uganda's NDP IV development process provides a comprehensive overview of the country's achievements and persistent challenges over the underscores the importance of holistic approaches, enhanced coordination, and increased investment in sustainable WASH, natural resources and climate change resilience, science, technology, and innovation, as well as human capital development to address some of the outstanding development bottlenecks that have affected Uganda's socio-economic transformation over the last 14 years. The proposed recommendations for NDP IV consideration, focusing on increasing production and productivity, raising domestic revenue and job creation, grassroots-focused human capital development, private sector engagement and harnessing high-impact projects such as the Africa Cup of Nations (AFCON), offer a pathway towards sustainable socio-economic transformation and long-term prosperity for Uganda.

1.0 Introduction

Over the last 14 years, Uganda's national development plans have highlighted several recurring policy trend issues. Inter-sectoral linkages and coordination have been a major challenge, with NDP I's broad Egg concept failing to prioritize effectively, while NDP II and NDP III have attempted to narrow focus and adopt a program approach to mitigate silos, yet coordination remains an issue. Prioritization and focus evolved from NDP I's broad scope to NDP II's targeted sectors of agriculture, tourism, minerals, and infrastructure, and NDP III's sustainable industrialization, yet achieving tangible results has been difficult. Implementation challenges and unexecuted reforms, such as performance contracts and administrative changes, have been persistent across all plans, with weak follow-up and accountability noted in each phase. Significant investments in infrastructure and human capital development have been central to both NDP II and NDP III, but progress has been stymied by external shocks and fiscal constraints. Economic diversification and industrialization efforts began in NDP II and were reinforced in NDP III, yet the full potential remains unrealized. Achieving inclusive growth and improving household incomes have been consistent objectives, but implementation gaps and external factors have limited success. Fiscal constraints and external shocks have repeatedly impacted plan implementation, as highlighted in NDP III. Finally, the need for better alignment between planning and budgeting is a recurrent theme, with NDP III's program approach aiming to address this for improved efficiency and result delivery. Despite substantial efforts, these recurring challenges have hindered the full achievement of the plans' ambitious goals.

2.0 Background

The National Development Plan (NDP) stipulates the Country's medium term strategic direction, development priorities and implementation strategies. In addition, it details Uganda's current development status, challenges, and opportunities. In line with the National Vision Framework, six (6) five-year NDPs will be implemented and so far, three NDPs have been produced.

The first NDP (NDPI) was for the period 2010/11 – 2014/2015 and the second NDP (NDPII) is from 2015/16 – 2019/2020. This National Development Plan (NDPIII) is the third in a series of six NDPs and has largely focused on guiding the nation in delivering the aspirations articulated in Uganda Vision 2040. The NDPIII (2020/21 – 2024/25) is anchored on the progress made, challenges encountered, and lessons learnt from previous planning and implementation of NDPI and NDPII. The NDPIII came into effect at the time when the country and the World were battling the COVID-19 pandemic that posed social and economic impacts. Considering this, the Plan defined the broad direction for the country and sets key objectives, interventions, and targets for sustainable socioeconomic transformation of Uganda.

The Country is already in the processes of developing the 4th National Development plan and UWASNET has engaged her members to contribute in these high-level processes with specific focus onto the Human Capital Development Program and Natural Resources, Environment, Climate Change, Land and Water Management.

The NDP IV builds on the achievements of NDPIII which was largely based on Increased Household Incomes and Improved Quality of Life of Ugandans through Sustainable Industrialization for inclusive growth, employment, and wealth creation.

2.1 Notable achievements over the past NDP period

While specific achievements in water and sanitation are not detailed in the NDPIV strategic direction, improvements in related public health metrics suggest progress in these areas as part of broader health and environmental initiatives. For instance, maternal mortality ratio improved from 435 per 100,000 live births in FY 2010/11 to 336 per 100,000 live births in FY 2021/22.

Similarly, forest cover increased from 10.7% of the total land area in FY 2010/11 to 13.3% in FY 2019/20, highlighting efforts in reforestation and environmental conservation. According to the National Forestry Authority's 2019 Land Use and Land Cover Biomass Study, Uganda's forest-land cover decreased from 24.1% in 1990 to 9.5% in 2015 but then increased to 12.3% in 2017 and 13.3% in 2019 due to forest restoration efforts, including tree planting and natural regeneration after removing encroachers. In FY 2021/22, the area of natural forest cover in the Central Forest Reserves grew from 456,679 hectares to 468,008 hectares, while industrial forest plantations expanded from 143,611 hectares to 149,460 hectares (MWE APR, 2022).

Relatedly, the formulation and adoption of the National Climate Change Policy (2012) and the establishment of the Climate Change Department within the Ministry of Water and Environment. According to MWE Annual Programme Report (2022), Uganda finalized the development of a national Greenhouse Gas Inventory and its Monitoring, Reporting, and Verification System (MRVS), reviewed its 2015 Nationally Determined Contributions (NDCs), and developed a national climate change action plan. This plan, which updates the NDCs up to 2030, was submitted to the UNFCCC on September 12, 2022. Additionally, Uganda submitted its First Biennial Update Report and third National Communication, detailing national greenhouse gas emissions, mitigation actions, and support needs, to the UNFCCC Secretariat. Uganda also identified a need to mobilize USD 4.1 billion for climate adaptation and mitigation actions, highlighting a funding gap of UGX 1.5 trillion annually by 2030.

