

Kenya Gazette Supplement No xxx

(Legislative Supplement No xxx)

LEGAL NOTICE NO.

THE WATER ACT
(No. 43 of 2016)

THE NATIONAL WATER HARVESTING AND STORAGE
REGULATIONS, 2019

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LEGAL NOTICE NO.

THE WATER ACT
(No. 43 of 2016)

THE NATIONAL WATER HARVESTING AND STORAGE
AUTHORITY REGULATIONS, 2019

IN EXERCISE of the powers conferred by Section 142 of the Water Act 2016, the Minister for Water and Sanitation makes the following Regulations—

**THE NATIONAL WATER HARVESTING AND STORAGE
AUTHORITY REGULATIONS, 2019**

PART I PRELIMINARY

1. These Regulations may be cited as the National Water Harvesting and Storage Authority Regulations 2019.

Citation.

2. In these Regulations, unless the context otherwise requires—

Interpretation.

“Act” means the Water Act 2016;

“Base Flood” means the flood having a one percent chance of being equaled or exceeded in any given year.

“Cabinet Secretary” means the Cabinet Secretary responsible for matters relating to water

“Dam” includes any existing or proposed structure which is capable of containing, storing or impounding water (including temporary impoundment or storage), whether that water contains any substance or not;

“Floods,” “flooding” or “floodwaters” means a general and temporary condition of partial or complete inundation of normally dry land from the overflow of inland or tidal waters; the unusual and rapid

accumulation or runoff of surface waters from any sources; and/or mudslides; or the condition resulting from flood-created erosion.

“Levee” means a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding.

“Net freeboard” also referred to as “flood freeboard” means the vertical distance between the maximum water surface and the top of the dam;

“Qualified Water Resource Professional” means a person qualified and licensed under the Water Resources Regulations 2019 as a water resources professional;

"Reservoir" means the body of water impounded by a dam or a dam with a safety risk;

"Risk" means the measure of the probability and severity of an adverse effect to life, health, property, or the environment.

“Spillway” is a structure used to provide the controlled release of flows from a dam or levee into a downstream area typically the riverbed of the dammed river itself;

"Storage capacity" means the total volume of free water (excluding groundwater) that could be stored below the lowest unobstructed spillway crest level or free outlet level of a dam, or below the maximum operating level (established by the penstock inlet level or free decant level and as prescribed in the operation and maintenance manual or code of practice) in the case of any residue deposit including tailings dams;

"Task" includes a task relating to designing, constructing, altering, repairing, impounding water in, operating, evaluating the safety of, maintaining, monitoring or abandoning a dam with a safety risk.

“Water Resources Authority” means the Authority established under section 11 of the Act;

“Water storage” means a location or structure where water is stored for future use;

“Water Storage Authority” means the National Water Harvesting and Storage Authority established in Section 30;

“Waterworks” for purposes of these Regulations means any man made structure, apparatus, contrivance, device or thing for storing, impounding, or diverting water permanently or temporarily, regulating the flow of water or containing or managing and

controlling flooding and includes a dam, reservoir, water pan, dyke, levee and such like structures and devices;

“Works” includes waterworks.

3. (1) These Regulations shall apply to and govern policies, plans, programmes, activities and discharge of mandate of the national government, county governments as well as the Water Storage Authority each in the execution of their respective mandates.
- (2) These Regulations shall apply to public and private Waterworks for water harvesting and storage; reservoirs for impounding surface run-off and for regulating stream flows to synchronize them with water demand patterns; and structures and devices for flood control and management.
- (3) These Regulations apply also to waterworks constructed before the commencement of the Act.

Application of Rules.

PART II- DEVELOPMENT OF WATER WORKS

4. (1) The Cabinet Secretary designates the waterworks listed in the First Schedule as national public water works.
- (2) The Cabinet Secretary may by notice published in the Gazette, amend the First Schedule by addition or deletion of any particulars in the list.
5. Waterworks listed in the First Schedule shall be developed, rehabilitated, managed and maintained by the Water Storage Authority or by an agent of the Water Storage Authority.
6. The acquisition, construction, alteration, operation, maintenance and control of the public waterworks listed in the First Schedule shall be financed out of the national government’s share of national revenue pursuant to the provisions of the Public Finance and Management Act, 2012 (Act No.18 of 2012).
7. (1) Prior to constructing the waterworks, the owner or developer or other person charged with the mandate of developing, managing and or maintaining waterworks shall –
 - (a) Apply for and obtain a water use permit under the water Resources Regulations 2019; and
 - (b) Apply for and obtain an environmental impact assessment licence under the Environmental (Impact Assessment and

Designation of National Public Water Works.

Development of works.

