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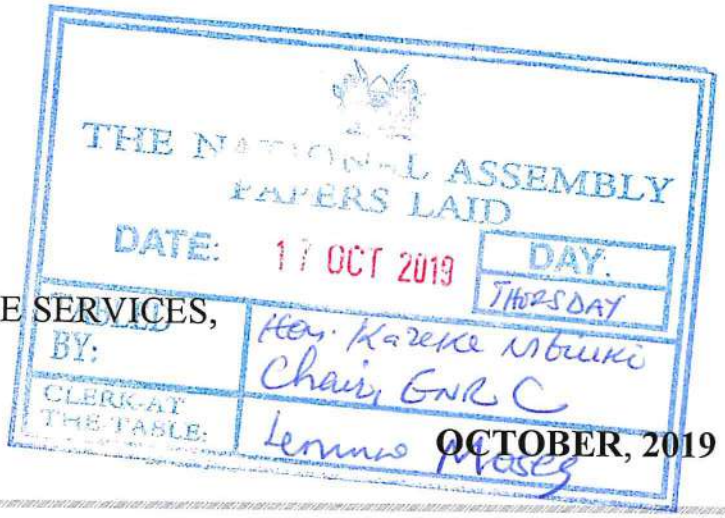
NATIONAL ASSEMBLY

12TH PARLIAMENT – THIRD SESSION - 2019

DEPARTMENTAL COMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES

REPORT ON THE INQUIRY INTO THE STATUS OF DAMS IN KENYA



DIRECTORATE OF COMMITTEE SERVICES,
CLERK'S CHAMBERS,
PARLIAMENT BUILDINGS,
NAIROBI

OCTOBER, 2019

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LIST OF ABBREVIATIONS AND ACRONYMS

AWSB	-	Athi Water Services Board
AFD	-	French Development Agency
ECAs	-	Export Credit Agencies
NLC	-	National Land Commission
CMC	-	Cooperative Muratori and Cementisti
EOI	-	Expression of Interest
EPCF	-	Engineering, Procurement, Construction and Financing Model
KFS	-	Kenya Forest Service
LVNWSB	-	Lake Victoria North Water Services Board
LVSWSB	-	Lake Victoria South Water Services Board
MWS	-	Ministry of Water, Sanitation and Irrigation
NWCPC	-	National Water Conservation and Pipeline Corporation
NWSB	-	Northern Water Services Board
PPADA	-	Public Procurement and Asset Disposal Act
PAPs	-	Project Affected Persons
RAP	-	Resettlement Action Plan
RFP	-	Request for Proposal
RVWSB	-	Rift Valley Water Services Board
TAWSB	-	Tana Athi Water Services Board
TWSB	-	Tana Water Services Board
SMEDI	-	Shanghai Municipal Engineering Design Institute
UV	-	Ultra Violet

CHAIRPERSON'S FOREWORD

The Departmental Committee on Environment and Natural Resources pursuant to Standing Order 216(5)(a) embarked on inquiring into the Status of Dams in Kenya. This was necessitated by the fact that there were various dams' projects across the country which had been allocated funds year after year. The Committee set out to establish the status of these dams against the resources allocated.

In the course of its inquiry, the Committee held meetings with the Cabinet Secretary for Water and Sanitation, Chief Executive Officers of various Water Works Agencies (formerly Water Services Boards) from across the country. The Committee also conducted inspection visits to various dams' projects across the country to assess their status. The dams visited included: Itare Dam, Chemsusu Dam, Northern Collector Tunnel, Karimenu II Dam, Thwake Dam, Umaa Dam and Mwache Dam.

The Committee also sought for written submissions for other dams across the country to understand the progress made so far. The Committee wrote to the Ministry of Water, Sanitation and Irrigation, the National Treasury, Rift Valley Water Works Development Agency, and Athi Water Works Development Agency seeking for additional information on various water projects being implemented.

The Inquiry into the Status of Dams in Kenya was guided by the following objectives:

1. To conduct Physical inspection to establish the status/progress of works for the dams to be visited.
2. To identify any discrepancies that may be notable between the paper reports and the actual physical situation.
3. To establish the reason for the slow progress of the construction of the dams;
4. To recommend effective implementation strategies for the construction of the dams.
5. To report on specific recommendations on the way forward for all the ongoing projects and the stalled ones.

During the inquiry, the Committee noted that the construction of various dams' projects was slow and this was attributed to a number of factors which included: inadequate financial resources primarily counterpart funding, inefficient and costly financing models, and unsettled resettlement action plan issues. It was further observed that various dams' projects financial commitments had been done before the acquisition of the project land. This led to delays in the implementation of the project and huge costs in idle time and equipment.

The Committee further noted that, whereas substantial resources were committed to construction of mega dams across the country, there were no plans in place to ensure that last mile connectivity was achieved. A case to illustrate this problem is Chemsusu Dam which was completed in the year 2014 and took five years to have last mile connectivity initiated.

The Committee observed that the National Treasury was engaging foreign private commercial banks to borrow money to finance projects. This is a matter of great concern considering that these loans come with high interest rates, costly insurance requirements, undisclosed negotiation fees and other hidden costs. The resultant effect is that these loans are many more times more expensive than the usual concessional loans, which are usually negotiated than such private institutions are likely to charge thereby making their loan facilities very exorbitant.

It was noted that the procurement processes and construction of most of the dams were being carried out under the Engineering, Procurement, Construction and Financing scheme. In this financing model, the contractor is not only responsible for engineering, procuring and constructing the project, but also has to

finance it. The contractor does all the preliminary works of the geo-technical investigations, interpretation, final designs and eventually the actual construction of the dam. As a matter of fact, this model is more or less single-sourcing, and therefore may be prone to abuse and value for money may not be efficiently realized.

It was observed that the Ministry had constructed various dams such as Chemsusu Dam, Kiserian Dam and Maruba Dam through GOK funding. This indicated that with proper planning, siting, management and monitoring, projects implemented through local funding could be more cost effective than through external borrowing. There is therefore need for the government to fund its projects from feasibility study, initial designs, land acquisition process and final designs until project implementation phase through exchequer funding.

The Committee also noted that there was need for proper public participation and engagement before implementation of dams' projects so as to ensure that the needs of the local communities are factored in at the project implementation phase.

It was observed that Itare Dam Project had stalled as the project contractor CMC Di Ravenna had filed bankruptcy proceedings in Italy. Consequently, there was equipment that included bulldozers, excavators, trucks and other earth moving machines that are valued at billions of money, in addition to the asphalt concrete plant, the structural concrete batching plant, the concrete tunnel lining pre-casting plant, tunnel boring machine lying idle on the site. All this plant and equipment was part of what was purchased using the money advanced to the contractor by the Government of Kenya and in the event this equipment is left in disuse, this would be a direct loss of public funds.

The Ministry of Water, Sanitation and Irrigation together with the National Treasury was engaging the contractor to ensure that the project implementation was not affected by the bankruptcy proceedings. It was also observed that the contractor had performance bond and advance payment guarantees that were almost expiring. There was therefore need to review the contract to ensure that Itare Dam project implementation continues to completion.

The Committee further observed the Government needed to come up with inter-ministerial approach at the design stage of the projects so as to reduce the delays resulting from way leaves at the implementation stage.

The Committee consequently recommended that:

1. The government should, as much as possible, first and foremost acquire land for construction of dams long before the project implementation and before making any financial commitments with donors/partners to avoid huge costs that accompany delays in the implementation phase. Where a full acquisition of the whole land for a dam project is not possible for one reason or another, the Committee recommends that at least the land for the construction of the dam wall MUST be available before any funding negotiations are initiated.

2. The National Treasury and the line Ministries should forthwith stop implementing any new projects through the EPC+F model of financing due to high costs associated with this model. They should ensure that financing models considered for projects implementation are efficient, cost effective and give value for money to Kenyans. The bilateral loans benefit outweighs the commercial loans procured through the EPC+F model whose costs are bound to be exorbitant due to hidden costs.

3. The Ministry Water, Sanitation and Irrigation together with the National Treasury should urgently put in place measures to have the works for the construction of the Itare Dam are subcontracted or assigned to another contractor so as forestall the huge loss that may be incurred if the plant and equipment that is currently on site remains unused for a long time. Otherwise, they should terminate the contract before the expiry of the performance bond guarantee.

4. The National Treasury should encourage the line ministries to implement projects with proper management and monitoring to the last phase utilizing local resources as was the case for Chemsusu and Kiserian Dams. Further, the National Treasury should ensure there is adequate funding for such locally funded projects to avoid stalling.

5. The Ministry of Water, Sanitation and Irrigation through its implementing agencies should ensure that proper background check on contractors is done before being awarded contracts. Further, upon engagement of the contractor, the consultant should do a continuous due diligence to ensure that the financial capacity of the contractor has not shifted in the course of the project life.
6. The Ministry of Water, Sanitation and Irrigation through its implementing agencies should ensure better monitoring of dams technical, financial and economic performance considering the huge financial outlays involved. This will enhance project implementation with minimal delays and idle time.

7. The National Government through the Ministry of Water, Sanitation and Irrigation should develop a collaborative framework between the national and county governments to ensure sustainable water resource and sanitation management. This will go a long way in ensuring that the county governments remit resources collected by the water and sewerage companies to the National Government for loan repayments. The National Treasury should come up with mechanisms for ring fencing money for water supply and sewerage works to ensure that the dams provide value for money.

8. The Ministry of Water, Sanitation and Irrigation should create a Directorate of Dam Engineering which should spearhead all the Dam Projects from conceptualization, through geo-technical works to Design and Supervision. This directorate should bring together all the dam experts from within the country and any external engineers should have the directorate as their entry point. The directorate give authority for the actual siting of any dam in Kenya after doing due technical diligence on the actual ground conditions. This would avoid a situation similar to that of Umaa and Badassa dams where the initial estimated cost of the projects was almost doubled by grouting exercise which had not been envisaged during the design time.

9. The Ministry of Water, Sanitation and Irrigation MUST forthwith stop any process of procurement for all the Dam Projects that are at the planning and procurement stages and do a complete review of the technical and financial aspects of the projects, to ascertain whether the country is getting value for money.
10. The Government through its Ministries should encourage an inter-ministerial approach at the project design stage to ensure that the relevant ministries are made aware of wayleaves requirements before project implementation to avoid delays as a result of lengthy period taken before wayleave is granted. This is in reference to the balancing act for the Ministry of Water and KFS between conserving the forest and providing water for the growing populations.

11. The Government needs to consolidate all the projects on water and its resources under the Ministry of Water, Sanitation and Irrigation for ease of implementation, monitoring, evaluation and financing. The scattered dams' projects in various ministries may not be effective as the technical expertise in such projects is in the rightful Ministry of Water, Sanitation and Irrigation.

12. The Ministry of Water, Sanitation and Irrigation should engage its technical experts to consult for the numerous dams' projects being implemented across the country to reduce the project costs incurred by the consultancy firms.

13. The Office of the Auditor General should within six (6) months upon the adoption of this report, undertake a performance audit of all the dam projects that have been implemented through the EPC+F model to assess the cost benefit analysis, completion rate of projects and viability of this model in future projects with a view to establishing whether there is value for money for expenditure of public resources incurred under the model.

THE HON. KAREKE MBIUKI, M.P.
CHAIRPERSON, DEPARTMENTAL COMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES

1.0 PREFACE

1.1 Establishment and Mandate of the Committee

1. The Departmental Committee on Environment and Natural Resources is one of the fifteen (15) Departmental Committees of the National Assembly established under ***Standing Order 216*** whose mandates, pursuant to the ***Standing Order 216 (5,)*** are as follows:
   a) **To investigate, inquire into, and report on all matters relating to the mandate, management, activities, administration, operations and estimates of the assigned ministries and departments;**
   b) To study the programme and policy objectives of Ministries and departments and the effectiveness of their implementation;
   c) To study and review all the legislation referred to it;
   d) To study, access and analyze the relative success of the Ministries and departments as measured by the results obtained as compared with their stated objectives;
   e) To investigate and inquire into all matters relating to the assigned Ministries and departments as they may deem necessary, and as may be referred to them by the House;
   f) To vet and report on all appointments where the Constitution or any law requires the National Assembly to approve, except those under Standing Order No.204 (Committee on appointments);
   g) To examine treaties, agreements and conventions;
   h) To make reports and recommendations to the House as often as possible, including recommendation of proposed legislation;
   i) To consider reports of Commissions and Independent Offices submitted to the House pursuant to the provisions of Article 254 of the Constitution; and
   j) To examine any questions raised by Members on a matter within its mandate.

2. The Committee is charged with the following subject matter as provided for in the Second Schedule of the National Assembly Standing Orders No. 216 (f): - climate change, environment management and conservation, forestry, water resource management, wildlife, mining and natural resources, pollution and waste management.

1.2 Oversight

3. The Committee oversees the following State Departments: Ministry of Water, Sanitation and Irrigation; Ministry of Environment and Forestry; State Department for Wildlife; and State Department for Mining.

1.3 Committee Membership

4. The Committee on Environment and Natural Resources was constituted by the House in on 20th December, 2017 and comprises of the following Members: -

The Hon. Kareke Mbiuki, M.P. **(Chairperson)**
MP for Maara Constituency
Jubilee Party

The Hon. Sophia Abdi Noor, M.P. **(Vice Chairperson)**
MP for Ijaara Constituency
Party of Development and Reforms (PDR)

The Hon. Benjamin Jomo Washiali, M.P.,
MP for Mumias East Constituency
Jubilee Party

The Hon. David Kangogo Bowen, M.P.
MP for Marakwet East Constituency
Jubilee Party

The Hon. Francis Chachu Ganya, M.P.
MP for North Horr Constituency
Frontier Alliance Party (FAP)

The Hon. Ali Wario Guyo, M.P.
MP for Garsen Constituency
Wiper Party

The Hon. Beatrice Cherono Kones, M.P.
MP for Bomet East Constituency
Jubilee Party

The Hon. Charity K. Chepkwony, M.P
MP for Njoro Constituency
Jubilee Party

The Hon. Hilary Kiplang'at Kosgei, M.P.
MP for Kipkelion West Constituency
Jubilee Party

The Hon. Peter Kimari Kihara, M. P.
MP for Mathioya Constituency
Jubilee Party

The Hon. Benjamin Dalu Tayari, MP.
MP for Kinango Constituency
Orange Democratic Movement (ODM)

The Hon. Charles Ong'ondo Were, M.P.
MP for Kasipul Constituency
Orange Democratic Movement (ODM)

The Hon. Nasri Sahal Ibrahim, M.P.
MP - Nominated
Forum for Restoration of Democracy-K

The Hon. Rozaah Buyu. M.P.
MP for Kisumu County
Orange Democratic Movement (ODM)

The Hon. Said Hiribae, M.P.
MP for Galole Constituency
Forum for Restoration of Democracy– K

The Hon. Hassan Oda Hulufo, M.P. MP for Isiolo North Constituency
Kenya People's Party (KPP)

The Hon. Amin Deddy Mohamed Ali, M.P.
MP for Laikipia East Constituency
Jubilee Party

The Hon. Rehema Hassan, M.P.
Tana River County
Maendeleo Chap Chap Party (MCC)

The Hon. (Eng.) Paul M. Nzengu, M.P.
MP for Mwingi North Constituency
Wiper Party

1.4 Committee Secretariat

5. The Committee secretariat comprises of:

Ms. Esther Nginyo
Second Clerk Assistant
Lead Clerk

Mr. Dennis Mogare Ogechi
Second Clerk Assistant

Ms. Winnie Kulei
Research officer III

Mr. Sydney Lugaga
Legal Counsel I

Ms. Yunis Amran
Fiscal Analyst II

2.0 BACKGROUND INFORMATION

2.1 Introduction

6. Water is the most important natural resource, indispensable for life and at the same time the backbone for growth and prosperity for mankind. The growing demands for water against the limited natural endowment and its increasing scarcity could result into conflicts and pandemic, if the water infrastructure and its management is not improved.

