

LEGAL NOTICE NO. 140

THE WATER ACT

(Cap. 372)

THE WATER (HARVESTING AND STORAGE) REGULATIONS,
2024

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THE WATER ACT

(Cap. 372)

IN EXERCISE of the powers conferred by section 142 of the Water Act, the Cabinet Secretary for Water, Sanitation and Irrigation makes the following Regulations—

THE WATER (HARVESTING AND STORAGE) REGULATIONS,
2024

PART I - PRELIMINARY

1. These Regulations may be cited as the Water (Harvesting and Storage) Regulations, 2024. Citation.
2. In these Regulations, unless the context otherwise requires— Interpretation.
 - “Act” means the Water Act; Cap. 372.
 - “Authority” means the Water Resources Authority established under section 11 of the Act;
 - “base flood” means the flood having a one percent chance of being equalled or exceeded in any given year;
 - “dam” includes any existing or proposed structure together with appurtenant works, which is capable of containing, storing or impounding water including temporary impoundment or storage above ground level, whether that water contains any substance or not;
 - “dykes and gabions 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;
 - “environmental impact assessment” means environmental assessment undertaken pursuant to the Environmental Coordination and Management Act;
 - “flood control works” means structures and measures used to manage flood water movement and minimize damage caused by floods and they include— Cap. 387.
 - (a) floodwalls and flood gates to redirect flood run-off; and
 - (b) dams and reservoirs to store and release water gradually during major flood events;
 - “maintenance plan” means information, policies and procedures for the optimal maintenance of water works or group of water works;
 - “net freeboard” means the vertical distance between the maximum water surface and the crest of the dam;
 - “regulated watercourse” means a watercourse on which the flow has been modified from its natural state by water storage or flood mitigation structures which provide a means of controlling or otherwise regulating the release of water into the natural channel;

“reservoir” means the body of water impounded by a dam;

“spillway” means 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 in the case of any residue deposit including tailings dams;

“storm water” means run-off water that has been concentrated by means of a drain, surface channel, subsoil drain or formed surface;

“watercourse” has the meaning assigned to it in section 2 of the Act;

“water harvesting system” means a system comprising entrapment, transportation, filtration and storage of rainwater for reuse or recharge;

“water storage” has the meaning assigned to it in section 2 of the Act;

“Water Storage Authority” means the National Water Harvesting and Storage Authority established under section 30 of the Act;

“works” has the meaning assigned to it in section 2 the Act; and

“waterworks development agency” has the meaning assigned to it in section 2 of the Act.

3. These Regulations shall apply to—

Application.

- (a) public and private waterworks for water harvesting and storage;
- (b) reservoirs for impounding surface run-off and for regulating stream flows to synchronize such waterworks with water demand patterns; and
- (c) structures and devices for flood control and management.

PART II- CLASSIFICATION OF DAMS AND OTHER WATERWORKS

4. (1) The owner or operator of a dam or other waterworks shall provisionally classify the dam or waterworks as Class SD1, SD2 or SD3, in accordance with the criteria set out in the First Schedule and taking account the risk factors set out in the Second Schedule.

Classification of dams.

(2) The Authority may, for purposes of determining an application for a permit for the development of a dam or other waterworks or otherwise in exercise of its regulatory mandate, affirm or vary the provisional classification referred to under sub-regulation (1).

(3) In classifying a dam or other waterworks, the principle to be applied is that the criteria or risk factor that results in the higher class of the dam or other waterworks shall prevail.

5. (1) The net freeboard for class SD1 dams shall not be less than zero point six metres. Minimum net freeboard.
- (2) The net freeboard for class SD2 and SD3 dams shall not be less than one metre or as may be otherwise specified by the Authority on a case by case basis.
6. (1) The minimum acceptable return period for the design of a dam spillway shall be as specified in Table 4 in the Second Schedule. Minimum spillway design flood.
- (2) The Authority may require a higher return period with respect to the conditions and risks associated with each site.
7. (1) National public waterworks shall be developed and managed by or under a contract with the Water Storage Authority, if the national public waterworks— National public waterworks.
- (a) comprises a dam, a reservoir or other artificial structure constructed to control the flow of the waters of a watercourse and designed or operated primarily to regulate stream flows to synchronise them with water demand patterns implemented pursuant to section 8(2)(d) of the Act;
 - (b) primary purpose is water storage for bulk distribution of raw water for multipurpose use including irrigation;
 - (c) is of strategic national importance;
 - (d) is financed using monies of the national government pursuant to section 8 (1)(b) of the Act; and
 - (e) meets the requirements for classification as a Class SD2 and Class SD3 dam.
- (2) National public waterworks whose primary purpose is for bulk distribution and provision of water services implemented pursuant to section 8(2)(b) of the Act may be developed and operated by or under a contract with a waterworks development agency or through the mechanisms specified under section 69 of the Act.
- (3) Waterworks developed and managed by the Water Storage Authority for the storage of flood flows to enable downstream releases for the purposes of flow regulation may in addition to the impoundment and flow regulation structures associated with the storage and release of water from the reservoir comprise structures and facilities to enable multi-purpose use such as draw-off towers that facilitate direct abstraction from the reservoir.
- (4) Waterworks developed and managed by the Water Storage Authority shall pay such charges and fees as may be determined from time to time and in accordance with the approved tariff levels set by the Water Services Regulatory Board established under section 70 of the Act.
- (5) The treatment or bulk transfer of water facilities shall be developed or managed by or under a contract with a waterworks development agency in accordance with section 69 of the Act.