Financing of works.

Consultation and Environmental Impact Assessment.

Audit) Regulations 2003 made under Environmental Management and Coordination Act 2015 (Act No. - of).

- (2) Sub regulation (1) does not apply –
 - (a) to works constructed in emergency circumstances;
 - (b) to temporary works in operation for a period of less than five years or;
 - (c) if the works are minor.
- (3) Within two years after the completion of the works contemplated in subregulation (2)(a), the owner, developer or operator of the waterworks shall decide either –
 - (a) to demolish the works and restore the site; or
 - (b) after complying with subregulation (1) to the appropriate extent, to retain the works for purposes of water resources storage and or flood control.

8. (1) Dams shall be classified as Class A, B or C and set out Table 1 of the Third Schedule and on the basis of criteria stipulated in the Second Schedule of these Regulations.

Classification of Dams.

(2) When establishing the class of a dam the criterion resulting in the higher risk class will prevail on the basis that in the general case, risk is estimated by the combined impact of all triplets of scenario, probability of occurrence and the associated consequence while in the special case, average risk is estimated by the mathematical expectation of the consequences of an adverse event occurring (that is, the product of the probability of occurrence and the consequence, combined over all scenarios).

9. (1) A works under these Regulations shall be designed and supervised by the appropriate category of Qualified Water Resource Professional as set out in Table 2 in the Third Schedule of these Regulations.

Works to be designed by Qualified Water Resources Professional.

(2) Works shall be constructed by the appropriate category of contractor as set out in Table 3 in the Third Schedule of these Regulations.

(3) The contractor referred to in subregulation 9 (2) must be registered in accordance with the Section 15 of the National Construction Authority Act (No. 41 of 2011).

10. (1) Any application for a permit to construct a Class A, B or C dam shall be accompanied by a Dam Design Report substantially as shown in the Fourth Schedule, for approval by the Authority.

Dam Design Report.

(2) The level of detail required in the Dam Design Report will be dependent on the class of dam under consideration and shall be determined by the Authority.

11. A permit applicant, on commissioning the construction of a dam, shall submit a dam construction progress report at such time intervals as determined by the Authority.

Dam Construction Progress Report.

12. (1) The net freeboard for Class A dams shall not be less than 0.6m.

Minimum net freeboard.

(2) The net freeboard for Class B and C dams shall not be less than 1.0m or as otherwise specified by the Water Resources Authority on a case by case basis.

13. (1) The minimum acceptable return period for the design of a dam spillway shall be as provided in Table 5 in the Third Schedule of these Regulations.

Minimum spillway design flood.

(2) The Water Resources Authority may require a higher return period with respect to the conditions and risks associated with each site.

14. (1) On completion of construction, the permit applicant shall submit to the Authority a Dam Completion Report and a Dam Operation Report substantially as shown in the Fourth Schedule, in conjunction with the Completion Certificate.

Dam Completion Report and Dam Operation Report.

(2) Issuance of the permit is conditional upon approval of the Dam Completion and Dam Operation Report by the Authority.

PART III- OPERATION OF DAMS AND OTHER WATER RESORUCE STORAGE FACILITIES

15. The right to store water shall be subject to prior right to its uninterrupted flow for so much as it is required for actual and beneficial use, and to the obligations imposed by the Act.

Prior Right to Storage.

16. The Water Resources Authority may require a water use permit applicant to develop adequate storage in respect of his or her application for water use.

Need for Storage.

17. (1) A permit holder who has a permit to store or impound water in any body of water or the operator, may, with the approval of the Authority, turn the water so stored into a natural watercourse, and may, subject to the water so stored being appurtenant to the land upon which it is to be utilized, and subject to the conditions of his or her authorization or permit authorizing the diversion or abstraction herein afterwards mentioned, at a point downstream of the point of storage, divert or abstract from the body of water into which the stored water is turned the quantity of water so turned, subject to such deductions for evaporation and seepage as the Authority may, from time to time, order.

Release and Use of Stored Water.

(2) A permit holder, who has a permit to store or impound water in any body of water, or the operator, before turning water into a natural watercourse as aforesaid, shall give to the Water Resources Authority and to all persons entitled to use water from any part of the body of water between the point of release of the stored water and the points of utilization of the said water such notice of the use of the body of water for the purpose aforesaid and such particulars regarding the time during which it will be turned into the body of water, the rate of discharge of the stored water and other matters as the Authority may, from time to time, require.

(3) No permit holder, other than the permit holder who releases the stored water as aforesaid, or the operator, shall divert or abstract any proportion of the flow of the body of water due to the water so released, nor shall any permit holder impound or store, except to such an extent as may be imposed upon him by the maximum capacity of his or her works for discharging the flow of the body of water through or around his or her works which abstract the flow of the water, any proportion of the flow of the body of water due to the water so released.