7. According to a study by the Ministry of Water and Irrigation that was commissioned by the German Federal Ministry of Economic Cooperation and Development in 2017, only around half of the approximately 46 million people in Kenya had access to clean drinking water and adequate sanitation in 2016. The expansion of infrastructure is not keeping pace with population growth in many of the over 2,000 poor urban areas, where around eight million people live. .[1]
8. Kenya is a water scarce country with an annual internal water availability of 636 cubic meter per capita. The scarce water resources are being utilized for domestic, agricultural and industrial use. Thereby this has necessitated the government to alleviate the shortage by investing in dams' construction to harvest rain water. [2]

2.2 Dams in Kenya

9. In ancient times, dams were built for the single purpose of water supply or irrigation. As civilizations developed, there was a greater need for water supply, irrigation, flood control, navigation, water quality, sediment control and energy. A dam is the cornerstone in the development and management of water resources and ultimately the development of a Country.
10. Dams serve to ensure an adequate supply of water by storing water in times of surplus and releasing it in times of scarcity, thus also preventing or mitigating floods and making a significant contribution to the efficient management of finite water resources that are unevenly distributed and subject to large seasonal fluctuations.
11. In Kenya, dams contribute significantly to economic growth, food security and national development. They can also help societies cope with climate change by storing water, protecting people and assets from floods, and generating cleaner electricity. It is an integral component of the Big 4 Agenda and the realization of the vision 2030. [3]

12. The already existing dams include: Thika Dam, Chemsusu Dam, Kiserian Dam and Sasumua dam. The Ministry of Water, Sanitation and Irrigation has embarked on an ambitious plan of dams' construction. Six of the dams are in the process of construction and they include: Itare Dam, Thwake Dam, Karimenu II Dam, Siyoi Muruny Dam, Ruiru II Dam and Yamo Dam. Others are in the procurement stage, some of which include: Kamumu Dam, Rupingazi Dam, Thambana Dam, Kithino Dam, Londiani Dam, Mwache Dam, Bosto Dam and Soin Koru Dam among others.[4]

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[1] Ministry of Water, Sanitation and Irrigation.
[2] Ministry of Water, Sanitation and Irrigation.
[3] Ministry of Water, Sanitation and Irrigation.
[4] Ministry of Water, Sanitation and Irrigation.

13. The Constitution of Kenya, 2010 Article 43(1)(d) gives Kenyans the right to clean, safe and adequate water. The Water Act, 2016 which repeal the 2002 Act and puts into the effect the rights as provided for in the Constitution. The Ministry of Water, Sanitation and Irrigation is obligated by the Constitution and the Water Act, 2016 to provide clean, safe and adequate water for all Kenyans. It is against this backdrop that the Ministry of Water, Sanitation and Irrigation has embarked on an ambitious program of constructing major dams across the country as will be detailed in this report. The Dams are at various stages such as procurement, construction and last mile connectivity. The program has not been without challenges in its implementation which necessitated the Committee to critically inquire into the matter of dams in the country.

2.3 Rationale for the Inquiry into the Status of Dams in Kenya

14. Arising from the above, the Departmental Committee on Environment and Natural Resources resolved during its Sitting of 14th March, 2019 to inquire into the status of dams in Kenya pursuant Standing Order 216(5)(a). The aim of the inquiry was to:
    a) Conduct Physical inspection to establish the status/progress of works for the dams to be visited.
    b) Identify any discrepancies that may be notable between the paper reports and the actual physical situation.
    c) Establish the reason for the slow progress of the construction of the dams;
    d) Recommend effective implementation strategies for the construction of the dams.
    e) Report on specific recommendations on the way forward for all the ongoing projects and the stalled ones.

2.4 Financing Models for the Dams Construction

15. The Committee took note of the various financing models that were being used in the construction of the various dams across the country. These models included:
    a) Exchequer / Government Funded Projects - The government finances its projects through exchequer. This is an effective method of project financing because there are no loan repayments.
    b) Donor Funded Model - Donor funded projects aim to promote development by strengthening organizations at the community level. Some of the donors that have been involved in the construction of dams include: The World Bank, African Development Bank, China Exim Bank among others.
    c) Grant – These are non-repayable funds or products disbursed or given by one party (grant makers), often a government department, corporation, foundation or trust, to a recipient.
    d) Engineering, Procurement, Construction and Financing Model (EPC+F) – This is a model that include Designing, Building and Financing of the project. It is usually done through commercial contracts. The contractor should be solely responsible for all design, procurement, engineering, construction, testing and commissioning of the facility.

3.0 INQUIRY INTO THE STATUS OF DAMS IN KENYA

16. On 14th March, 2019, the Departmental Committee on Environment and Natural Resources resolved to carry out an inquiry into the status of dams in Kenya. The study covered the following dams: Itare Dam, Chemsusu Dam, Ruiru II Dam, Karimenu II Dam, Muranga Northern Collector Tunnel, Thwake Dam, Umaa Dam and Mwache Dam.
17. The terms of reference were: -
    a) Conduct Physical inspection to establish the status/progress of works for the dams to be visited.
    b) Identify any discrepancies that may be notable between the paper reports and the actual physical situation.
    c) Establish the reason for the slow progress of the construction of the dams;
    d) Recommend effective implementation strategies for the construction of the dams.
    e) Report on specific recommendations on the way forward for all the ongoing projects and the stalled ones.
18. On the methodology of the inquiry, the Committee carried out inspection visits on various dates and received both oral and written submissions from the Ministry of Water, Sanitation and Irrigation, and its agencies. The Committee was interested to understand the various financing models that were being used in implementing various dams' projects, assess whether each of the models were giving value for money and eventually recommend the most cost-effective model for the construction of dams. The financing models that were mostly used in the dams' construction included: Government of Kenya Financing (Exchequer), Donor funding, Grant, and Engineering, Procurement, Construction and Financing Model (EPC&F).

3.1 Submission by the Stakeholders

3.1.1 Meeting with the Cabinet Secretary for Water and Sanitation

19. The Cabinet Secretary for Water and Sanitation, Mr. Simon Chelugui, appeared before the Committee on 5th March, 2019 to make submissions on the status of dams.
20. He stated that the Ministry through its institutions was implementing large dams' projects to increase water storage and ensure the country's water security. There were 24 dams which were at various stages of implementation (List in Appendix 1).
21. There were 7 Dam projects under actual construction and the details of the status of the projects indicating project duration and advance payments made are as highlighted in Appendix 2 of this report. Equally the financing models for the dams is captured in Appendix 3 of the report.
22. There were two dams that had stalled namely; Badasa dam in Marsabit County and Umaa dam in Kitui County. The details are as highlighted hereunder: -

Badasa Dam Water Project

i. The project was to serve Marsabit Town and its environs with potable water. The design production capacity of the dam is 7,500m3/day to serve 63,000 people by ultimate year 2030. It was awarded to M/s Midroc Drilling Company Limited on

10th July, 2009 at a contract sum of Kshs. 2,389,846,058.83 with 30 months' implementation period. During project implementation, variations amounting to Kshs. 935,048,544.62 (40% of contract sum) were awarded to the contractor by the supervising consultant majorly caused by shifting of the dam axis upstream that necessitated a design review.

ii. The delay caused in carrying out design review resulted to request of 1-year time extension by the contractor to complete the works. However, the client awarded 6 months' time extension and started deducting liquidated damages after end of the 6 months' extension of which the contractor disputed. This led to stoppage of works on 11th February, 2013 through a High Court order.

iii. The High Court issued Consent Orders for parties to agree on and deposit with the court for consent award. The dispute was resolved on 8th April, 2016 and parties agreed to disengage from the contract obligations by paying Kshs. 194,219,651.24 as final settlement to the contractor. This amount was approved and factored in 2016/2017 financial year supplementary estimates and was paid to the contractor on 30th June, 2017.

iv. To resume construction of the project, the Ministry was undertaking a review of the outstanding and additional scope of works. The estimated cost is **Ksh 2.3 billion.** M/S Tertiary Consulting Engineers Limited has been engaged to carry out design review of the project, prepare tender documents and supervision of the works.

Umaa Dam Water Project

i. The project was to serve people in Kitui Town and its environs by providing a live storage of 890,000m3 which could sustain production of 2,300m3/day for 8 months. It was awarded to M/s Draft and Develop Engineers Limited on 4th December, 2008 at a contract sum of Kshs. 824,457,120.49 with 24 months implementation period. During project implementation, variations amounting to Kshs. 312,240,265.68 (38% of contract sum) were awarded to the contractor by the supervising consultant due to chances in site conditions that resulted in justified increase of quantities under grouting works.

ii. This had led to request for time extension of 9 months by the contractor of which he was granted conditional 11 weeks' extension. The contractor disputed the award of conditional 11 weeks' extension of time that resulted to stoppage of works on 21st January 2011 having achieved 57% physical project completion.

iii. The matter was referred to Arbitral Tribunal that sanctioned the parties to negotiate and reach Amicable Settlement Agreement which was to be deposited with the Tribunal for a consent award.

iv. The dispute was resolved on 8th April, 2016 and parties agreed to disengage from the contract obligations by paying Kshs. 536,464,310.56 as final settlement to the contractor. This amount was approved and factored in 2016/2017 financial year Supplementary II Estimates and was paid to the contractor on 13th June, 2017.

v. To resume construction of the project, the Ministry was undertaking a review of the outstanding and additional scope of works. The estimated cost was **KSH 1.46 billion.** M/S SMEC Kenya Limited had been engaged to carry out design review of the project, prepare tender documents and supervision of the works.

vi. The projects were mainly EPC + F, which means their arrangements was a package that involved financiers and contractors. However, the implementing agencies engaged consultants and panel of dam experts to supervise the works.

23. The Committee made the following observations from its meeting with the Cabinet Secretary for Water and Sanitation, that:
    i. The matter of dam projects was spread across 4 ministries i.e. Ministry of Water, Sanitation and Irrigation, Ministry of Agriculture and Irrigation, Ministry of East Africa and Regional Development and Ministry of Energy.
    ii. Dam construction in Kenya was generally expensive compared to similar projects in the region. There was need for the implementers to review the cost component to establish the reasons behind the high cost.
    iii. There was skewed distribution of dam projects across the country. There was an unjustified concentration of such projects in some regions while there were no projects in other deserving areas.
    iv. There was need for a major dams' project in areas that were prone to perennial flooding of the area.

3.1.2 Meeting with the Rift Valley Water Works Development Agency

24. The Chief Executive Officer, Rift Valley Water Works Development Agency, Eng. Hosea Wendot, accompanied by other Board's officials and consultants appeared before the Committee on 22nd March, 2019 to make a submission on the status of the Itare Dam. Itare Dam and Water Supply Project was being implemented by the Rift Valley Water Service Board.
25. He stated that the estimated cost of the project was Ksh 28,973,739,492. The financing was done through an Export Credit and Tied Commercial Loan from Intesa Sanpaolo – BNP Paribas- Sace from Italy. The project was to run for 48 months commencing from 6th April, 2017 and was expected to be completed by 5th April, 2019;
26. The project contractor was CMC di Ravenna of Italy while the supervising consultant was H.P. Gauff Ingenieure GmbH & Co – JBG. The major construction works to be executed under the contract were: -
    a) **Component 1 – Rock fill Dam** – the overall progress was at 27%. Dam earthwork was at 85%, concrete works at 30%, rock fill works had just commenced (5,000m³) when the works stopped and grouting equipment partially mobilized.
    b) **Component 2 – Water Treatment Plant (100,000m³/day, 24 hours treatment)** – the overall progress reached was 11%. Earthwork progress was at 95% and concrete works had not started.
    c) **Component 3 Bulk Transfer Tunnel through Mau Forest (12.63 KM)** – the overall progress reached was 7%. Tunnel outlet portal at industrial area was at 96% completed, precast factory for tunnel precast segments was erected and Tunnel boring machine (TBM) factory was ready for shipment.
    d) **Component 4 – Bulk Transfer Pipeline (Treated water transmission pipeline to Nakuru 112 km)** – This component was just starting. Only site clearance/tree cutting was done. The procurement of pipes had not started. Due to the change of the tunnel inlet (vertical) position, the upstream pipeline had to be redesigned and changed from DN 1200mm to DN 1300mm in some parts

and DN 1200 mm in other parts. This redesign had delayed the purchase of pipes.

e) **Component 5 – Reservoirs/Connection Pipes (4 No., total storage of 21,000m³ and distribution pipeline- 33 km)** – the overall progress reached 0.6%. This had been affected by land acquisition delays. Construction of reservoir was at 5%. Despite the suspension of works, completion was expected to be within the project time for completion.

27. The overall progress summary was as follows, that:

Item	Amount (Kshs.)	Percentage
Total Contract Amount	28,973,739,492.12	
Effected Payments until 24.02.2019 including the Advance Payment	11,399,322,188.43	39%
Securities in Favour of the Employer		
Advance Payment Guarantee	4,346,060,923.82	15%
Performance Security	2,897,373,949.21	10%
Physical Works Done	6,374,222,688.00	22%
SUM works done and securities	13,617,657,561.03	47%

Source: Rift Valley Water Works Agency

28. On the Contractor's pre-bankruptcy procedure, he stated that CMC di Ravenna had been admitted by the Court of Ravenna on 7th December, 2018 to a Pre-bankruptcy procedure in which creditors need to approve a proposal by CMC for a delayed repayment of debt. This procedure is aimed at ensuring the survival of the company and to avoid bankruptcy. The final outcome of the procedure might only be known by the end of 2019 or early 2020.
29. Since December, 2018, meetings had been held between the Banks/lenders, CMC di Ravenna, Ministry of Water, Sanitation and Irrigation and the National Treasury to deliberate on the way forward regarding the project. The following proposals had been made in regard to the project:
    a) Termination of the works contract and retendering – this would terminate the financing agreement and alternative source of funding would be required. This would cause a delay of 1 to 1.5 years.
    b) Sub-contracting or remaining works- this would require direct payment from lenders, consent of lenders and credit insurance.

30. On the procurement of the contractor, the Rift Valley Water Service Board advertised for an Expression of Interest in 2014. The contractor was required to identify a financier. Six companies were shortlisted out of those who had expressed their interest. However, only 5 companies bid and only 3 of them remained; these included China State Engineering with Kshs. 38 billion, CMC di Ravenna with Kshs. 29 billion and Sino Hydro China with Kshs. 48 billion. CMC di Ravenna was the lowest bidder after the financial evaluation and was

eventually was engaged after the loan agreement was signed by the National Treasury for the government of Kenya.

