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Bat SNA

17/10/18

*Paper laid by
the Chairperson,
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Nbioki, MP on
Wed, 17/10/18.
M. N. N. N.*

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THE NATIONAL ASSEMBLY

12TH PARLIAMENT – SECOND SESSION - 2018

DEPARTMENTAL COMMITTEE ON ENVIRONMENT AND NATURAL
RESOURCES

REPORT ON A PETITION REGARDING THE LIFTING OF BAN ON
LOGGING AND HARVESTING OF THE MANGROVES IN LAMU COUNTY.

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

OCTOBER, 2018

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LIST OF ABBREVIATION

BMU	-	Beach Management Unit
CFAs	-	Community Forest Associations
FCC	-	Forest Conservation Committee
HIV/AIDs	-	Human Immuno Virus Acquired Immune Deficiency
KMNR	-	Kiunga Marine National Reserve
KFS	-	Kenya Forest Service
KWS	-	Kenya Wildlife Service
LAPSSET	-	Lamu Port South Sudan Ethiopia Project
UNESCO	-	United Nations Educational, Scientific and Cultural Organization.

FOREWORD

Mangrove forests in Kenya cover about 61,271 ha, representing approximately 3.0% of the natural forest cover or less than 1.0% of the national land area. About 59% of these forests occur in Lamu County. There are nine mangrove species in Kenya, with *Rhizophora mucronata* (or mkoko) and *Ceriops tagal* (mkandaa) being the most dominant.

The Petition on Lifting of Ban on Logging and Harvesting of Mangrove Trees in Lamu County was presented to Parliament on 3rd May, 2018 by the Hon. Capt. Ruweida Obo, MP. The petition was subsequently committed to the Committee for consideration pursuant to Standing Order 227. Consequently, the Committee held a Sitting with Hon. Capt. Ruweida Obo, MP, Lamu County on 14th June, 2018. The Committee also conducted an inspection visit to Lamu and held a meeting with the residents on 27th July, 2018. Further, the Committee sought responses on the matter from the Cabinet Secretary, Ministry of Environment and Forestry during a meeting that was held on 13th August, 2018. In the petition, the Petitioner highlighted the following, that:

1. Mangrove trees are assemblages of salt tolerant trees and shrubs that grow in the inter-tidal regions of the tropical and subtropical coastlines. The trees grow luxuriantly in the places where freshwater mixes seawater and where sediment is composed of accumulated deposits of mud.
2. Mangroves protect vulnerable coastlines from wave action. They hold the soil together and prevent coastline erosion and mangrove forest provides homes for several species of plants and animals.
3. The government had imposed a ban on logging and harvesting of trees in the country. Residents of **Ndau, Kiwayu, Faza, Kizingitini, Pate Siyu, Manda, Kizuke and Mkunumbi in Lamu County** have since time in memorial entirely depended on logging of mangrove forest for their livelihood.
4. Following the government ban on logging and harvesting of trees in the country, more than 15,000 families have been affected and are living in abject poverty. Further, loss of livelihood has caused rise in insecurity in Lamu County.

Prayer

The petitioners prayed that the Departmental Committee on Environment and Natural Resources:-

1. Investigates and inquiries into the matter with a view to causing the government to lift the ban on harvesting of mangrove trees.

2. Makes any other further order(s) or direction (s) that is deemed fit in the circumstances of the petitioners

Having reviewed evidence submitted to it by the stakeholders and the findings from the field visit, the Committee observed that:

1. The locals were adversely affected by the ban on logging since they relied heavily on the mangrove trees for sustenance. There was therefore an urgent need to consider lifting of the ban in Lamu County. The effects of the ban in the area included: escalated poverty levels, increase in social ills, rise in unemployment leading to possible increase in terror threat in the area and Kenya in general.
2. There was need for the Kenya Forest Service to open up the area from Ndau to Kiunga on the Somali border to mangrove harvesting which would in the long run help in conservation of the mangrove forest.
3. The locals had a natural way of harvesting the mangrove trees sustainably. There was need to encourage the same since the county had the highest concentration of mangrove trees in Kenya.
4. There were a lot of mangrove raw materials in Lamu that were going to waste and rotting since they had already been harvested before the moratorium came into effect.
5. There were justifiable reasons for lifting of the moratorium but with a strict institution of control mechanisms to ensure continued sustainable exploitation of the mangrove forests.
6. The situations of the communities that were dependent on forest resources varied in different areas of the country. Lamu County was unique and needed to be treated as such.
7. There was need for the Ministry of Environment and Forestry to engage with the stakeholders in Lamu to deliberate on alternative means of livelihood to reduce the total reliance of harvesting of mangrove trees.

Consequently, the Committee recommends that:

1. Prayer One:

That the Committee investigates and inquires into the matter with a view to causing the government to lift the ban on harvesting of mangroves trees;

Recommendation

- a. The Committee after inquiring and investigating the matter directs that the Cabinet Secretary for Environment and Forestry lifts the ban on the harvesting of the mangrove trees immediately with a view to changing the livelihoods of the residents that had been affected due to a blanket imposition of the moratorium.

- b. Upon the lifting of the ban, Kenya Forest Service to open up the area from Ndau to Kiunga on the Somali border to mangrove harvesting which would assist in the regeneration and conservation of the mangrove forest.

2. Prayer Two

That it makes any other direction that it deems fit in the circumstances.

Recommendation

- a) The Kenya Forest Service works closely with the Lamu Community to ensure continued sustainable exploitation of the mangrove trees.
- b) The Ministry of Environment and Forestry and other relevant national government agencies together with the County Government within six months of tabling of the report engages with the residents and stakeholders in Lamu County to explore other alternative means of livelihood to reduce pressure and total reliance on the mangrove trees.



**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

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 mandate, pursuant to the *Standing Order 216 (5,)* is 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);
- (fa) To examine treaties, agreements and conventions;
- g) To make reports and recommendations to the House as often as possible, including recommendation of proposed legislation;
- h) To consider reports of Commissions and Independent Offices submitted to the House pursuant to the provisions of Article 254 of the Constitution; and
- i) To examine any questions raised by Members on a matter within its mandate.

The subject matter of the Departmental Committee on Environment and Natural Resources are stated in the Second Schedule of the National Assembly Standing Orders No. 216 (f) as follows: climate change, environment management and conservation, forestry, water resource management, wildlife, mining and natural resources, pollution and waste management.

1.2 Oversight

In executing its mandate, the Committee oversees the following State Departments, namely:

- The Ministry of Water and Sanitation;
- The Ministry of Environment and Forestry;
- The State Department for Wildlife; and
- The State Department of Mining.

1.3 Committee Membership

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

1. **The Hon. Kareke Mbiuki, M.P.** **Chairperson**
2. **The Hon. Sophia Abdi Noor, M.P.** **Vice Chairperson**
3. The Hon. Benjamin Jomo Washiali, M.P., CBS²
4. The Hon. David Kangogo Bowen, M.P.
5. The Hon. Francis Chachu Ganya, M.P.
6. The Hon. Ali Wario Guyo, M.P.
7. The Hon. Beatrice Cherono Kones, M.P.
8. The Hon. Charity Kathambi Chepkwony, M.P.
9. The Hon. Hilary Kiplang'at Kosgei, M.P.
10. The Hon. Peter Kimari Kihara, M.P.
11. The Hon. Benjamin Dalu Tayari, MP.
12. The Hon. Charles Ong'ondo Were, M.P.
13. The Hon. Nasri Sahal Ibrahim, M.P.
14. The Hon. Rossa Buyu. M.P.
15. The Hon. Said Hiribae, M.P.
16. The Hon. Hassan Oda Hulufo, M.P.
17. The Hon. Amin Deddy Mohamed Ali, M.P.
18. The Hon. Rehema Hassan, M.P.
19. The Hon. (Eng.) Paul Musyimi Nzengu, M.P.

1.4 Committee Secretariat

1. Ms. Esther Nginyo - Second Clerk Assistant/Lead Clerk
2. Mr. Dennis Mogare Ogechi - Third Clerk Assistant
3. Mr. Salem Lorot - Legal Counsel II
4. Ms. Winnie Kulei - Research officer III
5. Ms. Yunis Amran - Fiscal Analyst III

2.0 BACKGROUND INFORMATION

2.1 Introduction

- 1) Mangrove forests in Kenya cover about 61,271 ha, representing approximately 3.0% of the natural forest cover or less than 1.0% of the national land area. About 59% of these forests occur in Lamu County. There are nine mangrove species in Kenya, with *Rhizophora mucronata* (or mkoko) and *Ceriops tagal* (mkandaa) being the most dominant.
- 2) Mangroves were declared government reserve forests by the Proclamation No. 44 of 30th April 1932, and later by Legal Notice No. 174 of 20th May 1964. Under this “Gazette Notification for Mangrove Forests in Kenya” all land between high water and low water marks (ordinary spring tides) are described as mangrove areas.

2.2 Lifting of Ban on Logging and Harvesting of Mangrove Trees

- 3) Mangrove trees are assemblages of salt tolerant trees and shrubs that grow in the inter-tidal regions of the tropical and subtropical coastlines. The trees grow luxuriantly in the places where freshwater mixes seawater and where sediment is composed of accumulated deposits of mud.
- 4) Mangroves protect vulnerable coastlines from wave action. They hold the soil together and prevent coastline erosion and mangrove forest provides homes for several species of plants and animals.
- 5) The government had imposed a ban on logging and harvesting of trees in the country. Residents of **Ndau, Kiwayu, Faza, Kizingitini, Pate Siyu, Manda, Kizuke and Mkunumbi in Lamu County** have since time in memorial entirely depended on logging of mangrove forest for their livelihood.
- 6) Following the government ban on logging and harvesting of trees in the country, more than 15,000 families have been affected and are living in abject poverty. Further, loss of livelihood has caused rise in insecurity in Lamu County.