These and other key achievements represent commendable progress registered by the NDPs over the past 14 years notwithstanding the existing bottlenecks.

2.2 Justification/Rationale for HCD and NRECCLWM programmes in the NDP IV development

The NDP IV Strategic direction has identified several outstanding policy bottlenecks impeding the successful delivery of key performance targets over the last 14 years.

Among others, the unsustainable use of natural resources, including deforestation and land-use changes, has led to a marked reduction in forest cover. This diminishes the absorption of carbon dioxide (CO_2) and exacerbates the release of greenhouse gases (GHGs), which is projected to increase from 90.1 $MtCO_2e$ in 2015 to 148.8 $MtCO_2e$ in 2030 and 235.7 $MtCO_2e$ by 2050 under the Business-As-Usual (BAU) Scenario (NDC, 2022). This is increasing the frequency and severity of floods and droughts. Wetlands, which also act as vital carbon sinks, are losing functionality due to human activities. This not only contributes to the accumulation of GHGs but also disrupts ecosystems and biodiversity.

The reliance on rain-fed agriculture without adequate irrigation infrastructure further compounds the issue, making agricultural productivity and agro industrialisation highly vulnerable to climate variability, hindering efforts to increase agricultural output, food security and ultimately domestic revenue generation from agricultural exports.

Environmental degradation is characterised by weak institutional frameworks and insufficient investment in sustainable practices. The country struggles with the implementation and enforcement of WASH and environmental regulations, which are critical to managing natural resources effectively.

Access to clean and safe water remains limited, and sanitation facilities are inadequate, leading to health issues and impeding economic productivity.

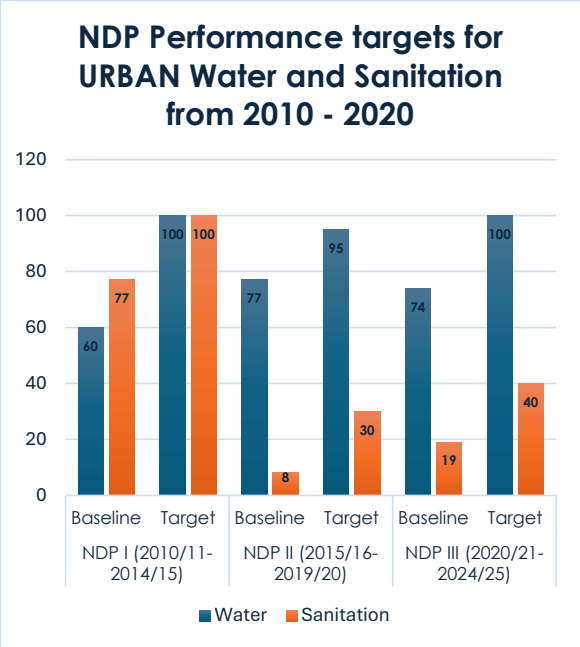


Figure 2: Urban Water and sanitation NDP performance targets showing limited progress over the three NDPs

From the Figure 2 above, while all the NDPs have aimed at achieving 100% coverage of safe water supply in urban areas, this target has oscillated between 70% and 74% for the past 14 years from the 2010 baseline of 60%, representing a marginal improvement of 14%.

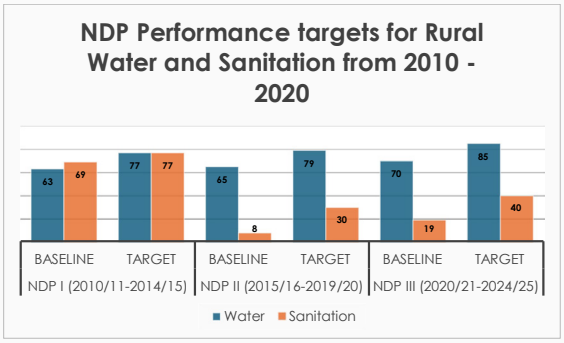


***Figure 3**: Rural Water and sanitation NDP performance targets showing limited progress over the three NDPs*

Similarly for rural water supply, the NDP 1 target of reaching 77% has not been met over the years from a baseline of 63% in 2010. By 2023, rural water supply was reported at 67% declining from 70% in 2020. Similarly for sanitation, while the NDP I target was to achieve 100% and 77% improved sanitation in urban and rural respectively by 2015, only 57% and 48% basic sanitation has been achieved for urban and rural respectively as per the Joint Monitoring Programme (JMP) report 2022 as shown in Figure 1 below.

***Figure 4:** JMP Household service levels for Uganda (2022).*

UWASNET takes note of a concerning inconsistency in the reporting of the sanitation indicator across the three National Development Plans (NDPs). NDP, used the sector's golden indicator, targeting an increase in access to improved sanitation. In contrast, NDP II adapted the JMP service level indicator of safely managed sanitation to focus on increasing sewerage coverage, which proved to be an ambitious target.