31. On financing, the National Treasury negotiated with Intesa San Paolo and PNP Paribus – private bank for a loan of Kshs.34 billion. The extra amounts beyond the project cost was necessitated by the cost of financing which included; insurance costs that were provided by SACE- a Credit Export Agency of the Italian Government to cover for the commercial risks.
32. The Supervising Consultants – HP Gauff Ingenieure were source through a competitive process at cost of Kshs. 598 million. The payment for the consultants would be funded through counterpart funding.
33. The Committee made the following observations:
    i. Although CMC di Ravenna was the lowest bidder, their financial capacity was wanting as it filed bankruptcy proceedings in Italy.Therefore, had due diligence been properly done, there would have been consideration for other bidders with financial and technical capacity as required by the procurement law.
    ii. There was duplication of designing works as CMC di Ravenna had included design component in their scope of works while the same had been done during the feasibility study by the supervising consultants – HP Gauff Ingenieure.
    iii. Although the lowest bidder bid for Kshs. 29 billion, the engineers estimate for the Itare Dam project was a Kshs. 39 billion thereby giving a difference of Kshs. 10 billion.
    iv. The Engineering, Procurement, Construction and Financing model of project implementation was attractive on face value. However, the model has various other hidden costs that are borne by the taxpayers.
    v. There was need for the Ministry of Water, Sanitation and Irrigation, the National Treasury and the Contractor – CMC di Ravenna to carefully evaluate the best way forward for the project to continue without incurring extra costs or experiencing elongated delays in completion.

3.1.3 Meeting with the National Water Harvesting and Storage Authority and their Consultants on the Chemsusu Dam

34. Eng. Maurine Naminda, Director at GIBBS, consulting for the National Water Harvesting and Storage Authority appeared before the Committee on 23rd March, 2019 to brief the Committee on Chemsusu Dam.
35. He stated that Chemsusu Dam Water Supply Project commencement date was 1st June, 2016 and the expected completion date was 30th June, 2020. The cost of the project was Ksh 3.5billion, inclusive of supervision and the overall progress of the project was at 48%.
36. Chemsusu Dam Water Distribution Project was one of the flagship projects identified by the Government of Kenya through the Rift Valley Water Services Board, that was being developed as an enabler for Vision 2030 in Baringo and Nakuru Counties. It was fully funded by the Government of Kenya and was expected to serve 300,000 people. Chemsusu Dam was developed in phase I by National Water Conservation and Pipeline Corporation with a capacity of 11million cubic metres. The dam is located in Koibatek Sub County in Baringo County.
37. The project targeted to provide water supply to Eldama Ravine town and its environs, Mogotio Town and its environs, Kabarak University, Kiamunyi area of Nakuru Town and parts of Rongai sub-counties.The contract was awarded to Guangxi Hydro – Electric

Construction Bureau in March 2016 at a cost of KShs. 2.9Billion and was being supervised by GIBB Africa. Original contract was supposed to run for 24 Months.

38. The scope of works included: Construction of 35,000m^3/day water treatment plant, 250 km long clean water pipelines of various diameters from Chemsusu Dam to Koibatek & Mogotio Sub Counties in Baring County and parts of Rongai Sub County in Nakuru County. Other works included: Distribution system mains and Storage reservoirs, Supply of O&M equipment and Rehabilitation of existing Chemsusu Water Supply System.
39. Overall completion rate was at 50%completion as end of December 2018. The progress of each component was as follows;
    i. Aeration: Four sections aeration cascade and 9 columns footings and 5 meters height construction work completed
    ii. All flocculation chamber: Concrete floor and baffle wall including distribution channel construction completed.
    iii. Sedimentation basin: all four-section floor slab, vertical wall and walk away slab construction work completed and all walkway vertical handrail manufacturing ongoing.
    iv. All 8 filter units: 1st lift concrete wall 5.1×41.5m width and length 2.4m height concrete casting has been done and 2nd left wall from work preparation ongoing.
    v. 1000m3 contact reservoir: all floor slab and 3m height vertical wall construction work completed.
    vi. The engineer's office (ERAWASCO) - permanent office all concrete columns and external and internal /partition stone wall construction up to top ring beam completed. All 600×200 mm top concrete ring beam concrete casting work completed.
    vii. 5000m^3 reservoir: construction works for the tank at Baringo high school has been completed.
    viii. Site work, inlet pipes, outlet pipes, chamber, car parking, guard house and perimeter fence construction ongoing.
    ix. Ravine town 750m^3 reservoirs: 750m^3 reservoir all floor slab, vertical wall, 12 roof supporter columns and roof slab concrete casting work has been done.
40. Project had faced challenges as it was halted for 4 months due to project resistance by surrounding communities. Government ban on forest activities had also delayed laying of 8km of pipeline inside Chemsusu and Narasha forest as well as construction of chemical treatment house.

3.1.3 Meeting with Athi Water Works Development Agency

41. Eng. Michael M. Thuita, the CEO, Athi Water Services Board appeared before the Committee on 27th March, 2019 to brief the Committee on the water projects that were being implemented by the Agency.
42. He stated that in 2012, the Athi Water Services Board carried out a feasibility study and developed a master plan for developing new water sources for Nairobi and satellite towns. It aimed at meeting the demands for water in Nairobi and satellite towns up to 2035. The total supply is 480,000 M^3 against a demand of 760,000 M^3 per day as at 2019. The 2012 master plan therefore proposed the development of the following bulk water sources: 4th Nairobi

Water Supply Program - comprising the Northern Water Collector Tunnel, water treatment plant and raw and treated water pipelines; Karimenu II Dam; and Ruiru II Dam.

43. Fourth Nairobi Water Supply Projects comprised of the following components: Northern Water Collector Tunnel Project phase (11.8 km), Kigoro Water Treatment Plant (140,000 M^3) per day, and Raw and treated water pipeline (54 km).

44. Northern Water Collector Tunnel Project was financed by the Government of Kenya and the World Bank as follows:

Component	**Amount in KSH**	**Financier**
Construction Works VAT Inc	6,825,639,672.79	World Bank
Land Compensation Cost	136,713,742.85	GoK
Total Project Coast	6,962,353,415.64	GoK and World Bank

45. Tendering was done and the lowest bidder, M/S China Ghezhouba Group Company Limited was awarded the contract at the contract price of Ksh 6,825,639,672.79 inclusive of VAT. Contract was signed on 1st September, 2014. Project progress: project commenced on 24th February, 2015 and was scheduled for completion on 24th December, 2019. The overall progress of works was at 65%. Payments made: a total of Ksh 3,931,744,700.13 had been paid to the contractor, inclusive of advance payments. This was about 58% of the contact sum. Challenges faced included: political interference, litigations, delays in payments to the contractor due to inadequate budgetary allocation, inadequate counterpart funding for Resettlement Action Plan (RAP) implementation.

46. Kigoro Water Treatment Plant was meant to treat additional water getting into Thika Dam as a result of the construction of the Northern Collector Tunnel Phase 1. An additional (140,000 M^3) per day will be treated and supplied to Nairobi. The project was financed by the Government of Kenya and the French Development Agency (AFD) as follows:

S/N	**Component**	**Amount (KES)**	**Financier**
1.	Construction works	4,022,379,718.30	AFD Total Contribution
2.	16% VAT	643,580,754.62	GoK
Subtotal		**4,665,960,472.92**	
3.	Land compensation	164,426,862.00	
Total Project Costs		**4,830,387,334.92**	

47. Procurement: Tendering was done and M/S Degremont/Sogea/Sacom JV was recommended for award at a cost of KES 4,665,960,472.92. Project Progress: works commenced in May 2016 and were substantially completed by November 2018. However, the plant could not be commissioned since works on the tunnel and the raw and treated pipelines were still ongoing. Payments made: A total of KES 3,153,269,234.50 had been paid which is approximately 82% of the contract sum. Challenges faced include: Delays in completion the tunnel and the raw and treated pipelines which had delayed commissioning of the plant.

48. Construction of Raw and Treated Water Pipeline aimed at laying 54km pipeline to convey raw water from Thika Dam (Ndakaini) to Kigoro Water Treatment plant to Gigiri Reservoirs to serve 1.2 million Nairobi residents. The project is financed as follows:

Component	Amounts in KES	Financier
Construction Works VAT Excl.	1,398,493,448.74	World Bank
	4,822,391,202.54	AFD
Subtotal	6,220,884,651.28	
Land Compensation and VAT	1,300,000,000.00	GoK
Total Project Cost	7,520,884,651.28	

49. Procurement: Tendering was done and M/S China State Construction Engineering Corporation Ltd in joint venture with Nanchang Foreign Engineering Corporation was awarded at a contract price of KES 6,996,179,243.68 inclusive of VAT. Project commenced on 27th October, 2016 and expected completion on 31st December, 2020. The project was at 21% complete with an 11 km pipeline laid. A total of KES 2,461,316,344.33 had been paid inclusive of VAT. This was about 35% of the contract sum. Challenges faced included: delayed payments due to inadequate budgetary allocations, lack of counterpart funds for land acquisition, lengthy land acquisition process, court injunctions on land matters, and escalation of steel prices.

50. **Ruiru II Dam** was identified through a feasibility study carried out in 2012 by the AWSB as a source of water for supply to Karuri and Kiambu towns. Tendering was done and an award made to lowest bidder (M/S Vinci Construction Grands Projects, Sogea Satom and Egis Eau Joint Venture at a cost of Euro 169,443,711). The project entailed construction of a dam (55m high with a storage capacity of 13M m^3), raw and treated water pipelines (45 km long), water treatment plant of capacity 40,000 m^3 /day and a storage tank with capacity of 10,000 m^3. The project would serve an additional 510,000 people in Karuri, Kiambu, Ruaka and parts of Nairobi. Commercial contract signed on 30th May, 2017, RAP update on priority areas completed and shared with the NLC, topographical surveys and geo-technical investigations had been undertaken. Challenges faced included: Delays in finalization of the financing agreement by the National Treasury.

51. **Karimenu II Dam** was identified through a feasibility study carried out in 2012 by the AWSB as a source of water for supply to Ruiru and Juja towns and parts of Nairobi. Tendering under the design and build framework was done and the award made to M/s AVIC International Holding Corporation (AVIC) and Shanghai Municipal Engineering Design Institute (SMEDI) joint venture at a cost of **USD 235,918,461.** Advance payment of 20% of the contact sum had been made amounting to **USD 47,183,692** against a bank guarantee. Projects components include a dam (59m high and 26.5 Million m^3 storage volume), water treatment plant of capacity 70,000M^3/day and 67km of raw and treated water pipeline, two terminal tanks in Ruiru and Juja. Project will serve 850,000 people in Juja, Ruiru and parts of Nairobi. Progress: Designs of the dam, water treatment plant and pipelines had been undertaken. RAP implementation for priority areas was being undertaken through the NLC, compensation process for 246 Project Affected Persons (PAPs) to acquire 171 acres was on going, 93 PAPs had been compensated at a cost of KES 393 Million, compensation for a batch of 41 PAPs at a cost of KES 176.2 Million was on going. The contactor was

undertaking mobilizing activities at the site. Challenges faced include land acquisition challenges due to conflicting valuation reports from NLC and AWSB and Inadequate funds for compensation.

4. **Kiambaa Water Supply Project** was identified through a feasibility study prepared by the Water Department in 1975. Procurement was ndertaken within a government to government loan framework between the Government of Kenya and the Kingdom of Belgium under the tied aid framework. Engineers estimate was of Euro 22,446,950 (about KES 2.5 Billion). The contractor from Belgium who had been identified to undertake the works was M/s ASPAC International. AWSB signed an MOU on 1st April, 2016 with M/s ASPAC International for the design and construction of the Kiambaa Water Supply Project in Kenya. M/s ASPAC International undertook detailed designs and changed the scope of works. It then submitted a revised estimate of Euro 74, 999,996 (about KES 8.249 Billion). However, after evaluation by AWSB, the works including the revised scope were worth Euro 30,632,759 (about 3.369 Billion). The contractor wrote to AWSB in September 2018 and rejected the AWSB proposal. Proposed project scope includes construction of 26m high earth embankment dam for impounding 2.5 M m^3 of water, water treatment plant of capacity 10,000m^3/day, 42 km of transmission and distribution network, 7 pumping stations and 7 reservoirs corresponding to 7,000m^3 storage.

52. The Committee made the following observations from the meeting, that:
    a) The AWSB ought to prioritize projects and execute them one after the other instead of starting off many projects and having most of them stalling due to inadequate budgetary provisions and other reasons.
    b) Land valuation and consequent compensation was a major challenge in implementation of water projects. This was due to conflicting valuation reports one commissioned by the AWSB and the other by NLC. There was therefore need to fast track the legislation on land value index to standardize the process of land valuation across the country.
    c) The government to government contacts aren't competitively executed leading to major losses for the government. For instance, the stalled tied aid contract between the Belgian and Kenyan Governments on implementation of the Kiambaa Water Supply Project. There was therefore need to ensure competitive bidding in all water projects to ensure Kenyans get the value for money spent on such projects.
    d) Water service providers across the country were not remitting the revenue they collected to the National Treasury to pay for the loans taken to finance water projects. This in effected affected the loan repayments by the Government.

3.1.4 Meeting with the Ministry of Water, Sanitation and Irrigation on Thwake Dam

53. Eng. Sao Alima, the Acting Water Secretary in the Ministry of Water, Sanitation and Irrigation and Eng. David Kimingi, SMEC, Project Director appeared before the Committee on 2nd April, 2019 to brief it on 'Thwake Dam.
54. He stated that the Thwake Multipurpose Water Development Program commenced on 27th March, 2017 and its expected completion date was 27th November, 2022. The cost of the project was Ksh 36,971,346,445 Billion and the progress at the time was at 7.2%.
55. The program comprised of multi-purpose dam for water supply, hydro-power generation and irrigation development. It would also provide regulation of flows on River Athi downstream

of the dam for flood control and drought mitigation. The program would be implemented in the following four phases;

a) Phase 1: Construction of an 80.5m high multi-purpose dam (688 Million Cubic Metres storage capacity) and associated preliminary works needed to enable the other three phases. It also involved implementation of Environmental and Social Management Plan. The proposed dam site was located one kilometre downstream of the confluence of Athi and Thwake Rivers traversing Makueni and Kitui Counties in Lower Eastern Kenya.
b) Phase 2: Development of Water Supply, Sanitation & Waste Water Infrastructure to supply estimated 150,000 m3/day of treated water to approximately 1.3 million people drawn from the rural and urban areas (Wote, Kalawa, Kibwezi, Kyusani, Kwavonza among others) of Kitui and Makueni Counties and those in Konza Techno City and its environs.
c) Phase 3: Development of Irrigation Scheme to ultimately irrigate approximately 40,000 hectares of land.
d) Phase 4: Development of hydropower generating system with an installed capacity of approximately 20 MW.