18. A permit holder storing or arresting the flow of water by means of a dam or weir located on a body of water or watercourse shall unless otherwise decided by the Water Resources Authority, provide, at a depth measured from the top of the dam or weir and to be specified by the Authority in each particular case, an outlet, controlled by a valve, sluice gate or other device, which shall be capable of being operated at all stages of the flow of such body of water or watercourse so that the normal flow, or other flow as required by the Water Resources Authority, of such body of water or watercourse can be passed through or around such dam or weir at all stages.

**Compensation
Flow.**

Provided that where the normal flow of the body of water or watercourse is automatically by-passed around the reservoir, without any storage or arresting of the flow of the water being effected no such outlet works need be constructed.

19. (1) It is the responsibility of the operator of any dam to take adequate measures at his or her cost as detailed within the approved Dam Operation Report to notify the Authority and persons downstream likely to be affected in the event of any discharge from the dam whether caused by dam failure, or intended releases from the dam that might result in damage downstream.

**Notice
Downstream.**

(2) It is the responsibility of the operator of any dam to take adequate measures at his or her cost as detailed within the approved Dam Operation Report to protect persons, infrastructure and environments downstream likely to be affected in the event of any discharge from the dam whether caused by dam failure, or intended releases from the dam that might result in damage downstream.

(3) In the event of such a discharge, failure to follow the steps detailed in the approved Dam Operation Report shall constitute an offence punishable under these Regulations and the Act.

PART IV- MAINTENANCE AND MANAGEMENT OF WATER WORKS

20. (1) An owner or operator of waterworks shall either directly or through an agent undertake the maintenance and management of the waterworks in accordance with the requirements of the Fourth Schedule.

Maintenance and Management of Works.

(2) For purposes of management and maintenance of the waterworks the owner and or operator of waterworks shall –

(a) undertake all measures necessary to maintain and manage the works including –

- (i) routine inspections;
- (ii) treatment of cracks, slides, sloughing and settlement;
- (iii) concrete repair;
- (iv) inspection and repair or spillway conduits;
- (v) establishment and control of proper vegetation to prevent erosion of embankments and earth channel surfaces;
- (vi) controlling seepage in both velocity and quantity;
- (vii) rodent control;
- (viii) installation of trashracks on pipe spillways;
- (ix) inspection and repair of vegetated earth spillways; and
- (x) repair of mechanical equipment.

(b) create a monitoring and evaluation system for optimal use of the works.

(c) Implement any other measures necessary for the safe operation management of the water works.

21. An owner and or operator shall prepare maintenance and management plans which shall comprise –

Maintenance and Management Plans.

(b) a maintenance operational plan;

(c) a maintenance budget;

(d) maintenance systems; and

(e) maintenance performance norms and standards.

22. (1) An owner and or operator of water works shall develop and implement a maintenance operation plan for the works.

**Maintenance
operational plan.**

(2) An owner and or operator of waterworks shall conduct a maintenance analysis for the works' infrastructure including –

(a) Identification of all the works;

(b) Identification of critical works based upon the risk of failure; and

(c) Analysis of the maintenance options and determination of the preferred option.

23. An owner and or operator shall document maintenance outcomes which shall include –

**Maintenance
Outcomes.**

(a) Compliance with these Regulations;

(b) Reliability of the infrastructure; and

(c) Cost of maintenance.

24. (1) An owner and or operator of waterworks shall maintain a Register of the water works which shall be used for the identification of all assets and which shall be updated periodically to reflect newly developed infrastructure including any alterations and material modifications.

**Maintenance
analysis.**

(2) An owner and or operator or waterworks shall identify infrastructure based on the risk of failure and shall evaluate the infrastructure on its –

(d) Environmental impact;

(e) Public health and safety impact;

(f) Financial impact; and

(g) Service delivery impact.

(3) The impact with regard to each of the criteria shall be rated using a 5 point scale.