Subsequently, NDP III lowered this target to focus on achieving basic sanitation. Despite this adjustment, the target for basic sanitation has not been met in either rural or urban areas during the NDP III period, indicating a decline in performance.

UWASNET critically observes that the proposed Key Performance Indicator (KPI) for sanitation in the NDP IV, which focuses on improved access rather than service levels, will undermine the progress made in aligning WASH targets with global SDG performance indicators. With only five years left until 2030, this shift could significantly hinder the achievement of the Sustainable Development Goals related to sanitation.

Based on the above issues, UWASNET mobilised its membership to develop a WASH and Environment sector specific CSO Position Paper with key recommendations for adoption by NPA in the National Development Plan.

3.0 Situation and trend analysis of NDPs

Over the last 14 years, Uganda's national development plans have struggled with inter-sectoral coordination, prioritization, and effective implementation, leading to recurring challenges despite evolving strategies. Significant investments in infrastructure and human capital have faced external shocks and fiscal constraints, limiting progress.

Efforts to diversify the economy and achieve inclusive growth have been central but hampered by implementation gaps. The plans have consistently highlighted the need for better alignment between planning and budgeting to improve efficiency. Some of the external shocks and fiscal constraints that have impeded the successful delivery of NDP targets include the following:

a) Commodity Price Volatility: Fluctuations in global commodity prices, particularly for oil and agricultural products, have created unpredictable revenue streams for Uganda.

b) Climate Change and Natural Disasters: Increasing frequency of extreme weather events such as floods and droughts has adversely affected the economy, WASH service provision inclusive due to reallocation of resources.

c) Debt Servicing and Fiscal Deficits: Rising public debt levels and the associated costs of debt servicing have constrained fiscal space, limiting the government's ability to allocate funds to developmental priorities.

d) COVID-19 Pandemic: The pandemic severely disrupted economic activities, strained public health systems, and led to significant reductions in revenue from tourism, remittances, and trade, exacerbating fiscal pressures.

3.1 Trends in policy reforms

The major policy reforms across Uganda's three National Development Plans (NDPs) have focused on strengthening institutional frameworks, improving service delivery, and ensuring sustainable development.

NDP, I FOCUS	NDP II FOCUS	NDP III FOCUS	NDP IV FOCUS
Growth, Employment and Socio-economic transformation for Prosperity.	To propel Uganda into a middle-income status economy by 2020.	Sustainable Industrialization for inclusive growth, employment, and sustainable wealth creation to increase household incomes and the quality of life of Ugandans.	Achieve higher household incomes and employment for sustainable socio-economic transformation.
• Designed based on the Egg concept. • Harnessing inter-sectoral linkages, functional relationships, and synergies • Economic sectors which had received insufficient attention in the past prioritized	• Coincided with the start of the SDGs Sought to prioritize better. • Focused on three opportunities of: agriculture; tourism; and minerals, oil and gas, • Two fundamentals of; infrastructure and human capital development the other focus	• Builds on the foundation laid in NDPI and II particularly in addressing the binding constraints in infrastructure and human capital development. • Adopted a Programmatic planning and budgeting approach	• Consolidation of development gains from past NDPs • Accelerated implementation to close gaps in previous plans • Stronger follow-up, management, and accountability for results. • Innovative financing and private sector involvement • Prioritizing high-impact projects and leveraging STI and ICT.

The National Development Plans (NDPs) have consistently emphasized decentralizing service delivery, empowering local governments and communities to enhance their role in managing these services. Additionally, there is a notable shift towards integrated and sustainable approaches in NDP II and NDP III, highlighting the importance of Integrated Water Resources Management (IWRM), climate resilience, and environmental sustainability to ensure long-term effectiveness and sustainability of WASH services.

Regulatory frameworks and governance structures within the WASH sector have been progressively strengthened to enhance accountability, efficiency, and transparency. This includes implementing innovative financing mechanisms and fostering public-private partnerships to mobilize resources and improve service delivery. Such initiatives are crucial for addressing the financial and operational challenges in the sector, ensuring that the WASH services are both effective and sustainable.

The NDPs also address urban and rural disparities through targeted strategies that cater to the specific needs of different regions, ensuring equitable access to WASH services. Furthermore, there is a strong alignment of national policies with international development goals, particularly the Sustainable Development Goals (SDGs), to ensure comprehensive and inclusive development. This alignment underscores the commitment to achieving global standards and fostering inclusive growth and development across all regions.

3.2 Financing and budget trends

Since 2010, Uganda's National Development Plans (NDPs) have progressively increased funding for water, environment, and climate change in nominal terms. Each subsequent plan, from NDP I to NDP III, has allocated more resources towards Water, Sanitation, and Hygiene (WASH), reflecting the growing recognition of its importance in national development priorities. For instance, while NDP I allocated UGX 200 billion annually to the water and environment sectors, NDP II increased this to UGX 350 billion per year, and NDP III further escalated the commitment to UGX 500 billion annually.

