

Approved  
Boss  
11/04/2024

THE NATIONAL ASSEMBLY

THIRTEENTH PARLIAMENT - THIRD SESSION - 2024


PUBLIC PETITIONS COMMITTEE

---

REPORT ON-

PUBLIC PETITION NO. 11 of 2022 REGARDING POLLUTION OF RIVER ATHI BY HON. VINCENT MUSYOKA, MP, MEMBER FOR MWALA CONSTITUENCY

APRIL, 2024

 THE NATIONAL ASSEMBLY PAPERS LAID	
DATE: 14 APR 2024	DAY: Thursday
TABLED BY:	Hon. Janet Sitherei (Vice Chairperson Public Petitions Committee)
CLERK-AT THE-TABLE:	Shibuko

Clerk's Chambers  
Directorate Of Legislative & Procedural Services  
Parliament Buildings  
Nairobi



## TABLE OF CONTENTS

LIST OF ABBREVIATIONS AND ACRONYMS.....	4
CHAIRPERSON’S FORWARD .....	5
1 PART ONE: PREFACE .....	5
1.1 ESTABLISHMENT AND MANDATE OF THE COMMITTEE .....	6
1.2 COMMITTEE MEMBERSHIP.....	7
1.3 COMMITTEE SECRETARIAT.....	8
2 PART TWO: PUBLIC PETITION NO. 11 OF 2022 REGARDING POLLUTION OF RIVER ATHI ....	9
2.1 INTRODUCTION .....	9
2.2 PETITIONERS’ PRAYERS.....	9
3 PART THREE: STAKEHOLDERS’ SUBMISSIONS ON THE PETITION.....	11
3.1 SUBMISSION BY PETITIONERS.....	11
3.1.1 Background of the Pollution .....	11
3.1.2 Systematic Identification of Polluters.....	11
3.1.3 Presence of Heavy Metals and Chemicals .....	12
3.1.4 The Effects of the Pollution .....	12
3.2 SUBMISSIONS BY WATER RESOURCE AUTHORITY .....	13
3.3 SUBMISSIONS BY TANA AND ATHI RIVERS DEVELOPMENT AUTHORITY.....	15
3.3.1 Background .....	16
3.3.2 Causes of Pollution .....	16
3.3.3 Impacts of Pollution.....	16
3.3.4 Efforts by TARDA .....	16
3.4 SUBMISSIONS BY THE COUNTY GOVERNMENT OF MACHAKOS.....	17
3.4.1 Background .....	17
3.4.2 Role of Interagency Technical Committee .....	18
3.4.3 Pollution Sources and Industrial Development.....	18
3.4.4 Interventions by the County Government of Machakos.....	18
3.4.5 Challenges .....	19
3.4.6 Conclusion .....	20
3.5 SUBMISSION BY MINISTRY OF ENVIRONMENT, CLIMATE CHANGE AND FORESTRY AND NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY .....	20
3.5.1 Importance of River Ecosystems in Kenya.....	20
3.5.2 Legislative Framework .....	21
3.5.3 Interventions by the Ministry to Stem Pollution .....	21
3.5.4 Recommendations .....	23
3.6 SUBMISSION BY MINISTRY OF WATER, SANITATION AND IRRIGATION.....	23
3.7 SUBMISSIONS BY EXPORT PROCESSING ZONE AUTHORITY .....	26
3.8 SUBMISSIONS BY THE CABINET SECRETARY MINISTRY OF INTERIOR AND NATIONAL ADMINISTRATION.....	28
4 PART FOUR: SITE VISITS .....	30
4.1 RIVER ATHI UPSTREAM .....	30
4.1.1 Site 1: Stream in Mlolongo .....	30
4.1.2 Site 2: Effluent Treatment Plant in Mavoko area .....	31
4.1.3 Submissions by MAVWASCO .....	34
4.1.4 Site 3: Amalia Apartments in Syokimau .....	35
4.1.5 Site 4: Athi River EPZA, Apex Steel Rolling Mill.....	37



4.2	RIVER ATHI, KIBAUNI / IKALAASA WARD IN MWALA (DOWNSTREAM) .....	38
5	PART FIVE: ISSUES FOR DETERMINATION AS PER THE PRAYERS IN THE PETITION.....	40
6	PART SIX: COMMITTEE OBSERVATIONS .....	45
7	PART SEVEN: COMMITTEE RECOMMENDATIONS .....	47



## LIST OF FIGURES

Figure 1. A River Athi tributary next to Signature Mall in Mlolongo .....	30
Figure 2. An Effluent Treatment Plant by MAVWASCO in Valley View Estate, Syokimau .....	31
Figure 3. A dysfunctional ETP with open lids managed by MAVWASCO in Mavoko area	32
Figure 4. A modern ETP at Amalia Apartments in Syokimau .....	35
Figure 5. Members of the Public Petitions Committee accompanied by NEMA and MAVWASCO officials inspecting an ETP at Amalia Apartment.....	36
Figure 6. A sewer line operated by MAVWASCO next to Apex Steel Company in Kitengela.....	37
Figure 7. Hon. Vincent Musyoka, MP. during the inspection of a water project in Kiukuuni Village, Mwala Constituency.....	38
Figure 8. Members of the Public Petitions Committee inspecting the dam project along River Athi, at Kiukuuni Village in Mwala Constituency.....	39





## LIST OF ABBREVIATIONS AND ACRONYMS

AWWDA	-	Athi Water Works Development Agency
CECM	-	County Executive Committee Member
CEPT	-	Common Effluent Treatment Plant
EIA	-	Environmental Impact Assessment
EMCA	-	Environmental Management and Coordination Act
EPZA	-	Export Processing Zone Authority
ETP	-	Effluent Treatment Plant
GESIP	-	Green Economy Strategy and Implementation Plan
IATC	-	Inter-Agency Technical Committee
KFS	-	Kenya Forest Service
MAVWASCO	-	Mavoko Water and Sewerage Company
MLD	-	Million Litres per Day
NEMA	-	National Environment Management Authority
NSWMS	-	National Solid Waste Management Strategy
URRP	-	Urban Rivers Restoration Programme
WASREB	-	Water Services Regulatory Board
WRA	-	Water Resources Authority
WRUA	-	Water Resources Users Association



## CHAIRPERSON'S FORWARD

On behalf of the Public Petitions Committee and pursuant to the provisions of Standing Order 227, it is my pleasant privilege and honour to present this House the Report of the Public Petitions Committee regarding Pollution of River Athi. The Petition was presented to the House pursuant to Standing Order No. 225 (2) (a) by the Hon. Vincent Kawayo, Member of Parliament Mwala Constituency.

The Petitioners pray that the Government Chemist and National Environment Management Authority (NEMA) ascertain the specific chemicals and heavy metals that have permeated the waters of River Athi and identify specific companies responsible for releasing such chemicals into the River. The Petitioners pray that a thorough clean-up of River Athi be secured through budgetary and related provisions, further pollution be stopped and a withdrawal of licenses of companies polluting River Athi and other water bodies be enforced. Further, the Petitioners pray for clear demarcation of riparian lands along the River by the relevant authorities and turning them into recreational areas.

The Committee considered the Petition in line with the provisions of the Constitution, relevant Acts of Parliament and Standing Orders and observed that the activities upstream of River Athi including effluent emissions into the tributaries and poor waste management threatened the water quality of the river.

From the engagement with various stakeholders and site visit to both the upstream and downstream of River Athi, the Committee notes with concern the lapse in management of pollution of River Athi causing hazardous impacts to the consumers of the water. Alongside other recommendations, the Committee recommends that NEMA conducts inspection of all companies/industries in the River Athi Basin and other affected areas and submits a report of the inspection detailing the non-compliant industries/companies to the relevant Committee of the House within six (6) months. Thereafter, NEMA to take remedial measures against non-compliant companies/industries including but not limited to revocation of their licenses.

The Committee is thankful to the Offices of the Speaker and the Clerk of the National Assembly for the logistical and technical support offered during the consideration of the Petition. The Committee also thanks the Hon. Vincent Kawayo, M.P. for bringing to the attention of the House such a grievous matter affecting not only River Athi but also other water bodies in the country. The Chairperson expresses gratitude to the Members of the Committee for their devotion and commitment to duty during the consideration of the Petition. On behalf of the Committee and pursuant to the provisions of Standing Order 199, I now wish to table the report before the House.



*For* **HON. NIMROD MBITHUKA MBAI, M.P.**  
**CHAIRPERSON, PUBLIC PETITIONS COMMITTEE**

Date: ..... *11-04-2024* .....



## PART ONE

### 1 PREFACE

#### 1.1 ESTABLISHMENT AND MANDATE OF THE COMMITTEE

The Public Petitions Committee is established under the provisions of Standing Order 208A with the following terms of reference:

- a) considering all public petitions tabled in the House;
- b) making such recommendations as may be appropriate with respect to the prayers sought in the petitions;
- c) recommending whether the findings arising from consideration of a petition should be debated; and
- d) advising the House and reporting on all public petitions committed to it.