56. Status of Implementation of the Program Components - Phase 1 of project had 2 key components; Acquisition of land for the dam project and construction of the dam.
    a) Acquisition of Land for The Dam Project - Approximately 9,158 acres of land was to be acquired for the dam project displacing approximately 1,792 persons. The National Land Commission (NLC) was acquiring the land for the Ministry of Water, Sanitation and Irrigation. National Land Commission had estimated total value of land and developments for compensation at KShs. 3,685,425,059.00. Only KShs. 2,844,648,868.00 (approx. 77%) had been remitted to NLC for compensation out of which 1606 PAPs had been fully compensated (approx. 90% of the PAPs). This left 186 PAPs who had not yet been fully compensated with total compensation value of Ksh. 676,312,296.00 for which the Ministry had received exchequer on 5th March, 2019) from National Treasury. The Ministry had remitted the funds to NLC to expedite payment to the PAPs.
    b) Construction of Thwake Dam Embankment and Associated Works - Contract for construction of Thwake Dam embankment and associated works was signed on 15th November, 2017 between the Ministry and China Gezhouba Group Company limited. The site was handed over to the contractor on 27th March, 2018 which also marked the commenced date of the contract.
    c) Physical progress of works was estimated at 10%. Ongoing works included; bush clearing, soil excavation, construction of temporary camps/ structures and access roads within the site and to the site.

57. The Committee made the following observations:

    a) The water sector was underfunded and relied heavily on donor support. Such donors-imposed conditions for support, some of which went against the best interest of the country.

b) Accessing land to implement water and sanitation projects was a major challenge and there was need to fast-track the passage of the legislation on Land Value Index.
c) There were many levels of experts that was too expensive to maintain i.e. the consultant (SMEC International), a panel of dam safety experts and the in-house expertise at the ministry overseeing the project. These levels of expertise were not only unnecessary but costly.
d) There was need to not only compensate the PAPs but also train them on financial management to ensure they made sustainable investments from the proceeds of compensation.
e) The contractor (China Gezhouba Group Limited) was awarded the contract for construction of the Thwake Dam despite having been blacklisted by the World Bank.

3.1.5 Meeting with the National Water Harvesting and Storage Authority on the Umaa Dam

58. Dr. Eng. Ali Hassan, General Manager, Construction at the National Water Harvesting and Storage Authority appeared before the Committee on 3rd April, 2019 and briefed it on the dams under the Authority.
59. He stated that Umaa Dam and Water Supply project commenced on 4th December, 2008 and was expected to be completed on 31st August, 2011. However, the project stalled on 21st January 2011 at 57% completion. The cost of the project was pegged at **Kshs. 1.137 Billion.** The project comprised of the construction of a 28m high Dam with a crest length of 300m and a storage capacity of 870,000 cubic meters' production for 8 months, treatment works of 2,500m^3/day, storage tank capacity of 3,000m^3 to serve people in Kitui Town and its environs.
60. The project was awarded to M/s Draft and Develop Engineers Limited on 4th December, 2008 at a contract sum of KShs. 824,457,120.49 with 24 months' implementation period. During project implementation, variations amounting to KShs. 312,240,265.68 (38% of contract sum) were awarded to the contractor by the supervising consultant due to changes in site conditions that resulted in justified increase of quantities under grouting works. This led to request for time extension of 9 months by the contractor of which he was granted conditional 11 weeks' extension.
61. The contractor disputed the award of conditional 11 weeks' extension of time that resulted to stoppage of works on 21st January 2011 having achieved 57% physical project completion. The matter was referred to Arbitral Tribunal that sanctioned the parties to negotiate and reach Amicable Settlement Agreement, which was to be deposited with the Tribunal for a consent award.
62. The dispute was resolved on 8th April, 2016 and parties agreed to disengage from the contractual obligations by paying Kshs. 536,464,310.56 as final settlements to the contractor. This amount was approved and factored in 2016/2017 financial year supplementary two estimates and was paid to the contractor on 13th June, 2017.

63. A summary of the outstanding and additional scope of works is as follows: -

S/N	Description of Works	Amount in Kshs.
1.	Completion of grouting works	100,000,000
2.	Construction of Dam embankment	800,000,000
3.	Concrete works for spillway channel	100,000,000
4.	Completion of intake tower and diversion channel	75,000,000
5.	Raw water main laying	2,000,000
6.	Completion of Treatment works structures	5,000,000
7.	Completion of building	5,000,000
8.	Installation of pumps and accessories	75,000,000
9.	Laying of 4km 250mm dia treated water rising main including valves and chambers	20,000,000
10.	Construction of 1,500m^3 RC tank at booster station.	25,000,000
11.	Extra land requirement compensation	50,000,000
	TOTAL	**1,257,000,000**

Source: National Water Harvesting and Storage Authority

64. The project status at the time was that M/S SMEC Kenya Limited was contracted to carry out design review, prepare tender documents and supervise the works at a contract price of KShs. 202,256,435.00. Total Budgetary Requirement to execute the project was Kshs. 1.46 Billion (Kshs 1.26B for works and KShs 0.2B for design review and supervision).

65. The Committee observed that:
    i. The contract sum was **KShs. 824,457,120.49** however, it was later varied to **Kshs. 1.1 Billion.** Despite these adjustments and payments made to the contractor, the project was never completed having stalled at 57%. This amounted to wastage of public funds.
    ii. The project had a consulting team yet it failed to be executed to completion calling into question the utility of consultancies.
    iii. For sustainability of the project, there was need to generate hydropower to be used in cases where supply of water requires pumping.
    iv. The National Water Harvesting and Storage Authority had huge pending bills due to the fact that regional water service boards took over the assets but not the liabilities attached to their jurisdictions.
    v. There was need for a policy on sharing of projects and mandate between the regional water service boards and the National Water Harvesting and Storage Authority.

3.1.7 Meeting with the Coast Water Works Development Agency and Kenya Climate Resilience Program

66. Eng. Simon Mwangi, Ministry of Water, Sanitation and Irrigation, appeared before the Committee on 7th April, 2019 and briefed it on the Mwache Dam. He stated that the Mwache dam was being constructed under the Kenya Water Security and Climate Resilience Program.

67. The project duration was 42 months at a cost of USD 140 Million. The contractor was Sino Hydro Corporation Limited (China) and the Project Engineering Consultant was Nippon Koei from Japan together with MIBP (Kenya) and AF (Switzerland).
68. On the project status, he noted that it had been awarded but yet to start due to land acquisition processes.
69. The dam capacity would be 84m high with a concrete volume of about 650,000 m^3 - reservoir to be created will supply water for both domestic and irrigation uses. A lower check dam of 29.5m high with a concrete volume of 80,000m^3 was also part of the scope of works.
70. On the Project affected Persons he noted that approximately 2,800 households (about 9,000 people) would be affected by the implementation of the project and that most of the affected persons (PAPs) belonged to the Duruma community who are recognized as being historically marginalized under the Kenyan Constitution and under the World Bank policies, it meets the requirements of the indigenous peoples' policy.
71. The Ministry of Water, Sanitation and Irrigation had deposited with the National Land Commission KES 650 Million for compensation of the PAPs. The funding was expected to be scaled up to 900 Million to meet the total requirement.

72. The Committee observed that:
    a) The project implementation was yet to commence at the proposed site.
    b) There were 3 check dams to be part of the main dam. This would take care of the water needs of the locals.
    c) Resettlement Action Plan -RAP- was being implemented and it was expected to be concluded by June, 2019.
    d) There was need to involve national government leadership originating from the area through the MPs since Mwache Dam was a national government project. Involvement of only the county leadership had led to favoritism as areas not affected by the project benefitted unfairly.

3.1.8 Meeting with the National Water Harvesting and Storage Authority

73. Eng. Sammy Mburu, the Acting Chief Executive Officer, National Water Harvesting and Storage Authority appeared before the Committee on 25th April, 2019 to brief it on the status Siyoi Muruny Dam.
74. He noted that the project consisted of a new water treatment works at Kabichbich with a capacity of 38,800 m^3 per day, 127 km of distribution system to Kapenguria Township and the surrounding town centres.The water supply component is financed by the Government to a tune of Kshs. 4.149 billion. The project was aimed at mitigating frequent incidence of water shortages, increase access to water, spur economic growth and create jobs to transform the lives of 350,000 residents of West Pokot County.
75. The project contract sum was Kshs. 4,149,828,304.73 and the value of the work done so far was Kshs. 2,814,939,951.42 translating to 67.83%, while the total payment done to date is Kshs. 2,542,476,508.72 representing 61.27%. The contractor is owed a total of Kshs. 314,779,473.92 for the interim payment No. 17 and 18.
76. The challenges facing the project included delayed payment which was likely to result into the suspension of works by the contractor, cost overrun due to interest on delayed payments at 3% above the CBK base lending rates, cost overrun due to contractual claim arising from idle plant and equipment, prolongation costs, idle staff, shortfalls in contractors head office

overheads and loss of profit for the contractor and damage to works that are partially complete.

3.1.8 Meeting with Lake Victoria North Water Works Development Agency Kakamega-Bungoma Bulk Water Supply

77. Eng. Boniface Mulama, Chief Executive Officer, Lake Victoria North Development Agency appeared before the Committee on 25th April, 2019 brief it on Kakamega-Bungoma Bulk Water Supply Project.
78. He stated that the objective of the Kakamega-Bungoma Bulk Water Supply Project was to provide potable and adequate water to Kakamega and Bungoma County and its environs and rehabilitation and augmentation of sewerage system in Kakamega. The source of water is Nzoia River near Webuye Waterfall. A treatment plant will be constructed directly opposite the existing Webuye Water Treatment Plant. He further stated that procurement process was carried out and a conditional award made to AVIC International Holding Corporation in Joint Venture with CHANGJIANG Survey Planning Design and Research Company. However, a letter Ref: MWI/PARAS/10/48 VOL. XI (91) dated January 30th 2019 advised the board to terminate the process, review the scope of the project and initiate a new procurement process. He cited the reasons for the terminations as:
    a) The bidder was given the conditional award based on an alternative bid offer he provided
    b) The scope of works as per the feasibility studies was not exhaustive hence risk of not achieving value for money.
    c) The Technical Proposal and Financial Proposal were sealed in the same envelop and opened at the same time during the bid opening. There is risk of the evaluation losing its objectivity.
79. After the conclusion of the termination of procurement process, the Board to re advertise through Expression of Interest (EOI)

80. Members observed that:
    i. The Lake Victoria North Water Services Board provided scanty information on the procurement intrigues related to the Kakamega-Bungoma Bulk Water Supply Project. There was need for detailed information on the same.
    ii. An award of a contract at KES 24 Billion was cancelled and the next award was pegged at KES 23.9 Billion. This constituted minimal change in the contract sum and the second award therefore wasn't justified.
    iii. A RAP consultant was then operating on site to ensure resettlement process was on course and done properly.

3.1.9 Meeting with the Lake Victoria South Water Works Development Agency Soin Koru

81. Eng. Petronillah Ogut, Chief Executive Officer, Lake Victoria South Development Agency appeared before the Committee on 25th April, 2019 to brief it on Soin Koru Dam. She stated that Soin Koru Dam is located 5 km on the upstream of Muhoroni Town across Nyando River. The main aim of the project is to control floods on the lower reaches of Nyando River.
82. The proposed dam capacity is 71,279 m^3 of potable water to a population of 1,707,740 persons located within Kisumu and Kericho Counties. It is also supposed to provide

irrigation water for 2,570 hectares of land as well as generate 2.5 MW hydropower.The areas of supply include: Kisumu County and parts of Kericho County.

83. The salient features of the dam include: 8,175 Km^2 water catchment area, 2,500 acres of land to be submerged, 1.35 km long dam crest and 10 m dam crest width.The project has also incorporated water supplies to the surrounding communities worth Kshs. 300 million as part of Corporate Social Responsibility.
84. The project has been phased into two lots which include: Dam and hydropower component and water supply component. The procurement process to acquire the contractors and supervising consultants has been initiated.
85. About 300 land owners are set to be affected by the project with approximately 2,500 acres of privately-owned land earmarked for compensation at an estimated cost of Kshs. 1,293,935,425. The valuation for land compensation process was started in 2016, however, some land owners disputed the valuation process and therefore no compensation has so far been done.
86. The project is yet to obtain the Environmental Impact Assessment Licence by NEMA as some stakeholders had filed a case in Kisumu High Court to stop it. The Court directed that the stakeholders' concerns be addressed through further consultations and involvement.

3.1.9 Tana Water Works Development Agency

87. Eng. Moses Naivasha, Chief Executive Officer, Tana Water Works Development Agency appeared before the Committee on 25th April, 2019 to brief it on the projects under the Agency.
88. He stated that Tana Water Works Development Agency covers six counties, namely: Murang'a, Nyeri, Meru, Tharaka Nithi, Embu and Kirinyaga with its Head office based in Nyeri County.
89. The Agency was implementing various projects in its jurisdiction which were at various stages of implementation as follows:
    a) Kamumu Dam in Embu County with a capacity of 22 million cubic metres was awaiting clearance of Commercial Contract and Due Diligence Report from the Office of the Attorney General. Communication for intention to award contract was sent to Willemen Groep NV, Belgium on 27th January, 2017 with a contract amount of Kshs. 19.8 billion, the financing agreement had not yet been signed.
    b) Maara Dam in Tharaka Nithi County with a capacity of 15 million cubic metres was awaiting clearance by the National Treasury to proceed with due diligence. The Communication for intention to award contract was sent to NMG Company Ltd and Mastermind Tobacco (K) Ltd on 27th January, 2017 with a contract amount of Kshs. 6.2 billion, the financing agreement had not yet been signed.
    c) Kithinu Dam in Meru County has a proposed capacity of 110 million cubic metres. The Agency had requested the Ministry of Water, Sanitation and Irrigation to seek concurrence to terminate the procurement process with Cooperative Muratori and Cementisti – CMC Di Ravenna of Italy with a contract amount of Kshs. 26.6 billion.
    d) Thambana Dam in Embu County with a proposed capacity of 27 million cubic metres was awaiting clearance by the National Treasury to proceed with procurement process. Communication for intention to award contract was sent to Willemen Groep NV, Belgium on 27th January, 2017 with a contract amount of Kshs. 19.1 billion, the financing agreement had not yet been signed.

e) Rupingazi Dam in Embu County with a capacity of 28 million cubic metres was awaiting clearance by the National Treasury to proceed with procurement process. Communication for intention to award contract was sent to Willemen Groep NV, Belgium on 27th January, 2017 with a contract amount of Kshs. 24 billion, the financing agreement had not yet been signed.
f) Thingithu Dam in Meru County with a capacity of 3.4 million cubic metres did not have a follow up by the Agency because of unrealistic bid by Sinohydro Corporation Ltd of Kshs. 22.3 billion. The financing agreement has not been signed.
g) Kianjuri Dam in Meru County with a capacity of 0.4 million cubic metres was a project funded by the government at a cost of Kshs. 72 million was at 80% complete.
h) Ura 4 Dam in Meru County with a capacity of 0.1 million cubic metres was funded by the Government at a cost of 60 million and was at 95% complete.
i) Thangatha Dam in Meru County with a capacity of 0.05 million cubic metres funded by the Government at a cost of 35 million and was at 98% complete.