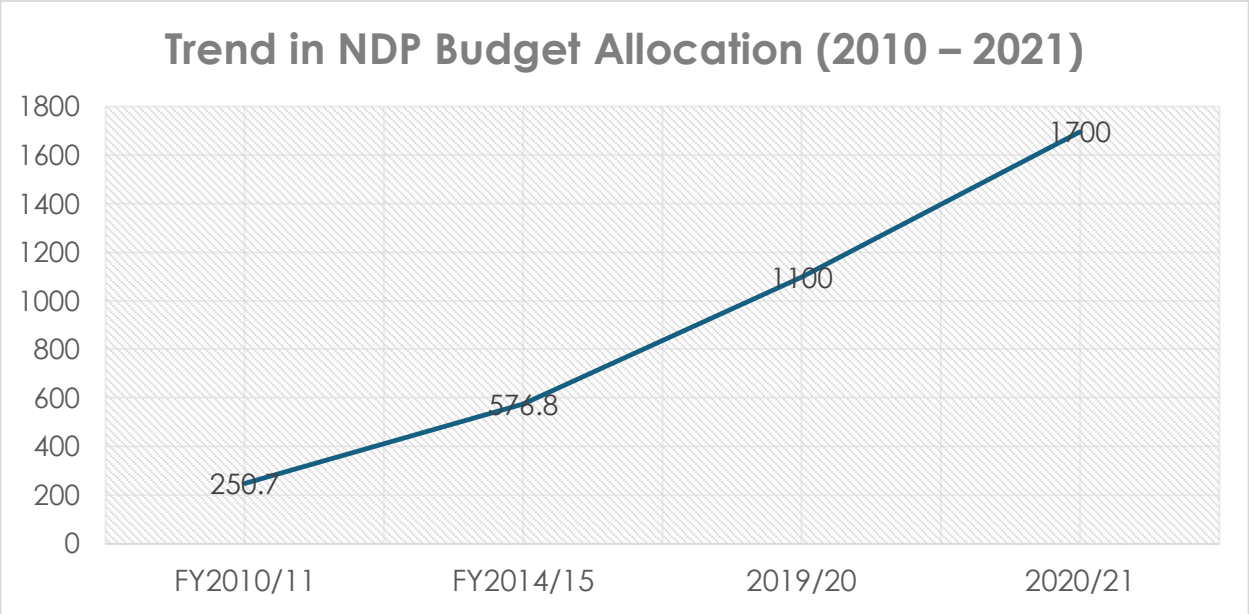
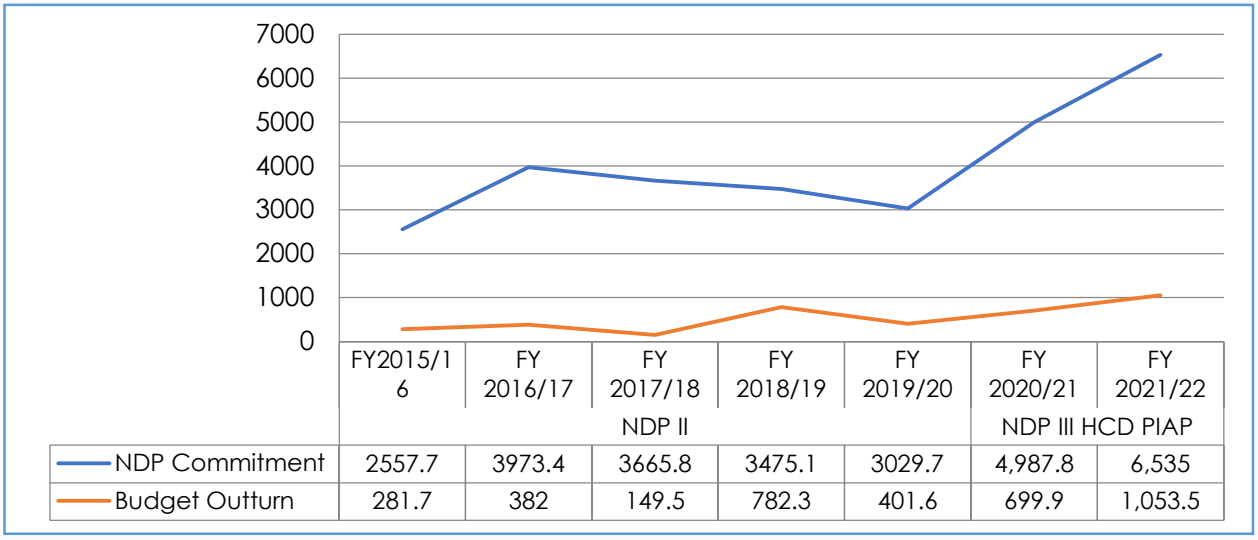


Figure 5: *The increasing trend in nominal budget allocation for water and environment (Consultant analysis)*

However, this increase in nominal terms has not been matched by a proportional increase in the national budget. Despite the higher absolute figures, the proportion of the national budget dedicated to these sectors has remained relatively stagnant. In NDP I, WASH received approximately 3% of the total national budget. This share slightly increased to 3.2% under NDP II, but has since plateaued around 3.8% in NDP III. This indicates that while financial commitments to WASH have grown in absolute terms, their relative importance within the overall budget framework has not seen a significant shift. This discrepancy highlights a need for a more substantial prioritization of water, environment, and climate change within the national budget to meet both national and global development goals effectively.

