MINISTRY OF WATER & SANITATION AND IRRIGATION

REGULATORY IMPACT STATEMENT (RIS)

THE IRRIGATION (GENERAL) REGULATIONS, 2020

Introduction

The Regulatory Impact Statement for the proposed Irrigation (General) Regulations, 2020 was prepared in accordance with the provisions of sections 6 and 7 (1) and (2) of the Statutory Instruments Act, 2013. Section 6 of the Statutory Instruments Act, 2013 requires the Regulation Making Authority to prepare a Regulatory Impact Statement (RIS) for the proposed regulations indicating the costs and benefits of the proposed regulations on the public and stakeholders. Section 7(1) and (2) of the Act set out the contents of a Regulatory Impact Statement for the proposed regulations as follows:

1.0 A Statement of the Objectives and Reasons for the Proposed Regulations

The primary objective of the Regulations is to facilitate better carrying out of the purposes and provisions of the Irrigation Act 2019, which was enacted in August 2019. The main object of this Act of Parliament is to promote and regulate the development, management, financing and irrigation support services in Kenya.

The purpose of the Regulations is to ensure:

i. Operationalization of the Irrigation Act, 2019 in the spirit of the Irrigation Policy, 2017;

ii. Sustainable development, management, financing, provision of support services and effective regulation of the entire irrigation sector in Kenya; and

iii. Compliance to the Constitution and laws of Kenya, international laws and treaties, agreements and other ratified instruments.

2.0 Statement on the Effect of the Proposed Regulations

2.1 Effects on the Public Sector

The proposed Regulations will affect the public sector in the following ways:

i. The Government will establish a coherent and regulated environment for streamlined oversight and improved management and development of the irrigation sub-sector;

ii. County governments will have a well-organized irrigation policy and supportive strategies implementation structure at the local level through the County Irrigation Development Units, for the regulation and better coordination of the irrigation sub-sector and promoting irrigation developments in the counties and thus increase agricultural production and incomes for farmers;

iii. Conservation and protection of all current and potential irrigation areas in the country for sustainable irrigation development and better control environmental hazards such as floods;

iv. The National Irrigation Authority will have improved sector structures, systems and implementation framework for more effective irrigation sub-sector regulation, planning and development;

v. The broader agricultural sector and national economy will benefit from the increased volumes of production and exports from irrigation schemes and thus increased foreign exchange earnings;

vi. The Regulations will provide opportunities for public and private sector partnership for irrigation investments, building synergies in the development and management of the irrigation sub-sector; and

vii. Increased cooperation and collaboration in irrigation research, science and technology, and information sharing with all stakeholders including regional and international partners.

2.2 Effects on the Private Sector

The proposed Regulations will affect the private sector in the following ways:

i. Irrigation sub-sector players including private companies, water users associations and umbrella associations, producers' associations/organizations, farm inputs and equipment suppliers irrigation equipment and machinery suppliers, irrigation articles manufacturers and suppliers, irrigation firms, irrigation professionals, irrigation service providers will stand to benefit from a better regulated irrigation sub-sector and conducive operating environment for their different businesses. They will also be protected from often negative interferences from Governments and government agencies; and other political interferences;

ii. These private sector actors will also have an opportunity to partner with the Governments and government agencies for synergy in the development and management of the irrigation sub-sector;

iii. Sustainable viable businesses will be established and can thrive in the irrigation sub-sector. This may attract new local and foreign investors to invest in the sub-sector in the country;

iv. Irrigation farmers and entities will access irrigation services only from qualified and registered professionals and firms which will ensure quality, effective and efficient services for the users;

v. Quality and safety of produce from the farms, human and environmental health will be enhanced through good on-farm water management and agricultural practices;

vi. Irrigation users and even those in irrigation water users associations will select their irrigation services providers based on quality, cost of services, efficiency and effectiveness. This will promote competition amongst the service providers for the benefit of the users e.g. resulting in better costing and services;

vii. Irrigation developments will increase agricultural production, create employment and improving livelihoods of farmers and rural populations through increased earnings;

viii. Production and supply consistence of raw materials for agro-processing will be improved; and

ix.

x. Academia and research organizations will also be winners in this regard because the Regulations create a demand for their services.

2.3 Effects on fundamental rights and freedoms

Article 43 of the Constitution provides for the economic and social rights. It affirms the rights of individuals and communities to an adequate standard of life including right to accessible and adequate housing, right to adequate food of acceptable quality and right to clean and safe water in adequate quantities. The State has an obligation to allocate and provide resources for the progressive realization of these rights.