(6) A private person may, under an agreement with the Water Storage Authority, in consultation with the County Governments and subject to compliance with the applicable law on public private partnerships develop, operate and maintain a dam to regulate stream flows by releasing the water stored into a natural watercourse as a public private partnership venture.

(7) The consultations referred to sub-regulation (6) shall be finalised within sixty days.

(8) A county government may, in collaboration with the Authority, develop, operate and maintain a dam for water harvesting and storage for use in bulk water provision, irrigation or other approved activities.

(9) Where a water resource storage dam has been constructed to enable multi-purpose use, a user may under a contract with the Water Storage Authority acquire rights of access to the water resources storage dam for purposes of abstraction of water directly from the dam or reservoir.

PART III- DEVELOPMENT OF WATERWORKS

8. (1) The water resources plan of the Water Storage Authority shall be implemented on the basis that the right to store water shall be subject to the prior right to its uninterrupted flow and what is required for actual and beneficial use and to compliance with the Act.

Prior right to water for storage.

(2) The Authority may require a person applying for a permit to construct or develop a dam or facility to demonstrate that the proposed storage is in line with the National Government's medium and long-term plans for water resources and development.

9. (1) A proponent shall, prior to commencing waterworks, apply for and obtain—

Requirements for construction of waterworks.

- (a) a water use permit issued by the Authority under the Act;
- (b) an environmental impact assessment licence in accordance with the Environmental Management and Coordination Act; and
- (c) authorization from the mandated lead agency where the proposed water works is to be located inside a protected area or catchment area.

Cap. 387.

(2) The provisions of sub regulation (1) shall not apply—

- (a) to works constructed in emergency circumstances;
- (b) to temporary works in operation for a period of less than two years; and
- (c) if the works are a structure less than 2 metres water depth or 10,000m³ total storage unless the Authority directs otherwise.;

(3) Within two years after the completion of the works under sub-regulation (2)(a), the owner, developer or operator of the waterworks may—

- (a) demolish the works and restore the site; or
- (b) retain the works for purposes of water resources storage or flood control subject to compliance with sub-regulation (1).

10. (1) An proponent who wishes to develop a dam or other waterworks of class SD 2 or SD 3 specified in Table 1 of the Second Schedule shall, before commencing the construction of the waterworks, undertake a feasibility study.

Feasibility study.

(2) The feasibility study referred to under sub-regulation shall—

- (a) be planned and supervised by a qualified water sector professional falling into the appropriate category for that class of dam and selected on the basis of the categories in Table 3 of the Third Schedule;
- (b) identify and address the risk factors associated with the particular waterworks contemplated and the class of dam; and
- (c) identify and address the main factors likely to affect the safe performance of the structures to be constructed.

(3) The feasibility study shall be submitted to the Authority for review and the Authority shall within, three months, provide approval for the proposal to proceed to full design.

(4) Where the Authority is not satisfied with the feasibility study, the Authority may require the proponent to enhance the feasibility study before a final decision is made.

(5) The Authority may, in any particular case, before determining an application for a permit for a storage dam or other waterworks not required under sub-regulation (1) to undertake a feasibility study, require the applicant to undertake and submit such feasibility study.

(6) The proponent shall undertake public participation through notification of the details concerning the dam.

11. (1) Dams and other waterworks shall be designed and supervised by the appropriate category of qualified water sector professionals as provided in the regulations relating to water resources.

Design by water sector professional.

(2) Dams and other waterworks shall be constructed by the appropriate category of contractor as set out in Table 3 in the Second Schedule.

Cap. 118.

(3) A contractor undertaking construction of waterworks under these Regulations shall be registered in accordance with the section 15 of the National Construction Authority Act.