2.3 Prayer

The petitioners pray that the departmental committee on environment and natural resources:-

- i. Investigates and inquiries into the matter with a view to causing the government to lift the ban on harvesting of mangrove trees.
- ii. Makes any other further order(s) or direction (s) that is deemed fit in the circumstances of the petitioners

3.0 SUBMISSIONS ON THE PETITION REGARDING LIFTING OF THE BAN ON LOGGING AND HARVESTING OF MANGROVES IN LAMU COUNTY

The Petition on Lifting of Ban on Logging and Harvesting of Mangrove Trees in Lamu County was presented to Parliament on 3rd May, 2018 by the Hon. Capt. Ruweida Obo, MP. It drew the House to the fact that the government had imposed a ban on the mangrove trees which had affected more than 15,000 families subjecting them to abject poverty.

The petitioners prayed that the National Assembly through the Departmental Committee on Environment and Natural Resources:

- i. Investigates and inquires into the matter with a view to causing the government to lift the ban on harvesting of mangrove trees; and
- ii. Makes any other further orders or directions that is deemed fit in the circumstances of the Petitioners.

The petition was subsequently committed to the Committee for consideration pursuant to Standing Order 227. Consequently, the Committee held a Sitting with Hon. Capt. Ruweida Obo, MP, Lamu County on 14th June, 2018. The Committee also conducted an inspection visit to Lamu and held a meeting with the residents on 27th July, 2018. Further, the Committee sought responses on the matter from the Cabinet Secretary, Ministry of Environment and Forestry during a meeting that was held on 13th August, 2018.

3.1 Submission By The Petition, The Hon. Capt. Ruweida Obo, MP

The Hon. Capt. Ruweida Obo, MP appeared before the Committee on 14th June, 2018 and informed it that:

1. Mangrove forests have been an important part of the economy of Lamu County since time immemorial.
2. In the 1960s, shiploads of mangrove trees were being exported to the Middle East.
3. In the 1980s, the government banned the export of mangrove trees and only allowed usage for local consumption. That was the situation obtaining in Lamu until the ban on logging activities was imposed countrywide in 2018.
4. The general ban had affected the building industry in Lamu County which relied heavily on mangrove trees since steel and iron could not be used in the area.
5. It was important to appreciate the fact that cutting down mangrove trees stimulated better growth of the mangrove forests.
6. The local population had been disenfranchised with the blanket ban on logging since the locals were keen on conservation efforts of the mangrove ecosystem in the area. The locals

even reported anyone using power saws to fell the trees to authorities since they were keen on sustainable use of the mangrove forests.

7. Lamu County held 60% of the mangrove trees present in Kenya and of the 60% in Lamu County, 92% was still intact.
8. The only degradation of the mangrove trees had been witnessed under the implementation of the LAPSSET project. 5-10 hectares of the trees had been felled courtesy of the project. Equally once the LAPSSET project was completed, it could affect the mangrove ecosystem since transportation of oil and possible spills would negatively impact the ecosystem.
9. The ban on logging was effected without any consultation with locals in Lamu. since mangrove trees were distinct from other trees, consultations would have been helpful.
10. When dealing with mangrove tree exploitation issues, best practices can be borrowed from countries like Sri Lanka with regard to:
 - Public participation
 - Micro loans
 - Alternative employment in case its needful to avoid over reliance on mangrove ecosystems
11. The ban on exploitation of the mangrove resources was fueling drug abuse, HIV/AIDS and the temptation to join terror groups since the youth were left hopeless since they relied on mangrove resources for sustenance.
12. There was need to lift the ban on mangrove tree logging and instead find alternatives sources of livelihoods before effecting the ban, if need be.
13. When replanting especially in areas affected by the implementation of the LAPSSET project, there was need to consider planting fast growing species.

3.2 Submission By The Lamu County Mangrove Harvesters

The Memorandum from Lamu County was presented by the Representative Timber Industry Mr. Mohamed Haroun on behalf of the mangrove harvesting fraternity to the Committee on 27th July, 2018 as follows: -

1. On the History of Mangroves in Lamu, Mr. Haroun stated that:
 - a) The Coast conservancy has unique features compared to the conservancies in Kenya. It covers a wide area of mangrove forest stretched along the coastal line from Kiunga (Somalia border) to Vanga (Tanzania border).
 - b) About 70% of Lamu County population depended on Mangrove either directly or indirectly for their livelihood and lifeline. The precious and most vital resource was taken care of and conserved to its betterment by the communities living adjacent to them. The Mangroves should not be considered like the main land forest because of its features, growth and should be distinguished to a wide range.

- c) Mangrove could grow to a height of more than 70 feet (230 inches) and a diameter of 92feet) 24inches). Kenya was the second richest in Mangroves from Nigeria in Africa. It also took good position in the world including Indonesia and Sri Lanka.
 - d) The total Mangrove coverage in Coastal region was 61,271 hectares. Tana River had 3,260 ha, Mombasa 3,771 ha and Kwale 8,354 ha. This totals to 49% of Mangrove cover. Lamu County covered 37,350ha of Mangrove which is equivalent to 61%.
 - e) Over 17,021ha almost 45% of Lamu Mangrove was under the custody of Kiunga Marine National Reserve (KMNR). KWS had not allowed any harvesting in this area for almost 20 years. A large area had been affected by diseases due to lack of cutting, poor aeration, space leading to congestion.
 - f) Over 4,000ha almost 12% of the Mangrove had been taken by the LAPPSET project. The remaining 40% was where people of Lamu obtain their livelihood and lifeline. Report proves that when Mangrove is not cut it dies due to poor aeration, space and congestion. During an aerial view with colleagues from the Forest Conservation Committee (FCC) coast conservancy march 2018, the mangrove forest was intact and healthy.
 - g) Lamu was one of the oldest towns in Kenya and Africa identified by UNESCO as world heritage site. Mangrove was one of the major exports of Lamu in the 19th century. The Mangroves were exported to Gulf States such as Yemen, Dubai, Iran and Far and Middle East countries such as India until 1982 when the export was banned by his Excellency Retired President Daniel Arap Moi. It was the 1st International Trade in Kenya and Lamu had no exemption.
 - h) The ancient town was built by mangroves and the villages in the county, small towns used mangroves in the construction because the weather condition could not sustain iron for construction. It was the residents' obligation to maintain its heritage, dignity and sustainability. Lamu County is divided into two districts. The mangroves stretched in the two district and were a major source of income. All the six counties in the Coastal region depended on Mangroves from Lamu for their construction.
2. On how Lamu people conserve their mangroves, Mr. Haroun stated that the following were ways of mangrove conservation in Lamu:
- a) Selective cutting - This type of harvesting was based on selective cutting where harvesting was done within a gap of 100M using a hand saw leaving over 90% of mangrove ecosystem vibrant and undegraded.
 - b) Monsoon wind - There were two types of monsoon winds the North east and the South East. The mangrove cutters used the dhows, jahaz and canoes as sailing boat depending entirely on the winds. The winds directed them to the harvesting sites thus creating natural ZONATION and BLOCKS. For example, during the South East monsoon, harvesting was done in Marembo, Ndau, Siu, Chongani, Vumbe to mention but a few leaving other blocks to grow. During the North East wind harvesting is done in Wange, Dodori, Rewa leaving the previous block to grow.

c) Mother plant - These were queens producing the seedling **MLINGE** in Kiswahili. The mother plant is left untouched. Harvesting is based on marketing: -

- **BORITI:** 11 Feet height, diameter 2/5 inches
- **MAZIO:** 11 feet height, diameter 2 inches
- **VIGINGI:** 7 feet height, diameter 3 inches

These were a mangrove needed in the market. Harvesting was done on the mediums leaving the old and small ones untouched.

- d) Aeration - The type of harvesting can be referred as Pruning leaving the mangrove forest with enough air to circulate in the forest. This improves aeration and sustainability.
- e) Diseases - Diseases were controlled due to lack of congestion. The mangrove forest received enough air after pruning/harvesting is done.
- f) Spacing - When mangrove harvesting was done, space was created for new seedlings to erect on the ground.
- g) Plant cover - Harvesting ensured the removal of plant cover for the new seedlings to reach the ground from the mother plant.
- h) User group - The user groups/ mangrove cutters were the watchdogs of the mangroves to enhance sustainability.
- i) Conservation groups - Every community living adjacent to the mangrove have conservation groups to conserve the unique ecosystem e.g Patte, Faza, Ndau, Kizingitini, Kizuke conservation groups to mention a few.
- j) Community Forest Association (CFA's) - CFA's were doing well when in terms of conservation. No intruders were allowed to harvest mangroves in areas that they managed. This enhanced and promoted conservation. In Lamu County, there was a Muungano and Lamu CFA for Mangroves. They ensured harvesting was done systematically.
- k) Beach Management Unit (BMU's) - Every village had a BMU. Tight supervision was done by them to ensure conservation and sustainability.
- l) Saw milling - There was no saw milling in the mangroves hence no logging unlike in the highlands forest where vehicles and other machines were used leading to desertification and oil spillage which affects the forest. Mangrove is harvested using a Hand Saw.
- m) New growth - It was during the rainy season when the Queens started to produce seedlings. "*Mkoko Unaalika Maua*". The seedlings directed themselves directly to erect on the ground naturally. Some seedlings fell through the effort of mangrove cutters. They erect the seedlings to the ground willingly free of charge.