Article 55 of the Constitution requires the State to take measures to ensure the youth can access employment and other opportunities for social and economic advancement. Thus the State has a constitutional obligation to promote investment, income and wealth creation in the agricultural sectors and other sectors of the economy. In addition, the government has an international obligation to promote the right to work in the country.

The proposed Regulations shall have the following positive impacts on rights and freedoms of individuals. They will provide better returns on their produce and investment to existing and new irrigation farmers. The Regulations will also create wealth and employment for more Kenyans in the rural areas while producing raw materials for agro-processing. This would contribute to improved household incomes and enhances capacities to afford an adequate standard of living envisaged in article 43 of the Constitution.

Further, the proposed Regulations seek to advance the government policy of transforming Kenya's agricultural sector aimed at achieving the national goals set out in the Kenya Vision 2030, the Government's Big 4 Agenda, the National Irrigation Policy, the National Agriculture Policy and the Agriculture Sector Transformation and Growth Strategy (ASTGS) and individual County Integrated Development Plans (CIDPs) whereby the agricultural sector shall be a key driver of economic growth and value addition. The Regulations will not only enhance public participation of the players in the sub-sector and enable public-private partnership in the development and management of irrigation in the country but also ensure consumers of irrigated products have quality and safe products to consume as required in article 46 of the Constitution and as well as preserve the environment as required in article 42 of the Constitution on the right to a clean and healthy environment.

Regulation 75 and 110 of proposed Regulations shall enhance the right to access information to industry players as provided in article 35 of the Constitution. Regulation 75 provides for sharing of information relating to maintenance and condition of a transferred irrigation system while Regulation 110 provides for the establishment and maintenance of irrigation and drainage management information system.

Regulation 82 - 86 of proposed Regulations enhance the right to fair administrative action as provided in article 47 of the Constitution that require administrative action to be expeditious, efficient, lawful, reasonable and procedurally fair. They establish a dispute resolution committee to resolve disputes among members of associations. They also provides for the dispute resolution procedures and appeal process to enhance fairness in dispute resolution in the sector.

Whereas Regulation 48 of the proposed Regulations recognizes the important roles being played by irrigation water users' association in development and management of community based irrigation, it may violate the provisions of article 36 of the constitution on freedom of association. This is because it compels individuals to form irrigation water users association. Article 36 allows individuals the freedom to form or join or participate in activities of an association. Article 36(2) of the Constitution disallows compelling an individual to join an association. Regulation 48(4) provides that where residents are unable or fail to form an association within twelve months of coming into force of the Regulations, the supervising entity "*may compel such persons to form an association*". This may be held to be unconstitutional. However, the violation is justifiable and reasonable and the circumstances of the schemes and the limitation of the right can be argued to be proper.

3.0 Statement on Regulatory & Non-Regulatory Options

3.1 Option 1: Maintaining the Status Quo

Before considering new interventions, it is important to consider whether the problem could be resolved by making changes to practices within the existing regulatory framework, thus maintaining the status quo. Examples of this are:

i. Making use of existing laws, regulation and/or guidelines e.g the Irrigation (National Irrigation Schemes) Regulations, 1977;

ii. Simplifying or clarifying existing regulation;

iii. Improving enforcement of existing regulation; or

iv. Making legal remedies more accessible or cheaper.

3.2 Option 2: Passing the Regulations

Government can achieve its policy objectives by using taxpayer's money or through a range of non-spending interventions, including regulation. The purpose of these Regulations is to ensure (a) sustainable development, management, financing, provision of support services and effective regulation of the entire irrigation sector in Kenya; and (b) compliance with the Constitution and the Laws of Kenya, international laws, treaties and agreements and other ratified instruments. These Regulations aim to set rules to protect and benefit people, businesses and the environment, stabilizing markets and addressing market failures to support economic growth. Regulations can also create costs for businesses, and the public sectors. It can, if overused, poorly designed or implemented, stifle competitiveness and growth.