12. (1) An application to the Authority for an authorisation to construct a dam shall be accompanied by a dam design report in the Form set out in the Third Schedule.

Dam design report.

(2) A qualified water sector professional shall prepare the dam design report which shall take into account the class of dam to be constructed and the risk category, provided that the Authority may, before determining the application, require the applicant to prepare and submit a more detailed report

(3) If the circumstances require, the Authority may provisionally authorise the works on the basis of a preliminary dam design report on condition that the applicant submits a detailed design report to the Authority before commencement of construction of the works.

13. A person authorized to construct a dam shall submit a dam construction progress report as may be required by the Water Storage Authority. Dam construction progress report.

14. (1) On completion of construction, the applicant shall submit to the Authority a dam completion certificate, a dam completion report and a dam operation report addressing the issues set out in the Third Schedule. Dam completion report and dam operation report.

(2) The issuance of the water use permit is conditional upon approval of the dam completion report and dam operation report by the Authority.

15. An owner or operator of waterworks shall prepare and submit to the Authority for approval a cessation or resumption plan if— Cessation or resumption plan.

- (a) the owner or operator intends to cease, suspend, restrict or limit the operation of the dam for more than three hundred and sixty-five days;
- (b) the owner or operator intends to resume the operation of a dam which has ceased or been suspended, restricted or limited for more than three hundred and sixty-five days; and
- (c) the dam falls within risk category SD2 or SD3.

PART IV- RELEASE OF WATER FROM DAMS AND OTHER WATERWORKS

16. The water held in the storage dams of the Water Storage Authority shall— Release and use of stored water.

- (a) not be diverted or abstracted for use for any purpose except with the prior written approval of the Water Storage Authority; and
- (b) be released into a natural watercourse subject to reductions in volume arising from evaporation and seepage according to a water release programme contained in its dam operation report and approved by the Authority to augment or regulate the stream flows of the natural watercourse.

17. (1) Water use permit holders shall, in addition to the water use charges payable under the Act, pay the Water Storage Authority a premium specified in the Fourth Schedule. Premiums for use of water from storage facilities.

(2) A water use permit holder for abstraction from a regulated river shall, in addition, pay twenty percent of the premium payable under sub-regulation (1) to the Water Storage Authority.

(3) A delay or failure to pay the premium shall attract interest at the rate of two percent for each month of such delay or failure.

(4) The premium which is in arrears shall be recoverable by the Water Storage Authority or private owner or operator of the dam as a civil debt in a court of competent jurisdiction without prejudice to the power of the Authority to treat the failure of the permit holder to make payment as breach of the conditions of the permit and suspend or cancel the permit.

18. A permit holder storing or arresting the flow of water using a dam or weir located on a body of water or watercourse shall unless otherwise directed by the 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 to ensure the normal flow, or other flow as required by the Authority, of such body of water or watercourse can be passed through or around such dam or weir at all stages:

Outlets for release of stored water.

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) A permit holder may release the stored water into a natural watercourse, on the approval of the Authority and, subject to the water stored being appurtenant to the land upon which it is to be utilized, and the conditions of the authorization or permit authorizing the diversion or abstraction herein afterwards mentioned may, at a point downstream of the point of storage, divert or abstract from the body of water into which the stored water is released the quantity of water so released.

Authorisation for release of stored water.

(2) A permit holder shall, before releasing water into a natural watercourse, issue a notice to the Authority and the persons affected by the use of the body of water.

(3) The notice referred to under sub-regulation (2) shall contain —

- (a) the timelines during which it will be released into the body of water; and
- (b) the rate of discharge of the stored water.

(4) No permit holder shall, except with the prior written approval of the Authority, divert or abstract any proportion of the flow of the body of water due to the water released, nor impound or store, except to such an extent as may be imposed on the permit holder by the maximum capacity of their works for discharging the flow of the body of water through or around their works which abstract the flow of the

water, any proportion of the flow of the body of water due to the water so released.

20. (1) The operator of a dam shall 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) The operator of a dam shall take adequate measures at their cost, as contained in 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 or intended release, a person who fails to comply with the approved dam operation report commits an offence and shall, on conviction, be liable to the penalties specified under section 147 of the Act.

PART V- MAINTENANCE AND MANAGEMENT OF WATER WORKS

21. (1) An owner or operator of waterworks shall undertake the maintenance and management of the waterworks in accordance with the requirements of the maintenance and operation systems specified in the Third Schedule.

Maintenance and
management of
works.

(2) In the absence of an owner or operator of a storage dam or waterworks, the Water Storage Authority shall act as the owner or operator pending a determination by the Cabinet Secretary on the ownership or operations.