## 1.2 COMMITTEE MEMBERSHIP

The Public Petitions Committee was constituted in October 2022 and comprises the following Members:

### Chairperson

Hon. Nimrod Mbithuka Mbai, M.P.  
Kitui East Constituency  
**United Democratic Alliance (UDA)**

### Vice Chairperson

Hon. Janet Jepkemboi Sitienei, M.P.  
Turbo Constituency  
**United Democratic Alliance (UDA)**

Hon. Patrick Makau King'ola, M.P.  
Mavoko Constituency  
**Wiper Democratic Movement-Kenya  
(WDM-K)**

Hon. Edith Vethi Nyenze, M.P.  
Kitui West Constituency  
**Wiper Democratic Movement-Kenya  
(WDM-K)**

Hon. Ernest Kivai Ogesi Kagesi, M.P.  
Vihiga Constituency  
**Amani National Congress (ANC)**

Hon. Maisori Marwa Kitayama, M.P.  
Kuria East Constituency  
**United Democratic Alliance (UDA)**

Hon. Joshua Chepyegon Kandie, M.P.  
Baringo Central Constituency  
**United Democratic Alliance (UDA)**

Hon. John Walter Owino, M.P.  
Awendo Constituency  
**Orange Democratic Movement (ODM)**

Hon. Bernard Muriuki Nebart, M.P.  
Mbeere South Constituency  
**Independent**

Hon. Bidu Mohamed Tubi, M.P.  
Isiolo South  
**Jubilee Party (JP)**

Hon. Caleb Mutiso Mule, M.P.  
Machakos Town Constituency  
**Maendeleo Chap Chap Party (MCCP)**

Hon. John Bwire Okano, M.P.  
Taveta Constituency  
**Wiper Democratic Movement-Kenya  
(WDM-K)**

Hon. Peter Mbogho Shake, M.P.  
Mwatate Constituency  
**Jubilee Party (JP)**

Hon. Sloya Clement Logova, M.P.  
Sabatia Constituency  
**United Democratic Alliance (UDA)**

Hon. Suzanne Ndunge Kiamba, M.P.  
Makueni Constituency  
**Wiper Democratic Movement-Kenya  
(WDM-K)**





### 1.3 COMMITTEE SECRETARIAT

The Public Petitions Committee is facilitated members of the secretariat:

Lead Clerk  
Mr. Ahmed Kadhi  
**Senior Clerk Assistant**

Ms. Anne Shibuko  
**First Clerk Assistant**

Ms. Miriam Modo  
**First Clerk Assistant**

Mr. Willis Obiero  
**Clerk Assistant III**

Mr. Shadrack Omondi  
**Legal Counsel II**

Ms. Patricia Gichane  
**Legal Counsel II**

Mr. Martin Sigei  
**Research Officer III**

Ms. Roselyne Njuki  
**Principal Serjeant-at-Arms**

Mr. Paul Shana  
**Sergeant at Arms**

Mr. Calvin Karungo  
**Media Relations Officer III**

Mr. Peter Muteithia  
**Audio Officer**



## PART TWO

### 2 PUBLIC PETITION NO. 11 OF 2022 REGARDING POLLUTION OF RIVER ATHI

#### 2.1 INTRODUCTION

1. Public Petition No. 11 of 2022 regarding Pollution of River Athi was presented by Hon. Vincent Musyoka, M.P. on Thursday, 22<sup>nd</sup> November, 2022 on behalf of the residents of Mwala Constituency.
2. The Petitioners averred that for several years, River Athi has been blatantly polluted with heavy metals and other harmful chemicals. That the discolouration of the river's waters indicate that the pollution source is in Nairobi's upstream section with various companies openly releasing their sewer and chemical wastes into the River Athi.
3. The Petitioners stated that the pollution is a serious health hazard that exposes residents of Mwala Constituency to infections such as cholera, skin infections and dysentery, especially in the view that most of the people consume the river's water directly.
4. That a number of the residents living along and near River Athi have already tested positive for cancer which is linked to the presence of chemicals and heavy chemicals in the river.
5. Further, the pollution was affecting a hydro-electric project initiated by the Hon. Vincent Musyoka, M.P, in Mwala Constituency that was meant to pump water for small scale farming since the use of the polluted water for irrigating vegetables and other plants predisposed residents to multiple diseases.

#### 2.2 PETITIONERS' PRAYERS

The Petitioners prayed that the National Assembly through the Public Petitions Committee—

6. Engages the government chemist and National Environment Management Authority (NEMA) to ascertain the specific chemicals and heavy metals that have permeated the waters of River Athi, in order to use these chemicals to identify the companies responsible for releasing them into River Athi.
7. Secures due compensation of residents affected by the pollution of River Athi.
8. Secures thorough clean-up of the river through budgetary and related provisions.

9. Intervenes to bring to an end any further pollution and make proposals for the withdrawal of licenses of companies that pollute River Athi and other water bodies in the country.
10. Secures the demarcation of riparian lands and analyses the feasibility of making them recreational areas.
11. Makes any other recommendations it deems fit in addressing the matters raised in the Petition.

## **PART THREE:**

### **STAKEHOLDERS' SUBMISSIONS ON THE PETITION**

#### **2.3 SUBMISSION BY PETITIONERS**

12. The Hon. Vincent Musyoka, M.P, on behalf of the residents of Mwala Constituency and other affected persons appeared before the Committee on Thursday, 15<sup>th</sup> December, 2022 and submitted as follows, that-

##### **2.3.1 Background of the Pollution**

13. The Petition was prompted by the lack of responsibility by relevant authorities mandated to protect River Athi. That there had been various petitions but little has been done to address the issues of River Athi pollution.

14. River Athi is the second largest in the country serving Matungulu, Yatta, Mwala, Makueni, and Kitui among other areas. That on the upstream were the polluters' section and the downstream was the consumers' section. However, some of the pollution also came through the tributaries along the river.

15. During the dry season, the pollution of the river was evident as the aquatic life died and there was complete change in the colour and smell of the waters as opposed to the rainy season when the river appeared cleaner yet it was not.

##### **2.3.2 Systematic Identification of Polluters**

16. There were challenges in identifying pollutants which were occasioned by lack of specific data and information. That the polluters could be identified by first testing the heavy metals and chemicals present in the river and tracing backwards to identify industries producing and emitting the harmful chemicals into the river. Further, a visit to the identified companies to determine their proximity to the river and identifying their waste management policies would enable identification of pollutants.

17. That industrial polluters scapegoat informal settlements along the river and its tributaries for pollution since it is difficult to establish whether the source of pollutants is the informal settlements or the industries. Therefore, the need for a clear demarcation of the riparian lands, for example, 30 meters gap to avoid settlements after cleanup and even turning the riparian lands to recreational spaces.

### **2.3.3 Presence of Heavy Metals and Chemicals**

18. A study was conducted by the University of Nairobi assessed the pollution of River Athi through analysis of heavy metals, industrial effluents, invertebrate community, and riverine vegetation between Ngara and Fourteen Falls.
19. The heavy metal analysis showed the elements of Lead (Pb) of between 3-98 mg/ml, Copper (Cu) of between 19-98 mg/ml, ferrous Iron (Fe) of between 190-857 mg/ml.
20. The invertebrate analysis showed that most of the invertebrate parts were found to disappear beyond Kijabe pointing to loss of aquatic life as the pollutants join the river through tributaries. The riverine vegetation was also progressively disappearing along the riverbanks due to the pollution.
21. A quick look at the Google Maps tracing the river upwards showed that Nairobi sewage was feeding into River Athi alongside other sewer lines. Many people had encroached into the riparian land, for example, at Globe Cinema, causing all manner of pollutants into the river.

### **2.3.4 The Effects of the Pollution**

22. The river was increasingly choking with uncollected garbage, human waste from informal settlements, industrial gaseous emissions, liquid effluents and solid waste, agrochemicals, and other waste specially petrochemicals and metals from microenterprises and overflowing sewers.
23. The situation had occasioned spread of waterborne diseases, loss of sustainable livelihoods, loss of biodiversity, reduced availability and access to safe water and various toxic substances and metals poisoning affecting human productivity.
24. Other than the small-scale irrigation projects, billions of shillings used in bigger projects like Thwake Dam would not be meaningful as its source was River Athi which was heavily polluted.

## 2.4 SUBMISSIONS BY WATER RESOURCE AUTHORITY

The Water Resource Authority is established under Section 11 of the Water Act, 2016 and designated under Section 6 as an agent of the National Government responsible for regulating the management and use of water resources. The Chief Executive Officer, Water Resources Authority (WRA), Mr. Mohamed M. Shurie, OGW vide a letter Ref. WRA/8/36(39) dated 23<sup>rd</sup> June, 2023 submitted as follows—

25. In discharging its mandate, WRA monitors water quality and controls pollution of water resources through setting standards and guidelines in an integrated manner involving stakeholders in a given river basin for compliance to the Regulations. In so doing the Authority has developed standards and guidelines for water quality and pollution control which are implemented by stakeholders (including County Governments and other entities).
26. Pursuant to Part II of the Fourth Schedule to the Constitution of Kenya, 2010, County Governments have the function of refuse removal, refuse dumps and solid waste disposal as well as liquid discharge (domestic and industrial).
27. The main sources of pollution within the Athi Basin have been a challenge over the years; particularly:
  - i. Domestic liquid waste (grey water) and industrial discharges largely within urban and peri-urban areas of Nairobi, Thika, Kiambu, Ongata Rongai and Mavoko among others.
  - ii. Sewerage systems are overwhelmed beyond their capacity and hence inadequate treatment of effluent to the required standards before discharge.
  - iii. Insufficient sewerage coverage for conveyance of sewage to treatment plants.
  - iv. Treatment plants infrastructure in place is not adequate.
  - v. Unregulated dumpsites within riparian reserves.
  - vi. Informal settlements have no sewerage infrastructure and directly discharge grey waters into water resources
28. The unsatisfactory management of liquid and solid wastes by County Governments and their entities (including water service providers), land use changes, catchment degradation and encroachment on the riparian reserves are the major causes of pollution to Athi river through its tributaries - *Ngong, Mbagathi, Nairobi, Kirichwa, Mathare, Ruiuaka* rivers amongst others in the basin.