3.1.11 Meeting with Cabinet Secretary for Water, Sanitation and Irrigation

90. The Committee sought for additional information from the Ministry of Water, Sanitation and Irrigation through its letter Ref: NA/DCS/ENR/2019(053) dated 2nd July, 2019. Among the information that the Committee sought for included:
    a) The implementation status of all the dams the Ministry was implementing;
    b) The status of Resettlement Action Plans (RAPs), Project Affected Persons (PAPs) and wayleave management on all dam projects that the Ministry was implementing;
    c) The financing models, the consultancy services and related costs to all the dams projects under the ministry; and
    d) The status of the GOK funded dams project, the challenges in the implementation of the projects and the consequences of the delayed exchequer funding for each project.
91. The Cabinet Secretary for Water and Sanitation appeared before the Committee on 25th July, 2019 and informed it that the Ministry directly or through its SAGAs had proposed to undertake 50 major dam projects to assure the country of water security by year 2030. However, 10 of the dams had been prioritized. The 10 were under implementation. Other projects were under procurement and planning.
92. On the current status of Resettlement Action Plans (RAPs), he stated that land acquisition was a complex and sensitive process. Some projects had delayed due to challenges related to land acquisition such as land succession and family disputes; lack of records, vacant National Land Commission at the time and very high land rates which result in the escalation in the project costs. There was also slow release of funds from the exchequer to implement RAPs. Delayed granting of easements from government agencies such as the Kenya Forest Service was delaying the projects too.
93. On the financing model, consultancy services and related costs for all the dam projects under the Ministry, he stated that the financing models adopted were as follows:
    a) Direct GOK development funds which depend on national priorities and many a time suffer slow exchequer releases.

b) Support by development partners through: Conditional grants mainly for consultancy services, Concessional loans mainly for construction works, Commercial loans mainly for the implementation of EPC+F, and Private capital (through PPPs).

94. The model adopted for particular dams was determined by considering affordability, availability of financing facility, procurement method applicable, estimated cost of the project based on feasibility study, national and strategic interests, the socio-economic impact expected. The parameters of the detailed design of a dam determine the cost of a dam project. In determining the most suitable dam, the experts mainly considered the cost per beneficiary against the cost per volume of embankment.
95. Consultancy services in the development and implementation of dams were for feasibility studies, construction, supervision and independent dam project reviews by panels of dam experts. The cost of such services was dependent on the terms of reference.
96. On the status of GOK funded dam projects, the challenges in their implementation, and the consequences of delayed exchequer funding, he stated that the Ministry and its SAGAs were implementing small and medium sized dams across the country funded directly by the GOK. These included:
    a) Chemsusu Dam – in Baringo County completed in 2012 at a cost of Kshs. 5 billion.
    b) Siyoi/Muruny Dam – in West Pokot which was ongoing at a cost of Kshs. 5 billion.
    c) Yamo Dam – In Samburu County which was ongoing at a cost of Kshs. 1.2 billion.
    d) Sagana Regeneration Project – In Muranga County which was ongoing at a cost of Kshs. 1.2 billion.
    e) Badasa Dam – In Marsabit County whose designs were being reviewed
    f) Umma Dam – In Kitui County whose designs were being reviewed

97. The challenges encountered with respect to the above projects included: land compensation challenges, insufficient funds, and delays in grant of easements. Such challenges led to delays in implementation, and escalation of costs.

98. The Committee observed that:
    a) There was need for implementing agencies to follow a logical sequence in project implementation. For instance, there was need to resettle PAPs before entering into contractual arrangements for construction of the dams.
    b) The insurance companies guaranteeing dam projects were mainly local companies and there could be vested interest in the guarantees.
    c) There were exorbitant costs related to consultancy services being rendered yet there were no clear efforts to utilize the expertise available internally within the Ministry and its agencies which would drastically cut costs.
    d) Kiserian Dam was a case study of a poorly done project as it is situated in a densely populated area and was suffering massive pollution through raw sewer among others. There was need to relook at it to avoid huge losses associated with its decommissioning.
    e) In Thwake Dam, local content provisions had been ignored and locals were sidelined as Chinese contractors were being given sub-contracts meant for locals. Equally, locals were not being employed even when they met set requirements.
    f) The financing model EPC+F had proven to be a conduit for engaging in underhand corrupt dealings in the dam projects being implemented using the model.

g) The Itare Dam implementation was in jeopardy as the main contractor, CMC Di Ravenna, had filed for bankruptcy in Italy. There was need for the Ministry to chart a viable way forward to save the project from permanently stalling.

3.2 Findings from the Inspection Visits

99. The Committee undertook inspection visits to various dams' projects across the country on various dates. These included; Itare Dam, Chemsusu Dam, Northern Collector Tunnel, Karimenu II Dam, Thwake Dam, Umaa Dam, and Mwache Dam.

3.2.1 Findings from the Visit to Itare Dam

100. The Committee conducted visit of the Itare Dam on 22nd March, 2019 and visited the following sites: Site workshop where repair and maintenance of equipment takes place; Asphalt Plant – this is where the preparation for asphalt concrete would take place; Rocks crushing site; Quarry -where rocks were being excavated for preparation for the rock filling of the dam; The dam site; Treatment plant; Tunnel; and Engineers camp.
101. The Committee made the following observations, that:
    a) There was a lot of mobilization that had taken place on site, equipment and materials were already on site. However, due to the stoppage of works, there were no activities going on at the time;
    b) A lot of excavation had taken place at the quarry from which about 700,000m³ of materials and overburden had been excavated. According to the design, the quarry was eventually going to serve as a reservoir to add water to the volumes of the dam;
    c) The 57-metre dam foundation had been laid. The excavation works were 90% complete except for the areas near the rivers. Its bottom was to be asphalt filled while the sides were to be rock filled. The grouting of the dam was also to be done.
    d) The dam spill way for channelling the overflow had been done. The foundation of the 60 metres tower had also been laid.
    e) The treatment plant was lying on 30 acres piece of land. The government had already compensated the land owners. The pipeline was to go through the forest with KFS having granted wayleave for the same. However, the project had been affected by the moratorium that had been imposed on forest logging in February, 2018. The earthworks were nearly complete and concrete works were about to start.
    f) At the bulk transfer tunnel site, the tunnel outlet portal and industrial area were nearly complete while the precast factory for tunnel precast segments was erected.
    g) The overall works completed were about 30% of the total. However, there was need to resume progress so as to avert huge losses of taxpayer's money.

3.2.2 Findings from the Visit to Chemsusu Dam

102. The Committee conducted inspection visit of the following sites of the Chemsusu Dam Project on 23rd March, 2019: Chemsusu Dam and Reservoir; Water Treatment Plant; Various Sites where laying of pipes was ongoing for the last mile connectivity for the Phase II of the project; and Water Tank Site.
103. The Committee observed the following during the inspection visit, that:
    a) Chemsusu Dam was completed in 2014. However, last mile connectivity had not fully been done and therefore the residents were not adequately served by the dam;

b) The residents living near the Chemsusu Dam were benefitting from the 6,000m³ that was being treated from the dam which was provided to them after petition the Rift Valley Water Service Board that they should benefit from the water which was being harvested in their locality. The original design had not incorporated the aspect of the local residents earlier on which led to the delay in project implementation due resistance by the locals agitating for their water supply component.
c) The phase II of the Chemsusu Dam Project require wayleave from the Kenya Forest Service and the Kenya National Highway Authority. There were however challenges that were being experienced from these agencies in securing the wayleaves for laying the pipes. There was therefore need for a concerted multi-agency engagement during project conceptualization to avert time loss in negotiating for the wayleaves.
d) 8 KM road had been cleared in the forest for pipeline connection. There were concerns that the Kenya Forest Service was levying annual charges to the Rift Valley Water Service Board yet there was a one-off payment that had been done to KFS.
e) There were still challenges being experienced for Resettlement Action Plan for the last mile connectivity. These were likely to delay the completion of the project.
f) The phase II of the Chemsusu Dam project for the last mile connectivity was progressing well at 50% completion.

3.1.6 Findings from the Visit to the Northern Water Collector Tunnel

104. The Committee visited the Northern Water Collector Tunnel on 28th March, 2019 and made the following observations:

a) The tunneling was about 65% complete (9.5 KM had been done out of the 12 KM envisaged). There was however need to Fasttrack the process to ensure timely delivery of the project
b) The Kigoro Water Treatment was ready for use but its use was being delayed by completion of the Northern Water Collector Tunnel Project which was meant to supply the additional water to Thika Dam meant to be treated at the plant.
c) The Northern Water Collector Tunnel Project was meant to collect only excess flood water during the rainy season hence no water would be collected during dry spells.
d) Water projects worth 2.7 Billion were ear marked to benefit residents of Muranga County. The National Treasury was however yet to approve the same so that the Athi Water Services Board would channel the resources.
e) Nairobi City Water and Sewerage Company wasn't remitting funds collected to repay loans used in putting up the Thika Dam and other supply pipelines. There was need to explore means of ensuring compliance.
f) The Kigoro Water Treatment plant was unique in the sense that it used UV treatment of the water. It had a capacity of 5800M³/ hour. However, it cost KES 4.5 Billion which was considered quite exorbitant.

3.2.4 Findings from the Visit to Karimenu II Dam

105. The Committee conducted an inspection visit to Karimenu II Dam on 28th March, 2019 and made the following observations:

a) No works had commenced at the project site 24 months after agreements were signed and an advance payment of **KES 4 Billion** made to the contractor (AVIC International).
b) The main challenge the project faced was implementation of the Resettlement Action Plan (RAP). This was complicated by discrepancies in land valuation between the Athi Water Services Board (valued the land at KES 517 Billion) and the National Land Commission (valued the land at KES 1.8 Billion). Ultimately a figure of 1.2 Billion was settled on.
c) A legislation on land value index was pending before parliament. There was need to fast track it in order to have consistency in land valuation across the country.
d) The Athi Water Services Board had not yet issued a commencement letter to the contractor since land acquisition was still a challenge. However, the Board had ensured there was a performance bond and an advance payment guarantee in the contract to protect its interests.
e) Locals had water for domestic use already and only required water for irrigation. Hence there was need to design the dam to have an irrigation water component.
f) The Athi Water Services Board had made partial land compensation and continued to engage stakeholders to acquire land in priority sites as the project progressed.

3.2.5 Findings from the Visit to Thwake Dam

106. The Committee conducted an inspection of the construction site of the Thwake Multipurpose dam on 2nd April, 2019 and observed that:

a) 136 PAPs had not been compensated. However, the process of compensation was being fast tracked with the National Land Commission having been provided with the requisite funds to effect the compensation.
b) The dam was meant to provide water for three purposes namely: hydropower generation, irrigation and domestic use.
c) The geotechnical analysis of the site had been done and validated by the panel of experts on dam safety.
d) The progress of works at the dam construction site was not up to speed. It was slow and seemingly uncoordinated and mainly was mobilization activities that were going on at the time.
e) Despite the huge financial outlay in terms of advance payment, the mobilization of equipment and human resources was very low.
f) There were constructed temporal prefabs for the contractor's camp. However, the contract terms were for permanent structures be put up for the engineer's office and a football pitch.

3.2.6 Findings from the Visit to Umaa Dam

107. The Committee conducted an inspection of the construction site at the Umaa dam on 3rd April, 2019. It inspected the following sections that were at various stages of completion: The treatment plant (the treatment unit, the coagulation unit and the sedimentation unit); The spillway; The embankment and the foundation area (grouting had been done); and The diversion culverts.

108. The Committee observed that:
   a) The compensation of land owners (PAPs) had been fully done and the therefore the land in question was under the hands of the National Water Harvesting and Storage Authority.
   b) The project commencement date was 4th December, 2008 and its expected completion date was 31st August, 2011. However, the project stalled on 21st January 2011 at about 57% physical project completion due to a contest over grouting works and extension of timelines.
   c) A consultant, (M/S SMEC Kenya Limited) was contracted in 2017 to carry out design review, prepare tender documents and supervise the works at a contract price of KShs. 202,256,435.00. however, the consultancy report was in abeyance due to lack of funds to move the process forward.

3.2.7 Findings from the Visit to Mwache Dam

109. The Committee conducted an inspection visit to the Mwache Dam on 7th April, 2019 and made the following observations, that:
   a) There was need to institute plans to ensure water supply to locals for both domestic use and irrigation. It was pointed out that the irrigation water supply planned for the locals as part of the project was only meant for demonstration purposes not sustainable irrigation water supply.
   b) The locals expressed fears that the problems witnessed during the compensation for those affected by construction of the SGR would be replicated in their case.
   c) The Mwache Dam Committee comprised of the locals (PAPs) ought to be recognized and their views taken on board in all decision making with respect to the project.
   d) There was need to guarantee employment for locals to a certain percentage to ensure they benefitted from the project adequately. Local leadership ought to be at the centre of addressing this concern.
   e) There was need to supply water to locals using small projects like water pans, and boreholes.
   f) There was need for transparency in resource utilization and involvement of local political leadership in implementation of projects in support of various schools and groups as part of CSR.

4.0 COMMITTEE'S OBSERVATIONS

110. The Committee, having taken evidence from the various stakeholders and having conducted inspection visits to various parts of the country, made the following observations that:

Itare Dam

111. The dam was being financed by Intensa San Paolo through Design, Build and Finance. It was awarded to CMC Di Ravenna (EPC-F) at a contract sum of KES 28,973,739,492 and was scheduled to commence on June, 2016 and to be completed by July, 2022.
112. The Rift Valley Water Works Development Agency advertised for competitive bidding in which it was looking for a contractor and with a proposal on financing. They received 5 bidders in which three were shortlisted. CMC DI Ravenna was among the shortlisted and it bid Kshs. 29 billion, Sino Hydro of China bid Kshs. 33 billion. The engineers cost estimate was however Kshs. 39.6 billion. After doing a financial evaluation, CMC DI Ravenna was awarded the contract based on its lowest bid. However, the bid by CMC DI Ravenna was very low compared to the engineer's estimate.
113. The certificate amounts for the works done by CMC DI Ravenna on Itare dam kept going down. The contractor raised certificate No. 2 amounting to Kshs. 2,007,398,109.35 billion and certificate No. 3 amounting to Kshs. 2,000,837,308.23 at the beginning of the contract. However, this reduced to Kshs. 252, 678,007.61 million for certificate No. 7. This trend should have been worrying to the RVWSB and the Consultants should have noted the declining amounts in the Certificates as indicators that CMC di Ravenna was experiencing some financial challenges. Ultimately, the Itare Dam implementation was in jeopardy as the main contractor, CMC Di Ravenna, had filed for bankruptcy in Italy.
114. There was noticeable and commendable mobilization for the project. The Rift Valley Water Works Development Agency reported that the project was at 30% completion at the time of the inspection visit. However, the project had stalled but the Ministry and the Rift Valley Water Works Development Agency were engaging financiers to sub contract to ensure project completion.