Adoption and operationalization of the proposed Regulations will:

i. Facilitate the implementation of the National Irrigation Policy, 2017 to address all aspects of the irrigation sub-sector and to align it to the Constitution of Kenya, 2010 in order for the two levels of government to work together harmoniously for the full exploitation of the irrigation potential in the country;

ii. Facilitate the implementation of the Irrigation Act, 2019 for the development, management, financing, provision of support services and regulation of the entire irrigation sector in Kenya;

iii. Support increased participation of the private sector and promote public-private partnerships in the irrigation sub-sector thus allowing for an expanded and more efficient

irrigation sub-sector that will support the country's agricultural development agenda as envisaged in the Vision 2030, the Big 4 agenda, National Irrigation Policy, the national agriculture policy including the Agriculture Sector Transformation and Growth Strategy (ASTGS) and individual Counties Integrated Development Plans (CIDPs) to make the agricultural sector be a key driver of economic growth and value addition;

iv. Improve quality of irrigation services offered in the country by allowing only qualified and registered professionals and firms to provide such services which will ensure quality, effective and efficient services for the irrigation farmers, agencies and other entities;

v. Streamline and coordinate irrigation sub-sector for a coherent, coordinated and regulated environment for oversight and improved management and development of the irrigation sub-sector, and remove hurdles that have negatively impacted on the sub-sector;

vi. Develop and maintain a realistic data base on the sub-sector inclusive of registers of irrigation schemes, irrigation water users' associations and umbrella associations, irrigation permit holders, land and water utilization, all sub-sector players including private irrigation companies, producers' associations and organizations, farm inputs and equipment suppliers, irrigation equipment and machinery suppliers, irrigation articles manufacturers, irrigation firms, irrigation professionals, irrigation service providers in Kenya for better coordination, control and planning in the sub-sector;

vii. Increased irrigation information access to stakeholders, especially smallholder farmers and prospective investors for informed on-farm and investment decisions;

viii. Enhance quality and safety of produce from the farms to better promote human and environmental health;

ix. Protect all current and potential irrigation areas in the country by designating and gazettement as irrigation areas;

x. Promote adoption of water harvesting, storage and waste water recycling technologies thus contribute to increasing available water for increased irrigation and effective irrigation water management; and

xi. Enhance safety standards in the irrigation infrastructure designing, construction and operations to avert human lives and property losses from irrigation structure failures.

The Regulations are thus important for the development, management, financing, streamlining and organizing the irrigation sub-sector.

3.3 Option 3: Other Practical Options

Alternatives to regulation include information and education, market-based structures, self-regulation and co-regulation. In addition, existing policies can be improved, without further regulation, using techniques such as behavioral insight or changing enforcement practices to improve compliance. Such approaches may be better or worse for business and the economy than an equivalent regulatory measure.

1. **Alternatives to regulation include:**

i. **No new intervention/do nothing**: This may include making use of existing laws and regulation; simplifying or clarifying existing laws and regulation- the Irrigation (National Irrigation Schemes) Regulations, 1977; improving enforcement of existing laws and regulation; or making legal remedies more accessible or cheaper and as discussed in the section above status quo in the sector is likely to remain.

ii. **Information and education**: Information and education can be used to empower irrigation industry players to make their own decisions, improving choice for mutual benefit of all. For instance, there are potential risks associated with this. Information and education can take time to make an impact. Access to information and the ability to use it can vary within a community and so may not reach all equally. It may also not be straightforward to assess how people will react or change their behaviour in response to the information provided. It will also increase costs for government and businesses that will be providing the information and education required.

iii. **Incentive/market-based structures**: The government can use economic instruments, such as taxes, subsidies, quotas and permits, vouchers etc. as initiatives to realize the desired objectives. These initiatives however are only practically possible in well-developed and efficiently functioning sectors which have well defined structures unlike the irrigation sub-sectors. Further, often these sorts of systems need their own regulation to establish the framework and may have additional costs to the government and are unlikely to be effective in the irrigation sub-sector.

2. **Alternatives models of regulation**:

i. **Self-regulation**;

An industry or a profession can self-regulate, for example through the use of codes of conduct, customer charters, standards or accreditation. In many cases rules and codes of conduct will be formulated by the industry representatives or organizations under their own initiative. In the absence of well-developed sector organizations, self-regulation is not possible

ii. **Co-regulation**.

Co-regulation is an intermediate step between state-imposed and self-regulation that involves some degree of explicit government involvement where industry may work with government to develop a code of practice whose enforcement would be by the industry or a professional organization and accredited by government. In the absence of well-developed sector organizations, co-regulation is not possible.