29. In order to mitigate the impacts of pollution from dumpsites and initiate collaboration with relevant stakeholders, the Authority mapped point and non-point sources of pollution (*point source are easily identifiable and specific while non-point are not*).
30. The Authority had engaged with, and disseminated the dumpsite pollution concerns to the stakeholders including Council of Governors and the concerned County Executive Committee Members (CECMs) in the Counties; taking into account the critical role played by County Governments in implementation of their function of solid waste management.
31. Data collected from monitoring activities, trends show that the polluted water undergoes self-cleansing through the experienced turbulences based on river morphology and bioremediation occasioned by the available aquatic flora and fauna in the river course. As the Athi river flows downstream (Thwake Dam) the quality of the water tends towards the normal raw surface quality.
32. Under the coordination of Ministry of Water, Sanitation and Irrigation, in a multisectoral approach, the Authority is a member of Inter-Agency Technical Committee (IATC) with focus to protect the Nairobi rivers from pollution. Further, the Authority together with other stakeholders is working in collaboration with Nairobi Rivers Commission on Nairobi Rivers Recovery Strategy with an Action Plan for facilitation under thematic areas:
- i. Catchment protection and restoration
  - ii. Riparian and wetlands reclamation and protection
  - iii. Waste to rivers (Sewerage - domestic liquid waste, Solid waste and Industrial and institutional waste)
  - iv. Drainage and hydrology.
33. Further, through series of efforts, the Authority has undertaken enforcement against Water Service Providers including Mavoko Water and Sanitation Company (MAVWASCO) under Machakos County Government with the view to facilitate their satisfactory management of the sewerage system that greatly contributes to the pollution of the Athi river.
34. Additionally, stakeholder discussions are underway with Government entities following the pollution Stop Orders issued to Export Processing Zones Authority (EPZA) and MAVWASCO in addition to the pollution Notification Letter to the CECM - Water and environment Machakos County Government.
35. In the event of non-compliance with the Stop Orders and compliance measures required of the aforementioned government agencies, the Authority is prevented from moving to court to seek compliance against continued pollution. This is in light of the Government's directive that state agencies should not seek enforcement



through court action. This has been a major deterrent in compliance with the standards and guidelines in place to mitigate on pollution.

36. Further, WRA has an established water quality and pollution monitoring network, from where point and non-point sources of pollution are monitored and enforcement undertaken against polluters.
37. Prior to issuance of an Effluent Discharge Permit, the Authority regulates pollution from point sources by requiring the development of an acceptable Waste Disposal/Discharge Control Plan. The facilities are thereafter required to acquire Effluent Discharge Permit and adhere to the conditions set out therein.
38. The Authority also enforces requirements of discharging facilities to pre-treat their waste to prescribed standards in accordance with environmental regulations to protect water resources from pollution.
39. The Authority conducts water abstraction and pollution surveys, engages stakeholders at grassroot levels. Further, the Authority advocates and calls upon private and public institutions to adopt sections/stretches of the river under the approach dubbed "*Adopt a River*" for the sustained conservation and protection of water resources.
40. Based on the priority and available capacity, the Authority has marked and pegged 103 km riparian reserve on river tributaries in Nairobi River basin with WRA"-inscribed concrete beacons. The marking and pegging still continues based on available funding.
41. The Authority anticipates that riparian reserve restoration, creation of river buffer zones, regulating the activities in the riparian reserves, riverbank stabilization through enhanced vegetation cover and gabions, ecological awareness creation, livelihoods water sports and recreational walkways will be embraced and incorporated for conservation and protection of the rivers from pollution.

## **2.5 SUBMISSIONS BY TANA AND ATHI RIVERS DEVELOPMENT AUTHORITY**

Tana and Athi Rivers Development Authority (TARDA) is a state corporation established under the TARDA Act CAP 443, Laws of Kenya in 1974 with the core mandate of basin based integrated development aimed at spurring socio-economic growth and environmental conservation in the Tana and Athi Rivers Basins. TARDA'S area of Jurisdiction covers approximately 138,000 km<sup>2</sup>, comprising 100,000 km<sup>2</sup> of the Tana Basin and 38,000 km<sup>2</sup> of the Athi Basin. On 4<sup>th</sup> June 2023, the CEO, TARDA Mr. Mohamed Liban appeared before the Committee and submitted as follows—

### **2.5.1 Background**

42. The Athi River was considered highly polluted with foul-smell and deep green colored water with litter on its banks being evidence of the extent of the pollution. Some of the pollution originates from inflows of raw sewerage, domestic waste, heavy metals, harmful chemicals, pesticides, gaseous emission, liquid effluence, water waste and solid wastes.
43. TARDA joined the Public Petitions Committee and other stakeholders in a site visit tour of four areas to ascertain pollution of the river. The visit identified various glitches that caused pollution of the river, including encroachment of riparian land, mismanagement of solid domestic waste, lack of functional effluent treatment plants, emission of raw industrial waste ending up in the river, and blocked sewers. However, the site visits also revealed an exemplary effluent treatment plant at the Amalia Apartments in Syokimau.

### **2.5.2 Causes of Pollution**

44. The pollution of River Athi was majorly caused by both industrial and domestic wastes from Nairobi City County and neighbouring urban areas. That the high population growth and rapid urbanization did not match the corresponding waste management systems put in place especially in the densely populated areas.
45. Further, there was lack of proper enforcement of regulations that prohibit the polluters from polluting the river. Therefore, there is need for multi stakeholder approach in dealing with the menace since NEMA was limited in mandate and resources.

### **2.5.3 Impacts of Pollution**

46. The pollution overrode the river's capacity to provide clean water hence causing serious health hazard such as waterborne diseases, cancer and poisoning. The pollution had caused loss of biodiversity such as fish species. The consumption of the water directly or indirectly through agricultural produce irrigated by the water from the river had caused secondary contamination of both humans and livestock.
47. Mismanagement of waste had also affected investments as some houses were evidently not occupied due to the choking smells from the nonfunctional ETPs. The long-term effects of the heavy metal poisoning were birth deformities and development challenges in children born around the area.

### **2.5.4 Efforts by TARDA**

48. Coordinating conservation efforts to protect natural resources by cleaning Nairobi River which is a major feeder of River Athi and provision of waste management

solutions in the informal settlements in Nairobi area. TARDA was part of the Nairobi River Cleanup Commission spearheading restoration of the river. TARDA had since planted 50,000 assorted seedlings in collaboration with Daystar University in Athi River and donated others to farmers. The collaboration is also geared towards partnering in research development and proposal writing for grants and funding on environmental matters.

49. Water harvesting and improvement of accessibility through drilling and rehabilitation of boreholes and construction of check dams.
50. Multiple agencies had been given various roles, for example, pollution management was vested on NEMA. The role of approving plans along the Tana and River Athi had been taken over by county governments through County Integrated Development Plans (CIDPs) hence TARDA was no longer responsible. Further, Water Resource Authority (WRA) and Water Services Regulatory Board (WASREB) were mandated to manage water resources.
51. In the advent of the transition of various roles to the multiple agencies, there came financing challenges to TARDA especially on civic education. However, TARDA was engaging communities on clean water provision and toilets in informal settlements. TARDA had done a proposal which was before Parliament for review of some of the concerns raised and avoid confusion of allocation of roles within the multiple agencies. Despite the efforts on community education to manage domestic waste, most of the pollution was from industrial waste.
52. TARDA was before the Intergovernmental Technical Relations Committee (IGTRC) to forge a working relationship between TARDA, and other relevant agencies spearheaded by the national Government to improve service delivery.

## **2.6 SUBMISSIONS BY THE COUNTY GOVERNMENT OF MACHAKOS**

The CECM in charge of Water, Irrigation, Environment and Climate Change, Machakos County, Hon. Catherine Mutanu appeared before the Committee on 4<sup>th</sup> July, 2023 and submitted as follows—

### **2.6.1 Background**

53. Water pollution is a critical issue that needs to be addressed nationally and globally and the responsibility of water protection and pollution is shared between the National and County Governments as mandated by the Constitution of Kenya 2010. Specifically, the national Government focuses on water resource management while the county government is responsible for stormwater management and water sanitation services.

54. Athi River had its drainage basin from Ngong Hills and runs through Kajiado, Nairobi, Machakos, Makueni, Kitui and eventually drains into the Indian Ocean and potential point of pollution start from its source counties.
55. Despite efforts by Machakos County to curb the said pollution, other pollution points exist in Nairobi and Kiambu counties. Athi river passes through Mavoko which is a highly industrialized area with major factories that manufacture cement, steel and other edible products like KAPA, London Distillers, Golden Africa Ltd. among others.
56. Many people in Nairobi have invested in the said area because of its proximity to the capital. This has overstretched the existing infrastructure including the sewer systems, water supply, transport system and other social amenities.
57. The existing trunk sewerage system was constructed in the early 1990's with a design life of 30 years and currently, the system is beyond its design life and suffers frequent blockages since its overstretched and suffers frequent blockages. The existing trunk system however, only covers mainly Athi River town as targeted to the EPZA, Athi River.