- n) Tree planting - Every year mangrove is planted to ensure sustainability by the Lamu people E.g Bora Maganga near Manda Air strip, Mokowe, Patte, kizingitini. This proves and indicates mangroves sustainability and conservation.
3. On the effects of the government Moratorium to the Lamu County, Mr. Haroun stated that it had led to:
- a) Unemployment: this had increased poverty level of Lamu people.
 - b) High cost of living: lorries from Mombasa carry Mangroves in their return have increased transport cost hence commodities are highly priced.
 - c) School dropout: some students have been expelled and sent home in secondary, colleges and universities due to lack of fees.
 - d) Insecurity: most of the youth are idle hence engaging in social evil activities e.g robbery and theft.
 - e) Destruction of dhows and jahazi: most of the dhows worth millions of shillings are now in critical condition due to the moratorium.
 - f) Destruction of houses: some houses have fallen down due to lack of materials for construction.
 - g) Broken families: some of the families are broken due to lack of income hence separation and divorce.
 - h) Loss of revenue: the county government receives alot of income from the mangrove harvesters. This boosts their revenue.
4. Effects of the Moratorium to the Mangrove Forest include: Disease, Poor aeration, few seedlings erect on the ground, Poor spacing and Congestion.
5. Effect of the Moratorium to the Nation/Government include: Death of the Mangrove Forest, Insecurity, Starvation, HIV/AIDS some ladies can engage in prostitution and contract the virus, Disease – nutrition deficiency diseases e.g. kwashiorkor, Loss of revenue – KFS through mangroves contributes millions of shillings to the treasury. This is a source of government revenue.
6. The organization made the following recommendations:
- a) Licensees should be given movement permits to transport the already cut mangroves that had been harvested before moratorium;
 - b) Moratorium should be lifted to enhance mangroves sustainability and conservation;

- c) Mangroves cutters should be compensated instead of KFS by the LAPPSET just like farmers;
- d) The Government to initiate food program to the starving Lamu people;
- e) When imposing moratorium, specific areas should be considered e.g. Mau and Mount Kenya the measures should be taken to the specific areas and not all forests at large;
- f) The government should find alternative way of living to the Lamu people.

3.3 Submission By The Kenya Forest Service, Coastal Region

Mr. Evans Maneno, the Ecosystem Conservator in the Coastal Region, appeared before the Committee on 27th July, 2018 and informed it that:

1. Mangroves comprised of trees and shrubs that were salt tolerant and are most common and familiar form of vegetation occurring in the inter-tidal zone along sheltered coast.
2. Mangrove forests were highly productive ecosystems and natural renewable resource. They provided essential goods and services and play a very important role in the lives of coastal communities. This include: - fish breeding, fish hide outs, coastal shoreline protection, carbon sinks, construction materials, climate change mitigation.
3. Mangrove Habitat and Characteristics included:
 - a) Have adaptation such as viviparous germination, separation of fresh water from salt water conservation of fresh water.
 - b) Ability to strike roots soon after coming into contact with soil
 - c) Ability to exchange gases through specialises roots system.
 - d) Able to deal with adverse environment where few plants would survive
 - e) Roots of salt-excluding species of ceriops and rhizophorus can absorb only fresh water from saline water through a process of ultrafiltration
 - f) Species of Avicines and sonneratia can regulate the salt content of their tissues by glands in their leaves.
 - g) Mangroves display features similar to those in desert plants which tend to conserve water
 - h) Mangroves occur in areas of high humidity
 - i) Mangroves are characterised by high salt and water, low oxygen

- j) Mangroves have shallow root system hence cannot withstand strong winds hence grow in sheltered habitat
 - k) Seeds and propagules dispersed by water hence influenced by tides that carry them both upstream and downstream
4. On mangrove regeneration he stated that:
- a) Mangrove forests have an efficient mechanism for natural regeneration particularly in areas of mangrove stands where site degradation has not taken place.
 - b) Mangrove seeds develop into seedlings while they are still attached to the mother tree this is called vivipary where the embryo ruptures the pericarp and grows e.g. rhizophorus and ceriops.
 - c) Other species such as Avecinia, the embryo develops within the fruit but does not enlarge sufficiently to rupture the pericarp this is called cryptovivipary
 - d) Most of the seeds that fall off mother trees during low tide stick to the soft mud and quickly strike roots. In the case of viviparous seeds, the adventitious roots already present emerge and anchor the seedlings.
 - e) In instances where seeds or seedlings drop during high tides, they continue to float in the water until they come into contact with a soil substrate and strike roots.
 - f) Profuse natural regeneration occurs in areas under mangrove formations.
 - g) In many instances advance growth establishes itself and waits for an opening in the canopy to emerge.
5. On Silvicultural System (management) he stated that:
- a) In most mangrove countries except Asia, no systematic silviculture or management practice is applied to the resource. However, in Lamu, there is selective removal, enrichment planting and rehabilitation of the extreme open spaces.
 - b) The normal mangrove forest behaviour is that a lot of losses occur in the crop before it reaches maturity. This is due to suppress site by canopy and normal mortality. It has been noted that: -
 - i) Fito 10% fail to reach Pau
 - ii) Pau 50% fails to reach Mazio
 - iii) Mazio 30% fail to reach Boriti
 - iv) Boriti 20% fail to reach Nguzo

6. Mangrove Products include:

S/N	NAME	DIAMETER	AGE
1.	Fito	less than 4cm	7 years
2.	Pau	4.1cm to 6.0cm	15 years
3.	Mazio	6.1cm to 9cm	28years
4.	Boriti	9.1cm to 13cm	37 years
5.	Nguzo	13.1cm to 20cm	45years
6.	Banaa	20.1cm to 35cm	

7. Plantation Establishment can be done through:

- i) enrichment planting with spacing of 0.5m*0.5, 1.5m*1.5, 3m*3m to supplement natural regeneration or
- ii) direct sowing pregerminated seeds.
- iii) no weeding required but beating up in the spaces necessary.
- iv) The selective removal done periodically by the licensees serves for the thinning done in traditional plantations. Failure to do so leads to increased mortality.
- v) This is one of the justifications to allow the continuous selective harvesting/removal of Mazio, Boriti and limited Pau and Nguzo.

8. Mangrove as a forest ecosystem occurs along the Kenya Coast with distribution as follows: -

S/No	County	Forest Area	Percentages Cover (%)	Non Mangrove Areas 1120 (Ha)
1.	Lamu	37,350	61	61,836
2.	Kilifi	8,536	13.9315	12,092
3.	Kwale	8,354	13.347	7,205
4.	Mombasa	3,771	6.15	5,513
5.	Tana River	3,260	5.326	1,382
	Total	61,271	100%	80,823

Lamu has the largest percentage cover of 61%

9. The mangrove forests give range of benefits and opportunities to both local and national economic development which include:

- Improved livelihoods
- Provision of environmental goods and service such as habitat for fish and other wildlife
- Shoreline protection

- Carbon sequestration

It is these reasons that mangrove should be protected to continue providing the goods and services.

10. Mangrove types - There are 9 species found in Kenya though *Rhizophora Mucronata* and *Ceriops tagal* are the most dominant.

S/N	SPECIES	LOCAL NAME	MAIN USES
1.	<i>Rhizophora mucronata</i>	Mkoko	poles, dye firewood, fencing, charcoal
2.	<i>Ceriops tagal</i>	Mkanda	poles, firewood, charcoal
3.	<i>Sonneratia</i>	Mlilana	boat, ribs poles, firewood
4.	<i>Avecinia marina</i>	Mchuu	firewood, poles
5.	<i>Brugliera gymnorhica</i>	Muia	poles, firewood, charcoal

11. Mangrove Materials Harvested before Moratorium

S/NO	NAMES	ITEMS	SCORES	KSHS
1.	Mohamed Haroun	Boriti Vigingi Mazio	280 180 240	140,000 108,000 96,000
2.	Abderehman Lali	Boriti Vigingi Mazio Pau	80 20 80 70	90,0000 42,000 32,000 14,000
3.	Mohamed Lali	Boriti Vigingi Mazio	1200 60 400	600,000 36,000 160,0000
4.	Mohamed Rashid	Boriti Vigingi Mazio	500 500 100	250,000 300,000 40,000
5.	Hassan Idarus	Boriti Vigingi Mazio Pau	10 10 10 10	5,000 6,000 4,000 2,000
6.	Abdulrahman S. Abdalla	Boriti Vigingi Mazio	10 10 10	5,000 6,000 4,000

		Pau	10	2,000
7.	Fatma F. Abushiri	Boriti	10	5,000
		Vigingi	10	6,000
		Mazio	10	4,000
		Pau	10	2,000
	TOTAL			1,959,000

12. Mangrove in the field

S/NO	NAME	ITEM	SCORES	KSH	SITE
	Mohamed Haroun	Vigingi	300	180,000	Wange, Ndau
		Mazio	260	104,000	
		Boriti	200	100,000	
	Abderehman Lali	Vigingi	230	210,000	Ndau, Mkunumbi
		Mazio	240	96,000	
		Boriti	280	140,000	
	Mohamed Lali	Vigingi	230	138,000	Ndau, Wange
		Mazio	240	96,000	
		Boriti	180	90,000	
	Mohamed Rashid	Vigingi	230	138,000	
		Mazio	340	136,000	
		Boriti	250	125,000	
	Hassan Idarus	Vigingi	17	10,200	
		Mazio	20	8,000	
		Boriti	30	15,000	
	Abdulrahman S. Abdalla	Vigingi	25	15,000	
		Mazio	15	6,000	
		Boriti	10	5,000	
	Fatma F. Abushiri	Vigingi	300	180,000	
		Mazio	250	100,000	
		Boriti	400	200,000	

13. Mangrove challenges include: Increasing population, Weak governance in the past, Inadequate awareness of true value of mangrove ecosystem, High level of poverty, Lack of alternative livelihood and Inadequate mangrove prescriptions.
14. Threats to the mangrove ecosystem include: Over exploitation, Conversion of mangrove area to other land uses, Aquaculture, Pollution-oil spills, dumping, degradation, Infrastructure development, Diversion and damming of rivers and Sedimentation.
15. Measures to address the challenges: Alternative resources being promoted e.g fast growing Casuarina, Management plan of mangrove prepared, Management plan and research into value of mangrove, Alternative livelihood support system and diversification of enterprises and Mangrove prescriptions and field supervision.
16. The impacts of ban include:
 - i) 70% of Lamu population depended on mangrove and fishing for their livelihood hence a number of them had no fall back plan.
 - ii) Construction of houses and repairs were depended on mangrove products hence currently most houses on the world heritage site leaking and threaten loss of its heritage status
 - iii) Steel metal had been replaced for many years with Pau, Mazio, Boriti in the current ban status no materials available affecting major percentage of the Big Four Agenda
 - iv) Dhows making, boats repair and jetties depended on mangrove produces, this is no longer the case
 - v) Over 94% of the population in Lamu is dependent on fuelwood and charcoal for energy and based on their purchasing power, this has rendered majority unable to access source of energy for cooking.
 - vi) Employment in the island villages of Ndau, Wange, Faza, Kizingitini, Pate is purely dependent on mangrove since time in memorial and with the ban, the villages cannot feed themselves, this is a risk to especially youth who could join gangs increasing insecurity.