4.0 Costs-Benefit Analysis (CBA)

4.1 Economic, Environmental and Social Impacts

The economic impacts of the regulations

Economic benefits of proposed Regulations are:-

i. Increase the area under irrigation from the current approximate 201,962 hectares to the country's potential of 1.342 Million hectares by 2030 by increasing the area under irrigation by 40,000 hectares per year in line with the National Irrigation Policy. Vision 2030 envisioned 404,800 hectares under irrigation especially in the Arid and semi-arid area by putting 30,000 hectares of land under irrigation each year. This plan will ensure Kenya hit the one million irrigation acre threshold (405,000 hectares) in 12.5 years;

ii. Increase irrigation contribution to country's GDP by 400% to the projected potential from the current estimated 3% contribution through increased agricultural production and productivity;

iii. Increased irrigation contribution to the total value of all agricultural produce by 400% to the projected potential from the current estimated 18% contribution through increased agricultural production according to the National irrigation policy, 2017; and

iv. Create many jobs opportunities at the rate of up to 15 persons per hectare directly and indirectly through professional services.

Other economic benefits but which are difficult to quantify with the available data and information in this assignment are:

i. Guarantee raw materials for agro-industries;

ii. Increased agricultural production under irrigation;

iii. Increased exports of products/produce from irrigation schemes;

iv. Increased value addition and product diversification;

v. Increased foreign exchange earnings from irrigation products exports;

vi. Increased savings and investment by irrigation farm families;

vii. Foreign direct investment through new investments in production, value addition and marketing in Kenya's irrigation sub-sector;

viii. Improved terms of trade - substitution of imported agricultural produce with locally produced produce;

ix. Aquaculture can be introduced and incorporated in the irrigation schemes as a complimentary activity to diversify production and income streams for farmers;

x. Increased cess and taxes from increased agricultural produce;

xi. Reduced health costs due to improved nutrition; and

xii. Low and affordable cost of food items for households.

Economic costs of the proposed regulation

The economic costs of proposed Regulations are:

i. The Regulations require the users to acquire and renew the licence and permit at a fee;

ii. The Regulations require different types of studies and surveys including irrigation schemes feasibility studies, water quality analysis, hydrological surveys etc. and which are mandatory and will be a costly process for irrigators;

iii. The Regulations require that only qualified and registered professionals and firms will provide irrigation services in the country. These will be more expensive to engage (for good reason) and they may not be readily available in some parts of the country and may thus result to delays to planning, implementation, management or provision of services in the irrigation schemes;

iv. Effective implementation of the Regulations will require increased investment in capacity building of irrigation stakeholders on among others good on-farm water

management and agricultural practices, development and maintenance of the sub-sector register, schemes audits, monitoring and evaluation etc; and

v. The Regulations may also introduce additional transactional costs from bureaucracy due to the many processes envisaged in the Regulations resulting in time delays.

The social impacts of the regulations

The social benefits of proposed Regulations are:

i. Decreased poverty level among the farm families and the community in general;

ii. Improved income distribution among the farm families and the community in general and thus reduced inequalities;

iii. Improved access to water and sanitation among the farm families due to increased incomes;

iv. Improved health status of the farm families and the community resulting to reduced child and maternal mortality and reduced disease incidences due to improved nutrition and improved food safety;

v. Improved education levels and reduced illiteracy;

vi. Reduced tide of rural urban migration in search of employment opportunities; and

vii. Improved security amongst rural populations in irrigation areas.

Social costs of the proposed regulation

The social costs of proposed Regulations are:

i. Whereas land within public national and county public irrigation schemes is allocated at no cost and permits are perpetual with succession embed within the dependant, some of the provisions of the Regulations especially on tenure and obligations may be viewed as infringing on individuals rights especially in the public irrigation schemes and there may be difficulties in their acceptance as they may be interpreted as extending insecure land tenure system that has always characterized public irrigation schemes in Kenya;

ii. Increased gender disparities for youth and women in certain areas;

iii. Loss of cultures , habits and social value systems held for long time; and

iv. More conflicts between neighbors for water as schemes become bigger.

The environmental impacts of the regulations

The environmental benefits of proposed Regulations are:

i. Improved utilization and access to suitable and affordable water for irrigation;

ii. Better control environmental hazards like floods and reduced risks from irrigation infrastructure failures;

iii. Increased afforestation and reduced deforestation;

iv. Reduced carbon emissions;

v. Improved land conservation, utilization and management in all irrigation areas; and

vi. Reduced soil degradation due to improved run-off water and irrigation scheme discharge management, improved plant cover.