- (4) The individual ratings will be combined into a combined rating which will be used to identify the relative criticality of maintaining a specific works.
25. (1) Costs associated with the maintenance activity shall be calculated.
- (2) Where available maintenance budgets are inadequate, the criticality of the individual activities shall be used to prioritize the maintenance actions to be performed.
- (3) Maintenance activities that cannot be funded will be classified as deferred maintenance and recorded as such.
26. (1) Maintenance activities will be scheduled and controlled using an appropriate Waterworks Infrastructure Maintenance System.
- (2) The Waterworks Infrastructure Maintenance System shall –
- (a) Record maintenance costs, time and other resources consumed against the works;
- (b) Include links to the financial management system to facilitate reconciliation of maintenance budgets;
- (c) Include built-in maintenance analysis tools or ability to export information to other applications to facilitate maintenance analyses; and
- (d) Analyze infrastructure performance to be used as an input to maintenance planning.
27. (1) An owner and or operator of waterworks shall continuously maintain the structures and facilities for flood control in such a manner, and operated at such times and for such periods as may be necessary to obtain the maximum benefits.
- (2) A reserve supply of materials needed during a flood emergency shall be kept on hand at all times at the works.
- (3) No improvement shall be passed over, under, or through the walls, levees, improved channels or floodways, nor shall any excavation or construction be permitted within the limits of the structure right-of-
- Infrastructure Maintenance Budget.**
- Waterworks Infrastructure Maintenance System.**
- Flood control works, maintenance and operation of structures and facilities.**

way, nor shall any change be made in any feature of the flood control works without prior determination by the owner and or operator, which determination shall be documented, that such improvement excavation, construction, or alteration will not adversely affect the functioning of the flood control facilities.

- (4) Such improvements or alterations as may be found to be desirable and permissible under the above determination shall be constructed in accordance with standard engineering practice.

28. (1) Periodic maintenance shall be conducted to insure serviceability of the structures in time of flood. Measures shall be taken to-

**Maintenance of
Levees.**

- (a) promote the growth of sod;
- (b) exterminate burrowing animals,
- (c) provide for routine mowing of the grass and weeds, removal of wild growth and drift deposits, and repair of damage caused by erosion or other forces; and
- (d) where practicable, to retard bank erosion by planting suitable growth on areas riverward of the levees.

(2) An owner and or operator shall undertake periodic inspections to ensure that the stipulated maintenance measures are being effectively carried out and, further, to be certain that:

- (a) No unusual settlement, sloughing, or material loss of grade or levee cross section has taken place;
- (b) No caving has occurred on either the land side or the river side of the levee which might affect the stability of the levee section;
- (c) No seepage, saturated areas, or sand boils are occurring;
- (d) Toe drainage systems and pressure relief wells are in good working condition, and that such facilities are not becoming clogged;
- (e) Drains through the levees and gates on drains are in good working condition;

- (f) No revetment work or riprap has been displaced, washed out, or removed; and
 - (g) No action is being taken, such as burning grass and weeds during inappropriate seasons, which will retard or destroy the growth of sod.
- (3) During flood periods the levee shall be patrolled continuously to locate possible sand boils or unusual wetness of the landward slope and to be certain that:
- (a) There are no indications of slides or sloughs developing;
 - (b) Wave wash or scouring action is not occurring;
 - (c) No low reaches of levee exist which may be overtopped; and
 - (d) No other conditions exist which might endanger the structure.
- (4) The owner and or operator shall take appropriate advance measures shall be taken to ensure the availability of adequate labour and materials to meet all contingencies.
- (5) Immediate steps shall be taken to control any condition which endangers the levee and to repair the damaged section.
29. (1) Periodic inspections shall be made to ascertain that:
- (a) No seepage, saturated areas, or sand boils are occurring;
 - (b) No undue settlement has occurred which affects the stability of the wall or its water tightness;
 - (c) No trees exist, the roots of which might extend under the wall and offer accelerated seepage paths;
 - (d) The concrete has not undergone cracking, chipping, or breaking to an extent which might affect the stability of the wall or its water tightness;
 - (e) Care is being exercised to prevent accumulation of trash and debris adjacent to walls, and to insure that no fires are being built near them;
 - (f) No bank caving conditions exist riverward of the wall which might endanger its stability;

**Maintenance of
Flood Walls.**

- (g) Toe drainage systems and pressure relief wells are in good working condition, and that such facilities are not becoming clogged.
 - (3) Inspections shall be made immediately prior to the beginning of the flood season, immediately following each major high water period, and otherwise at intervals not exceeding ninety (90) days.
 - (4) Measures to eliminate encroachments and effect repairs found necessary by such inspections shall be undertaken immediately and all repairs shall be accomplished by methods acceptable in standard engineering practice.
30. (1) The owner and or operator of a waterworks shall –
- (a) Set the requirements for dam safety emergency planning and audits of each works response actions; and
 - (b) in consultation with the county government, local communities and the relevant disaster management authorities, share information and engage in joint efforts to implement strategies to mitigate against the effect of disaster.
- (2) The owner and or operator of a dam shall prepare emergency preparedness plans for all dams and works and these plans shall-
- (a) describe actions that the owner and or operator must take to address safety problems at a dam with a safety risk;
 - (b) contain appropriate procedures and information to assist the owner and or operator in issuing early warning notification messages to responsible disaster management authorities in the national and county governments, representatives of local county governments, representative bodies or of any communities potentially threatened by the condition of the dam and with whom arrangements have been made in connection with the issue of warnings; and
 - (c) contain engineering drawings of the dam and inundation maps to show disaster management

**Emergency
Management
Plans for dams
affected by
floods.**

authorities critical areas for action in case of an emergency.