3.2.1 Discrepancies between NDP commitment and actual budget outturn

There is a significant gap between the commitments made in Uganda's National Development Plans (NDPs) and the actual budget releases for Water, Sanitation, and Hygiene (WASH). The commitments outlined in NDP II and NDP III's Human Capital Development Program Implementation Action Plan (HCD PIAP) have consistently fallen short in terms of actual budget outturns over the past seven financial years.



	FY2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22
	NDP II					NDP III HCD PIAP	
NDP Commitment	2557.7	3973.4	3665.8	3475.1	3029.7	4,987.8	6,535
Budget Outturn	281.7	382	149.5	782.3	401.6	699.9	1,053.5

Figure 6: *Trends of NDP II and NDP III HCD PIAP financial commitments and Budget Outturn (Source: UWASNET, 2023).*

As depicted in Figure 3, the budget outturn was less than 20% of the commitments in six of these seven financial years. This persistent underfunding suggests that, with the current level of financial allocation, the situation is unlikely to improve during the remaining period of NDP III. This discrepancy underscores the need for more reliable and increased budget releases to fulfill the ambitious goals set forth in the NDPs for WASH.

Overall, the last three NDPs, fiscal policy changes have significantly evolved to address WASH. Each successive NDP has increased total financial allocations for WASH and environment. Funding sources have diversified, with a shift from heavy reliance on donor funding to increased government contributions and private sector involvement.

Financing strategies have moved from project-based approaches in NDP I to more strategic, programmatic investments in NDP II and NDP III, focusing on long-term sustainability and resilience.

4.0 Outstanding development bottlenecks limiting NDP progress.

This section presents an analysis of how poor Water, Sanitation, and Hygiene (WASH), along with environmental and natural resource management, contribute to the macro-economic bottlenecks hindering the progress of NDP IV. These include limited agricultural production and productivity, low domestic revenue generation, and limited application of science, technology, and innovation.

Environmental degradation, climate change impacts, and weak regulatory frameworks further exacerbate these issues, collectively hindering economic growth and private sector investment. Additionally, poor WASH infrastructure leads to health-related costs and productivity losses, while inadequate management of natural resources affects food security and livelihoods, compounding the development bottlenecks faced by the country.

4.1 Inadequate production, productivity, and value addition in key growth areas

The government's emphasis on WfP as a macro-economic investment opportunity aims to transform Uganda's economy by ensuring a reliable water supply for agricultural and industrial production.

Investments in multi-purpose water systems can increase agricultural productivity and industrial output, driving economic growth.

A heavy reliance on climate sensitive sectors makes Uganda's economy highly vulnerable to climate change. Agriculture, for instance, accounts for 40% of Uganda's GDP, employs 80% of the country's labour force and supplies 85% of the exports. However, agriculture in Uganda is mainly rain-fed with only 1% of agricultural production supported by irrigation grossly increasing the vulnerability of the sector to climate variability and change. Despite 80% of Uganda's land being arable, only 35% is cultivated, largely due to dependence on rain-fed agriculture, limited irrigation infrastructure, and a varied land tenure system. This low productivity is further compounded by pest infestations, poor-quality seeds, and insufficient extension services, affecting both food security and economic stability. The country also struggles with the unsustainable use of natural resources and climate change vulnerability. Deforestation and land-use changes have significantly reduced forest cover, decreasing the absorption of CO2 and increasing greenhouse gas emissions.

This has exacerbated incidents of floods and droughts, highlighting the urgent need for sustainable management practices and restoration efforts for forests and wetlands, which are crucial for climate change mitigation and ecosystem services to boost sustainable production.

Aligning investment in water infrastructure with broader economic goals can enhance productivity across sectors. This includes constructing dams, irrigation systems, and water reservoirs that serve both agricultural and industrial needs to boos production, productivity, and value addition. At least 80% of Uganda's land is arable of which only 35% is actually cultivated as per the 2020 MAIIF report and only 0.5% of the potential land for irrigation is actually irrigated according to the national irrigation policy *2017(.

4.2 Limited application of science, technology, and innovation (STI) along the different value chains

Another critical challenge is the weak application of science, technology, and innovation (STI) across the value chain of various sectors. Poor management of water, sanitation, hygiene (WASH), and environmental resources significantly hinders the advancement of STI. Inadequate WASH facilities, environmental degradation and climate change create health and productivity issues that divert resources and attention away from innovation and research. Consequently, Uganda's low investment in research and development stifles progress in agriculture, industry, and natural resource management. The limited use of modern production techniques and technologies in these sectors restricts productivity and environmental sustainability, impeding the full exploitation of the country's natural resources and stalling economic development.