The possible negative impacts of the Regulations may include:

i. Reduced rivers flow and disturbed aquatic ecosystems;

ii. Increased, waterlogging and soil salinity;

iii. Reduced downstream river water quality;

iv. Reduce water access for downstream water users;

v. Lost land use opportunities;

vi. Groundwater depletion mining with wells, land subsidence; and

vii. Expansion of irrigation schemes may result to an increase in water borne diseases and insect pests breeding areas negatively affecting health of the population and increased insects nuisance to the public where schemes management fail to fully comply with the approved Environmental Management Plans.

However, with good irrigation design, development and management, these negative environmental impacts can be significantly mitigated and impacts reduced.

4.2 Administration and Compliance Cost

RIA notes that resources would be required for operationalization of the Regulations which will include human resource and operation costs for enforcement as well as for awareness creation of the Regulations to different stakeholders in the irrigation sub- sector. It is assumed that more resources will go to the implementation of the wider national agriculture policies which support extension services (now a devolved function) for strengthening knowledge transfer and technology distribution among the farmers and in the implementation of the National Irrigation Policy, agriculture sector transformation and growth strategy and the Big 4 agenda.

The government will also incur costs in the identification, mapping, assessment, protection gazettement, status review, and monitoring of all and potential irrigation areas across the country as protected irrigation areas.

4.3 Assessment of Return on Investment (Benefit)

Passing and operationalization of the Regulations will be critical in facilitating development of the irrigation sub-sector. It will streamline Kenya's unstructured irrigation sub-sector to allow coordinated control of the sub-sector, create a level playing field for all sub-sector players and promote professionalism and fair trade practices to support Kenya's agricultural development and manufacturing pillars as envisioned in the Vision 2030, the Big 4 agenda, ASTGS and individual counties' CIDPs. An effective, efficient and well developed irrigation sub-sector will optimize land utilization in irrigation areas and support increased production and productivity of quality agricultural products that meet international market standards, and ensure consistent provision of quality raw material for agro-industries to sustainably guarantee improved incomes for the farmer and thus improved livelihoods and social welfare for communities, while guaranteeing other businesses within sub-sector good returns and higher export earnings for the country.

In broad terms, the RIA notes that following broad benefits and returns on investment will be achieved:

i. The Regulations will streamline the unstructured irrigation sub-sector for better functioning while allowing for fair competition and this will result to enhanced efficiency and development of the industry;

ii. Improved access to reliable irrigation information and irrigation services from the professionals, firms, contractors and other service providers- will support the farmers and other stakeholders to improve the productivity and quality of their service delivery;

iii. Enabling policy operating environment will be attractive to new investors expanding irrigation in the country, thus contributing towards reaching the national target irrigation area;

iv. A reliable comprehensive data base on the sub-sector inclusive of a register of irrigation schemes, irrigation water users' associations and association of irrigation farmers, irrigation permits holders, land and water utilization, all sub-sector players including private irrigation companies, producers' associations and organizations, farm inputs and equipment suppliers, irrigation equipment and machinery suppliers, irrigation articles manufacturers, irrigation firms, irrigation professionals, irrigation service providers in Kenya for better coordination, control and planning in the sub-sector;

v. More efficient and effective irrigation water use planning, management and utilization for sustainable water resources management and development;

vi. Adoption of appropriate water harvesting, conservation, saving, utilization and waste water recycling technologies;

vii. Establish clear structured mechanisms for discharge of water from irrigation schemes, thus reduce environmental contamination;

viii. Increased agricultural national production and value addition will translate into increased agricultural exports and thus increased foreign exchange earnings;

ix. Increased agricultural production which translates to increased job creation through farm labour, agro-processing and products manufacturing, value addition, marketing and auxiliary services;

x. Research in the irrigation sub-sector will be focused to address identified issues and support further development of all spheres of the sector;

xi. Increased and effective public and stakeholders' participation in irrigation development processes including direct private sector and public-private partnerships; and

xii. Adoption of good agricultural and on-farm water management practices for increased returns and thus a motivation for increased investment in irrigation.