#### **2.6.2 Role of Interagency Technical Committee**

58. To address the menace of pollution in River Athi, an Interagency Technical Committee was established under the Nairobi Rivers Commission comprising representatives from relevant government agencies inclusive of several counties (Kajiado, Machakos, Makueni, Kiambu, and Nairobi) to coordinate efforts for the fast-tracking and restoration of the Athi River Basin.

#### **2.6.3 Pollution Sources and Industrial Development**

59. The petition rightly points out that potential pollution points exist in Nairobi, Kiambu, and Machakos Counties, with Mavoko being highly industrialised. Many industries including cement and steel manufacturing are located near Athi River. The rapid industrial and population growth in the area has overstretched existing infrastructure, including sewer systems, water supply and transportation.

#### **2.6.4 Interventions by the County Government of Machakos**

60. Several interventions are underway to address the pollution of the Athi River including detailed engineering designs for the Mavoko Sewerage Infrastructure System have been completed, and efforts are being made to secure financing for its construction. This system will serve a population of over 500,000 people in Syokimau, Mlolong0, Athi River, and Lukenya areas.

61. The County Government, in collaboration with the National Government and the African Development Bank (ADB), is currently constructing the Machakos Sewer system, which is 52% complete and expected to be finished by December 2024.
62. The County Government, in conjunction with the Interagency Technical Committee and other government agencies, is actively mapping out sources of pollution along the Athi River. Further, a multi-agency committee has been constituted to tackle the conflict between EPZ and Mavoko water company.
63. The County Government has gazetted environmental inspectors who will assist in monitoring of pollution within River Athi. Additionally, the County Government has streamlined the licensing and building approvals plans and incorporated the environment department to ensure quality control.
64. The County Government is engaging with stakeholder partners on public private partnerships, for example, Safaricom on clean-up of Athi River Basin, Fresh Life to provide solutions to sanitation challenges in informal settlements (Kosovo, Kwa Mangeli and Mlolongo in Mavoko).
65. The MAVWASCO has a dedicated sewerage department responsible for preventive and corrective maintenance, as well as minor improvements to the existing sewerage network. The County Government has established Department of Sewerage, Sanitation and Waste Management and developed the Environmental Management Act 2022 to address pollution challenges and enhance environmental protection.
66. The County Government is engaging in environmental education and sensitization efforts, particularly during environmental forums like World Environmental Day and World Wetlands Day, are ongoing to raise awareness among the public.

### **2.6.5 Challenges**

67. Despite the efforts being made, the County Government acknowledges that there are challenges that need to be addressed. Funding for the Mavoko Sewer Infrastructure Project has not been secured yet, which has delayed its implementation.
68. Industries in the absence of a conventional sewer network rely on onsite ETPs, which face operational challenges. The lack of real-time and portable effluent monitoring equipment has resulted in a reliance on technical capacity from other government agencies for quality analysis, causing delays in ascertaining pollution levels.
69. Administrative challenges between EPZA and Mavoko Water and Sewerage Company have hindered coordination in the maintenance and management of the sewerage infrastructure.

70. Many towns along the drainage basin within Machakos County still lack conventional sewerage coverage.
71. The gross vandalism of existing sewerage and other infrastructure continues to undermine the proper functioning of these systems.

#### **2.6.6 Conclusion**

72. It is important to highlight the proactive role and commitment of the County Government of Machakos in addressing the pollution of River Athi. Recognizing the significance of collaborative efforts, the Governor has actively engaged and partnered with various stakeholders, including becoming a part of the Nairobi Rivers Commission. This partnership signifies a collective commitment to reclaim and restore the river's health.
73. Furthermore, in line with sustainable environmental practices, the Governor has initiated plans for extensive tree growing along the riverbanks. This approach not only helps in preventing soil erosion but also promotes biodiversity, enhances water quality, and contributes to the overall restoration of the river ecosystem.
74. The efforts and dedication of the County, along with the collaboration of partners and the implementation of tree-growing initiatives, demonstrate a comprehensive and integrated approach to combatting the pollution of River Athi. Through these collective endeavours, we can look forward to a cleaner and revitalized river that benefits both the environment and the communities that depend on it.

#### **2.7 SUBMISSION BY MINISTRY OF ENVIRONMENT, CLIMATE CHANGE AND FORESTRY AND NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY**

The Director General, National Environment Management Authority (NEMA) Mr. Mamo B. Mamo, appeared before the Committee on Thursday, 11<sup>th</sup> May, 2023 on behalf of NEMA and the Cabinet Secretary, Ministry of Environment, Climate Change and Forestry, Hon. Soipan Tuya, CBS, and submitted as follows—

##### **2.7.1 Importance of River Ecosystems in Kenya**

75. That the Government of Kenya appreciated the multiple ecosystem goods and services provided by the Athi-Sabaki River ecosystem including provision of water for drinking and irrigation; fishing; and for leisure activities such as swimming.
76. The main sources of the Athi River drainage basin pollution arose from informal settlements, inadequate and dilapidated sewerage systems, garages, and industries along the riparian areas. To comprehensively address the menace, a strategy that addresses pollution matters from upstream (all the way to Ngong area); mid-stream and downstream locations needed to be adopted.

## 2.7.2 Legislative Framework

77. The Ministry had put in place several relevant pieces of legislation to help stem pollution of the Athi-Sabaki ecosystem including the Environmental Management and Coordination Act (EMCA, 1999); the Environmental Management and Coordination (Water Quality) Regulations of 2006; the Environmental Management and Coordination (Waste Management Regulations) of 2006; and the Environmental Management and Coordination (Wetlands, Riverbanks, Lake shores and Seashore Management) Regulations of 2009.

## 2.7.3 Interventions by the Ministry to Stem Pollution

78. The Green Economy Strategy and Implementation Plan (GESIP) 2016-2030 blueprint would aid Kenya's transition to a sustainable path through five thematic areas and strategies, including: promoting sustainable infrastructure; building resilience; sustainable natural resource management; promoting resource efficiency and social inclusion and sustainable livelihoods.
79. The National Solid Waste Management Strategy (NSWMS 2015) was the guiding principle of the strategy is that of 'zero waste' with interventions to phase out illegal dumpsites across the country in line with the envisioned waste hierarchy. Further, a number of guidelines to promote sustainable management of the ecosystem including National Sand Harvesting Guidelines and the Environmental Impact Assessment Guidelines.
80. The Nairobi River Commission had been established to provide strategic direction, oversight, and coordination of efforts towards the rehabilitation of Nairobi Rivers. The work and objectives of the commission would greatly contribute to reduction of pollution of the Athi- Sabaki ecosystem.
81. The Ministry through NEMA had the National Strategic Plan on Prevention and Control of Pollution of Athi-Sabaki river basin (2020), a five-year strategic plan whose objective was to restore the environmental health of the Athi-Galana-Sabaki River basin.
82. That the Nairobi Rivers Regeneration Programme 2009-2014 aimed at curbing pollution in the river ecosystem in a holistic manner had managed to arrest pollution from upstream sources of the Athi including abattoirs and establishments that did not have sewerage systems.
83. NEMA conducted a **pollution assessment** of River Athi which revealed that informal settlements like Korogocho, Mukuru Dandora and other residential areas in the Nairobi Metropolitan had inadequate sanitary and sewerage facilities and were major sources of human waste which were environmental hazards causing pollution of water sources.

84. NEMA had undertaken awareness creation in its implementation of the Urban Rivers Restoration Programme (URRP) and the Athi Sabaki Pollution Control Action Plan.
85. NEMA conducted **EIA and audits of facilities** within the Athi-Sabaki basin and action taken against the noncompliance entities. Such facilities are required to submit their environmental audit annually for review. However, depending on the nature of the facility, NEMA was also undertaking control audits in facilities considered to be of high risk to the environment.
86. On **riparian demarcation**, NEMA in collaboration with the Water Resources Authority (WRA) commenced the demarcation, mapping, and marking of illegal structures, dumpsites, and discharges in the Athi River Water Basin in line with the URRP. The mapping had been done in sections of major Nairobi Rivers including Kirichwa Kubwa, Kirichwa Ndogo, Nyong'ara, Ngong River, and Mathare River. The objective of the activity was to demarcate and protect riparian areas from harmful activities and improve the water quality in the rivers.
87. NEMA undertook inspections and monitoring exercises to establish the performance of the sewage treatment facilities within the Nairobi City Metropolitan since they were considered potential sources of pollution of River Athi waters.
88. On **water quality monitoring**, NEMA had conducting a water quality analysis on the upper drainage basin of Nairobi River covering the drainage basin from the source at Ondiri Swamp and up to, and along the Thika Express Way, Eastern Bypass towards Ruai, Lang'ata Road and upper parts of Ngong River. The water sampling was carried out in thirty-seven (37) sampling points in the Athi drainage basin and tested for various parameters including presence of heavy metals which indicated that some parameters were outside the permissible limits.
89. Additionally, NEMA had conducted an assessment of water quality in identified twenty-three (23) sampling points/sites to ascertain the suitability of Athi and Tana River drainage basins between 18<sup>th</sup> - 22<sup>nd</sup> December, 2020. The analysis report showed that none of the twenty-three (23) sites randomly sampled passed the test of standard of good quality water for domestic use. NEMA continued to monitor water quality on the Athi River Basin in the period between September 2022 and April 2023 both during the dry and rainy seasons for comparison.
90. The findings from the water quality monitoring indicated the presence of *Escherichia coli* (E. coli) which exceeded the limits and was the greatest polluter in the twenty-three (23) sites sampled. This was evident of human waste finding its way in to the water resources.