Chemsusu Dam

115. Chemsusu Dam Water Supply Project was fully funded by the GOK. Its commencement date was 1st June, 2016 and the expected completion date was 30th June, 2020. The cost of the project was Ksh 3.5billion, inclusive of supervision.
116. The dam was completed in the year 2014 but it took five years to have the last mile connectivity initiated. However, at the time of the inspection visit by the Committee, phase II of the Chemsusu Dam project for the last mile connectivity was progressing well.
117. The last mile connectivity for Chemsusu Dam Project required wayleave from the Kenya Forest Service and the Kenya National Highway Authority for laying of water pipes. There were however challenges in securing the wayleaves from the said agencies.
118. There were still challenges being experienced for Resettlement Action Plan for the last mile connectivity which were likely to delay the completion of the project.

Northern Collector Tunnel

119. The project was financed by the Government of Kenya and the World Bank and M/S China Ghezhouba Group Company Limited was awarded the contract at the contract price of Ksh 6,825,639,672.79 inclusive of VAT. The project commenced on 24th February, 2015 and was scheduled for completion by 24th December, 2019.
120. The Athi Water Works Development Agency reported that tunneling was about 65% complete (9.5 KM had been done out of the 12 KM envisaged). The Kigoro Water Treatment plant was ready for use but its use was being delayed by completion of the Northern Water Collector Tunnel Project which was meant to supply the additional water to Thika Dam meant to be treated at the plant. The treatment plant was unique in the sense that it was highly automated and UV treatment of the water was being used. The total cost of the plant was KES 4.5 Billion.

Karimenu II Dam

121. The project was being financed by China Exim Bank through Design, Build and Finance. Commercial Contract awarded to AVIC International Holding Corporation in JV with Shanghai Municipal Engineering Design Institute (Group) Company Ltd (EPC-F) at a contract sum of KES 23,591,846,100. The project was to commence on January, 2018 and completed by December, 2022.
122. No works had commenced at the project site 24 months after agreements were signed and an advance payment of **KES 4 Billion** made to the contractor. This was largely due to implementation of the Resettlement Action Plan (RAP) which was complicated by discrepancies in land valuation between the Athi Water Services Board (valued the land at KES 517 Million) and the National Land Commission (valued the land at KES 1.8 Billion). Ultimately a figure of 1.2 Billion was settled on.

The Thwake Multipurpose Dam

123. The Thwake Multipurpose Dam was meant to provide water for: hydropower generation, irrigation and domestic use. It was being financed by a loan from AfDB. Contract awarded under international competitive bidding to China Gezhouba Group Co. Ltd at a contract sum of KES 36,971,346,445. An advance payment of KES 7,394,269,287 had been made but only 7% of works had been done according to the Ministry of Water, Sanitation and Irrigation. During the inspection visit by the Committee, it was noted that the mobilization of equipment and human resources was not commensurate to the advance payment made leading to slow progress of works.
124. The dam project was being handled by international contractors and supervised by international consultants at the detriment of the local expertise. Additionally, the local content clauses appeared not to be adhered to in terms of obtaining materials and labour (both skilled and unskilled) from the locals as the contractors were engaging foreigners in jobs that could be handled by the locals.
125. China Gezhouba had been contracted to undertake the Thwake Dam project after being cleared by the Public Procurement Oversight Authority (PPOA) despite reservations by the then Principal Secretary.
126. The Thwake Dam is situated at the confluence of River Thwake and Athi River. However, the water from Athi River feeding into the dam was highly polluted.

127. There were allegations that the contractor had failed to comply with provisions relating to the preference and reservation in so far as there were no effort to cause technological transfer or create employment opportunities in accordance with Section 155(5)(b) of the Public Procurement and Assets Disposal Act, 2015 in the construction of Thwake Dam project.
128. Land compensation had been effected and the challenges associated with RAPs were not witnessed.

Umaa Dam

129. The project is fully financed by the Government of Kenya. The project contractor was Draft and Development Engineers Ltd while the supervising consultant is Kiri Consult Ltd. The project commencement date was 4th December, 2008 and its expected completion date was 31st August, 2011. However, the project stalled on 21st January 2011 at about 68% physical project completion according to the National Water Harvesting and Storage Authority. Its contract sum was Kshs. 824,457,120.49 with Kshs. 1,094,103,918.46 having been paid so far.
130. During project implementation, variations amounting to KShs. 312,240,265.68 (38% of contract sum) were awarded to the contractor by the supervising consultant due to changes in site conditions that resulted in justified increase of quantities under grouting works. This led to request for time extension of 9 months by the contractor of which he was granted conditional 11 weeks' extension. The contractor disputed the award of conditional 11 weeks' extension of time that resulted to stoppage of works on 21st January 2011 having achieved 57% physical project completion. The matter was referred to Arbitral Tribunal that sanctioned the parties to negotiate and reach Amicable Settlement Agreement, which was to be deposited with the Tribunal for a consent award. The dispute was resolved on 8th April, 2016 and parties agreed to disengage from the contractual obligations by paying Kshs. 536,464,310.56 as final settlements to the contractor. This amount was approved and paid to the contractor on 13th June, 2017.
131. A consultant, (M/S SMEC Kenya Limited) was contracted in 2017 to carry out design review, prepare tender documents and supervise the works at a contract price of KShs. 202,256,435.00. However, the consultancy report was in abeyance due to lack of funds to move the process forward.
132. The project had been allocated KES 500 Million in the 2019/2020 Financial Year to pay the consultant (M/S SMEC Kenya Limited) in order to have the report released for the project to move forward.

Mwache Dam

133. Mwache dam was being constructed under the Kenya Water Security and Climate Resilience Program. It was being funded by the World Bank. The project duration was 42 months at a cost of USD 140 Million. The contractor was Sino Hydro Corporation Limited (China) and the Project Engineering Consultant was Nippon Koei from Japan together with MIBP (Kenya) and AF (Switzerland).
134. The project had been awarded but was yet to start due to land acquisition processes at the time of the visit by the Committee.
135. There was failure to provide a transparent process that included effective participation at the planning phase of the project. This had prevented affected people from playing an active role to support the project leading to negative impacts and alienation of affected communities.

Badasa Dam Water Project

136. The objective of the Badasa Dam was to augment the Bakuli Water supply supplying to Marsabit Town and its environs. It was started in June, 2009 and was fully supported by the Government of Kenya. The project Contractor was Midroc Drilling Company Ltd and the Supervising Consultant was Runji & Partners Consulting. The project was expected to run for 30 months with the expected completion date being November, 2011. The project had stalled at physical progress of 57% according to National Water Harvesting and Storage Authority.
137. The project contract sum was Kshs. 2,389,846,058.83. However, the contract was revised to Kshs. 3,324,894,603.45 with Kshs. 2,153,202,200.80 having been paid to date.
138. The project Contractor sought for an extension of time the completion of works in two phases. However, the employer granted an extension of six months for the phase one and conditional extension for phase two were liquidated damages were to be levied. The contractor however disputed the levying of liquidated damages and registered a dispute in court seeking redress.
139. The Court determined that the work was to continue and each party was to honour its contractual obligation. The contractor however failed to honour his part of the contract and went back to court. The parties after several court processes agreed to seek an amicable settlement in which they agreed to disengage from the performance. The agreement was shared with the Ministry of Water and Irrigation and subsequently with the Office of the Attorney General for his opinion. The Agreement was registered with the court after no objection from the Attorney General. A final exit certificate of Kshs. 194,219,651,.24 was settled and the site handed over to the National Water Conservation and Pipeline Corporation (NWCPC). At the time of discharge of the Contractor, 57% of the physical works had been done for the Badasa Dam.
140. The Authority had engaged a Consultant Ms. Tertiary Consulting Engineers Ltd to carry out design review, preparation of tender documents and supervision of construction works at a contract sum of Kshs. 178,287,800. However, lack of funds hampered the consultant form completing the works. There is an outstanding fee note of Kshs. 35,657,560 for the inception report.The project had been allocated KES 500 Million in the 2019/2020 Financial Year to jump start it.

Project Financing

141. The construction of various dams' projects was slow which was attributed to a number of factors that included: inadequate financial resources primarily counterpart funding, inefficient and costly financing models, and unsettled resettlement action plan issues. It was further observed that various dams' projects financial commitments had been done before the acquisition of the project land. This led to delays in the implementation of the project and huge costs in idle time and equipment.
142. It was noted that the procurement processes and construction of most of the dams were being carried out under the Engineering, Procurement, Construction and Financing scheme. In this financing model, the contractor is not only responsible for engineering, procuring and constructing the project, but also has to finance it. The contractor does all the preliminary works of the geo-technical investigations, interpretation, final designs and eventually the

actual construction of the dam. As a matter of fact, this model is more or less single-sourcing and therefore may be prone to abuse and value for money may not be efficiently realized.

143. Ministry of Water, Sanitation and Irrigation had constructed various dams such as Chemsusu Dam, Kiserian Dam and Maruba Dam through GOK funding. This indicated that with proper planning, siting, management and monitoring of project implemented through local funding could be more cost effective than through external borrowing. There is therefore need for the government to fund its projects from feasibility study, initial designs, land acquisition process and final designs until project implementation phase through exchequer funding.

144. The amounts paid as insurance for the construction of dams under the Engineer Procure Construct and Finance (EPCF) model is very expensive compared to other models of financing. In this financing model, the contractor is not only responsible to engineer, procure and construct the project, but also has to source for financing. This model is therefore prone to abuse and value for money may not be efficiently realized. In the case of Itare Dam, in as much as CMC DI Ravenna had the lowest bid, the insurance aspect was an extra cost over and above the contract amount, thereby negating the lowest bid offered by CMC DI Ravenna.
145. The government has various project financing models options, such as Direct funding, conditional grants, concessional loans, commercial loans and private capital. The commercial loans are seemingly expensive due to other hidden costs and tied-in conditionalities such as engaging contractors as directed by the financier (single sourcing) and incase of disputes, there were resolution challenges for instance in the case of Itare Dam. This was unlike cases where projects were 100% donor funded.
146. The Export Credit Agencies (ECAs) are increasingly financing large scale infrastructure projects in Kenya. ECAs provide loans, guarantees and insurance to overseas corporations and businesses for their activities to support and promote export trade from their respective countries. This was the case for SACE which offered insurance services for BNP Paribus Fortis and Intesa Sanpaolo who were the lenders to the Kenyan Government for the Itare dam construction.
147. Although the EPC+F model of project implementation may appear attractive to the procuring entities, there was need for an independent audit on all the projects that have been implemented through this model to assess the cost benefit analysis, completion rate of projects and viability of this model in future projects.
148. There is the non-remittance of water revenues by the county government to the relevant Water Works Authorities. The Water and Sewerage infrastructure are developed by the Water Works Authorities, formerly Water Services Boards (WSB) and transferred to the County governments for management and maintenance in line with the Water Act, 2016. The infrastructure is developed using loans obtained from development partners and such loans are repaid by the Water Works Authorities from revenues collected from water sales. In the recent years, County Governments have not been remitting these revenues to the WWAs as expected for loan repayment.
149. Although the Public Procurement and Assets Disposal Act, 2015 allowed other financial institutions such as insurance companies to secure Advance Payment Guarantees and Performance Bond Guarantees, there were risks of such guarantees lapsing should renewals not be made when they fall due.

Project Identification, Implementation and Management

150. Itare Dam Project had stalled as the project contractor CMC Di Ravenna had filed bankruptcy proceedings in Italy. Consequently, there was equipment that included bulldozers, excavators, trucks and other earth moving machines that are valued at billions of money, in addition to the asphalt concrete plant, the structural concrete batching plant, the concrete tunnel lining pre-casting plant, tunnel boring machine lying idle on the site. All this plant and equipment was part of what was purchased using the money advanced to the contractor by the Government of Kenya and in the event this equipment is left in disuse, this would be a direct loss of public funds.
151. The Ministry of Water, Sanitation and Irrigation together with the National Treasury was engaging the contractor to ensure that the project implementation is not affected by the bankruptcy proceedings. It was also observed that the contractor had performance bond and advance payment guarantees that were almost expiring. There was therefore need to review the contract to ensure that Itare Dam project implementation continues to completion.
152. Whereas substantial resources were committed to construction of mega dams across the country, there were no plans in place to ensure that last mile connectivity was achieved. A case to illustrate this problem is Chemsusu Dam which was completed in the year 2014 and it took five years to have the last mile connectivity initiated.
153. The government was not engaging locals through public participation at project conceptualization stages especially on matters regarding acquisition of land for project implementation. This had led to high costs in terms of compensation of PAPs.
154. The Kiserian Dam had been completed by the National Water Harvesting and Storage Authority with only the last mile connectivity phase remaining. However, the project siting was inappropriate as it was situated in a congested settlement leading to pollution through solid waste and siltation. The utility of these dam would not be realized, hence loss of public resources.
155. While many have benefited from the services large dams provide, their construction and operation have led to significant, negative social, environmental and human impacts. The effects include: directly displaced families, host communities where families are resettled, and riverine communities, especially those downstream of dams, whose livelihood and access to resources are affected in varying degrees by altered river flows and ecosystem fragmentation.
156. Lack of proper designs had led to mid-way variation of project implementation. This had resulted into huge project costs, litigation costs and project delays and stalling denying the residents the much-needed water services. A case in point is the stalled Badassa and Umaa Dams which were stopped at 57% and 68% completion respectively despite utilization of colossal amounts of money.
157. Most dam projects constructions have not met the expected completion schedules. Delays in the date at which a project is commissioned lead to increases in interest accumulated on funds borrowed for construction activities and to delays in revenues accruing to the country from the completed project.
158. There was lack of a clear policy and structure on initiation, management and implementation of large dam projects. This was as a result of several government entities and institutions underpinned by various policies and laws relevant to water that often

duplicate functions and are inconsistent with one another. This leads to confusion over roles and responsibilities. This is with the case of Arror and Kimwarer dam being implemented under the Regional Development Authorities instead of the Ministry of Water, Sanitation and Irrigation.

159. Many of the dams' projects were incurring huge amounts of money for consulting services yet the Ministry of Water, Sanitation and Irrigation had a huge pool of engineers who should be consulting for these projects saving the government colossal amounts incurred in paying for the consulting services.

Land/Resettlement Action Plans

160. Most dams' financial and contractual project commitments were signed before the acquisition of the much-needed land for their implementation. This in many cases led to compulsory acquisition of land which is costly to the government due to costs of resettling PAPs. A case in point was the Karimenu II Dam where the feasibility study was done in 2012 and its contract signed in 2017 for the Kshs. 24 Billion worth of project. The Government then paid the contractor Kshs. 4 billion as advance payments but 24 months down the line, there were no works on the site due to land issues.

161. Implementation of the Resettlement Action Plan (RAP) was complicated by discrepancies in land valuation between the Athi Water Services Board (valued the land at KES 517 Million) and the National Land Commission (valued the land at KES 1.8 Billion). Ultimately a figure of 1.2 Billion was settled on. These, however, caused unreasonable delays in commencement of the project since the Government had signed contracts before acquiring the land on which the project was to be implemented leading to project implementation delays, idle time for the contractor and land price escalation.

Project Wayleave

162. Most dam projects require wayleave for last mile connectivity of water. However, there were challenges in securing such wayleaves from government agencies. A case in point was the Chemsusu Dam Project which required wayleave from the Kenya Forest Service and the Kenya National Highway Authority for laying of water pipes.