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

(a) undertake—

- (i) routine inspections;
- (ii) the repair of the waterworks and mechanical equipment;
- (iii) the growth of appropriate vegetation to prevent erosion of embankments and earth channel surfaces;
- (iv) the control of seepage in both velocity and quantity;
- (v) control of pests including rodents; and
- (vi) an annual environmental audit on the compliance of the dam or water works with the environmental impact assessment licence and environmental management plan issued for the dam under the Environmental Management and Coordination Act,

Cap. 387.

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

- (c) implement any other measures necessary for the safe operation and management of the storage dam or water works.

22. An owner or operator shall implement the approved maintenance and management plans which shall comprise—

Maintenance and management plans.

- (a) a maintenance operational plan;
- (b) a maintenance budget;
- (c) maintenance systems; and
- (d) maintenance performance norms and standards.

23. (1) An owner or operator of water works shall implement a maintenance operation plan for the works appropriate to the class and risk category of the storage dam.

Maintenance operational plan.

(2) An owner 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; and
- (c) analysis of the maintenance options and determination of the preferred option.

24. An owner 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.

25. (1) An owner or operator of waterworks shall identify maintenance requirements by considering—

Maintenance requirements analysis.

- (a) the environmental impact;
- (b) public health and safety impact;
- (c) financial impact; and
- (d) service delivery impact.

(2) The impact of each criteria shall be rated using a five-point scale.

(3) The individual ratings shall be combined into a combined rating which shall be used to identify the maintenance requirements of specific waterworks.

26. (1) The costs related to the maintenance activities for each storage dam or other waterworks operated and maintained by or under a contract with the Water Storage Authority shall be calculated by reference to costs approved by the Authority.

Infrastructure maintenance budget.

(2) Where available maintenance budgets are inadequate, the importance of each activity shall be considered to prioritize the maintenance actions to be undertaken.

27. (1) An owner or operator of waterworks shall maintain a register of the water works which shall indicate all assets that comprise the waterworks.

Waterworks
infrastructure
maintenance
system.

(2) The maintenance activities for a storage dam shall be regulated by a waterworks infrastructure maintenance system which 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;
- (d) analyse infrastructure performance to be used as an input to maintenance planning; and
- (e) include clear disaster management plans for ensuring safety in the event of an emergency.

(3) The Water Storage Authority shall submit the initial waterworks infrastructure maintenance system to the Authority for approval within twelve months of the commencement of these Regulations and the Authority shall make a determination within forty-five days of the submission.

(4) In every subsequent year following the period provided for under sub-regulation (3), the Water Storage Authority shall submit the waterworks infrastructure maintenance system to the Authority and shall indicate any modifications made to the previous plan.

28. (1) An owner or operator of waterworks shall —

Flood control
works.

- (a) maintain the facilities for flood control in such a manner, and operate the facilities at such times and for such periods as may be necessary to obtain the maximum benefit; and
- (b) ensure that a reserve supply of materials required during a flood emergency is available at all times at the works.

(2) An owner or operator of waterworks shall —

- (a) not undertake any modifications over, under, or through the walls, levees, improved channels or flood ways;
- (b) not undertake any excavation or construction within the limits of the structure right-of-way; and
- (c) effect any changes in any feature of the flood control works,

without making a determination that such improvement excavation, construction, or alteration shall not adversely affect the functioning of the flood control facilities.

(3) The determination under sub-regulation (2) shall be in writing.

(4) The improvements or alterations that may be undertaken pursuant to sub-regulation (2) shall be constructed in accordance with standard engineering practice.

29. (1) Levees shall be maintained to ensure durability of the structures during floods and in particular 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 or operator of a dam shall undertake inspections of levees to ensure—

- (a) no settlement, sloughing, or material loss of grade or levee cross section takes place;
- (b) no caving occurs 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 occur;
- (d) toe drainage systems and pressure relief wells are in good working condition, and that such facilities are not 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;
- (g) no action is being taken, such as burning grass and weeds during inappropriate seasons, which will retard or destroy the growth of sod; and
- (h) the availability of adequate labour and materials to meet any contingencies.

(3) The levees shall, during floods, be inspected to locate possible sand boils or unusual wetness of the landward slope and to ensure that—

- (a) no slides or sloughs develop;
- (b) wave wash or scouring action does not occur;

- (c) no low reaches of leave exist which may be overtopped; and
- (d) no other conditions exist which might endanger the structure.

30. (1) Inspections shall be undertaken to ensure—

Maintenance of flood walls.