91. Fertilisers and agrochemicals in the upper catchments contributed to heavy pollution of water resources. Further, along the river basin, PH, temperature, total dissolved solids parameters were within the allowable limits. However, no traces of heavy metals were detected within the study area.
92. With regards to **enforcement actions**, NEMA was undertaking inspections and monitoring of performance of the sewer treatment facilities within Nairobi City Metropolitan as a potential area and source of pollutants. The inspection and monitoring exercise seek to establish compliance and ensure the waste water meets the required discharge standards and does not cause pollution. NEMA has conducted more than seventy (70) inspection to stop illegal discharge, mapping of 31 illegal dumpsites and informed the county government for remedial action.

#### **2.7.4 Recommendations**

The Director General, NEMA made the following recommendations to the Committee:

93. Demolition, removal and relocation of informal settlements to suitable and planned areas of the city away from the Nairobi Rivers. NEMA was implementing the Urban Rivers Restoration Programme (URRP) where discharging facilities and structures within River riparian areas were being mapped.
94. Concerted efforts to promote uptake of the National Solid Waste Management Strategy and a circular approach to waste instead of the prevailing linear approach where a “use and dump” attitude has encouraged wastefulness and improper waste management. In the circular approach, waste is treated as a resource as espoused in the Sustainable Solid Waste Management Act, 2022.
95. Provision of adequate sanitary facilities to accommodate for disposal and treatment of all human waste from the formal and informal settlement areas within Nairobi Metropolitan. NEMA was working with lead agencies and service providers including the State Departments for Water and Sanitation, Nairobi City County Government, Athi Water Works Development Agency (AWWDA) and Nairobi Water and Sewerage Company in plans and programs to provide sewer systems and to upgrade existing networks for instance the ongoing sewer masterplan for Nairobi and Satellite towns with the AWWDA.
96. Counties adjacent to River Athi to take immediate actions to set up and operationalize their County Environment Committees for purposes of proper environmental management within their jurisdictions.

#### **2.8 SUBMISSION BY MINISTRY OF WATER, SANITATION AND IRRIGATION**

The Cabinet Secretary, Hon. Alice Wahome appeared before the Committee on Thursday, 6<sup>th</sup> July, 2023 and submitted as follows—

97. Pollution of water bodies including rivers require a holistic approach hence the Cabinet in 2019 had established the Inter-Agency Technical Committee (IATC) on Rivers Protection and Pollution Management. The IATC was established to address the poor state of the country's rivers especially those traversing urban centers. The initial focus of the IATC was the restoration of the Athi River Basin which is the catchment for the upcoming Thwake Multipurpose Water Development Program.
98. The urban rivers are heavily polluted from untreated/partially treated waste-water discharges, industrial pollution, over-flow of toilets in the informal areas, polluted surface run-off in areas with low sanitation coverage and rotting garbage swept into the rivers.
99. The restoration of degraded river ecosystem had prompted various key interventions including nationwide upgrade of water, sewerage and storm water infrastructure, resettlement and upgrading of informal settlements, rehabilitation and protection of water catchment areas and riparian areas. Further, programs include establishment of sustainable solid waste systems, sustainable land use plans by county governments and smart farming and agricultural practices.
100. The IATC was set up to among others examine and identify sources and no-point pollution on Athi River including domestic and industrial waste discharges and identify public solid waste dumping sites close to rivers draining into Athi River. Further, the committee was tasked to examine legal and regulatory environment on solid and liquid waste management to identify weaknesses that promote pollution and propose improvement.
101. The IATC is comprised of Ministry of Water, Sanitation and Irrigation as the overall coordinator of the interventions; Water Resource Authority (WRA) as the lead agency; NEMA, County Governments of Nairobi, Kajiado, Machakos, Kiambu and Makueni; Thwake Project Implementation Team, Athi and Tanathi Water Works Development Agencies, Ministry of Lands, Public Works, Housing and Urban Development; and Kenya Forest Service (KFS).
102. The intervention measures for protection of River Athi for the Financial Years 2021/2022 and 2022/2023 include among others, riparian reserve pegging by WRA along Kamiti, Riara, Kirichwa Ndogo, Kirichwa Kubwa in upper Athi; regular water quality monitoring to assess the impacts of interventions; and supporting Water Resources Users Associations (WRUAs) to undertake catchment conservation activities.
103. Further, NEMA has pegged the riparian areas to protect them against prohibited activities and engaged environmental scouts to assist in containing 200 identified

sources of pollution and other interventions including informal settlements upgrading and sewerage improvement.

104. The main challenge of pollution of River Athi was due to lack of enough capacity of sewerage system. While Nairobi Metropolitan produces 400,000 cubic meters per day of sewage, the installed capacity of the sewerage system in Kariobangi and Ruai were only 192,000 cubic meters per day.
105. The Ministry through the Athi Water Works Development Agency (AWWDA) had undertaken comprehensive master plan and investment plan to connect households to sewerage system. The plan requires Kshs.106 billion for short- medium- and long-term phases and the Ministry is currently mobilizing for resources.
106. Enforcement agencies were enhancing compliance on known pollution points such as burst sewers, dumpsites on riparian reserves, industrial areas, garages, slaughterhouses, concealed effluent discharge pipes in both formal and informal settlements, dysfunctional water waste treatment systems among others.
107. The Nairobi River Commission will also assist in realizing the goal of cleaning up the urban rivers as it is mandated to spearhead restoration activities and supporting socioeconomic programs along the river basin.

## 2.9 SUBMISSIONS BY EXPORT PROCESSING ZONE AUTHORITY

The Export Processing Zones Authority (EPZA) is a state corporation under the Ministry of Investments, Trade and Industry established in 1990 by the EPZ Act CAP 517, Laws of Kenya. Our primary mandate is to promote and facilitate export-oriented investments while creating an enabling environment for such investments. The CEO Export Processing Zone Authority (EPZA) vide a letter Ref. EPZA/PROJ/7/5 and dated 25<sup>th</sup> August, 2023 made the following submissions—

108. Prior to licensing or renewing any EPZ company license, EPZA conduct a compliance audit to ensure that the company complies with the relevant laws of Kenya. To join the EPZ program, an Environmental Impact Assessment (EIA) license is required, and an annual environmental audit clearance is necessary to renew the company's license.
109. As part of our regular operations, EPZA conducts routine tests on effluents discharged by companies legally connected to our sewer line. Whenever complaints arise, EPZA takes them seriously and address them promptly. However, the Authority had not received any reports of affected individuals resulting from its operations.
110. The EPZA acknowledges the challenges in Athi River, Mlolongo, and its surroundings regarding the lack of proper sewer infrastructure and a garbage collection program and that these issues may contribute to waterborne diseases, as claimed by the Petitioners.
111. The major cause of the blockage adjacent to Apex Steel Plant that was witnessed by the honourable members of parliament on 30th May, 2023 was a result of illegal dumping of black cotton soil on top of the EPZA trunk sewer line.
112. The Authority had already written to the Municipal manager of Mavoko Sub- County regarding the illegal dumping and to further take corrective measures since the matter falls under the County Government of Machakos.
113. The authority has always endeavoured to operate its main trunk sewer line and the effluent treatment plant sustainably. The management of the sewerage services within Athi-River Township and its environs is under MAVWASCO and they have constructed several lines that are eventually hooked onto the EPZA trunk sewer line and the Authority has no control over the operations and maintenance of the said connections.
114. Part of challenges that the Authority is encountering are as a result of illegal dumping of solid waste on the sewer lines that are operated by MAVWASCO since all the waste ends up in the EPZA trunk sewer line. On several occasions, the Authority had written to the Managing Director, MAVWASCO with a view to addressing sanitation challenges within Mavoko Suh- County. The Authority through

a letter dated 27 June 2023 wrote to the County Executive Committee, Department of Water Irrigation, Environment and Climate Change-Machakos County with regard to constituting a multi-agency committee between EPZA and MAWASCO in regards to managing shared resources sustainably.

115. The Authority has personnel who man the Kenanie ETP on a 24-hour basis in order to prevent any threats of vandalism that can allow wastewater to be discharged into River-Athi illegally since that posed a huge environmental consequence for the communities living downstream. The EPZA ETPs Treatment process is very elaborate in that it cannot allow untreated wastewater to be discharged into River-Athi.
116. Apart from unblocking the blocked manhole adjacent to Apex Steel Plant, the Authority has also cleaned up several sections along its trunk sewer line in order to avert such unfortunate incidences from happening in the future.
117. The EPZA submitted to the Committee to consider—
  - a) Absolving the Authority from the allegations by the petitioners regarding the pollution of River Athi;
  - b) Protecting the EPZA trunk sewer line which plays critical role in facilitating export-oriented investments against any external aggressions in line with Environment and Land Court Ruling Case No.35 of 2010, Machakos. It was held that the entire sewerage infrastructure is the property of EPZA; and
  - c) Vindicating the Authority of any wrong doing as pertains this matter.
118. As part of continuous improvement, the Authority constructed a modern multi-billion Common Effluent Treatment Plant (CETP) of 10 (MLD) Million Liters per Day Capacity, and the new plant is expected to be operationalized before the end of this year. The new CETP is capable of fully treating the effluent to meet both international and other regulatory agencies' standards.
119. The Authority remains committed to safeguarding all matters of the environment for posterity by working closely with investors ad relevant government agencies. Finally, we sincerely appreciate the opportunity to respond to this matter and shall remain committed to our mandate of promoting sustainable and environmentally responsible investment practices within the Export Processing Zones.