- (3) Prioritization of planning for dam emergencies shall be determined based on relevant information including –
- (a) The condition of the dam and the degree, if any, of dam safety deficiency;
 - (b) Population at risk and community vulnerability;
 - (c) Scale of flood risk costs;
 - (d) Range of other consequences such as those on property, the environment or community value of the dam
 - (e) Stakeholder perceptions and expectations; and
 - (f) State of knowledge and planning commitments for different scenarios.
- (4) The owner and or operator shall engage with the county government, NGO's, and other stakeholders in coordination with disaster management authorities to develop community awareness strategies.

31. (1) Every dam owner shall be required to cause inspection of his or her dam according to the criteria given in Table 4 in the Third Schedule and an Inspection Report prepared and submitted to the Authority.

**Inspections and
Inspection Reports.**

(2) Compliance with dam inspection requirements shall be among the conditions to be considered before permit renewal is processed where dams are involved.

32. (1) The permit holder or operator or the person having the control of any dam, in the event of serious damage or failure, shall submit an interim Dam Damage or Failure Report within three days, and a detailed Report substantially as shown in the Fourth Schedule to the Authority within twenty one days of the event.

**Dam Damage or
Failure Report.**

(2) Failure to submit the Dam Damage or Failure Report shall constitute an offence.

**PART V - LICENSING OF QUALIFIED PROFESSIONALS
IN RESPECT TO WATERWORKS**

33. (1) A qualified water resource professional desiring for the purposes of a provision of these Regulations to be the approved water resource professional for a task required in terms of these Regulations in connection with specified waterworks, shall apply in writing to the Water Resources Authority with –

**Application to be
Approved Water
Resource
Professional for a
Task.**

(a) A description of the project and the nature of the task or tasks to be undertaken; and

(b) Particulars of his or her relevant qualifications, training and experience

(2) An application contemplated in subrule (1) above shall be processed by the Water Resources Authority and forwarded to the Engineers Board of Kenya for evaluation, except when the procedure provided for in subrule () is followed;

(3) The Engineers Board may establish a committee to evaluate an application contemplated in subrule (1) and make a recommendation in writing to the Authority within 5 working days of receipt of application

(4) The Engineers Board of Kenya may recommend an application contemplated in subrule (1) for approval subject to conditions if shortcomings in experience or exposure related to specific fields of dam engineering have been identified in an application. This recommendation shall include-

(a) The fields where the qualified water professional shall be assisted in the task; and

(b) The qualifications and experience of the person or group of persons who shall provide the assistance

(5) The Authority shall take into consideration the recommendations of the Engineers Board of Kenya before granting an approval of an application contemplated in subrule (1).

(6) The Authority may approve an application by a qualified water resources professional for any task with a safety risk,

taking into account a previous recommendation by the Engineers Board of Kenya, provided that –

- (a) The type of dam is the same, or can be logically associated with a similar category or combination of dam types, for which the applicant has been previously approved;
 - (b) The maximum wall height of the dam as defined in these Regulations does not exceed that for which the applicant has been previously approved by more than:
 - (i) Three metres in the case of small dams;
 - (ii) Five meters in the case of medium dams; and
 - (iii) Seven meters in the case of large dam.
 - (c) The task is, in the opinion of the Authority, no more complex than that for which the applicant has previously been approved.
- (7) In the case of tasks to be carried out for a Class C dam, a qualified water resources professional shall apply to the Authority for approval of members of the professional team and provide the names, qualifications, curriculum vitae, relevant professional experience and description of component of the task entrusted to each team member.
- (8) The water resources professional must be informed in writing of any decision of the Authority in terms of this Regulation.
- (9) A professional contemplated in subrule (1) above shall-
- (a) Inform the dam owner of the decision of the Authority whether the application has been approved, conditionally approved or not approved;
 - (b) Apply to the Authority for approval of a person or group of persons to assist him or her in the specified field of dam engineering if the approval is subject to conditions requiring assistance; and

(c) Immediately inform the Authority in writing if he or she has withdrawn from a task or if his or her appointment has been terminated by the dam owner

(10) An application contemplated in subrule (9) (b) must include the name, qualifications, curriculum vitae, and relevant experience of the person or group of persons providing assistance.