- (a) no seepage, saturated areas or sand boils occur;
- (b) no excessive settlement occurs 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 cracked, chipped, or broken which might affect the stability of the wall or its water tightness;
- (e) the prevention of accumulation of trash and debris adjacent to walls, and to ensure that no fires are lit near them;
- (f) no bank caving conditions exist riverward of the wall which might affect its stability; and
- (g) toe drainage systems and pressure relief wells are in good working condition, and that such facilities are not becoming clogged.

(2) Inspections shall be conducted—

- (a) prior to the commencement of the flood season;
- (b) immediately following each major high water period;
- (c) at intervals not exceeding ninety days; and
- (d) to deter encroachments and effect repairs;

31. (1) The owner and or operator of a dam shall submit to the Authority for approval, emergency preparedness plans for dams and works and these plans shall—

Emergency management plans for dams affected by floods.

- (a) indicate actions that the owner and or operator shall take to address safety problems at a dam with a safety risk;
- (b) contain appropriate procedures and information to assist the owner or operator in issuing early warning notification messages to responsible disaster management authorities in the national and county governments, representative bodies or of any communities likely to be affected 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 authorities critical areas for action in case of an emergency.

(2) The owner or operator of a waterworks shall, 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 floods.

(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 damage;
- (e) stakeholder perceptions and expectations; and
- (f) state of knowledge and planning commitments for different scenarios.

(4) The owner or operator of a waterworks shall engage with the county government, civil society, and other stakeholders in coordination with disaster management authorities to develop community awareness strategies.

32. (1) A permit holder or operator of a dam shall update emergency contact information contained in its emergency management plan at least once every twelve months.

Emergency
contact
information.

(2) In the event of a change on the emergency contact information in an emergency management plan, a permit holder or operator of a dam shall, within fourteen days from the date of the change submit the information in writing to the Authority.

33. (1) An owner or operator of a dam shall inspect the works in accordance with the criteria set out in Table 5 in the Second Schedule and submit a report to the Authority.

Inspection reports.

(2) Inspection reports shall be submitted to the Authority within thirty days of the completion of the dam inspection.

(3) Compliance with dam inspection requirements shall be among the conditions to be considered by the Authority before permit renewal is processed.

(4) The Authority shall, before renewing a permit for the operation of a dam, ensure that the provisions of these Regulations are complied with.

34. (1) The permit holder or operator shall, in the event of damage or failure, submit an interim dam damage or failure report to the Authority within three days of such damage or failure, and a detailed report in accordance with the Third Schedule within twenty-one days of the event.

Dam damage or
failure report.

(2) A person who contravenes the provisions of sub-regulation (1) commits an offence and shall, on conviction, be liable to the penalty provided under section 142 (3) of the Act.

35. (1) The permit holder or operator shall, if required by the Authority, obtain and maintain an insurance policy to cover the risk of dam failure which may result in injury, loss of human life or damage to health, property or the environment.

Insurance policy.

(2) The Authority shall, in consultation with industry stakeholders, determine conditions for the maintenance of an insurance policy, the categories and the amount of insurance to be maintained by the permit holder or operator of the dam.

PART VI – STRATEGIC WATER EMERGENCY INTERVENTIONS

36. (1) The Water Storage Authority shall maintain a Drought Response Plan to be implemented in collaboration with the National Drought Management Authority.

Drought response plan.

(2) Drought preparedness measures may include, where appropriate, designing and constructing storage dams with features and facilities enabling diversion of water from the storage dam into natural watercourses in emergency drought situations.

(3) The Authority shall, in consultation with the Cabinet Secretary, approve a drought response plan with or without conditions.

37. The Water Storage Authority shall implement measures to enable it respond by activating its Drought Response Plan including making releases of water into watercourses designed to ameliorate the effects of drought, permitting diversion of water from a storage dam into other natural watercourses and direct abstraction by water service providers of water from the Water Storage Authority's storage dams where practicable.

Water supply and demand management.

38. The Water Storage Authority may implement measures to improve systems for the management of stored water to conserve water within its water resources storage facilities during drought.

Improved system efficiency.

PART VII – CLIMATE CHANGE AND FLOOD MITIGATION

39. (1) The Water Storage Authority shall monitor, collect, collate and maintain data of floods experienced in flood prone areas including—

National water resources storage and flood control data.

- (a) information on the state of the works infrastructure;
- (b) climate reports;
- (c) base flood data;
- (d) data on flood prone areas;
- (e) information of flood inundation levels;
- (f) flood hazard maps;
- (g) flood early warning systems; and
- (h) socio-economic impacts.