## 2.10 SUBMISSIONS BY THE CABINET SECRETARY MINISTRY OF INTERIOR AND NATIONAL ADMINISTRATION

The Cabinet Secretary, Ministry of Interior and National Administration, Hon. (Prof.) Kithure Kindiki, appeared before the Committee on 24<sup>th</sup> August, 2023 and made submissions as follows—

120. The studies conducted by students on the chemical concentration and levels of pollution of River Athi indicate that commercial and household waste, hazardous industrial waste, bio-medical clinical waste, and special hazardous waste such as radioactive and explosive and e-waste were present in the water. Therefore, there were serious environmental pollution of River Athi.
121. The Government Chemist receives requests from individuals and companies to test samples from River Athi and the results confirm the presence of the said toxic elements. The industrial waste emanates from:
  - i. Manufacturing industries for drugs, cosmetics, plastics, synthetic fibres, paints, cleansing agents, and other consumer products which release chemical waste that eventually affects both human and the environment;
  - ii. Some chemicals get into the food chain disrupting the natural biotic cycle and threatening populations of organisms with extinction and jeopardising quality of food supply; and
  - iii. Natural waters from rivers and lakes are becoming unfit for domestic use and some streams become biologically barren.
122. The specific industries polluting River Athi include:
  - i. Metal industries producing waste from coking of coal and washing of blast furnace flue gases and pickling which contain cyanogen, phenol, limestone and fine suspended solids, plated chromium, lead, nickel, cadmium, zinc, copper, silver, grease and oils;
  - ii. Food processing companies producing high content of decomposable organic matter leading to oxygen depletion just like from domestic waste;
  - iii. Pharmaceutical industries producing antibiotic residues;
  - iv. Tanneries producing calcium, chromium, dissolved and suspended matter;
  - v. Pesticides aromatic compounds, acidity and high organic matter;

- vi. Petroleum industry (motor vehicle garages) producing grease and oils, acids, alkalis, cyanides, phenolic compounds, sulphur compounds, halogenated and nitrogenated hydrocarbons.
  - vii. Organic chemical industries producing phenols with high acidity and alkalinity
  - viii. Textile industries producing waste from cooking fibres arising from impurities in the fibre and chemicals used in processing;
  - ix. Paper and allied products industries producing effluents from the mills contain toxic compounds such as methyl mercaptan, pentachlorophenol and sodium pentachlorophenate; and
  - x. Rubber and plastic industries producing hydrocarbons and other organic compounds.
  - xi. Radioactive wastes from nuclear power plants, fuel reprocessing plants and hospitals and research laboratories using radioisotopes.
123. The Government Chemist Department had both human and technical capacity to carryout chemical analysis of the wastewater to ascertain the possible contaminants. However, the department will require additional financial support to meet the required tasks since the resource has been already overstretched.
124. The Ministry had no vote head to cater for compensation of residents affected by the pollution of River Athi. However, the polluter pays principle in the EMCA Act, 1999 would better address that by identifying the polluters and naming them to restore environmental justice.
125. The Government Chemist was ready and willing to assist in conducting research to unearth the chemicals present in the waters of River Athi. Further, for the analysis to generate detailed results, there is need for enough samples from different sites across the river. However, such analysis should be done after cost analysis because it has a budget implication.

## PART FOUR

### 3 SITE VISITS

#### 3.1 RIVER ATHI UPSTREAM

The Committee conducted site visits in the following areas on Tuesday, 30<sup>th</sup> May, 2023:

##### 3.1.1 Site 1: Stream in Mlolongo



**Figure 1.** A River Athi tributary next to Signature Mall in Mlolongo

The Committee toured one of the River Athi tributaries next to Signature Mall in Mlolongo and made the following observations, that-

126. The stream next to Signature Mall was one of the feeders of River Athi which passes through residential areas;
127. The riparian land along the stream had been encroached by people who had built houses and changed the course of the river occasioning overflowing of the stream on to the road during rainy seasons;



128. The residential areas upstream especially in the slums channelled waste into the stream which ended up in River Athi; and
129. The Mlolongo and Syokimau areas were populous yet lacked a proper sewer line to manage the waste from residential areas.

### 3.1.2 Site 2: Effluent Treatment Plant in Mavoko area



**Figure 2.** An Effluent Treatment Plant by MAVWASCO in Valley View Estate, Syokimau

Mavoko Water and Sewerage Company Ltd. (MAVWASCO) was formed in 2006 in line with the water sector reforms as enshrined in the Water Act 2002. The company is licensed and regulated by the Water Services Regulatory Board (WASREB) to supply water and sewerage services within its specified area of jurisdiction which includes Syokimau, Mlolongo, Athi River, Kinanie and Kyumbi areas of Mavoko Sub County. The company has a functional board of directors constituted from key stakeholders within the service area. The County Government of Machakos has 100% shareholding of the company whose area of jurisdiction is approximately 693 Km<sup>2</sup> with a population of about 200,000 people. The Committee visited an Effluent Treatment Plant (ETP) managed by Mavoko Water and Sewerage Company (MAVWASCO) and made the following observations, that-

130. Valley View Estate hosting about 360 households in Mavoko handed over the facility to MAVWASCO in 2018 as a requirement that all sewer treatment plants be reverted to water and sewerage companies.

131. The plant was set up in one-and-a-half-acre land which was insufficient to manage the waste of such magnitude from the residential areas in Mavoko.
132. Besides MAVWASCO operating the plant without being licensed by NEMA, Valley View Estate emitted human waste into the plant which was dysfunctional and transmitted raw sewer into River Athi due to poor management by MAVWASCO.
133. The plant was an environmental hazard to the residents neighbouring it as well as those using River Athi waters. There was evidence of corrosion of the iron sheets possibly caused by the impact of sulphite and nitrite from the plant. Further, vacant houses neighbouring the plant was evidence of the impact the hazardous stench from the plant.
134. The plant was last exhausted in April 2023 after MAVWASCO took charge in November 2022 and was left exposed and dangerous without the lids closed.



**Figure 3.** A dysfunctional ETP with open lids managed by MAVWASCO in Mavoko area

### 3.1.3 Submissions by MAVWASCO

During the site visit at the Mavoko ETP, the Committee engaged the Managing Director, Mr. Michael Mangeli who submitted that-

135. The challenge of maintenance of the plant was occasioned by the residents' failure to pay water and sewerage bills due to billing together of water and sewerage yet the same company was not providing enough water services. MAVWASCO only had the capacity to supply 7,000 cm<sup>3</sup> against the demand of 20,000 cm<sup>3</sup>.
136. Further, MAVWASCO faced financial challenges since the treatment exercise envisioned required huge capital yet the machines originally installed worked only up to late 2022;
137. The sewer line coverage in entire Mavoko Sub County was only 10% causing misbehaviour by residents including pumping of raw sewer into the environment.

### 3.1.4 Site 3: Amalia Apartments in Syokimau



Figure 4. A modern ETP at Amalia Apartments in Syokimau

The Committee visited Amalia Apartment in Syokimau, one of the residential areas where a model effective sewer treatment plant was installed and made the following observations:

138. The modern sewer treatment plant was ideal for household-level waste treatment and effectively treated waste from about 160 households from the 16-block apartment. The system was able to treat the waste and recycle it into water which was being reused to irrigate flowers and construction activities;
139. The technology and machinery used in the plant was able to store, mix, separate, remix and filter the output product before channelling it for other usage. The waste water treatment plant used microbes to recycle the water waste from the households and producing reusable water;

140. The plant was well maintained with an assigned engineer doing maintenance works. There was no stench coming out and all the manholes were well covered.



**Figure 5.** *Members of the Public Petitions Committee accompanied by NEMA and MAVWASCO officials inspecting an ETP at Amalia Apartment*

### 3.1.5 Site 4: Athi River EPZA, Apex Steel Rolling Mill



Figure 6. A sewer line operated by MAVWASCO next to Apex Steel Company in Kitengela

The Committee conducted a visit to Athi River EPZA next to Apex Steel Company (one of the companies next to River Athi tributaries) and observed that-

141. The unblocking of a sewer burst that had occurred in the sewer line co-managed by EPZA and MAVWASCO was underway. However, the officers doing the work were not properly equipped with the proper equipment for the work hence vulnerability to various kinds of hazards.
142. There was evidence of solid waste from both industrial and residential areas clogging the sewer line. The waste emanating from the eruption appeared untreated and unfit for transmission into River Athi.
143. The CEO, EPZA admitted that the failure in the management of sewer line was occasioned by lack of proper collaboration between EPZA and MAVWASCO. The EPZA always took liability yet the sewer line was also used by MAVWASCO but in cases of breakdown, repaired by EPZA.
144. The CEO, EPZA indicated that the treatment of the industrial waste was done at Kenanie area before the waste was dismissed into River Athi.