5.0 COMMITTEE'S RECOMMENDATIONS

163. The Committee made the following recommendations, that:

Itare Dam

164. The Ministry of Water, Sanitation and Irrigation through the Rift Valley Water Works Development Agency should:
    a) urgently engage the contractor, CMC Di Ravenna, on available options especially securing able sub-contractor(s) to complete the works since as the main contractor, CMC Di Ravenna was facing financial challenges. This would save the project from permanently stalling.
    b) ensure that proper back ground checks on contractors is done before award of contracts. Further, upon engagement of the contractor, the project consultants should engage in continuous due diligence checks to ensure that the financial and technical capacity of the contractor was intact in the course of the project life.
    c) Renegotiate the loan terms, in conjunction with the National Treasury, to allow for a sub-contractor(s) in order to ensure project completion.
    d) ensure that there was negotiated an extension of the advance payment and performance bond guarantees to avoid a situation where the government would lose money.

Chemsusu Dam

165. The Ministry of Water, Sanitation and Irrigation through the Rift Valley Water Works Development Agency should:
    a) Fast-track the completion of phase II of the Chemsusu Dam project for the last mile connectivity. This would ensure the dam water was utilized for its intended purposes.
    b) urgently engage in discussions on acquisition of wayleave from the Kenya National Highway Authority for laying of water pipes intended for last mile connectivity.
    c) engage relevant stakeholders on conclusively addressing resettlement of PAPs to ensure smooth implementation of last mile connectivity to avoid further delays in the completion of the project.

Northern Collector Tunnel

166. The Office of the Auditor General should conduct a special audit of the Kigoro Water Treatment Plant that cost KES 4.5 Billion to establish if indeed the country realized value for the money. The auditor general should then report to the National Assembly **within 6 months** from the date of adoption of this report.

Karimenu II Dam

167. The Auditor General should institute a performance/special audit to:

a) investigate the circumstances under which agreements were signed between the Athi Water Works Development Agency and the contractor (AVIC International) and advance payments made before acquisition of the requisite land for implementation of the Karimenu II Dam leading to loss of public funds through idle time. If any culpability is found, the perpetrators should be prosecuted forthwith.

b) investigate discrepancies in land valuation between the Athi Water Works Development Agency (valued the land at KES 517 Million) and the National Land Commission (valued the land at KES 1.8 Billion). If any culpability is found, the perpetrators should be prosecuted forthwith.

The Thwake Dam

168. The Ministry of Water, Sanitation and Irrigation should:
    a) urgently and aggressively, in conjunction with relevant stakeholders, address the pollution menace at Athi River which is feeding into the dam.
    b) closely monitor the performance of the contractor on site and invoke relevant clauses in the contractual agreements to ensure the speed of the works is up scaled.

Umaa Dam

169. The National Water Harvesting and Storage Authority should:
    a) lobby for funding through its parent ministry to complete the Umaa dam project.
    b) monitor the project implementation at the dam with respect to technical, financial and economic performance considering the huge financial outlays involved.
170. The Ministry of Water, Sanitation and Irrigation should investigate its officials that may have been involved in the stalling of the dam project and take disciplinary actions, if culpability is established.
171. The National Treasury should ensure adequate funding of the project in order to assure its completion on schedule.

Mwache Dam

172. The Ministry of Water, Sanitation and Irrigation should:
    a) actively engage the community in the vicinity of the dam construction site to ensure their concerns in in terms of RAP, water for their domestic and irrigation use are addressed.
    b) ensure no advance payments are made before RAP issues are conclusively addressed.

Project Financing

173. The National Treasury and the line Ministries should forthwith stop implementing any new projects through the EPC+F model of financing due to high costs associated with this model. They should ensure that financing models considered for projects implementation are efficient, cost effective and give value for money to Kenyans. The bilateral loans benefit outweighs the commercial loans procured through the EPC+F model whose costs are bound to be exorbitant due to hidden costs.
174. The Ministry of Water, Sanitation and Irrigation should develop a collaborative framework between the National and County Governments to ensure sustainable water resource and

sanitation management. This will go a long way in ensuring that the County Governments remit resources collected by the water and sewerage companies to the National Government for loan repayments.

175. The Office of the Auditor General should within six (6) months upon the adoption of this report, undertake a performance audit of all the dam projects that have been implemented through the EPC+F model to assess the cost benefit analysis, completion rate of projects and viability of this model in future projects with a view to establishing whether there is value for money for expenditure of public resources incurred under the model.

176. The National Treasury should encourage the line ministries to implement projects with proper management and monitoring to the last phase utilizing local resources as was the case for Chemsusu and Kiserian Dams. Further, the National Treasury should ensure there is adequate funding for such locally funded projects to avoid stalling.

Project Identification, Implementation and Management

177. The Ministry of Water, Sanitation and Irrigation through its implementing agencies should ensure better monitoring of dams technical, financial and economic performance considering the huge financial outlays involved. This will enhance project implementation with minimal delays and idle time.

178. The National Government through the Ministry of Water, Sanitation and Irrigation should develop a collaborative framework between the national and county governments to ensure sustainable water resource and sanitation management. This will go a long way in ensuring that the county governments remit resources collected by the water and sewerage companies to the National Government for loan repayments. The National Treasury should come up with mechanisms for ring fencing money for water supply and sewerage works to ensure that the dams provide value for money.

179. The Ministry of Water Sanitation and Irrigation should create a Directorate of Dam Engineering which should spearhead all the Dam Projects from conceptualization, through geo-technical works to Design and Supervision. This directorate should bring together all the dam experts from within the country and any external engineers should have the directorate as their entry point. The directorate give authority for the actual siting of any dam in Kenya after doing due technical diligence on the actual ground conditions. This would avoid a situation similar to that of Umaa and Badassa dams where the initial estimated cost of the projects was almost doubled by grouting exercise which had not been envisaged during the design time.

180. The Ministry of Water, Sanitation and Irrigation MUST forthwith stop any process of procurement for all the Dam Projects that are at the planning and procurement stages and do a complete review of the technical and financial aspects of the projects, to ascertain whether the country is getting value for money.

181. The Government through its Ministries should encourage an inter-ministerial approach at the project design stage to ensure that the relevant ministries are made aware of wayleaves

requirements before project implementation to avoid delays as a result of lengthy period taken before wayleave is granted. This is in reference to the balancing act for the Ministry of Water and KFS between conserving the forest and providing water for the growing populations.

182. The Ministry of Water, Sanitation and Irrigation should engage its technical experts to consult for the numerous dams' projects being implemented across the country to reduce the project costs incurred by the consultancy firms.
183. The Ministry Water, Sanitation and Irrigation together with the National Treasury should urgently put in place, measures to have the works for the construction of the Itare Dam are subcontracted or assigned to another contractor so as forestall the huge loss that may be incurred if the plant and equipment that is currently on site remains unused for a long time. Otherwise, they should terminate the contract before the expiry of the performance bond guarantee.
184. The Ministry of Water, Sanitation and Irrigation through its implementing agencies should ensure that proper background check on contractors is done before being awarded contracts. Further, upon engagement of the contractor, the consultant should do a continuous due diligence to ensure that the financial and capacity of the contractor has not shifted in the course of the project life.
185. The National Government should consolidate all the projects on water and its resources under the Ministry of Water, Sanitation and Irrigation for ease of implementation, monitoring, evaluation and financing. The scattering of water projects in various ministries may not be effective as the technical expertise for such projects was in the Ministry of Water, Sanitation and Irrigation.
186. The Ministry of Water, Sanitation and Irrigation should ensure that National Water Harvesting and Storage Authority undertakes all major dam projects while the regional Water Works Development Agencies should be restricted to undertaking last mile connectivity once such dam projects are concluded. This should be well documented at the planning phase to avoid any lapses in project implementation.
187. The National Government should actively engage locals through public participation at the project identification/conceptualization stage. This was likely to eliminate or reduce challenges and costs associated with land compensation.
188. The Ministry of Water, Sanitation and Irrigation should engage its technical experts to consult for the numerous dams' projects being implemented across the country to reduce the project costs incurred by the consultancy firms.
189. The National Treasury, together with the project implementing ministries and agencies should ensure that matters relating to preference and reservation issues are provided for comprehensively in the contractual agreements with the contractors to ensure that there is technology transfer and creation of employment opportunities as stipulated under Section 155 (5)(b) of the Public Procurement and Disposal Act (PPADA), 2015.
190. The National Treasury should initiate an amendment to the PPADA, 2015 to limit the issuance of Advance Payment and Performance Bond Guarantees to banks as opposed to the insurance companies.

Land/Resettlement Action Plans

191. The government should, as much as possible, first and foremost acquire land for construction of dams long before the project implementation and before making any financial commitments with donors/partners to avoid huge costs that accompany delays in the

implementation phase. Where a full acquisition of the whole land for a dam project is not possible for one reason or another, the committee recommends that at least the land for the construction of the dam wall MUST be available before any funding negotiations are initiated.

192. The National Land Commission should:
    a) fast track the implementation of the Land Value Index law which aims at standardizing the process of land valuation across the country. This would hasten RAP processes and avoid the arbitrary valuation of land intended for dam projects across the country.
    b) initiate the development of a legal and policy guideline that governs the process of resettlement to ensure protection of the rights of affected people and a benefit-sharing approach that requires the project design and planning process to consider compensation for property and other losses.
193. The Ministry of Water, Sanitation and Irrigation should ensure that procuring entities do not sign contractual obligations (commercial and financing agreements) on dam project implementation before securing land for priority area especially the embankment for the dam project.

Project Wayleave

194. The Ministry of Water, Sanitation and Irrigation should spearhead the establishment of a multi-agency team to handle matters regarding wayleaves in order to facilitate comprehensive inter-agency consultations to avoid unnecessary stalling of government projects.

ANNEXTURES

1. ADOPTION LIST
2. MINUTES
3. LIST OF DAMS

ANNEX 1

DC-ENR: DEPARTMENTAL COMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES

REPORT ON THE INQUIRY INTO THE STATUS OF DAMS IN KENYA

ADOPTION LIST

	NAME	SIGNATURE
1.	**The Hon. Kareke Mbiuki, M.P. - Chairperson**	
2.	**The Hon. Sophia Abdi Noor, M.P. – Vice Chairperson**	
3.	The Hon. David Kangogo Bowen, M.P.	
4.	The Hon. Benjamin Jomo Washiali, M.P.	
5.	The Hon. Francis Chachu Ganya, M.P.	
6.	The Hon. Beatrice Cherono Kones, M.P.	
7.	The Hon. Benjamin Dalu Tayari, MP.	
8.	The Hon. Amin Deddy Mohamed Ali, M.P.	
9.	The Hon. Charity Kathambi Chepkwony, M.P	
10.	The Hon. Charles Ong'ondo Were, M.P.	
11.	The Hon. Hassan Oda Hulufo, M.P.	
12.	The Hon. Hilary Kiplang'at Kosgei, M.P.	
13.	The Hon. Ali Wario Guyo, M.P.	
14.	The Hon. Nasri Sahal Ibrahim, M.P.	
15.	The Hon. Peter Kimari Kihara, M.P	
16.	The Hon. (Eng.) Paul Musyimi Nzengu, M.P.	
17.	The Hon. Rehema Hassan, M.P.	
18.	The Hon. Rozaah Buyu. M.P.	
19.	The Hon. Said Hiribae, M.P.	

ANNEX 2

MINUTES OF THE 67TH SITTING OF THE DEPARTMENTAL COMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES HELD ON WEDNESDAY 21ST AUGUST, 2019 AT THE PRIDEINN HOTEL, MOMBASA AT 2:30 PM.

PRESENT

1. **The Hon. Kareke Mbiuki, M.P. Chairperson**
2. The Hon. Benjamin Jomo Washiali, M.P., CBS
3. The Hon. Beatrice Cherono Kones, M.P.
4. The Hon. David Kangogo Bowen, M.P.
5. The Hon. Hilary Kiplang'at Kosgei, M.P.
6. The Hon. Nasri Sahal Ibrahim, M.P.
7. The Hon. Charles Ong'ondo Were, M.P.
8. The Hon. Ali Wario Guyo, M.P.
9. The Hon. (Eng.) Paul Musyimi Nzengu, M.P.
10. The Hon. Charity Kathambi Chepkwony, M.P
11. The Hon. Benjamin Dalu Tayari, M.P.
12. The Hon. Said Hiribae, M.P.

APOLOGIES

1. **The Hon. Sophia Abdi Noor, M.P. Vice Chairperson**
2. The Hon. Francis Chachu Ganya, M.P.
3. The Hon. Hassan Oda Hulufo, M.P
4. The Hon. Peter Kimari Kihara, M.P
5. The Hon. Rehema Hassan, M.P.
6. The Hon. Amin Deddy Mohamed Ali, M.P.
7. The Hon. Rozaah Buyu. M.P.

IN ATTENDANCE

THE NATIONAL ASSEMBLY

1. Mr. Dennis Mogare	-	Clerk Assistant II
2. Ms. Winnie Kulei	-	Research Officer III
3. Mr. Boniface Mugambi	-	Serjeant-At-Arms
4. Mr. Eugene Luteshi	-	Audio Recording Officer

AGENDA

i) Prayers
ii) Confirmation of Minutes
iii) Matters Arising
iv) **Consideration and Adoption of a draft Report on the Inquiry into the Status of Dams in Kenya.**

v) AOB
vi) Date of the next Sitting

MIN.NO. DC/ENR/336/2019: - PRELIMINARIES

The meeting was called to order at 2.58 p.m. after which prayers were said. The Chairperson then stated that the main agenda of the meeting was Consideration and Adoption of a draft Report on the Inquiry into the Status of Dams in Kenya.

The Members adopted the Agenda of the meeting.

MIN.NO.DC/ENR/337/2019: - CONFIRMATION OF MINUTES

Confirmation of the minutes of the previous sitting was deferred to the next sitting.

MIN.NO. DC/ENR/338/2019: - CONSIDERATION AND ADOPTION OF A DRAFT REPORT ON THE INQUIRY INTO THE STATUS OF DAMS IN KENYA.

The draft Report on the Inquiry into the Status of Dams in Kenya was considered and adopted after being proposed and seconded by the Hon. (Eng.) Paul Musyimi Nzengu, M.P. and the Hon. Charles Ong'ondo Were, M.P. respectively.

It was adopted with the following recommendations:

Itare Dam

1. The Ministry of Water, Sanitation and Irrigation through the Rift Valley Water Works Development Agency should:
    a) urgently engage the contractor, CMC Di Ravenna, on available options especially securing able sub-contractor(s) to complete the works since as the main contractor, CMC Di Ravenna was facing financial challenges. This would save the project from permanently stalling.
    b) ensure that proper back ground checks on contractors is done before award of contracts. Further, upon engagement of the contractor, the project consultants should engage in continuous due diligence checks to ensure that the financial and technical capacity of the contractor was intact in the course of the project life.
    c) Renegotiate the loan terms, in conjunction with the National Treasury, to allow for a sub-contractor(s) in order to ensure project completion.

d) ensure that there was negotiated an extension of the advance payment and performance bond guarantees to avoid a situation where the government would lose money.