3.4 Submission by the Cabinet Secretary, Ministry of Environment and Forestry, Mr.

Keriako Tobiko

Mr. Keriako Tobiko, the Cabinet Secretary, Ministry of Environment and Forestry appeared before the Committee on 13th August, 2018 and briefed it as follows that:

- i. In Kenya, mangroves covered approximately 61, 271 ha, and that they were found on the coastline in Lamu, Kwale, Kilifi, Malindi and Mombasa and Tana River Counties. The Mangrove areas were gazetted vide Proclamation No. 44 of 30th April 1932, defined as all land between high water and low water marks. They were declared central forests through Legal Notice No. 174 of 1964.
- ii. These forests were managed by the Kenya Forest Service (KFS) and where they fall in the Marine Protected areas or Kayas then they are managed jointly with KWS and the

National Museums of Kenya, respectively. The largest coverage of mangrove forests occurs in Lamu County (61%) with Mombasa and Tana River Counties having the least.

- iii. There were 8 mangrove species in Kenya, namely; *Rhizophora mucronata*, *Ceriops tagal*, *Bruguiera gymnorrhiza*, *Sonneratia alba*, *Xylocarpus granatum*, *Avicennia marina*, *Lumnitzera racemosa* and *Heritiera littoralis*.
- iv. The dominant species are *Rhizophora mucronata* and *Ceriops tagal* making 70% of the formation. Mangroves in Kenya display typical zonation pattern of the mangroves in Eastern Africa. The seaward side is occupied by *Sonneratia-Rhizophora-Avicennia* community. This is followed by *Rhizophora-Bruguiera-Ceriops* in the mid zone and dwarf *Avicennia-Lumnitzera-Xylocarpus* complex on the landward side.
- v. Mangrove forest supported enormous kind of living things, fish, crabs, shells, water birds, insects, and even large animals such as crocodiles, hippopotamus, and buffaloes. It was noteworthy that mangrove forest was important as stopover for migratory birds, and haven of young fish whose adults inhabit in coral reef and/or ocean. Mangrove forest also contributed to human life/livelihoods; providing fishery, firewood and timber and protecting shoreline from erosion among other services and products.
- vi. Mangroves provided goods and services that were of economic, ecological, and environmental value to the people. At the ecosystem level, mangroves are classified as the third in productivity after tropical rain forests and coral reefs. The goods and services provided by mangroves in Kenya include: Provisioning - Wood products (building poles, fuelwood) and Non-wood forest products (fishery, local medicine); Regulatory - Shoreline protection from damaging storm and hurricane winds, waves and floods; carbon sequestration; nutrient, pollutants and sediment filtration; Supporting services - Nutrient cycling, primary production, habitat, breeding grounds; Cultural services - Sacred sites, education, research, tourism, recreation. The total economic value of mangroves in Kenya has been estimated at more than KSh. 200,000 /ha/yr.
- vii. Mangrove forests in Kenya provided many direct products – both timber and non-timber. Timber products included firewood, building poles and charcoal used in urban and rural areas. Mangrove wood was also utilized by the local communities for furniture making. Among the non-timber products derived from mangrove forests include honey, herbal medicines, crabs, prawns, and fish.
- viii. Threats to Mangroves like in most parts of the world, mangroves in Kenya were endangered due to:
 - a) Land-use change: The biggest threat is Encroachment and Human Settlement
 - b) Over-exploitation: Selective removal of quality poles of suitable species has tended to leave out inferior species unsuitable for the market. Quality poles have been wiped out in most mangrove areas where population density is highest along the coast.
 - c) Salt extraction has also led to loss of mangroves. Currently there are more than 6 salt works in Ngomeni where most of extraction is carried out; landing 71 400 tonnes of salt per year. Environmental impacts associated with salt extraction include hyper salinity in areas close to mangroves leading to their deaths.

- d) Poor land use practices in the hinterland has increased sediment loads into mangrove leading to siltation of breathing mangrove roots and eventual death.
 - e) The 1997/98 El Nino rains that hit the country caused massive death of mangroves in many areas along the coast, most of which have experienced no recovery up to date.
 - f) The projected sea-level rise due to climate change. Climate change impacts are also associated with increased flooding/sedimentation and acidity. Evidence of death of mangroves due to climate change impacts has been observed in several areas along the coast such as Gazi bay, Mwache creek, Ngomeni, Tana River and Dodori creek.
 - g) Aquaculture
 - h) Pollution – oil spills, dumping, degradation
 - i) Infrastructure development
 - j) Diversion and damming of rivers
- ix. Mangrove management Challenges were due to the increasing population, weak governance, inadequate awareness of true value of mangrove ecosystem, and inadequate mangrove prescriptions.
- x. On Conservation Measures, a National Mangrove Ecosystem Management Plan (2017-2027) had been developed to address the benefits and threats facing mangrove ecosystem in Kenya. The plan contains six management programmes developed to ensure an integrated approach in Mangrove management. At least KES 3.8 billion would be required to implement the plan over a period of 10 years.
- xi. A number of measures were being undertaken in order to reverse the trend of degradation within mangrove areas, which included:
- a) Restoration of degraded areas through replanting, for instance in Lamu County a total of 30 ha of mangrove area was planted.
 - b) Enhancing sustainable management of mangroves in by creating awareness of the importance of mangroves.
 - c) Implementation of the National Mangrove Ecosystem Management Plan (2017-2027)
 - d) Controlling of mangrove harvesting and encroachment through licensing procedures and enhanced monitoring of the harvesting plan.
 - e) An all-inclusive and participatory management approach where all stakeholders, especially the local communities are involved.
 - f) Promotion of nature-based enterprises such as ecotourism, bee-keeping, aquaculture, and mari culture.
 - g) Developing baseline data and information for the development of a comprehensive management plan.
- xii. On the Ban on Mangrove Harvesting, the Government had extended a moratorium on logging and charcoal burning in public and community forests for a period of six months and would end in December, 2018. The mangrove forests being public forests

had also been affected by the moratorium. The purpose of the moratorium was to allow for reassessment and rationalization of the entire forest sector in the country.

- xiii. Impacts of the Moratorium on harvesting of mangroves included:
1. Seven licensees operate in mangroves in Lamu County. When the ban on logging was declared the following licensees had cut some materials which up to today they are lying on the ground uncollected
 2. Seventy percent of Lamu population depends on mangrove and fishing for their livelihood hence a number of them have no fall back.
 3. Construction of houses and repairs are dependent on mangrove products hence currently most houses are leaking and threatens its global heritage status.
 4. Lamu people use Pau, Mazio and Boriti for construction and with the current ban they can only resort to using steel which is expensive and not durable due to saline conditions.
 5. Dhows making, boats repairs and jetties depend on mangrove produces, this is no longer the case.
 6. Over 94% of the population in Lamu is dependent on fuelwood and charcoal for energy and based on their purchasing power, this has rendered majority unable to access source of energy for domestic use.
 7. Employment in the Island villages of Ndau, Wange, Faza, Kizingitini, Pate is purely dependent on mangrove since time immemorial and with the ban, the villages have lost their livelihood sources – this is a risk to especially youth who could join gangs increasing insecurity.
- xiv. it was not in doubt that the ban on logging in public and community forests including the mangroves had adversely affected livelihoods of not only the residents of Lamu County but many communities whose livelihood is dependent on forests. The aim of the ban was to allow reassessment and rationalization of the entire forest sector in Kenya.
- xv. On Measures being undertaken by the Ministry and its agencies to facilitate lifting of the ban, the Ministry of Environment and Forestry and the Kenya Forest Service was working on modalities towards lifting of the moratorium by implementing priority recommendations of the Taskforce formed to Inquire into Forest Resources Management and Logging Activities in Kenya. So far the steps that had been taken included:-
- a) Initiated online vetting, registration and licensing of saw millers (including those dealing in mangroves).
 - b) Developed procedures for allocation of Mangrove materials to adhere to the current Forests (Participation in Sustainable Forest Management) Rules 2009 in respect to issuance of Mangrove licenses.
 - c) Conducting audit of logging status in state forests.
 - d) Developed Forest products chain of custody.
 - e) Developed new generation movement permits with enhanced security features to control illegal harvesting and transportation of mangrove products.
 - f) Conducted plantation audit.

- xvi. The Ministry was aware of the plight of the people of Lamu County and steps are being taken to address the issues that led to the ban on logging and harvesting of mangrove trees in Lamu County.