(2) The data shall be publicized on the Water Storage Authority's website provided that a person requiring an extract of the data certified to be true from the Water Storage Authority's database shall make an application for it in writing and pay such reasonable costs as the Water Storage Authority may require.

(3) 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.

40. The Cabinet Secretary shall, after considering the information maintained pursuant to regulation 39(1), within twelve months of the commencement of these Regulations and as required by the Climate Change Act, formulate and publicly disseminate an action plan and strategies to guide how climate change considerations shall be integrated in the management of water resources, including mitigation and adaptation actions, and the prevention and management of floods and other impacts of climate change.

Climate change action plan.

Cap. 387A.

41. The Authority shall regulate the implementation of integrated flood management plans in all the flood prone areas, by relevant state organs in collaboration with stakeholder groups.

Flood mitigation.

42. The integrated flood management plans shall be implemented through water resource users associations and other stakeholders in collaboration with county governments through guidelines issued by the Cabinet Secretary.

County governments and integrated flood management plans.

43. The Authority may require the development of check dams, green energy projects and dykes for purposes of flood mitigation.

Check dams, green energy, projects, dykes.

PART VIII- WATER HARVESTING

44. (1) Any building constructed after the commencement of these Regulations which is to be utilised—

Roof-based rainwater harvesting.

- (a) as an institutional facility, place of employment or otherwise;
- (b) as a manufacturing or industrial establishment; or
- (c) as a commercial establishment or place for the service of customers,

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.

(2) Subject to sub-regulation (3), the storage capacity of the tank or tanks or other storage facility provided in respect of any building referred to in sub-regulation (1), shall be capable of storing water sufficient to meet the equivalent of seven days' average water demand of the building.

(3) Where it is not practicable—

- (a) to gutter the roof of a building referred in sub-regulation (1) for catching rain water;

(b) to provide a ground catchment having the prescribed area;
or

(c) to provide a tank or tanks having the prescribed capacity,

the building may, in the opinion of the county government or water services provider, be supplied with drinking water from a piped supply.

(4) A county government may, subject to such conditions and restrictions as it may deem proper to impose, permit the owner or occupier of the building to dispense in part or in whole with compliance to sub-regulation (1) or (2).

(5) Roof based rainwater may be harvested for use through a filter into a storage tank or, in compliance with the water resource quality standards specified by the Authority, for recharge of an open well or borehole and in case of a borehole in the building, rainwater shall be harvested through artificial structures or pits, irrespective of the nature of subsoil conditions.

(6) Rainwater from the roof of the buildings with tiled or sloped roof and flat roofs may be harvested using sized gutters or pipe lines stored either in a collection tank or storage structure of appropriate size placed over the ground or underground after proper filtering and disinfection.

(7) A filter shall be used to filter rain water to be used for non-potable purposes and shall be treated before use according to the drinking water guidelines specified by the Water Services Regulatory Board.

(8) Any surplus water available after filling a storage tank may be diverted to an open well through recharge structure or pits.

45. (1) A person may—

Land based
rainwater
harvesting.

(a) directly capture and store precipitation on a parcel of land owned or leased by the person in accordance with sub-regulation (2); or

(b) place the water captured and stored pursuant to paragraph (a) to beneficial use on the parcel on which the water is captured and stored.

(2) Land based rain water harvesting shall be done using the appropriate ground water recharge structures or pits depending on the nature of the sub-soil conditions.

46. The Water Storage Authority shall implement and maintain a website which shall provide technical and capacity building support to enable compliance with these Regulations.

Technical and
capacity building
support.

47. (1) Every agricultural establishment using water resources for irrigation purposes shall implement water harvesting and storage measures capable of storing flood water sufficient to meet three months' water demand.

Rainwater
harvesting by
agricultural
establishments.

(2) An agricultural establishment using water resources for commercial irrigation shall submit to the Water Resources Authority, a plan of water harvesting and applicable storage strategies.

(3) The Water Resources Authority or its agent may conduct an inspection to ensure compliance with the implementation report.

48. A County Government shall put in place measures to ensure that provision is made for planning, managing, maintaining, financing, extending and improving drainage services and storm water run-off collection within its area of jurisdiction.

Storm water run-off.

PART IX- LICENSING OF QUALIFIED PROFESSIONALS AND QUALIFIED CONTRACTORS IN RESPECT TO WATERWORKS

49. (1) A water sector professional or dam contractor who wishes to be licensed as a water sector professional for storage dams or other waterworks or qualified dam contractor shall, if not already licensed under the relevant Water Resources Regulations for the appropriate class of storage dam, apply in writing to the Cabinet Secretary for licensing.

Licensing of water sector professional or dam contractor.