4.3 Low domestic revenue generation

Low domestic revenue generation in Uganda is significantly impacted by poor water, sanitation, and hygiene (WASH) infrastructure, environmental degradation, and climate change. Poor WASH services led to high public health costs and reduced productivity, diminishing the taxable income base. According to the World Bank Water and Sanitation Programme (WSP) report (2012), poor sanitation costs Uganda 389 billion Ugandan Shillings each year, equivalent to US$177 million. This sum is the equivalent of US$5.5 per person in Uganda per year. Environmental degradation and climate change disrupt agricultural activities, a major source of revenue, by reducing crop yields and increasing the costs of addressing climate-related damages.

If no adaptation measures are taken, annual impact costs of climate change are estimated to come up to about US$ 3.2 – 5.9 billion. In 2008 and 2010-11 droughts led to a 3% and 11% depreciation in the value of cash crops respectively. Forecasts suggest that the value of key export crops like coffee are expected to fall by 50% as a result of a contraction in the area suitable for production due to changes in the climatic conditions. This translates to losses of about US$ 1.4 billion by 2050.

These factors collectively lower the economic output, thereby shrinking the tax base and limiting domestic revenue generation.

The resulting financial strain exacerbates the country's reliance on deficit financing and increases public debt, further hindering economic growth and development.

4.4 Underdeveloped human capital

Poor water, sanitation, and hygiene (WASH) conditions, environmental degradation, and climate change have significantly contributed to the underdevelopment of Uganda's human capital. The lack of access to clean water and proper sanitation facilities leads to widespread waterborne diseases, which affect the health and educational attainment of children. Frequent illness and malnutrition hinder children's cognitive development and reduce school attendance, exacerbating the low human capital index. Environmental degradation and climate change further exacerbate this issue by disrupting agricultural productivity and food security, which are crucial for children's health and development. Floods, droughts, and other climate-related disasters lead to displacement and loss of livelihoods, increasing poverty and limiting access to education. The compounded effects of poor WASH conditions, environmental challenges, and climate impacts undermine the effectiveness of educational programs and vocational training, resulting in an inadequately skilled labor force and low productivity in the long run.

4.5 Low private sector investment

Poor WASH conditions, environmental degradation, and climate change have significantly impacted Uganda, leading to low private sector investment and reduced economic growth. Ineffective water, sanitation, and hygiene infrastructure has resulted in widespread health issues, with the World Bank reporting that inadequate sanitation costs Uganda approximately $177 million annually due to healthcare costs and lost productivity. Frequent outbreaks of waterborne diseases like cholera and dysentery increase absenteeism and lower worker productivity, deterring private sector investment.

Environmental degradation is evident in Uganda's alarming deforestation rates, with the country losing 73% of its forest cover between 1990 and 2015, according to the National Environment Management Authority (NEMA). This deforestation has led to reduced agricultural yields, impacting food security and livelihoods. Pollution and poor waste management, particularly in urban areas like Kampala, have further strained resources and public health. The ineffective waste collection and disposal systems result in significant pollution and health hazards, making the environment less conducive for investment.

Climate change exacerbates these challenges, with the Uganda National Meteorological Authority (UNMA) noting increased frequency and severity of weather events such as floods and droughts. These events especially in Eastern and Southwestern Uganda have disrupted supply chains, damaged infrastructure, and increase the costs of doing business. Weak regulatory frameworks and inadequate enforcement of environmental and waste management policies further discourage private sector involvement in sustainable practices.
Despite these challenges, there are significant opportunities for private sector investment in WASH, environmental, and climate change-related initiatives. Successful projects, such as Water for People's improvements in Kamwenge District's water and sanitation infrastructure, have shown that investments in WASH can lead to healthier communities and increased productivity. The Uganda bamboo project, part of the Uganda Green Growth Development Strategy, demonstrates how reforestation and sustainable agriculture can enhance resource availability and create new business opportunities. The Uganda Solar Energy Association (USEA), has promoted the adoption of solar energy, providing reliable power and reducing operational costs for businesses while making water for both domestic and production uses available.

Private sector investments in initiatives such as these can drive economic growth and create a more resilient and sustainable business environment. Benefits include improved workforce productivity, new market opportunities, cost savings, enhanced corporate image, and regulatory compliance. By addressing critical issues in WASH, environmental conservation, and climate change mitigation, private sector investments can foster sustainable development and economic prosperity in Uganda.

5.0 UWASNET Position/ recommendations for consideration in the NDP IV

5.1 Prioritise catchment and watershed protection to increase production and productivity of the agro-industry through Public Private Partnerships (PPPs).

UWASNET urges government to prioritise catchment and watershed protection through public-private partnerships (PPPs) will enhance water resource management, benefiting both the environment and agro-industrialization efforts in the NDP IV. PPPs involving corporations such as Coca-Cola, East African breweries working alongside state agencies such as Uganda Investment Authority (UIA), Ministry of Water and Environment (MWE), and National Environment Management Authority (NEMA), can increase private sector funding to the Natural resources, Environment, Climate Change, Land and Water Management (NRECCLWM) programme, leading to better protection and sustainable use of water resources. This focus will support agricultural productivity by ensuring reliable water supply for industrial production and value addition.