(11) The different class of qualified professionals may be established specifying the maximum wall height of the dam, type of dam wall, regional maximum flood, and or type of task that the approved professional person may undertake and conditions in accordance with Table 2 and Table 3 in the Third Schedule.

(12) The requirements for admission to a class of approved professional water resources person on the register are the same as those for regulating the approval of a professional person as a qualified water resources professional for a specific task, with the additional requirement that a contractor has successfully completed at least one task for a specific dam as the qualified water resources professional in accordance with these Regulations.

(13) The register must be updated at least two times per annum and made available within a reasonable time to any person who has made a written request to the Authority for a copy of the register

(14) A qualified water resources professional on the register may undertake tasks as provided for on the register without having to reapply.

(15) A qualified water resources professional on the register may only perform a task or tasks within the class or class for which he or she has been approved and shall –

(a) follow the procedure outlined in Regulation 33 (7) for tasks related to Category C dams if applicable

(b) Follow procedure outlined in Regulation 33(4) in the case of conditional approval; and

- (c) Submit a completed form obtained from the Authority, signed by him or her to the Cabinet Secretary and the dam owner confirming that he or she has been appointed to perform a specific task or tasks, within 7 days of appointment.

PART VI – DATA GATHERING AND COLLECTION

- 34. The Water Storage Authority shall maintain a database for the purposes of water resources storage and flood control management.

National Water Resources Storage and Flood Control Database.

- (a) The database shall contain information on the state of the works infrastructure, climate reports, base flood data, and any other data relevant to the management of the national public water works for water resources storage and flood control.
- (b) The data shall be made available on the Storage Authority's website provided that a person requiring an extract of the data from the Water Storage Authority certified to be true shall make an application for it in writing.
- (c) The request for data should be reasonable and relevant with respect to a specific activity and area.
- (d) Data provided by the Water Storage Authority shall not be transferable to a third party and the Water Storage Authority shall not be liable for any error or omissions in the data.

PART VII- WATER HARVESTING

- 35. (1) The Water Storage Authority shall on the basis of stakeholder consultation develop a water harvesting policy and strategy for the works which shall have the minimum requirements as provided in subregulation 23(2).

Water Harvesting Policy.

- (2) The Water Harvesting policy and strategy shall –
 - (a) not be in conflict with the national water resource strategy;
 - (b) set out the policy objectives, plans, guidelines and procedures and strategies for rainwater harvesting.

- (c) take into account any relevant national or regional plans prepared in terms of any other law;
- (d) outline mechanisms and procedures for collaborating with other institutions, both public and private, at national and county level to achieve the objectives of the policy and strategy;
- (e) put in place measures and for incentives to enhance the adoption and implementation by the public of rainwater harvesting;
- (f) facilitate the provision of technical and capacity building support to public and private institutions at national and county level on rainwater harvesting techniques; and
- (g) be time bound.

(3) All state organs at national and county level shall give effect to any water harvesting policy established under this Part when exercising any power or performing any duty in terms of these Regulations.

(4) The Water Storage Authority shall designate authorized agents at national and county government level with responsibility for oversight over the enforcement of the water harvesting and storage policy and strategy within each agent's respective constitutional and statutory mandate.

36. (1) Any building which is used—

- (a) for human occupation, whether as a dwelling-house, institutional facility, place of employment or otherwise; or
- (b) as a manufacturing or industrial establishment; or
- (c) commercial establishment or place for the service of customers therein,

Shall have its roof adequately guttered for catching rain water or may have a ground catchment for the purposes of catching rainwater pursuant to these Regulations.

**Rainwater
Harvesting in
Buildings.**

- (2) Subject as provided in paragraph (3), the storage capacity of the tank or tanks or other storage facility provided in respect of any building mentioned in paragraph (1) shall be capable of storing water sufficient to meet the equivalent of at least seven (7) days water demand of the building.
- (3) Where it is made to appear to the Water Storage Authority—
- (a) that it is not practicable—
- (i) to gutter the roof of a building mentioned in paragraph (1) for catching rain water; or
- (ii) to provide a ground catchment having the prescribed area; or
- (iii) to provide a tank or tanks having the prescribed capacity; and
- (b) that the building can in the opinion of the Cabinet Secretary, be adequately supplied with drinking water from a main piped supply, the Cabinet Secretary may, subject to such conditions and restrictions as he may think proper to impose, allow the owner or occupier of the building to dispense in part or in whole with paragraph (1) or of paragraph (2).