4.0 COMMITTEE OBSERVATIONS

Having reviewed the evidence submitted to it by the stakeholders and the findings from the field visit, the Committee observed that:

- 1) The locals were adversely affected by the ban on logging since they relied heavily on the mangrove trees for sustenance. There was therefore an urgent need to consider lifting of the ban in Lamu County. The effects of the ban in the area included: escalated poverty levels, increase in social ills, rise in unemployment leading to possible increase in terror threat in the area and Kenya in general.
- 2) There was need for the Kenya Forest Service to open up the area from Ndaui to Kiunga on the Somali border to mangrove harvesting which would in the long run help in conservation of the mangrove forest.
- 3) The locals had a natural way of harvesting the mangrove trees sustainably. There was need to encourage the same since the county had the highest concentration of mangrove trees in Kenya.
- 4) There were a lot of mangrove raw materials in Lamu that were going to waste and rotting since they had already been harvested before the moratorium came into effect.
- 5) There were justifiable reasons for lifting of the moratorium but with a strict institution of control mechanisms to ensure continued sustainable exploitation of the mangrove forests.
- 6) The situations of the communities that were dependent on forest resources varied in different areas of the country. Lamu County was unique and needed to be treated as such.
- 7) There was need for the Ministry of Environment and Forestry to engage with the stakeholders in Lamu to deliberate on alternative means of livelihood to reduce the total reliance of harvesting of mangrove trees.

5.0 COMMITTEE RECOMMENDATIONS

The Committee recommends that:

1. Prayer One:

That the Committee investigates and inquires into the matter with a view to causing the government to lift the ban on harvesting of mangroves trees;

Recommendation

- a. The Committee after inquiring and investigating the matter directs that the Cabinet Secretary for Environment and Forestry lifts the ban on the harvesting of the mangrove trees immediately with a view to changing the livelihoods of the residents that had been affected due to a blanket imposition of the moratorium.
- b. Upon the lifting of the ban, Kenya Forest Service to open up the area from Ndau to Kiunga on the Somali border to mangrove harvesting which would in the regeneration and conservation of the mangrove forest.

2. Prayer Two

That it makes any other direction that it deems fit in the circumstances.

Recommendation

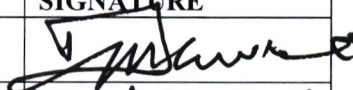
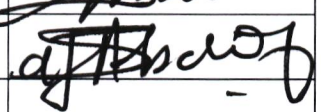
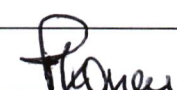



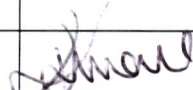


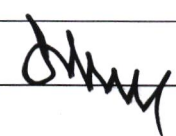
- a. The Kenya Forest Service works closely with the Lamu Community to ensure continued sustainable exploitation of the mangrove trees.
- b. The Ministry of Environment and Forestry and other relevant national government agencies together with the County Government within six months of tabling of the report engages with the residents and stakeholders in Lamu County to explore other alternative means of livelihood to reduce pressure and total reliance on the mangrove trees.

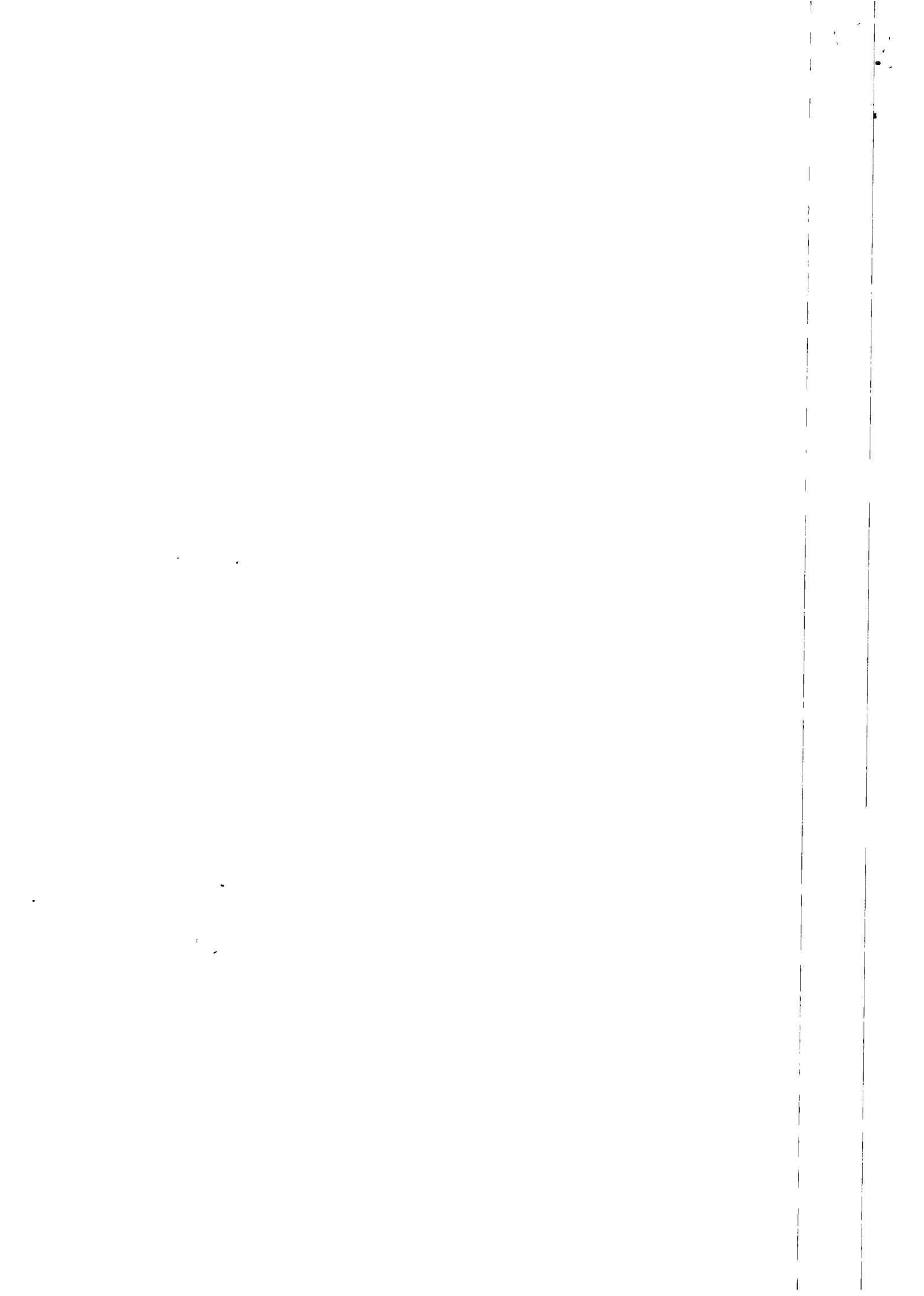
**DC-ENR: DEPARTMENTAL COMMITTEE ON ENVIRONMENT AND NATURAL
RESOURCES**

REPORT ADOPTION LIST

**REPORT ON PETITION REGARDING LIFTING OF THE BAN ON LOGGING AND
HARVESTING OF MANGROVE TREES BY THE HON. CAPT. RUWEIDA OBO, LAMU
COUNTY.**

DATE: Thursday 4th October, 2018 (10 AM) VENUE: 4th Floor, Protection House Boardroom

	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 Cheronon 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.	



REPUBLIC OF KENYA



Approved
SNA
2/5/18

Mr. Speaker
to approve
page 1
on 15/1/18

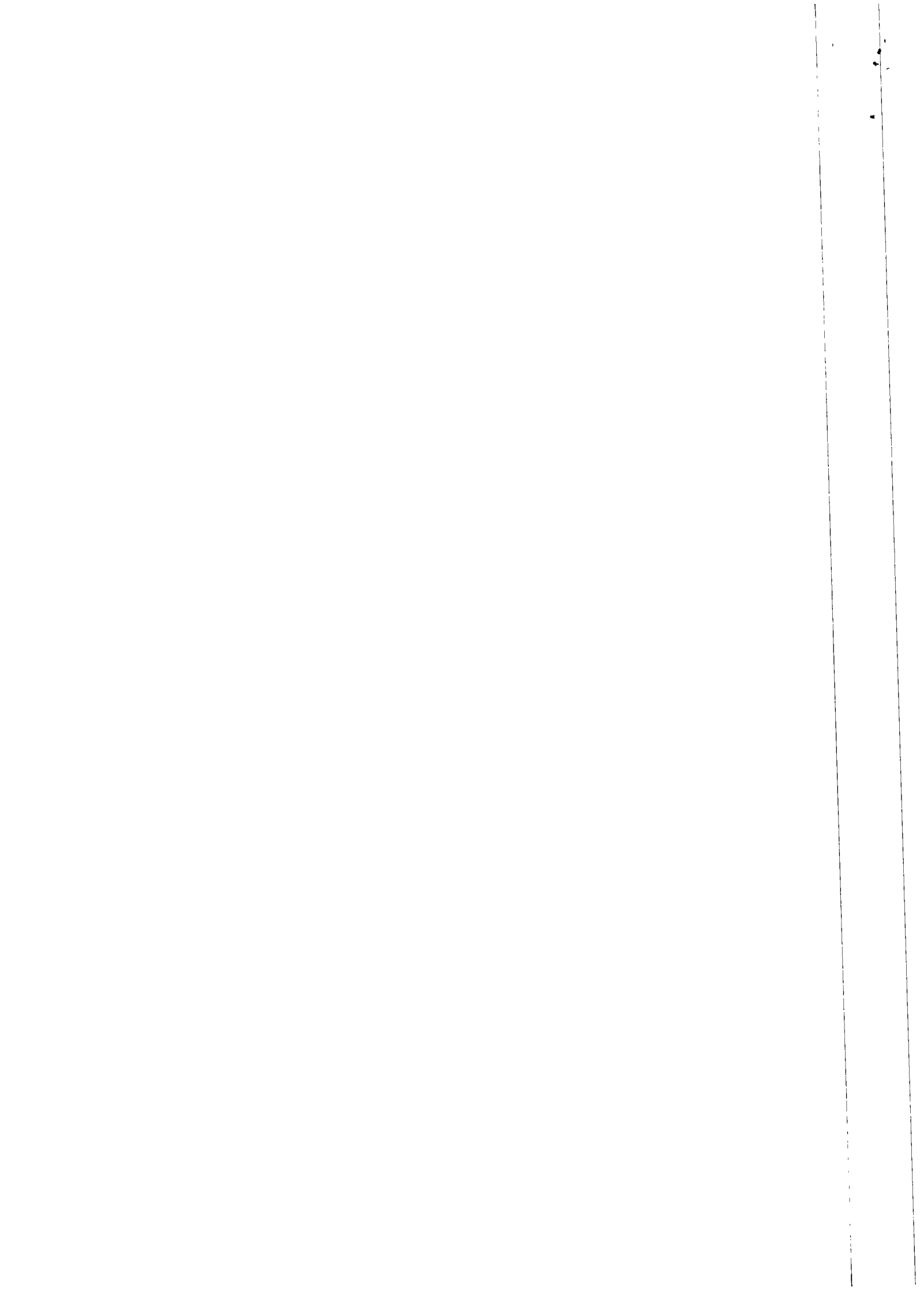
THE NATIONAL ASSEMBLY
TWELFTH PARLIAMENT
SECOND SESSION
PUBLIC PETITION

PETITION ON LIFTING OF BAN ON LOGGING AND HARVESTING OF
MANGROVE TREES

I, the UNDERSIGNED, on behalf of the residents of Lamu County;