Chemsusu Dam

2. The Ministry of Water, Sanitation and Irrigation through the Rift Valley Water Works Development Agency should:
    a) Fast-track the completion of phase II of the Chemsusu Dam project for the last mile connectivity. This would ensure the dam water was utilized for its intended purposes.
    b) urgently engage in discussions on acquisition of wayleave from the Kenya National Highway Authority for laying of water pipes intended for last mile connectivity.
    c) engage relevant stakeholders on conclusively addressing resettlement of PAPs to ensure smooth implementation of last mile connectivity to avoid further delays in the completion of the project.

Northern Collector Tunnel

3. The Office of the Auditor General should conduct a special audit of the Kigoro Water Treatment Plant that cost KES 4.5 Billion to establish if indeed the country realized value for the money. The auditor general should then report to the National Assembly **within 6 months** from the date of adoption of this report.

Karimenu II Dam

4. The Auditor General should institute a performance/special audit to:
    a) investigate the circumstances under which agreements were signed between the Athi Water Works Development Agency and the contractor (AVIC International) and advance payments made before acquisition of the requisite land for implementation of the Karimenu II Dam leading to loss of public funds through idle time. If any culpability is found, the perpetrators should be prosecuted forthwith.

    b) investigate discrepancies in land valuation between the Athi Water Works Development Agency (valued the land at KES 517 Million) and the National Land Commission (valued the land at KES 1.8 Billion). If any culpability is found, the perpetrators should be prosecuted forthwith.

The Thwake Dam

5. The Ministry of Water, Sanitation and Irrigation should:
    a) urgently and aggressively, in conjunction with relevant stakeholders, address the pollution menace at Athi River which is feeding into the dam.
    b) closely monitor the performance of the contractor on site and invoke relevant clauses in the contractual agreements to ensure the speed of the works is up scaled.

Umaa Dam

6. The National Water Harvesting and Storage Authority should:
    a) lobby for funding through its parent ministry to complete the Umaa dam project.

b) monitor the project implementation at the dam with respect to technical, financial and economic performance considering the huge financial outlays involved.

7. The Ministry of Water, Sanitation and Irrigation should investigate its officials that may have been involved in the stalling of the dam project and take disciplinary actions, if culpability is established.
8. The National Treasury should ensure adequate funding of the project in order to assure its completion on schedule.

Mwache Dam

9. The Ministry of Water, Sanitation and Irrigation should:
    a) actively engage the community in the vicinity of the dam construction site to ensure their concerns in in terms of RAP, water for their domestic and irrigation use are addressed.
    b) ensure no advance payments are made before RAP issues are conclusively addressed.

Project Financing

10. The National Treasury and the line Ministries should forthwith stop implementing any new projects through the EPC+F model of financing due to high costs associated with this model. They should ensure that financing models considered for projects implementation are efficient, cost effective and give value for money to Kenyans. The bilateral loans benefit outweighs the commercial loans procured through the EPC+F model whose costs are bound to be exorbitant due to hidden costs.
11. The Ministry of Water, Sanitation and Irrigation should develop a collaborative framework between the National and County Governments to ensure sustainable water resource and sanitation management. This will go a long way in ensuring that the County Governments remit resources collected by the water and sewerage companies to the National Government for loan repayments.

12. The Office of the Auditor General should within six (6) months upon the adoption of this report, undertake a performance audit of all the dam projects that have been implemented through the EPC+F model to assess the cost benefit analysis, completion rate of projects and viability of this model in future projects with a view to establishing whether there is value for money for expenditure of public resources incurred under the model.

13. The National Treasury should encourage the line ministries to implement projects with proper management and monitoring to the last phase utilizing local resources as was the case for Chemsusu and Kiserian Dams. Further, the National Treasury should ensure there is adequate funding for such locally funded projects to avoid stalling.

Project Identification, Implementation and Management

14. The Ministry of Water, Sanitation and Irrigation through its implementing agencies should ensure better monitoring of dams technical, financial and economic performance considering the huge financial outlays involved. This will enhance project implementation with minimal delays and idle time.

15. The National Government through the Ministry of Water, Sanitation and Irrigation should develop a collaborative framework between the national and county governments to ensure sustainable water resource and sanitation management. This will go a long way in ensuring that the county governments remit resources collected by the water and sewerage companies to the National Government for loan repayments. The National Treasury should come up with mechanisms for ring fencing money for water supply and sewerage works to ensure that the dams provide value for money.

16. The Ministry of Water Sanitation and Irrigation should create a Directorate of Dam Engineering which should spearhead all the Dam Projects from conceptualization, through geo-technical works to Design and Supervision. This directorate should bring together all the dam experts from within the country and any external engineers should have the directorate as their entry point. The directorate give authority for the actual siting of any dam in Kenya after doing due technical diligence on the actual ground conditions. This would avoid a situation similar to that of Umaa and Badassa dams where the initial estimated cost of the projects was almost doubled by grouting exercise which had not been envisaged during the design time.

17. The Ministry of Water, Sanitation and Irrigation MUST forthwith stop any process of procurement for all the Dam Projects that are at the planning and procurement stages and do a complete review of the technical and financial aspects of the projects, to ascertain whether the country is getting value for money.
18. The Government through its Ministries should encourage an inter-ministerial approach at the project design stage to ensure that the relevant ministries are made aware of wayleaves requirements before project implementation to avoid delays as a result of lengthy period taken before wayleave is granted. This is in reference to the balancing act for the Ministry of Water and KFS between conserving the forest and providing water for the growing populations.
19. The Ministry of Water, Sanitation and Irrigation should engage its technical experts to consult for the numerous dams' projects being implemented across the country to reduce the project costs incurred by the consultancy firms.
20. The Ministry Water, Sanitation and Irrigation together with the National Treasury should urgently put in place, measures to have the works for the construction of the Itare Dam are subcontracted or assigned to another contractor so as forestall the huge loss that may be incurred if the plant and equipment that is currently on site remains unused for a long time. Otherwise, they should terminate the contract before the expiry of the performance bond guarantee.
21. The Ministry of Water, Sanitation and Irrigation through its implementing agencies should ensure that proper background check on contractors is done before being awarded contracts. Further, upon engagement of the contractor, the consultant should do a continuous due diligence to ensure that the financial and capacity of the contractor has not shifted in the course of the project life.
22. The National Government should consolidate all the projects on water and its resources under the Ministry of Water, Sanitation and Irrigation for ease of implementation, monitoring, evaluation and financing. The scattering of water projects in various ministries may not be

effective as the technical expertise for such projects was in the Ministry of Water, Sanitation and Irrigation.

23. The Ministry of Water, Sanitation and Irrigation should ensure that National Water Harvesting and Storage Authority undertakes all major dam projects while the regional Water Works Development Agencies should be restricted to undertaking last mile connectivity once such dam projects are concluded. This should be well documented at the planning phase to avoid any lapses in project implementation.
24. The National Government should actively engage locals through public participation at the project identification/conceptualization stage. This was likely to eliminate or reduce challenges and costs associated with land compensation.
25. The Ministry of Water, Sanitation and Irrigation should engage its technical experts to consult for the numerous dams' projects being implemented across the country to reduce the project costs incurred by the consultancy firms.
26. The National Treasury, together with the project implementing ministries and agencies should ensure that matters relating to preference and reservation issues are provided for comprehensively in the contractual agreements with the contractors to ensure that there is technology transfer and creation of employment opportunities as stipulated under Section 155 (5)(b) of the Public Procurement and Disposal Act (PPADA), 2015.
27. The National Treasury should initiate an amendment to the PPADA, 2015 to limit the issuance of Advance Payment and Performance Bond Guarantees to banks as opposed to the insurance companies.

Land/Resettlement Action Plans

28. The government should, as much as possible, first and foremost acquire land for construction of dams long before the project implementation and before making any financial commitments with donors/partners to avoid huge costs that accompany delays in the implementation phase. Where a full acquisition of the whole land for a dam project is not possible for one reason or another, the committee recommends that at least the land for the construction of the dam wall MUST be available before any funding negotiations are initiated.
29. The National Land Commission should:
    a) fast track the implementation of the Land Value Index law which aims at standardizing the process of land valuation across the country. This would hasten RAP processes and avoid the arbitrary valuation of land intended for dam projects across the country.
    b) initiate the development of a legal and policy guideline that governs the process of resettlement to ensure protection of the rights of affected people and a benefit-sharing approach that requires the project design and planning process to consider compensation for property and other losses.
30. The Ministry of Water, Sanitation and Irrigation should ensure that procuring entities do not sign contractual obligations (commercial and financing agreements) on dam project implementation before securing land for priority area especially the embankment for the dam project.

Project Wayleave

31. The Ministry of Water, Sanitation and Irrigation should spearhead the establishment of a multi-agency team to handle matters regarding wayleaves in order to facilitate

comprehensive inter-agency consultations to avoid unnecessary stalling of government projects.

MIN.NO. DC/ENR/339/2019: - ADJOURNMENT

There being no other business the meeting was adjourned at 5:45 pm.

SIGNED: .....
THE HON. KAREKE MBIUKI, M.P.
CHAIRPERSON,
DEPARTMENTAL COMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES

DATE: 15/10/2019

ANNEX 3

APPENDIX 1:
LIST OF LARGE DAM PROJECTS

	Name of Dam	County	Capacity (million m^3)	Approx. Cost (KSh million)	Contracting Authority	Project Status
1	Kamumu Dam	Embu	31	6,000	TWSB	(Request for Proposal) RFP Finalized awaiting Treasury clearance of financing proposal.
2	Rupingazi Dam	Embu	28	5,500	TWSB	RFP Finalized awaiting Treasury clearance of financing proposal
3	Thambana Dam	Embu	12	5,000	TWSB	RFP finalized awaiting clearance of financing proposal
4	Kithino Dam	Meru	103		TWSB	RFP finalized awaiting clearance of financing
5	Maara Dam	Tharaka-Nithi	27	4,136	TWSB	RFP Finalized awaiting treasury clearance of financing proposal, Forwarded to ADB for consideration

	Name of Dam	County	Capacity (million m^3)	Approx. Cost (KSh million)	Contracting Authority	Project Status
6	Thingithu Dam	Meru	3	600	TWSB	RFP Finalized awaiting Treasury clearance of financing proposal
7	Kahurura Dam	Laikipia	2	5,900	NWSB	RFP awaiting Treasury clearance
8	Pesi Dam	Nyandarua	16		NWHSA	feasibility study
9	Kinja Dam	Nyandarua	1.6	3,970	NWHSA	Feasibility
10	Wiyumiririe Dam	Laikipia	1.5	3,000	NWHSA	Feasibility
11	Karemeno Dam	Nyeri	12.3	8,000	AWSB	Preliminary Design
12	Londiani	Kericho	1	4,685	NWHSA	feasibility study
13	Maragua IV	Muranga			AWSB	Advertised for EOI by AWSB
14	Bute Dam	Wajir	21	15,000	NWSB	Due diligence of the Contractor has been done. Awaiting signing of commercial contract
15	Bosto Dam	Bomet	70	19,900	NWHSA	Treasury has cleared the RFP for financing by China Exim Bank
16	Gatei dam	Kiambu	16		AWSB	Advertisement for Expression of Interest (EOI) done
17	Maragua IV Dam	Muranga	33	7,000	AWSB	Advertised under EPC-F and is under procureemnt

	Name of Dam	County	Capacity (million m^3)	Approx. Cost (KSh million)	Contracting Authority	Project Status
18	Keben/Lessos Dam	Nandi	5.4	4,200	LVNWSB	Commercial contract signed seeking clearance from The National Treasury and Attorney General
19	Isiolo Dam/Crocodile Jaw	Laikipia	215	10,000	NWHSA	Under Planning Stage
20	Ndarugu II dam	Kiambu	11	33,000	TAWSB	Due diligence of the contractor conducted. Awaiting signing of Commercial Contract
21	Mwache Dam	Kwale	118	15,000	MoWS/kwscrp	Funded under World Bank. No objection to award has been given
22	Kiandongoro/Chania Dam	Nyeri	24	12,000	TWSB	Feasibility
23	Soin Koru	Kisumu/Kericho	93	24,000	NWHSA	Detailed design and RAP
24	Kabasi	Nakuru	6	2,000	RVWSB	Feasibility

Source: Ministry of Water, Sanitation and Irrigation

APPENDIX 2:

DAM PROJECTS UNDER ACTUAL CONSTRUCTION

	Name of Dam	Start date	completion date	Approx. Cost (KSh million)	20% Advance Payment (Ksh million)	Contracting Authority	Project Status
1	Itare Dam	Jun 2016	Jul 2022	28,973,739,492	4,346,060,924	RVWSB	Works at 30%. Facing contractual challenges. Alternatives being considered.
2	Karimenu II Dam	Jan 2018	Dec 2022	23,591,846,100	3,600,000,000	AWSB	Project commencement was delayed due to land compensation issues.
3	Ruiru II Dam/Water Supply	Jul 2017	Jan 2022	17,000,000,000	Not paid	AWSB	The advance payment had been guaranteed by Deutsche Bank, however payment had not been effected yet, pending NT approval.
	Name of Dam	**Start date**	**completion date**	**Approx. Cost (KSh million)**	**20% Advance**	**Contracting Authority**	**Project Status**

					Payment (Ksh million)		
4	Thwake Dam	Mar 2018	Nov 2022	36,971,346,445	7,394,269,287	MWS	Funded under AfDB. Works were at 7%
5	Siyoi/Murun y	Mar 2015	Dec 2020	5,000,000,000	413,000,000	NWHSA	Project Status 40%. Recovere d Ksh 72 million of the advance payment
6	Yamo Dam	6-Oct-2017	April 2019	1,200,000,000	214,000,000	NWSB	Commen cement of works was delayed due to Moratori um on logging. Issue had been resolved and works were at 7%
7	Sagana regeneration Project	'Jun 2019	'Jun 2021	1,200,000,000	215,000,00 0 under process	MWS	To regulate water resources on Sagana River

Source: Ministry of Water, Sanitation and Irrigation

APPENDIX 3:

FINANCING MODELS FOR DAMS UNDER ACTUAL CONSTRUCTION

	Name of Project	Financing
1	Itare Dam	Financed by Intensa San Paolo through Design, Build and Finance. It is awarded to CMC Di Ravenna (EPC-F)
2	Karimenu II Dam	Financed by China Exim Bank through Design, Build and Finance. Commercial Contract awarded to AVIC International Holding Corporation in JV with Shanghai Municipal Engineering Design Institute (Group) Company Ltd (EPC-F)
3	Ruiru II Dam/Water Supply	Financed by AFD through Design, Build and Finance. Commercial Contract awarded to VINCI Construction Grands Projects in joint venture with Sogea Satom and Egis EUA
4	Thwake Dam	Financed by a loan from AfDB. Contract awarded under international competitive bidding to China Gezhouba Group Co. Ltd
5	Siyoi/Muruny	Financed wholly by GOK. Contract awarded under international competitive bidding to China Jiangxi Co. (K) Ltd.
6	Yamo Dam	Financed wholly by GOK. Contract awarded under international competitive bidding to Hebei Water Conservancy & Hydropower(K) Co. Ltd
7	Sagana Regeneration Project	Financed wholly by GOK. Contract awarded under international competitive bidding to Baran International, Machine Center and Riang JV

Source: Ministry of Water, Sanitation and Irrigation