145. The CEO, EPZA stated that the Authority ensured industries/companies were compliant and that it monitored pretreatment of chemical effluents but not human waste before their transmission into the sewer line.
146. The industries under the EPZA were major pollutants of River Athi through emission of untreated industrial waste. The evident emission of industrial waste from EPZA industries required urgent attention and a quick stoppage as it posed a severe hazard to the users of River Athi waters for domestic, industrial and agricultural use.
147. The failures witnessed in the management of the EPZA-MAVWASCO sewer line were accumulation of various incidences of negligence.

### 3.2 RIVER ATHI, KIBAUNI / IKALAASA WARD IN MWALA (DOWNSTREAM)



*Figure 7. Hon. Vincent Musyoka, MP. during the inspection of a water project in Kiukuuni Village, Mwala Constituency*

The Committee conducted a site visit downstream River Athi in Mwala Constituency in Kiukuuni Village on Friday, 16<sup>th</sup> June, 2023 and noted as follows:

148. The Hon. Vincent Musyoka, M.P, Member for Mwala Constituency was constructing a Mini-hydro dam, which was 70% complete, aimed at generating electricity for

pumping water for irrigation and fish farming. The project was intended for duplication across other wards across the constituency.

149. The farming activities around the area relied on the water from River Athi which was highly polluted as evident in the coloration, an indication of chemical elements.
150. The consumers of the water downstream reported instances of skin and other diseases including cancer attributed to various chemical pollutants in River Athi water.
151. The consumers downstream called out for urgent interventions to stop pollution, treat and clean River Athi water getting to consumers downstream.
152. The residents called for the Committee to zoom in to large polluters and recommend personal responsibility.
153. The consumers also urged the Committee to conduct research to identify cancer victims affected by the pollution of River Athi to enable the polluters to be accountable and allow the victims to claim financial compensation.



**Figure 8.** *Members of the Public Petitions Committee inspecting the dam project along River Athi, at Kiukuuni Village in Mwala Constituency*



## PART FIVE

### ANALYSIS OF ISSUES FOR DETERMINATION AS PER THE PRAYERS IN THE PETITION

154. Arising from the findings and observations, the Committee makes determination on the following issues as per the prayers sought in the petition as follows:

**Prayer No. 1:** *Engages the Government Chemist and the National Environment Management Authority (NEMA) to ascertain the specific chemicals and heavy metals that have permeated the waters of River Athi, in order to use these chemicals to identify the companies responsible for releasing them into the river.*

155. Following engagements with the Government Chemist under the Ministry of Interior and National Administration and NEMA, the Committee notes that—

- a) According to the Ministry of Interior and National Administration, the Government Chemist had received requests from individuals and companies to test samples from River Athi and the results confirmed the presence of toxic elements majorly emanating from industrial waste.
- b) The chemicals and heavy metals present in River Athi water were from metal, food processing companies, pharmaceutical, tanneries, motor garages, organic chemical, textile industry, paper and allied products, rubber and plastic, and radioactive industries.
- c) The main source of pollution of the river Athi was in the upstream from Nairobi metropolitan, Athi River, Mlolongo and its environs. The lack of proper sewer infrastructure, improper garbage collection system, unregulated dumpsites, malfunctioning effluent treatment plants in the said areas contribute to pollution of River Athi.
- d) NEMA's findings for water quality monitoring carried out between 18<sup>th</sup> - 22<sup>nd</sup> December 2020 and between September 2022 and April 2023 (dry and wet seasons) indicated that no traces of heavy metals were detected in the sampled areas. However, presence of Escherichia coli (E. coli) was evident of human waste in the water resources which NEMA cited as the greatest polluter in the sampled sites.

**Prayer No. 2:       *Secures due compensation of residents affected by the pollution of River Athi:***

156. The Committee notes that—

- a) Residents in the downstream were at environmental and health risks due to the pollution of River Athi which is one of their main sources of water for domestic and farming use.
- b) Following a site visit to the downstream area of River Athi in Mwala Constituency, it was evident that River Athi waters were polluted as evidenced by the coloration of the water. Further, the consumers of the water reported instances of skin and other diseases including cancer attributed to various chemical pollutants in River Athi water.
- c) Section 25(4) of the Act also provides for the National Environment Restoration Fund within NEMA. The Fund acts as supplementary insurance for the mitigation of environmental degradation where the perpetrator is not identifiable or where exceptional circumstances require the Authority to intervene towards the control or mitigation of environmental degradation. However, according to NEMA, the Fund has no monies because NEMA had not collected environmental impact assessment (EIA) fees hence it was declared insolvent in 2019.
- d) The compensation of residents affected by pollution of River Athi is a complex process, as they will have to prove the elements of the effluent that caused the alleged health complications and the polluters liable for unlawful discharge of the chemicals. This process is best resolved through a petition before court.
- e) Section 142 of the EMCA 1999 provides for offences relating to pollution and provides that the court may direct the polluter to meet the cost of the pollution to any third parties through adequate compensation, restoration or restitution. The polluter pays principle is applicable in Kenya and the court may apply this principle when issuing environment restoration orders as provided in sections 108 and 111 of the Act.

This includes the compensation of victims for health complications as a result of environmental degradation caused by the pollution. A petition of similar nature before the environmental and land court at Mombasa (Petition 1 of 2016 - KM & 9 others v Attorney

General & 7 others [2020] e KLR) saw the residents of Owino-Uhuru village secure their right to a healthy environment through compensation in monetary and non-monetary reliefs.

**Prayer No.3:**       *Secures through clean-up of River Athi through budgetary and related provisions*

157. The Committee notes that—

- a) From the submissions from various stakeholder including NEMA, WRA, TARDA, and Ministry of Interior & National Administration, there was consensus of the need to clean-up River Athi.
- b) In the advent of the transition of various management roles regarding pollution of rivers, to the multiple agencies, there was financing challenges to TARDA as well as the duplicity of functions leading to unclarity of which agency was responsible to secure clean-up of the river.
- c) TARDA had done a proposal which was before Parliament for review of some of the concerns raised to avoid confusion of allocation of roles within the multiple agencies.
- d) There was an upstream clean-up of River Athi was being undertaken by the Nairobi Rivers Clean-up Commission which was established through a Gazette Notice Number 14891 on 2<sup>nd</sup> December 2022 to reclaim the rivers of Nairobi metropolitan.
- e) The mandate of the clean-up of River Athi extends to the Machakos County and the work and objectives of the commission is expected to contribute to reduced pollution of the Athi-Sabaki ecosystem.
- f) The commission comprises of various stakeholders such as NEMA, TARDA and WRA. Further the clean-up of River Athi downstream falls within the mandate of TARDA as it is charged with the responsibility to implement any projects for the purpose of utilization and protection of water and soils within the Tana and Athi River Basins.

**Prayer No.4:**       *Intervenes to bring an end to any further pollutions and makes proposals for the withdrawal of licences of companies that pollute River Athi and other water bodies in the country.*

- a) NEMA was not effectively discharging its regulatory role, as per section 42 of Environmental Management and Coordination Act (EMCA) that requires an environmental impact assessment to be conducted before any substance can be deposited in a lake, river or wetland, especially if that substance is likely to have adverse environmental effects.
- b) There was inadequate cooperation and coordination between NEMA, TARDA and the County Government of Machakos in enforcing the Environmental Management and Coordination Act (EMCA) hence create lapses in the regulation of pollution of the river.
- c) Under the Fourth Schedule of the Constitution the county governments are mandated with the function of refuse removal, refuse dumps and solid waste management. Therefore, the management of sewers is a devolved function. Sewer management in Mavoko Sub- County is managed by Mavoko Water and Sewerage Company (MAVWASCO), which provides both water and sewerage services.
- d) MAVWASCO provides water and sanitation services to Syokimau, Mlolongo, Athi River, Kinanie and Kyumbi areas within Mavoko sub-county and the Kitengela town in Kajiado county. Mavoko town and Mlolongo are supplied by the EPZA, Nol Turesh bulk suppliers and other private suppliers. MAVWASCO's several sewer lines connect to the EPZA Trunk sewer line.
- e) Most of the municipalities under MAVWASCO remain underserved by the sewerage network, majority rely on onsite sanitation and septic tanks. The industries and residencies within the Mavoko area do not have proper sewer infrastructure or an effective effluent treatment plant system (ETP).
- f) For instance, EPZA Water Service Provider identified several illegal sewer connections to their existing sewer line. There is also an issue of broken pipes, overflowing of sewers and toilets. Further the present Kenanie waste water treatment works has exceeded its capacity thus only 30% of its effluent are treated. This results in the discharge of untreated effluent in the river.
- g) Polluting companies could not be specifically identified as the necessary testing of the effluent discharge was not undertaken. The WRA has the mandate of water sampling and can undertake the same.

- h) As per the various submissions and the findings of the site visit by the committee on 30<sup>th</sup> June 2023 EPZA WSP and MAVWASCO were cited for unlawful discharge of effluent and these parties reported back to the committee of the remedial measures they undertook to halt the pollution.
- i) The regulatory bodies including NEMA, WRA and TARDA claimed not to have recourse or the necessary mandate and budgetary resource to hold polluting companies accountable.
- j) However, it is evident that a lack of cooperation and effective coordination between these agencies create lapses in the regulation of pollution of the river.