DRAW the attention of the House to the following:-

- i) THAT, mangrove trees are assemblages of salt tolerant trees and shrubs that grow in the inter-tidal regions of the tropical and subtropical coastlines;
- ii) THAT, mangrove trees grow luxuriantly in the places where freshwater mixes with seawater and where sediment is composed of accumulated deposits of mud;
- iii) THAT, mangroves protect vulnerable coastlines from wave action because they hold the soil together and prevent coastal erosion and mangrove forest provide homes for several species of plants and animals;
- iv) THAT, in Kenya mangrove forests are largely located in Lamu County;
- v) THAT, recently the government imposed a ban on logging and harvesting of trees in the country;
- vi) THAT, residents of Ndau, Kiwayu, Faza, Kizingitini, Pate, Siyu, Manda, Kizuke and Mkunumbi have since time in memorial entirely depended on logging of mangrove forest for their livelihood;
- vii) THAT, ^{following} the ban more than 15,000 families have been affected and are living in abject poverty;
- viii) THAT, loss of livelihood has caused rise ^{of} insecurity in Lamu County;
- ix) THAT, efforts to resolve this matter with the relevant government agencies have been futile;
- x) THAT, the matter presented in this Petition is not pending before any tribunal, court of law or independent body.



PUBLIC PETITION
PETITION ON LIFTING OF BAN ON LOGGING AND HARVESTING OF
MANGROVE TREES

THEREFORE your humble Petitioners pray that the National Assembly through the Departmental Committee on Environment and Natural Resources:-

- i) Investigates and inquires into the matter with a view to causing the government to lift the ban on harvesting of mangrove trees; and
- ii) Makes any other further order(s) or direction(s) that is deemed fit in the circumstances of the Petitioners.

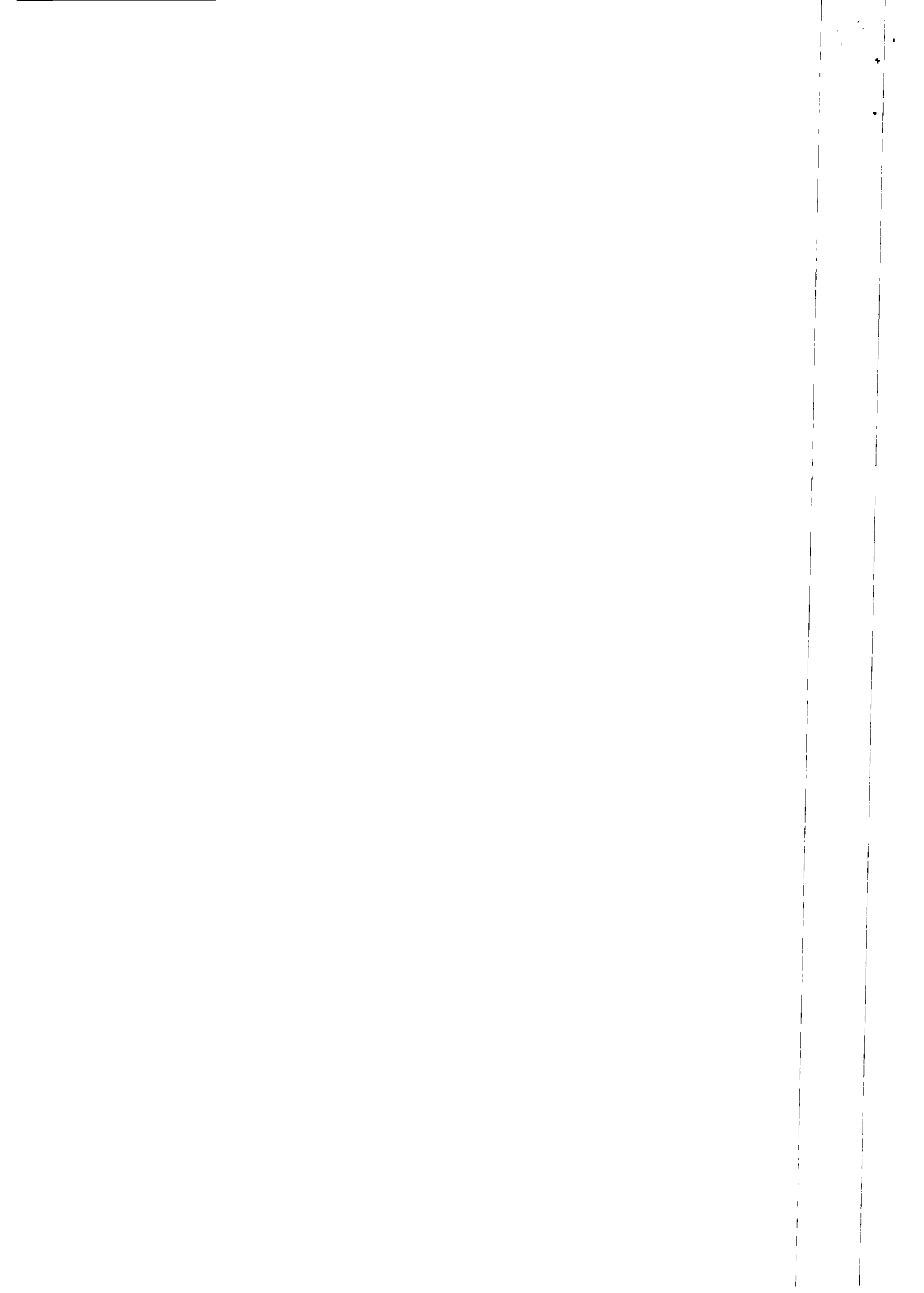
And your PETITIONERS will ever pray.

PRESENTED BY:



HON. CAPT. RUWEIDA MOHAMED OBO, MP
LAMU COUNTY WOMEN REPRESENTATIVE

DATE:.....



MINUTES OF THE 59TH SITTING OF THE DEPARTMENTAL COMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES HELD ON THURSDAY 14TH JUNE, 2018 AT 10.00 AM IN THE BOARDROOM ON 9TH FLOOR, HARAMBEE SACCO PLAZA, PARLIAMENT BUILDINGS.

PRESENT

1. **The Hon. Sophia Abdi Noor, M.P.** Vice Chairperson
2. The Hon. Benjamin Jomo Washiali, M.P., CBS
3. The Hon. Francis Chachu Ganya, M.P.
4. The Hon. Said Hiribae, M.P.
5. The Hon. Rozaah Buyu, M.P.
6. The Hon. Amin Deddy Mohamed Ali, M.P.
7. The Hon. Charity Kathambi Chepkwony, M.P.
8. The Hon. Nasri Sahal Ibrahim, M.P.
9. The Hon. (Eng.) Paul Musyimi Nzengu, M.P.
10. The Hon. Ali Wario Guyo, M.P.
11. The Hon. Hilary Kiplang'at Kosgei, M.P.

APOLOGIES

1. **The Hon. Kareke Mbiuki, M.P.** Chairperson
2. The Hon. Benjamin Dalu Tayari, MP
3. The Hon. Peter Kimari Kihara, M.P.
4. The Hon. Beatrice Cheronno Kones, M.P.
5. The Hon. Hassan Oda Hulufu, M.P.
6. The Hon. Rehema Hassan, M.P.
7. The Hon. David Kangogo Bowen, M.P.
8. The Hon. Charles Ong'ondo Were, M.P.

IN ATTENDANCE

FRIEND TO THE COMMITTEE

The Hon. Capt. Ruweida Obo, MP

THE NATIONAL ASSEMBLY

- | | | |
|----------------------|---|---------------------------|
| 1. Ms. Esther Nginyo | - | Clerk Assistant III |
| 2. Mr. Dennis Mogare | - | Clerk Assistant III |
| 3. Mr. Joseph Okongo | - | Media Relations Officer I |
| 4. Mr. Stanley Lagat | - | Sergeant-at-Arms II |
| 5. Ms. Winnie Kulei | - | Research Officer III |
| 6. Mr. Abdikan Kala | - | Audio Recording Officer |

AGENDA

- i) Prayers
- ii) Confirmation of Minutes
- iii) Matters Arising
- iv) **Meeting with The Hon. Capt. Ruweida Obo MP, Lamu County, on a Petition on Lifting of the Ban On Logging and Harvesting of Mangrove Trees**
- v) Any Other Business
- vi) Date of the next Sitting

MIN.NO. DC/ENR/305/2018: - PRELIMINARIES

The meeting was called to order at 10.22 a.m. after which prayers were said. The Chairperson then stated that the main agenda of the meeting was meeting with the Hon. Capt. Ruweida Obo MP, Lamu County, on a Petition on lifting of the ban on logging and harvesting of mangrove trees.

The Members adopted the Agenda of the meeting.