Furthermore, strengthening PPPs through co-creation with private sector entities and local communities will foster sustainable water resource management. The Directorate of Water Resources Management (DWRM) and Directorate of Environmental Affairs (DEA) will play key roles. This initiative aims to create employment opportunities through nature-based solutions (NBS), improve water system health, and generate sustainable hydropower. Enhanced water management will boost agro-industrial activities, ensuring a consistent water supply and contributing to climate resilience.

5.2 Ensure targeted investment in grassroot Human Capital Development systems to create a healthy and productive labour force.

UWASNET recognises that investing in human capital development holds the key to fostering economic development in Uganda.

Public health promotion: Through adequately resourcing the promotion of sanitation and hygiene by Village Health Teams (VHTs) and Community Health Extension Workers (CHEWs), the Ministry of Health (MOH) and MWE will significantly improve public health and hygiene standards, thereby enhancing human capital in the NDP IV.

WASH service delivery: Furthermore, by enhancing WASH service delivery at the household level and making sustainable investments in hygiene education, government will significantly improve health and education outcomes. Improved hygiene practices and access to clean water will reduce the prevalence of waterborne diseases, leading to healthier communities and better school attendance, ultimately fostering a more educated and productive workforce.

Private sector partnerships: Government through its relevant Ministries, Departments and Agencies (MDAs) must collaborate with the private sector to implement innovative WASH technologies that ensure efficient water management. Examples include solar-powered water systems and Water ATMs, which can lower the cost of WASH services and increase their accessibility. Such investments will not only drive technological advancements but also reduce operational costs and enhance service delivery, contributing to the overall development of human capital.

Sustainability of WASH services: Prioritizing investment in the full life cycle costs of WASH infrastructure, with an emphasis on operation and maintenance, is vital for sustained economic growth and job creation. The DWD, DEA, DWRM, MOH, and MOES should ensure efficient use of resources through the implementation of the Operation and Maintenance (O&M) framework. This approach will create employment opportunities by engaging graduates,

Area Service Providers (ASPs), hand pump mechanics, and local masons in the rehabilitation and maintenance of WASH infrastructure. By ensuring the long-term functionality and sustainability of water systems, this initiative will address weak human capital development and support stable economic growth, thereby transforming Uganda's economy.

5.3 Integrate rural water supply under the social services pillar of the Parish Development Model

The Parish Development Model (PDM) should include prioritizing rural water supply infrastructure under the social services pillar. The Ministry of Water and Environment (MWE), Area Service Providers (ASPs), the Ministry of Local Government (MoLG), and Local Governments (LGs) would be responsible for guiding this integration. By ensuring the provision and sustainability of safe drinking water, this initiative will create jobs and maintain the high functionality of community water systems. Additionally, it will generate revenue from taxes paid by ASPs, which can be reinvested into the WASH sector, thereby addressing low domestic revenue collection and enhancing economic growth at the parish level.

This initiative will also foster employment opportunities for youth and provide income for Water and Sanitation Committees. These roles include water system maintenance, hygiene promotion, and community education. By focusing on the full-service chain, from provision to maintenance, the initiative will ensure the long-term sustainability of water infrastructure, contributing to better health outcomes and stronger human capital development. This will be instrumental in addressing weak human capital development by providing consistent access to safe drinking water and promoting community well-being.

Additionally, integrating rural water supply infrastructure into the PDM will enhance the capacity of local governments to manage and sustain these services. This will lead to increased local expertise and local economic stability, ultimately supporting broader NDP goals. The initiative will also create a supportive environment for private sector involvement in the WASH sector serving as ASPs, driving innovation and efficiency. By prioritizing these actions, the PDM will significantly contribute to economic transformation and improved quality of life in rural Uganda.

5.4 Increase investment in digitalizing WASH, natural resources management and agriculture production.

UWASNET recommends that NDP IV prioritises investment in real-time WASH data management systems to enhance planning and decision-making in agro industrialization as well as universal access to WASH as an enabler to human capital development. By leveraging science, technology, and innovation, this initiative can create jobs for youth and improve service delivery. The Ministry of Information and Communications Technology (MICT), Ministry of Water and Environment (MWE), Ministry of Health (MOH), Ministry of Education and Sports (MOES), and the District Health Information System (DHIS2) should collaborate to implement this strategy.

5.5 Nurture private sector partnerships in sewerage treatment in the Greater Kampala Metropolitan Area.

The NDP IV should consider promoting private sector investment in sewerage management by co-financing micro sewerage systems such as lagoons. This initiative should include incentives for private sector entities such as tax breaks, subsidies, and streamlined regulatory processes to attract investment.

Collaboration with real estate developers and relevant government agencies like the Ministry of Lands, Housing, and Urban Development (MLHUD), National Water and Sewerage Corporation (NWSC), Ministry of Water and Environment (MWE), and the National Environment Management Authority (NEMA) will ensure effective regulation and technical oversight. Additionally, public awareness campaigns on the benefits of modern sewerage systems can help garner community support and encourage public-private partnerships (PPPs). This multi-stakeholder approach will boost private sector investment in WASH and environmental protection, leading to improved sanitation services, reduced pollution, and enhanced public health outcomes to steer economic growth.