4.4 Quantification of the Benefit

In 2019, the country experienced a mixed weather phenomenon. This was characterized by drought during the first half of the year, followed by high rainfall in the second half of the year. This culminated in reduced production of selected crops and pasture for livestock. Consequently, the agriculture sector performance decelerated from 6.1 per cent in 2018 to 3.6 per cent in 2019. Maize production reduced from 44.6 million bags in 2018 to 39.8 million bags in 2019. Tea

production decreased by 6.9 per cent to 458.5 thousand tonnes in 2019, while sugar cane production decreased by 12.5 per cent to 4.6 million tonnes over the same period. However, total quantity of coffee produced increased by 8.7 per cent from 41.4 thousand tonnes in 2017/18 to 45.0 thousand tonnes in 2018/19. The export quantities of fresh horticultural quantities increased slightly by 1.8 per cent from 322.6 thousand tonnes in 2018 to 328.3 thousand tonnes in 2019. The quantity of formally marketed milk increased by 5.3 per cent from 634.3 million litres in 2018 to 668.2 million litres in 2019. Total paddy rice production rose by 42.6 per cent from 112.6 thousand tonnes in 2018 to 160.6 thousand tonnes in 2019.

The value of marketed production at current prices for the first time in the last five years decreased by 6.5 per cent from KSh 498.3 billion in 2018 to KSh 465.7 billion in 2019. Earnings from sugarcane decreased by 16.6 per cent from KSh 21.0 billion in 2018 to KSh 17.6 billion in 2019, while pyrethrum earnings increased by 49.2 per cent from KSh 26.2 million in 2018 to KSh 39.1 million in 2019. During the year under review, coffee earnings decreased by 31.5 per cent from KSh 14.8 billion in 2018 to KSh 10.2 billion in 2019. This was mainly attributable to excess production of coffee globally, especially, in Brazil, which led to reduced average prices.

It is estimated that irrigation provides 18% of the value of all agricultural produce demonstrating the potential of irrigation in increasing agricultural production and productivity (MWI, 2016).

By 2015 only an estimated 180,503 hectares of irrigation land had been developed which is equivalent to 13.5% of the total estimated 1,341,900 hectares potential that could be irrigated and was contributing an estimated 3% to the GDP. According to the National Irrigation Policy, agricultural production can be increased by up to 400 percent, and over 1 million jobs created at the rate of up to 15 persons per hectare directly and indirectly in the sub-sector. This can be interpreted that the current contribution of irrigation to the national GDP, in Agriculture Value Added and value of marketed agricultural production can be increased by 400% with the right interventions in irrigation development and management whilst creating millions of jobs in the sub-sector.

In addition to expanded irrigation schemes, irrigation sub-sector contribution to the economy can further be increased by enhancing efficiency in existing schemes. Many of the existing community-based smallholder irrigation schemes in the country have a long history of management failures, inefficiencies and a myriad of other problems that stem from the inabilities to self-governance including those that were government managed through the NIB and have been operating well below their capacity. The government managed schemes worked under a relatively closed management by the NIB and traditionally grow rice with little or no rotation.

Studies have shown that irrigation can increase yields of the top Kenya's five crops of maize, pulses, fruits, tea and roots and tubers by one to seven times compared Kenya's predominantly rain-fed yields today. While investment in irrigation technology repays faster for cash or high value crops, there is a business case for all Kenya's important crops.

5.0 Reasons why other Regulatory Options are not Appropriate

5.1 Option 1: Maintaining the Status Quo

Maintaining the status-quo will only sustain the challenges in the irrigation sub-sector, curtailing new developments in the sub-sector and even allow further decline in this sub-sector, including the following:

i. The irrigation sub-sector will continue to remain unstructured and not effectively regulated allowing continued operation of unqualified, unscrupulous, quick-for-profit players who do not necessarily comply with set irrigation standards resulting to the installation of unsafe irrigation and failed infrastructures which are harmful to lives, health and to the environment, inefficient and unsustainable exploitation of water resources, reduced agricultural productivity and production in the irrigation schemes, reduced produce quality and food safety and the sub-sector will remain unattractive to new private sector investments;

ii. Irrigation information and services will remain inaccessible by many users and potential investors to inform on-farm and investment decisions;

iii. Quality of irrigation services offered in the country will continue to be low and expensive;

iv. Exploitation of Kenya's irrigation potential of 1.342 million hectares which is currently estimated at 15.05% will remain low;

v. Limited private sector participation in irrigation development, leaving the sub-sector as a monopoly for less business efficient public agencies;

vi. Underutilization of irrigation schemes by farmers in underperforming and/or collapsed schemes and especially by smallholders in public irrigation schemes who do not realize optimal benefits of irrigation;