MIN.NO.DC/ENR/306/2018: - CONFIRMATION OF MINUTES

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

MIN.NO. DC/ENR/307/2018: - MEETING WITH HON. CAPT. RUWEIDA OBO, MP, LAMU COUNTY, ON A PETITION ON LIFTING OF THE BAN ON LOGGING AND HARVESTING OF MANGROVE TREES

The Hon. Capt. Ruweida Obo, MP appeared before the Committee and informed it that:

1. Mangrove forests have been an important part of the economy of Lamu County since time immemorial.
2. In the 1960s, shiploads of mangrove trees were being exported to the middle east.
3. In the 1980s, the government banned the export of mangrove trees and only allowed usage for local consumption. That was the situation obtaining in Lamu until the ban on logging activities was imposed countrywide in 2018.
4. The general ban had affected the building industry in Lamu County which relies heavily on mangrove trees since steel and iron can't be used in the area.
5. It's important to appreciate the fact that cutting down mangrove trees stimulates better growth of the mangrove forests.

6. The local population had been disenfranchised with the blanket ban on logging since the locals are keen on conservation efforts of the mangrove ecosystem in the area. The locals even report anyone using power saws to fell the trees to authorities since they were keen on sustainable use of the mangrove forests.
7. Lamu County held 60% of the mangrove trees present in Kenya and of the 60% in Lamu County, 92% was still intact.
8. The only degradation of the mangrove trees had been witnessed under the implementation of the LAPSSET project. 5-10 hectares of the trees had been felled courtesy of the project. Equally once the LAPSSET project is completed, it could affect the mangrove ecosystem since transportation of oil and possible spills would negatively impact the ecosystem.
9. The ban on logging was effected without any consultation with locals in Lamu. since mangrove trees were distinct from other trees, consultations would have been helpful.
10. When dealing with mangrove tree exploitation issues, best practices can be borrowed from countries like Sri Lanka with regard to:
 - Public participation
 - Micro loans
 - Alternative employment in case its needful to avoid over reliance on mangrove ecosystems
11. The ban on exploitation of the mangrove resources was fueling drug abuse, HIV/AIDS and the temptation to join terror groups since the youth were left hopeless since they relied on mangrove resources for sustenance.
12. There was need to lift the ban on mangrove tree logging and instead find alternatives sources of livelihoods before effecting the ban, if need be.
13. When replanting especially in areas affected by the implementation of the LAPSSET project, there was need to consider planting fast growing species.

MIN.NO. DC/ENR/308/2018:

- OBSERVATIONS AND RESOLUTIONS

OBSERVATIONS

It was observed that:

1. The livelihoods of the locals in Lamu County heavily relied on the mangrove trees and ecosystem. There was therefore need to ensure a balance between conservation efforts and supporting livelihoods in the region.
2. There was need to visit Lamu County to understand and appreciate the issues at hand before charting the definitive way forward with regard to the petition.
3. There was need for an extensive consideration of the pros and cons of lifting the ban in the areas before considering such a course of action.

4. There was a need to explore, together with the locals, the alternatives available other than the heavy reliance on mangrove trees for sustenance.
5. In its "Report On the Inquiry into Forest Resources Management and Logging Activities in Kenya" the committee had proposed lifting of the national ban, which covers the subject of the petition at hand.
6. There was need to explore the best practices with regard to utilization of mangrove trees and ecosystem in general for instance through countries like Sri Lanka.

RESOLUTIONS

It was resolved that:

1. The committee shall visit Lamu County to focus on the petition with regard to on lifting of the ban on logging and harvesting of mangrove trees and the expected exploitation of coal in the same County.
2. The Ministry of Environment and Forestry and the Kenya Forest Service should be invited to respond to the issues in the petition on lifting of the ban on logging and harvesting of mangrove trees in Lamu County.

MIN.NO. DC/ENR/309/2018:

- ADJOURNMENT

There being no other business the meeting was adjourned at 12.37 pm.

SIGNED:

THE HON. KAREKE MBIUKI, M.P.

CHAIRPERSON,

DEPARTMENTAL COMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES

DATE: 27/07/2018

MINUTES OF THE 72ND SITTING OF THE DEPARTMENTAL COMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES HELD ON FRIDAY 27TH JULY, 2018 AT 10.00 AM IN THE SOCIAL HALL AT NDAU, LAMU COUNTY.

PRESENT

1. **The Hon. Kareke Mbiuki, M.P.** **Chairperson**
2. **The Hon. Sophia Abdi Noor, M.P.** **Vice Chairperson**
3. The Hon. Charles Ong'ondo Were, M.P.
4. The Hon. Nasri Sahal Ibrahim, M.P.
5. The Hon. Charity Kathambi Chepkwony, M.P.
6. The Hon. Francis Chachu Ganya, M.P.
7. The Hon. Peter Kimari Kihara, M.P.
8. The Hon. Rozaah Buyu. M.P.

APOLOGIES

1. The Hon. Benjamin Jomo Washiali, M.P., CBS
2. The Hon. (Eng.) Paul Musyimi Nzengu, M.P.
3. The Hon. Ali Wario Guyo, M.P.
4. The Hon. Rehema Hassan, M.P.
5. The Hon. Amin Deddy Mohamed Ali, M.P.
6. The Hon. Said Hiribae, M.P.
7. The Hon. Benjamin Dalu Tayari, MP
8. The Hon. Hassan Oda Hulufu, M.P.
9. The Hon. Hilary Kiplang'at Kosgei, M.P.
10. The Hon. Beatrice Cherono Kones, M.P.
11. The Hon. David Kangogo Bowen, M.P.

IN ATTENDANCE

FRIENDS TO THE COMMITTEE

1. The Hon. Capt. Ruweida Obo, MP
2. The Hon. Stanley Muthama, MP

COUNTY GOVERNMENT OF LAMU

1. Mr. Abdulhakim A.B. - Deputy Governor
2. Mr. Abdu Godana - CEC, Water, Environment and Natural Resources

COUNTY COMMISSIONER'S OFFICE (LAMU)

1. Mr. David Lusava - Deputy County Commissioner

- | | | |
|----------------------|---|------|
| 2. Mr. Juma Londo | - | OCPD |
| 3. Mr. Paul Maweu | - | DAPC |
| 4. Mr. Mutuku Justus | - | DCI |

MINISTRY OF ENERGY

- | | | |
|------------------------|---|-----------------|
| 1. Mr. Chrispine Lupe | - | Chief Geologist |
| 2. Mr. Cyrus Kirima | - | AMU Power |
| 3. Mr. Duncan Lizunela | - | Geologist |

NATIONAL ENVIRONMENTAL MANAGEMENT AUTHORITY

- | | | |
|------------------|---|---|
| Mr. Kahindi Yeri | - | County Environment Officer, Lamu County |
|------------------|---|---|

KENYA FOREST SERVICE

- | | | |
|------------------|---|-----------------------|
| Mr. Evans Maneno | - | Ecosystem Conservator |
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MANGROVE FOREST STAKEHOLDERS

- | | | |
|--------------------|---|---|
| Mr. Mohamed Haroun | - | Chairman, Timber Industry, Coast Conservancy and numerous members |
|--------------------|---|---|

THE NATIONAL ASSEMBLY

- | | | |
|----------------------|---|---------------------------|
| 1. Ms. Esther Nginyo | - | Clerk Assistant II |
| 2. Mr. Dennis Mogare | - | Clerk Assistant III |
| 3. Mr. Joseph Okongo | - | Media Relations Officer I |
| 4. Mr. Salem Lorot | - | Legal Counsel II |
| 5. Ms. Winnie Kulei | - | Research Officer III |
| 6. Mr. Antony Wamae | - | Sergeant-at-Arms |
| 7. Mr. Abdikani Kala | - | Audio Recording Officer |
| 8. Ms. Lydia Mwangi | - | Secretary |

AGENDA

- i) Prayers
- ii) Confirmation of Minutes
- iii) Matters Arising
- iv) **Meeting with stakeholders with respect to a petition by the Hon. Capt. Ruweida Obo, MP, Lamu County on lifting of the ban on logging and harvesting of mangrove trees in Lamu County.**
- v) Any Other Business
- vi) Date of the next Sitting

MIN.NO. DC/ENR/373/2018:

- PRELIMINARIES

The meeting was called to order at 10.28 a.m. after which prayers were said. The Chairperson then stated that the main agenda of the meeting was meeting with stakeholders with respect to a petition by the Hon. Capt. Ruweida Obo, MP, Lamu County on lifting of the ban on logging and harvesting of mangrove trees in Lamu County. He then asked all those present to introduce themselves.

The Members adopted the Agenda of the meeting.

MIN.NO.DC/ENR/374/2018:

- CONFIRMATION OF MINUTES

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

MIN.NO.DC/ENR/375/2018:

**- MEETING WITH STAKEHOLDERS
WITH RESPECT TO A PETITION BY
THE HON. CAPT. RUWEIDA OBO, MP,
LAMU COUNTY ON LIFTING OF THE
BAN ON LOGGING AND
HARVESTING OF MANGROVE
TREES IN LAMU COUNTY.**

The Chairperson stated that the Committee was making a working tour in the Coast region specifically Lamu and Mombasa counties to:

- Gather facts with respect to a petition it was handling by the Hon. Capt. Ruweida Obo, MP, Lamu County on lifting of the ban on logging and harvesting of mangrove trees in Lamu County. The aim was for the Committee to familiarize itself with the issues canvassed in the petition in order to respond to them appropriately;
- To establish the environmental concerns related to the proposed coal plant in Lamu County; and
- Undertake an enquiry into encroachment onto riparian areas by private developers across the country triggered by a question raised by the Hon. Peter Kaluma, MP (Homabay Town Constituency). It has identified Mombasa county as one of the affected counties.