**Prayer No.5:**        ***Secures the demarcation of riparian lands and analyses the feasibility of making them recreational areas.***

158. The Committee notes that—

- a) Some riparian lands had been encroached by human and industrial activities that were contributing to the pollution of the River Athi tributaries and led to changing the course of the tributaries and flooding on the roads during rainy seasons.
- b) Demarcation of riparian land and the creation of recreational areas would improve the river's water quality through revegetation of the river banks and the removal of illegal structures.
- c) NEMA, in collaboration with the Water Resources Authority (WRA) had commenced the demarcation, mapping, and marking of illegal structures, dumpsites in the Athi River Water Basin in line with the (URRP) Urban Rivers Regeneration Programme.
- d) The Environmental Management and Coordination (water quality) Regulations (2006), provides that the recommended riparian distance is at a minimum of six metres and a maximum of 30 metres from the highest water mark.
- e) The Ministry of Lands & Physical Planning is collaborating through Inter Agency Technical Committee (IATC) and the Ministry of Water, Sanitation & Irrigation are lead agencies and authorities in repossession of encroached riparian land.

## PART SIX

### COMMITTEE OBSERVATIONS

159. The activities of industries/companies in the Athi River Basin pose environmental threats to the residents in the Athi River Basin.
160. The enforcement actions and inspection by NEMA on the industrial establishments was not satisfactory.
161. The sewer systems in Athi River were old and overstretched by the rapid industrial and population growth thus could not sustain the demand. The Kenanie Effluent Treatment Plant that was for domestic waste was also being used for industrial waste.
162. Nairobi Metropolitan had a capacity of 192,000 cubic meters of sewer yet it produces about 400,000 cubic meters of sewer thus becoming a major source of upstream pollutants into the River Athi.
163. Some estates in Athi River emitted human waste into a dysfunctional Effluent Treatment Plant operated by MAVWASCO leading to transmission of raw sewer into River Athi.
164. Administrative challenges between EPZA and Mavoko Water and Sewerage Company hindered coordination in the maintenance and management of the sewerage infrastructure in Athi River.
165. The activities upstream of River Athi including effluent emissions into the tributaries and poor waste management threatened the water quality of the river and further compromises the water collected at the Thwake Dam project.
166. Continuous tests based on requests from researchers, public health department and industries indicated poor water quality in River Athi.
167. According to the Ministry of Interior and National Administration, the Government Chemist had received requests from individuals and companies to test samples from River Athi and the results confirmed the presence of toxic elements majorly emanating from industrial waste.
168. In the advent of the transition of various management roles regarding pollution of rivers, to the multiple agencies, there was financing challenges to TARDA as well as the duplicity of functions leading to unclarity of which agency was responsible to secure clean-up of the river.

169. The County Government of Machakos and NEMA lacked adequate enforcement officers to monitor the discharge of effluents in the river especially at night.
170. Enforcement measures against pollution along River Athi and other riparian areas was inadequate due to poor coordination of agencies involved. For instance, the Ministry of Interior and National Administration relied on requests made by NEMA for assistance in enforcement to assist in stopping the discharge of pollutants into the river. The multiagency approach was more reactive rather than proactive.
171. The efforts made by the multiagency team led by the County Commissioner of Machakos after the Committee's site visit had led to positive results. Enforcement notices had been issued to polluters especially in the upstream and there were improvements regarding compliance.

## PART SEVEN

### COMMITTEE RECOMMENDATIONS

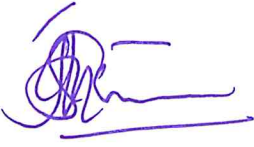
Pursuant to the provisions of Standing Order 227, the Committee recommends that—


172. On the prayer for the committee to engage the Government Chemist and National Environment Management Authority (NEMA) to ascertain the specific chemicals and heavy metals that have permeated the waters of Athi River in order to identify the companies responsible for the pollution, the Committee recommends that, **the water sampling to be undertaken within sixty (60) days by the Government Chemist and the Water Resources Authority (WRA) which has the mandate of water quality sampling and the sample analysis report be used by the WRA to issue restoration orders to the polluting companies.**
173. On the prayer to secure clean-up of the River Athi through budgetary and related provisions the Committee recommends that **TARDA is given budgetary allocation to spearhead the clean-up of Athi River and to collaborate with other agencies NEMA, WRA, WASREB and the County Government of Machakos.**
174. On the prayer to secure due compensation of residents affected by the pollution the committee **rejects this prayer as the issue of compensation is best resolved through adjudication.**
175. On the prayer to end further pollution through the revocation or withdrawal of licenses of the polluting companies in River Athi and other water bodies, the committee recommends that **NEMA conducts inspection of all companies/industries in the River Athi Basin and other affected areas and submits a report of the inspection detailing the non-compliant industries/companies to the relevant Committee of the House within six (6) months. Thereafter, NEMA to take remedial measures against non-compliant companies/industries including but not limited to revocation of their licenses.**
176. On the prayer to secure the demarcation of the riparian lands and analyse the feasibility to make them recreation areas the committee recommends that **WRA is accorded budgetary allocation under the Urban Rivers Regeneration Programme for demarcation and marking with beacons riparian reserve along the River Athi ecosystem. The Ministry of Water, Sanitation & Irrigation considers the proposal of the Petitioner of establishment of recreational walkways to enhance conservation and ecological awareness of riparian land.**



The Committee further recommends that—

177. The Environmental Management and Coordination Act be amended to provide for vetting by the National Assembly of the NEMA Board.
178. The pending regulations on Environmental Bond that will compel polluting companies to pay a guarantee into the Restoration Fund be fast-tracked.
179. The national government and the county governments of the affected areas in collaboration with development partners to ensure provision of adequate sewer system for the affected areas.
180. The report be debated in the House.

Signed:  11-04-2024  
THE. HON. NIMROD MITHUKA MBAI, MP  
CHAIRPERSON, PUBLIC PETITIONS COMMITTEE.

 THE NATIONAL ASSEMBLY PAPERS LAID	
DATE: 11 APR 2024	DAY:
TABLED BY:	
CLERK-AT THE-TABLE:	



## ANNEXURES

- Annex 1:** Adoption List
- Annex 2:** Public Petition No. 11 of 2022 Regarding Pollution of River Athi
- Annex 3:** Letter Ref. WRA/8/36(39) dated 23<sup>rd</sup> June, 2023 by Water Resources Authority
- Annex 4:** Letter Ref. EPZA/PROJ/7/5 and dated 25<sup>th</sup> August, 2023 by Export Processing Zone Authority (EPZA)
- Annex 5:** Minutes of the 14<sup>th</sup> Sitting of the Public Petitions Committee held on 25<sup>th</sup> March 2024
- Annex 6:** Minutes of the 53<sup>rd</sup> Sitting of the Public Petitions Committee held on Thursday, August 24, 2023
- Annex 7:** Minutes of the 36<sup>th</sup> Sitting of the Public Petitions Committee held on Thursday, July 6, 2023
- Annex 8:** Minutes of the 35<sup>th</sup> Sitting of the Public Petitions Committee held on Tuesday, July 4, 2023
- Annex 9:** Minutes of the 34<sup>th</sup> Sitting of the Public Petitions Committee held on Tuesday, June 4, 2023
- Annex 10:** Minutes of the 28<sup>th</sup> Sitting of the Public Petitions Committee held on Thursday, May 11, 2023
- Annex 11:** Minutes of the 10<sup>th</sup> Sitting of the Public Petitions Committee held on Thursday, December 15, 2022





REPUBLIC OF KENYA  
THE NATIONAL ASSEMBLY  
THIRTEENTH PARLIAMENT - THIRD SESSION - 2024  
PUBLIC PETITIONS COMMITTEE

ADOPTION OF THE REPORT ON THE CONSIDERATION OF PUBLIC PETITION NO. 11 OF 2022  
REGARDING THE POLLUTION OF RIVER ATHI

We, the undersigned Honourable Members of the Public Petitions Committee, today Monday, 25<sup>th</sup> March, 2024, do hereby affix our signatures to this Report on the consideration of Public Petition No. 11 of 2023 regarding the Pollution of River Athi, to affirm our approval and confirm its accuracy, validity and authenticity: -

S/NO	NAME	DESIGNATION	SIGNATURE
1.	Hon. Nimrod Mbithuka Mbai, M.P.	Chairperson	
2.	Hon. Janet Jepkemboi Sitienei, M.P.	Vice-Chairperson	
3.	Hon. Patrick Makau King'ola, M.P.	Member	
4.	Hon. Ernest Ogesi Kivai, M.P.	Member	
5.	Hon. Joshua Chepyegon Kandie, M.P.	Member	
6.	Hon. John Walter Owino, M.P.	Member	
7.	Hon. Maisori Marwa Kitayama, M.P.	Member	
8.	Hon. Edith Vethi Nyenze, M.P.	Member	
9.	Hon. Bidu Mohamed Tubi, M.P.	Member	
10.	Hon. Caleb Mutiso Mule, M.P.	Member	
11.	Hon. (Eng.) Bernard Muriuki Nebart, M.P.	Member	
12.	Hon. Peter Mbogho Shake, M.P.	Member	
13.	Hon. Suzanne Ndunge Kiamba, M.P.	Member	
14.	Hon. John Bwire Okano, M.P.	Member	
15.	Hon. Sloya Clement Logova, M.P.	Member	