(2) The application under sub-regulation (1) shall be accompanied by—

- (a) a description of the class of waterworks and risk categories of the waterworks which the water sector professional or contractor wishes to be licensed in respect of; and
- (b) particulars of their relevant qualifications, training and experience.

(3) Before determining an application under sub-regulation (1), the Cabinet Secretary shall forward it to the Technical Advisory Committee established under the applicable Water Resources Regulations for consideration, except where the procedure provided for under sub-regulation (6) is followed.

(4) The Technical Advisory Committee may recommend for approval of the application under sub-regulation (1) by the Cabinet Secretary with conditions or it may recommend rejection of the application with reasons.

(5) The Cabinet Secretary shall consider the recommendations Technical Advisory Committee before granting an approval of an application under sub-regulation (1) or rejecting it.

(6) The Cabinet Secretary may approve an application by a qualified water sector professional for any task with a safety risk, by considering the recommendation by the Technical Advisory Committee, provided that—

- (a) the type of dam is similar to the dam type previously approved for the applicant; and
- (b) the maximum wall height of the dam as defined in these Regulations shall not exceed that for which the applicant has been previously licensed by more than—

- (i) three metres in the case of Class SD1 dams;
- (ii) five meters in the case of Class SD2 dams; and
- (iii) fifteen meters in the case of Class SD3 dam.

(7) In the case of tasks to be carried out for a Class SD3 dam, a water sector professional shall apply to the Cabinet Secretary for approval of members of the team accompanied by the relevant information.

(8) The water sector professional or contractor shall be informed in writing of any decision of the Cabinet Secretary.

(9) A professional contemplated in sub-regulation (1) above shall—

- (a) inform the dam owner of the decision of the Cabinet Secretary;
- (b) apply to the Cabinet Secretary for approval of a person or group of persons to assist in the specified field of dam engineering if the approval is subject to conditions requiring assistance; and
- (c) immediately inform the Cabinet Secretary in writing if the professional has withdrawn from a task or their appointment has been terminated by the dam owner

(10) An application under sub-regulation (9) (b) shall include the name, qualifications, curriculum vitae, and relevant experience of the person or group of persons providing assistance.

(11) The different class of qualified water sector 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 may undertake and conditions in accordance with Table 2 and Table 3 in the Second Schedule.

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

(13) The Cabinet Secretary shall maintain two separate registers of water sector professionals and dam contractors in accordance with the applicable regulations.

(14) The registers contemplated in sub-regulation (13) shall be published annually in the *Gazette* and shall be made available within reasonable time to any person who has made a written request to the Cabinet Secretary for a copy of the register.

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

(16) A registered water sector professional may only perform a task or tasks within the class or class for which they have been approved and shall—

- (a) comply with the procedure outlined in regulation 10 (5) for tasks related to Class SD3 dams if applicable;
- (b) comply with the procedure outlined in regulation 10 (2) in the case of conditional approval; and
- (c) submit a copy of the licence issued by the Cabinet Secretary to the Water Resources Authority for its records and the dam owner confirming that they have been licenced to perform a specific task or tasks, within seven days of the licence being issued.

PART X - GENERAL PROVISIONS

50. A person who contravenes the provisions of these Regulations commits an offence and shall, on conviction, be liable to the penalties provided under section 147 of the Act.

Offences.

51. (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 Water Storage Authority including the information set out in the Fifth Schedule.

Complaints mechanism.

(2) The Water Storage Authority shall consider and respond to the complaint within twenty-one days of receiving the complaint.

(3) A complainant who is dissatisfied with the decision of the Water Storage Authority, may appeal to the Tribunal.

52. (1) The Water Harvesting and Storage Regulations, 2021 are revoked.

Revocation and transitional arrangements.
L.N. 169 of 2021.

- (2) Notwithstanding the provisions of sub-regulation (1)—
 - (a) 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 these Regulations or such longer period as the Authority may permit take measures to ensure the waterworks comply with these Regulations;
 - (b) where existing or ongoing waterworks are not authorised, the owner or operator shall within a period of twelve months following the commencement of the Regulations lodge an application with the Authority for a water use permit.