5.6 Prioritise investment in hazardous waste management in the petrochemical Industry.

To enhance public health and environmental management, the NDP IV should invest in the proper segregation, transportation, and disposal of hazardous waste, particularly from the petrochemical industry. This requires developing and enforcing stringent regulations on hazardous waste handling and disposal, alongside training programs for workers to ensure compliance with safety standards. Recycling waste can also generate alternative energy, contributing to increased domestic revenue and improved food security. Moreover, partnerships with private sector companies specializing in waste-to-energy technologies can be explored to innovate and expand recycling capabilities. The Ministry of Health (MOH), National Environment Management Authority (NEMA), local governments (LGs), and the Ministry of Water and Environment's Appropriate Technology Centre (MWE-ATC) should collaborate to implement this initiative. Additionally, establishing a monitoring and evaluation framework will ensure the effectiveness of hazardous waste management practices, protecting communities and the environment from potential risks associated with petrochemical waste.

5.7 Building the WASH-Environment-Tourism and Sports nexus through the African Cup of Nations (AFCON).

The NDP IV should implement comprehensive WASH and waste management strategies to ensure clean and sustainable environments during the AFCON tournament. This includes enhancing waste management practices through increased waste segregation, recycling programs, and the provision of adequate sanitation facilities in and around sports venues. Eco-friendly initiatives such as community clean-ups, tree planting campaigns, and the promotion of reusable materials will not only beautify the environment but also engage local communities in sustainable practices. Effective coordination among local governments, municipalities, Kampala Capital City Authority (KCCA), Ministry of Education and Sports (MoES), Ministry of Water and Environment (MWE), and National Environment Management Authority (NEMA) is essential to ensure effective implementation and regulation. These efforts will not only enhance Uganda's national image but also create job opportunities for youth in the areas of waste management, sanitation services, and environmental conservation.

Additionally, the NDP IV should leverage WASH and environmental initiatives to promote sports tourism through the AFCON tournament. By investing in eco-tourism initiatives targeting women and youth, the plan will create jobs and boost tourism revenue. This includes developing eco-friendly accommodations, promoting nature tours, and integrating cultural experiences that showcase Uganda's natural beauty and heritage. The Ministry of Tourism, Uganda Tourism Board (UTB), local governments (LGs), MoES, and MWE should coordinate on these sustainable investments to ensure long-term economic benefits that extend beyond the tournament. Enhanced WASH infrastructure will not only improve the experience for visitors and athletes but also promote public health and environmental sustainability, fostering a positive legacy for future sporting events and tourism in Uganda.

5.8 Promote Innovative WASH Research and Development for Economic Growth (Knowledge Economy).

The NDP IV should prioritize the promotion of innovative WASH research and knowledge management as a strategic avenue to inform planning, generate revenue, and create employment opportunities, particularly for the youths. This involves investing in research and development (R&D) initiatives that explore new technologies and methodologies in water, sanitation, and hygiene management. For instance, developing smart water management systems, efficient waste treatment technologies, and sustainable sanitation solutions can significantly contribute to economic development. Additionally, creating dedicated research funds and innovation hubs will stimulate the involvement of young scientists and entrepreneurs in WASH and environment programmes, addressing the unemployment burden.

The integration of science, technology, and innovation (STI) into WASH and environmental management will drive economic growth by improving service delivery, reducing costs,

and enhancing environmental sustainability. Public universities and research institutions like the Economic Policy Research Centre (EPRC) of Makerere University should take the lead in these efforts, fostering partnerships with international research bodies and the private sector. These institutions can also develop curricula and training programs focused on WASH, environment, and climate change resilience innovations, preparing a skilled workforce equipped to tackle the external shocks and contemporary bottlenecks identified by the NDP IV strategic direction.

6.0 Conclusions

- Prioritizing catchment and watershed protection through public-private partnerships (PPPs) will enhance water resource management and support agro-industrialization, fostering economic growth and environmental sustainability.

- By collaborating with corporations such as Coca-Cola and East African Breweries, alongside state agencies like the Uganda Investment Authority (UIA) and National Environment Management Authority (NEMA), Uganda can increase private sector funding for the Natural Resources, Environment, Climate Change, Land, and Water Management (NRECCLWM) program.

- Targeted investment in human capital development, particularly through sanitation and hygiene promotion by Village Health Teams (VHTs) and Community Health Extension Workers (CHEWs), will improve public health and education outcomes, fostering a more productive workforce.

- Integrating rural water supply infrastructure into the Parish Development Model (PDM) will enhance local governments' capacity to manage and sustain these services, creating jobs and supporting economic growth at the parish level.

- Investment in digitalizing WASH and natural resources management will enhance planning and decision-making, leveraging science, technology, and innovation to create youth employment and improve service delivery.

- Promoting private sector investment in sewerage management and hazardous waste management in the petrochemical industry will improve sanitation services, reduce pollution, and protect public health.

- Lastly, implementing comprehensive WASH and waste management strategies for the African Cup of Nations (AFCON) will ensure clean and sustainable environments, boost tourism revenue, and create job opportunities. By prioritizing these actions, NDP IV can harness the potential of WASH and environmental management to spur economic transformation, enhance public health, and achieve sustainable development goals, ensuring a prosperous future for Uganda.

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