vii. Continued mismanagement of irrigation schemes and especially public schemes resulting to their under-performance or even total collapse and thus loss of public investments;

viii. Agricultural productivity and quality of Kenya's agricultural products will decline further, reducing export volumes and acceptability in some markets, thus, reduced foreign exchange earnings;

ix. Farmers' earnings will also reduce as a result of reduced productivity and product quality, thus impacting on the farms families' ability to access social services and amities including housing, health, education etc.;

x. Reduced earnings for farmers will also translate to loss of employment opportunities in agricultural production in the rural areas, increasing the rate of unemployment in the country and insecurity;

xi. The environmental hazards resulting from low adoption of good agricultural practices and poor on-farm water management practices continue destroying Kenya's environment and biodiversity which are important for sustainable agricultural and economic development;

xii. Farmers' cost of production under irrigation will remain high due to uncompetitive irrigation services costs, low adoption of good agricultural practices, poor on-farm water management practices, and inefficiencies of the irrigation schemes;

xiii. There will be no clear involvement of county governments in regulation of the irrigation sub-sector thus contravening the provisions of fourth schedule of the constitution, and relevant provisions of County Governments Act on devolution and sharing of responsibilities;

xiv. Destruction and poor utilization of all existing and potential irrigation areas in the country will continue leading to their partial or total destruction;

xv. Adoption of water harvesting, storage and waste water recycling technologies thus contribute to increasing available water for increased irrigation and effective irrigation water management will remain low;

xvi. Incidences of human lives and property losses from irrigation structure failures due to non-compliance of standards in the irrigation infrastructure designing, construction and operations will continue;

xvii. Quality and safety standards of produce from the irrigation schemes will continue to be low, negatively affecting human and environmental health; and

xviii. Regulation, coordination, control and planning in the sub-sector will continue to be ad hoc and not to be evidence-based in absence of the proposed all-inclusive data base on the sub-sector.

The situation is not sustainable, and the RIA recommends that the proposed Regulations be put in place to promote the development of the irrigation sub-sector to effectively contribute to the realization of the objectives of the Vision 2030, the National Irrigation Policy, the Agricultural Sector Transformation and Growth Strategy, the National Agriculture Sector Development Strategy, the Government's Big 4 Agenda and the individual Counties' CIDPs.

5.2. Other Practical Options

Alternatives to regulation include:

i. **No new intervention/do nothing**

This may include making use of existing irrigation Regulations (1977) and other sectoral Regulations by NEMA and WRA; simplifying or clarifying existing regulation; improving enforcement of existing regulation; or making legal remedies more accessible or cheaper to regulate the irrigation sub-sector. The challenge with this approach is that the status quo in the irrigation sub-sector is likely to remain to the detriment of all the sector stakeholders and the country.

ii. **Information and education**

Information and education can be used to empower stakeholders to make their own decisions, improving choice for mutual benefit of all. However, information and education can take time to make an impact and still may not be acceptable. This approach may increase costs for government and businesses that will be providing the information and education required. The desired objectives are unlikely to be realized within reasonable time for the common good of all.

iii. **Incentive/market-based structures**.

The government can use economic instruments, such as taxes, subsidies, initiatives to realize the desired objectives. These initiatives however are only practically possible in well-developed and efficiently functioning sectors which have well defined structures and often these sorts of systems need their own regulation to establish the framework and may have additional costs to the government and are unlikely to be effective in the irrigation sub-sector.

5.3. Alternatives models of regulation include:

i. **Self-regulation**

The irrigation sub-sector currently has no well-developed industry representative(s) to formulate and implement codes of conduct, customer charters, standards or accreditation system for self-regulation thus it is not possible in the sector.

ii. **Co-regulation.**

Co-regulation is an intermediate step between state-imposed and self-regulation that involves some degree of explicit government involvement where industry may work with government to develop a code of practice whose enforcement would be by the industry or a professional organization and accredited by government. The irrigation sub-sector currently has no such organization(s) at the moment and thus co-regulation is practically not possible.

6.0 Conclusion

The proposed Regulations if effectively implemented will provide a favorable environment to promote development, management, financing and provision of support for the irrigation sub-sector and make it attractive to potential farmers, other irrigation sub-sector players and to investors, thus providing the sub-sector with an opportunity to realize its full potential and contribute fully to the national development goals of food security, wealth and employment creation.

7.0 Recommendation

The Regulatory Impact Assessment recommends the passing and operationalization of the proposed Regulations.