37. (1) A person may:

- (a) Directly capture and store precipitation on a parcel of land owned or leased by the person in accordance with subregulation (2) or (3); and
- (b) Place the water captured and stored as provided in subregulation (1)(a) to beneficial use on the parcel on which the water is captured and stored.
- (2) If a person collects or stores precipitation in an underground storage container, the person may collect and store precipitation:
- (c) In only one underground storage container for a parcel if the underground storage container:
- (i) Has a maximum capacity of no more than 10000 Litres or such other capacity as may be prescribed; and

**Rainwater
Harvesting on
Parcel of Land.**

- (ii) Is installed in accordance with the Planning and Building Regulations 2009.
- (3) The Water Storage Authority shall establish a website on which a person may register to receive technical and capacity building capacity from the Water Storage Authority or its agents to enable the person comply with these Regulations.
- (4) To register, a person shall complete information required by the Water Storage Authority including the:
 - (a) Name and address of the person capturing or storing precipitation;
 - (b) Total capacity of all containers storing precipitation; and
 - (c) Street address or other suitable description of the location where precipitation is to be captured and stored.

- 38. (1) Every agricultural establishment using water resources for commercial irrigation shall implement water harvesting and storage measures capable of storing flood water sufficient to meet three months water demand.
- (2) An agricultural establishment using water resources for commercial irrigation shall submit to the Water Resources Authority an annual implementation report of water harvesting strategies.
- (3) The Water Resources Authority or its agent may conduct an inspection to verify compliance with the implementation report.

Agricultural Establishments.

PART VIII – STRATEGIC WATER EMERGENCY INTERVENTIONS

- 39. The Water Storage Authority shall maintain a Drought Response Plan prepared and implemented in collaboration with the National Drought Management Authority.
- 40. (1) The Water Storage Authority shall determine the water resources availability and increase monitoring of facilities during periods of drought.

Drought Response Plan.

Water Supply and Demand Management.

(2) In consultation with the Cabinet Secretary the Water Storage Authority may adopt and implement strategic interventions to mitigate against the effects of drought.

41. The Water Storage Authority may adopt measures to improve system efficiency in order to conserve water within its water resources storage facilities.

PART IX – GENERAL PROVISIONS

42. Any breach of the provisions of these Regulations shall –

Offences.

(a) Constitute a criminal offence punishable in accordance with the provisions of Section 147 of the Act;

(b) Constitute a reason for suspension and or cancellation of the permit or other authorisation held by the owner of operator of the waterworks in accordance with Section 147 of the Act.

43. (1) No person may –

Further Offences.

Use any works otherwise than as permitted under the Act and/or under these Regulations and for the avoidance of doubt –

(a) Fail to comply with any condition attached to the operation and maintenance of Water Works for Water Resources Storage and Flood Control under the Act and these Regulations;

(b) Fail to comply with an order or directive issued under the Act and these Regulations and unlawfully and intentionally or negligently tamper or interfere with any works or any seal or measuring device attached to a Water Works for Water Resources Storage and Flood Control; and

(c) Fail or refuse to give data or information, or give false or misleading data or information when required to give information under the Act;

(d) Intentionally refuse to perform a duty, or obstruct any other person in the exercise of any power or performance of any of that person's duties in terms of the Act and these Regulations;

- (e) Unlawfully and intentionally or negligently commits any act or omission which detrimentally affects or is likely to effect a water works for water resources storage and flood control;

(2) Any person who contravenes any provision of subregulation (1) is guilty of an offence and liable, on conviction, to a fine or imprisonment for a period prescribed under Section 147 of the Act and any rules made there under.

44. (1) Any person with a complaint related to any matter falling within the mandate of the Water Storage Authority shall submit the complaint to the appropriate office of the Water Storage Authority providing the details as shown in the Second Schedule.

Complaints Mechanism.

(2) The Water Storage Authority shall reply to the complainant, with copies to all other relevant parties, within twenty-one days of receiving the complaint, stating what action is being taken, the position of the Water Storage Authority on the matter and or any recommendation to the complainant.

(3) If the complainant is dissatisfied, he or she may forward the matter to the Chief Executive Officer of the Water Storage Authority.

(4) The Chief Executive Officer shall reply to the complainant with a final decision either upholding or overruling the action take and or decision made by the agent or officer within twenty-one days of receiving the complaint and the executive officer shall furnish copies to all other relevant parties of the decision.

(5) If the complainant is dissatisfied with the final decision of the Water Storage Authority he may have recourse under Section 121 (2) of the Act and may forward the matter to the Water Tribunal for determination

(6) Each complaint shall be given a Complaint Number by the Water Storage Authority which shall be used for purposes of monitoring the response and action taken to address the complaint.

45. (1) Construction of works by the Water Storage Authority or its agent prior to the commencement of these Regulations or construction work in progress on that date shall within a period of twelve months following the commencement of the Regulations or such longer period as the Water Resources

Transitional Arrangements.