FIRST SCHEDULE

(r. 4(1))

CLASSIFICATION OF DAMS

Classification of Dams

Class of Dam	Maximum Depth of Water at NWL (m)	Impoundment at NWL (m ³)	Catchment Area (km ²)
SD1	0 – 4.99	< 100,000	< 100
SD2	5.00 – 14.99	100,000 to 1,000,000	100 to 1,000
SD3	≥ 15.00	> 1,000,000	> 1,000

NWL = Normal Water Level

SECOND SCHEDULE

(r. 4(1), 6(1), 10(1), 11(2), 33(1), 49(11))

RISK FACTORS OF DAMS AND OTHER WATERWORKS

Table 1: Risk Factors

Classification	Population at Risk	Incremental Consequences of Failure		
		Loss of Life	Environmental and cultural values	Infrastructure, economics and other property
SD 1 (Low Risk)	Temporary/ Permanent	Minimal numbers	Limited presence of: (a) important fisheries (b) important wildlife habitats (c) rare or endangered species, or (d) unique landscapes (e) sites of cultural significance and additionally Restoration or compensation in	Low economic losses affecting limited infrastructure and residential buildings, public transportation or services or commercial facilities; alternatively limited destruction or damage to locations used occasionally and

Classification	Population at Risk	Incremental Consequences of Failure		
		Loss of Life	Environmental and cultural values	Infrastructure, economics and other property
			kind for losses and damage is possible.	irregularly for temporary purposes.
SD 2 (Medium Risk)	Permanent	Significant numbers	Significant presence: (a) critical fisheries; (b) critical wildlife habitats; (c) rare or endangered species, or (d) unique landscapes (e) sites of cultural significance and additionally Restoration or compensation in kind for losses and damage difficult.	Moderate economic losses affecting important infrastructure, public transportation or services or commercial facilities, or moderate destruction or severe damage to residential areas.
SD 3 (High Risk)	Permanent	Large numbers	Presence of: (a) critical fisheries; (b) critical wildlife habitats; (c) rare or endangered species, or (d) unique landscapes (e) sites of cultural significance and additionally Restoration or compensation in kind for losses and damages is impossible or impracticable.	High economic losses affecting critical infrastructure, public transportation or services or commercial facilities, or significant destruction or damage to residential areas.

Table 2: Design and Supervision of Dam

Class of Dam	Category of Qualified Water Sector Professional
SD1	Panel II C, Panel I C1& Panel I C2
SD2	Panel I C1 & Panel I C2
SD3	Panel I C2

Table 3: Category of Dam Contractor

Class of Dam	Category of Dam Contractor
SD1	C1, C2
SD2	C1, C2
SD3	C1

Table 4: Minimum Return Period for Spillway Design

Class of Dam	Minimum Return Period for Design of Spillway
SD1	1 in 50 years
SD2	1 in 100 years
SD3	1 in 500 years

Table 5: Dam Safety Inspection Schedule

Class of Dam	Frequency of inspection	Inspection by
SD1	Once in 3 years	Panel I C1, Panel I C2, Panel II C
SD2	Once in 2 years	Panel I C2, Panel I C1
SD3	Once a year	Panel I C2

THIRD SCHEDULE

(r. 10(2)(a), 12(1), 14(1), 21(1), 34(1))

CONTENT AND FORMAT OF TECHNICAL REPORTS

The following technical reports shall substantially provide the details required.

DAM DESIGN REPORT (FOR CLASS SD1, SD2 AND SD3 DAMS)

<i>Item</i>	<i>Contents</i>
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 draw-off 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

<i>Item</i>	<i>Contents</i>
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

<i>Item</i>	<i>Contents</i>
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

<i>Item</i>	<i>Contents</i>
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

<i>Item</i>	<i>Contents</i>
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

FOURTH SCHEDULE

(r. 17(1))

PREMIUMS FOR USE OF WATER FROM STORAGE FACILITIES

In the case of a permit to abstract or divert water from a regulated river a premium shall be paid by the water user which shall be calculated using the formula herein:

$$\frac{(O \wedge M) + 20\% \times \text{allocation to individual water user} \in \text{MCM/year}}{\text{Annual Design Yield of Storage Dam} \in \text{MCM/year}} = \text{Kshs per year}$$

:

Where:

1. (O&M) is the Water Storage Authority's operation and maintenance costs of the dam releasing the water into the natural watercourse from which the abstraction or diversion occurs.
2. The allocation to individual water user is the water allocated by the permit to the individual water user in cubic metres per year.
3. Annual design yield is the design yield of the dam releasing into the regulated river in cubic metres per year.
4. The formula provides the basis for deriving the amount payable by the water user as a premium.

FIFTH SCHEDULE

(r. 51(1))

COMPLAINTS

INFORMATION TO BE GIVEN BY COMPLAINANT UNDER THESE RULES

Item	Information
(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 or complaint
(f)	Any other relevant details
(g)	Signature of the Complainant

Made on the 2nd August, 2024.

MUSALIA MUDAVADI,
Ag. Cabinet Secretary,
Ministry of Water, Sanitation and Irrigation.