Authority may permit take measures to bring the waterworks into compliance with these Regulations.

(2) Where existing or ongoing waterworks are not authorised the owner and or operator shall within a period of twelve months following the commencement of the Regulations lodge an application with the Water Resources Authority for a water use permit.

SCHEDULES

FIRST SCHEDULE

(Rule 4)

DESIGNATED WATERWORKS

SECOND SCHEDULE

(Rule 8)

CATEGORIZATION OF DAMS AND OTHER WATERWORKS

Category	Description
A	Waterworks deemed by virtue of scale and or location to pose low risk to the safety of people and the environment.
B	Waterworks deemed by virtue of scale, location and or function to pose a significant (medium) risk to the safety of people and the environment but whose disruptive and potential can be mitigated adequately.
C	Waterworks deemed by virtue of scale, location and or function to pose a serious (high) risk to people and the environment and with the potential to cause widespread disruption to economic activity and national life with respect to which limited mitigation measures are available.

THIRD SCHEDULE

(Rule 8)

DETAILS FOR STORAGE DAMS

Table 1: *Classification of Dams*

Class of Dam	Maximum Depth of Water at NWL (m)	Impoundment at NWL (m ³)	Catchment Area (km ²)
A (Low Risk)	0 – 4.99	< 100,000	< 100
B (Medium Risk)	5.00 – 14.99	100,000 to 1,000,000	100 to 1,000
C (High Risk)	> 15.00	> 1,000,000	> 1,000

NWL = Normal Water Level

Table 2: *Design and Supervision of Dam*

Class of Dam	Category of Qualified Water Resource Professional
A (Low Risk)	Panel II C, Panel I C1 & Panel I C2
B (Medium Risk)	Panel I C1 & Panel I C2
C (High Risk)	Panel I C2

Table 3: *Category of Dam Contractor*

Class of Dam	Category of Dam Contractor
A (Low Risk)	C1, C2
B (Medium Risk)	C1, C2
C (High Risk)	C1

Table 4: *Dam safety Inspection Schedule*

Class of Dam	Frequency of inspection	Inspection by
A (Low Risk)	Once in 5 years	Panel I C1, Panel I C2, Panel II C
B (Medium Risk)	Once in 3 years	Panel I C2, Panel I C1
C (High Risk)	Once every 2 years	Panel I C2

Table 5: *Minimum Return Period for Spillway Design*

Class of Dam	Minimum Return Period for Design of Spillway
A (Low Risk)	1 in 50 years
B (Medium Risk)	1 in 100 years
C (High Risk)	1 in 500 years

FOURTH SCHEDULE

(Rule 10,11,14,31,32)

CONTENT AND FORMAT OF TECHNICAL REPORTS

Schedule: Technical reports

Dam Design Report (for Class A, B and C Dams)

1. Details of location
2. Details of hydrological assessment
3. Details of design flood and return period
4. Details of embankment
5. Details of reservoir
6. Details of drawoff and compensation works
7. Details of spillway(s)
8. Details of ancillary structures
9. Details of construction materials
10. Details of construction schedule
11. Details of operational rules
12. Procedures to notify and protect downstream inhabitants, infrastructure and environments;
13. Schedule of inspection and maintenance
14. Assessment of impacts and risks

Dam Operation Report

1. Basic summary of technical details
2. Details of management structure for dam operations
3. Details of operational and release rules
4. Details of operation and maintenance systems
5. Procedures to notify and protect downstream inhabitants, infrastructure and environments
6. Schedule of inspection and maintenance

Dam Completion Report

1. Changes and explanation for differences between as-constructed and design details
2. As-constructed drawings
3. Summary of as-constructed details

Dam Inspection Report

1. Current condition of dam with respect to approved design and “as-constructed” condition
2. Any action required to restore the functional and structural integrity of the dam to the required state
3. Any changes with regard to the risk of or impact in the event of dam failure
4. Review appropriateness of the action plan in event of dam failure

Dam Damage or Failure Report

1. Details of location
2. Date and time of dam failure or damage
3. Preceding climate
4. Preceding hydrology
5. Cause of dam failure or damage
6. Steps taken to notify downstream inhabitants
7. Nature and extent of damage caused to the dam or caused by the dam failure

FIFTH SCHEDULE

(Rule 44)

COMPLAINTS

1. Information to be given by complainant under these rules
 - (a) Name of Complainant
 - (b) Contact address, telephone number, email address (if any) of Complainant
 - (c) Nature and location of the problem
 - (d) Date that problem occurred
 - (e) Name and, if available, the contact details of all parties to the dispute of complaint
 - (f) Any other relevant details
 - (g) Signatures of the Complainant.