He then invited stakeholders present to present their views:

SUBMISSION BY THE LAMU COUNTY MANGROVE HARVESTERS

The Memorandum from Lamu County was presented by the Representative Timber Industry Mr. Mohamed Haroun on behalf of the mangrove harvesting fraternity as follows: -

1. On the History of Mangroves in Lamu he stated that:
 - a) The Coast conservancy has unique features compared to the conservancies in Kenya. It covers a wide area of mangrove forest stretched along the coastal line from Kiunga (Somalia border) to Vanga (Tanzania border).
 - b) About 70% of Lamu County population depended on Mangrove either directly or indirectly for their livelihood and lifeline. The precious and most vital resource was taken care of and conserved to its betterment by the communities living adjacent to them. The Mangroves should not be considered like the main land forest because of its features, growth and should be distinguished to a wide range.
 - c) Mangrove can grow to a height of more than 70 feet (230 inches) and a diameter of 92feet) 24inches). Kenya is the second richest in Mangroves from Nigeria in Africa. It also takes good position in the world including Indonesia and Sri Lanka to mention a few.
 - d) The total Mangrove coverage in Coastal region was 61,271 hectares. Tana River had 3,260 ha, Mombasa 3,771 ha and Kwale 8,354 ha. This totals to 49% of Mangrove cover. Lamu County covers 37,350ha of Mangrove which is equivalent to 61%.
 - e) Over 17,021ha almost 45% of Lamu Mangrove was under the custody of Kiunga Marine National Reserve (KMNR). KWS had not allowed any harvesting in this area for almost 20 years. A large area had been affected by diseases due to lack of cutting, poor aeration, space leading to congestion.
 - f) Over 4,000ha almost 12% of the Mangrove had been taken by the LAPPSET project. The remaining 40% was where people of Lamu obtain their livelihood and lifeline. Report proves that when Mangrove is not cut it dies due to poor aeration, space and congestion. During an aerial view with colleagues from the Forest Conservation Committee (FCC) coast conservancy march 2018, the mangrove forest was intact and healthy.
 - g) Lamu was one of the oldest towns in Kenya and Africa identified by UNESCO as world heritage site. Mangrove was one of the major exports of Lamu in the 19th century. The Mangroves were exported to Gulf States such as Yemen, Dubai, Iran and Far and Middle East countries such as India until 1982 when the export was banned by his Excellency Retired President Daniel Arap Moi. It was the 1st international trade in Kenya and Lamu had no exemption.
 - h) The ancient town was built by mangroves and the villages in the county, small towns used mangroves in the construction because the weather condition could not sustain iron for construction. It was the residents obligation to maintain its heritage, dignity and sustainability. Lamu County is divided into two districts. The mangroves stretched in the two district and were a major source of income. All the six counties in the Coastal region depended on Mangroves from Lamu for their construction.

2. On how Lamu people conserve their mangroves he stated that the following were ways of mangrove conservation in Lamu:

- a) Selective cutting - This type of harvesting was based on selective cutting where harvesting was done within a gap of 100M using a hand saw leaving over 90% of mangrove ecosystem vibrant and undegraded.
- b) Monsoon wind - There are two types of monsoon winds the North east and the South East. The mangrove cutters used the dhows, jahaz and canoes as sailing boat depending entirely on the winds. The winds directed them to the harvesting sites thus creating natural ZONATION and BLOCKS. For example, during the South East monsoon, harvesting was done in Marembo, Ndau, Siu, Chongani, Vumbe to mention but a few leaving other blocks to grow. During the North East wind harvesting is done in Wange, Dodori, Rewa leaving the previous block to grow.
- c) Mother plant - These were queens producing the seedling MLINGE in Kiswahili. The mother plant is left untouched. Harvesting is based on marketing: -
 - **BORITI:** 11 Feet height, diameter 2/5 inches
 - **MAZIO:** 11 feet height, diameter 2 inches
 - **VINGI:** 7 feet height, diameter 3 inches

These are a mangrove needed in the market. Harvesting is done on the mediums leaving the old and small ones untouched.

- d) Aeration - The type of harvesting can be referred as Pruning leaving the mangrove forest with enough air to circulate in the forest. This improves aeration and sustainability.
- e) Diseases - Disease is controlled due to lack of congestion. The mangrove forest receives enough air after pruning/harvesting is done.
- f) Spacing - When mangrove harvesting is done, space is created for new seedlings to erect on the ground.
- g) Plant cover - Harvesting ensures the removal of plant cover for the new seedlings to reach the ground from the mother plant.
- h) User group - The user groups/ mangrove cutters are the watchdogs of the mangroves to enhance sustainability.
- i) Conservation groups - Every community living adjacent to the mangrove have conservation groups to conserve the unique ecosystem e.g Patte, Faza, Ndau, Kizingitini, Kizuke conservation groups to mention a few.
- j) Community Forest Association (CFA's) - CFA's do a wonderful job when interns of conservation. No intruders are allowed to harvest mangroves in areas they manage. This enhances and promotes conservation. In Lamu county, there is a Muungano and Lamu CFA for mangroves. They ensure harvesting is done systematically.

- k) Beach Management Unit (BMU's) - Every village has a BMU. Tight supervision is done by them to ensure conservation and sustainability.
 - l) Saw milling - There is no saw milling in the mangroves hence no logging unlike in the highlands forest where vehicles and other machines are used leading to desertification and oil spillage which affects the forest. Mangrove is harvested using a Hand Saw.
 - m) New growth - It is during the rainy season when the Queens start to produce seedlings. "*Mkoko Unaalika Maua*". The seedlings direct themselves directly to erect on the ground naturally. Some seedlings fail through the effort of mangrove cutters. They erect the seedlings to the ground willingly free of charge.
 - n) Tree planting - Every year mangrove is planted to ensure sustainability by the Lamu people E.g Bora Maganga near Manda Air strip, Mokowe, Patte, kizingitini. This proves and indicates mangroves sustainability and conservation.
3. On the effects of the government Moratorium to the Lamu County he stated that it had led to:
- a) Unemployment: this had increased poverty level of Lamu people.
 - b) High cost of living: lorries from Mombasa carry Mangroves in their return have increased transport cost hence commodities are highly priced.
 - c) School dropout: some students have been expelled and sent home in secondary, colleges and universities due to lack of fees.
 - d) Insecurity: most of the youth are idle hence engaging in social evil activities e.g robbery and theft.
 - e) Destruction of dhows and jahazi: most of the dhows worth millions of shillings are now in critical condition due to the moratorium.
 - f) Destruction of houses: some houses have fallen down due to lack of materials for construction.
 - g) Broken families: some of the families are broken due to lack of income hence separation and divorce.
 - h) Loss of revenue: the county government receives alot of income from the mangrove harvesters. This boosts their revenue.
4. Effects of the Moratorium to the Mangrove Forest include: Disease, Poor aeration, few seedlings erect on the ground, Poor spacing and Congestion.
5. Effect of the Moratorium to the Nation/Government include: Death of the Mangrove Forest, Insecurity, Starvation, HIV/AIDS some ladies can engage in prostitution and

contract the virus, Disease – nutrition deficiency diseases e.g. kwashiorkor, Loss of revenue – KFS through mangroves contributes millions of shillings to the treasury. This is a source of government revenue.

6. The organization made the following recommendations:
 - a) Licensees should be given movement permits to transport the already cut mangroves that had been harvested before moratorium;
 - b) Moratorium should be lifted to enhance mangroves sustainability and conservation;
 - c) Mangroves cutters should be compensated instead of KFS by the LAPPSET just like farmers;
 - d) The Government to initiate food program to the starving Lamu people;
 - e) When imposing moratorium, specific areas should be considered e.g. Mau and Mount Kenya the measures should be taken to the specific areas and not all forests at large;
 - f) The government should find alternative way of living to the Lamu people.

SUBMISSION BY THE KENYA FOREST SERVICE

Mr. Evans Maneno, the ecosystem conservator in the coastal region, appeared before the committee and informed it that:

1. Mangroves comprised of trees and shrubs that were salt tolerant and are most common and familiar form of vegetation occurring in the inter-tidal zone along sheltered coast.
2. Mangrove forests were highly productive ecosystems and natural renewable resource. They provided essential goods and services and play a very important role in the lives of coastal communities. This include: - fish breeding, fish hide outs, coastal shoreline protection, carbon sinks, construction materials, climate change mitigation.
3. Mangrove Habitat and Characteristics included:
 - a) Have adaptation such as viviparous germination, separation of fresh water from salt water conservation of fresh water.
 - b) Ability to strike roots soon after coming into contact with soil
 - c) Ability to exchange gases through specialises roots system.
 - d) Able to deal with adverse environment where few plants would survive
 - e) Roots of salt-excluding species of ceriops and rhizophorus can absorb only fresh water from saline water through a process of ultrafiltration

- f) Species of *Avicennia* and *Sonneratia* can regulate the salt content of their tissues by glands in their leaves.
 - g) Mangroves display features similar to those in desert plants which tend to conserve water
 - h) Mangroves occur in areas of high humidity
 - i) Mangroves are characterised by high salt and water, low oxygen
 - j) Mangroves have shallow root system hence cannot withstand strong winds hence grow in sheltered habitat
 - k) Seeds and propagules dispersed by water hence influenced by tides that carry them both upstream and downstream
4. On mangrove regeneration he stated that:
- a) Mangrove forests have an efficient mechanism for natural regeneration particularly in areas of mangrove stands where site degradation has not taken place.
 - b) Mangrove seeds develop into seedlings while they are still attached to the mother tree this is called vivipary where the embryo ruptures the pericarp and grows e.g. *Rhizophora* and *Ceriops*.
 - c) Other species such as *Avicennia*, the embryo develops within the fruit but does not enlarge sufficiently to rupture the pericarp this is called cryptovivipary
 - d) Most of the seeds that fall off mother trees during low tide stick to the soft mud and quickly strike roots. In the case of viviparous seeds, the adventitious roots already present emerge and anchor the seedlings.
 - e) In instances where seeds or seedlings drop during high tides, they continue to float in the water until they come into contact with a soil substrate and strike roots.
 - f) Profuse natural regeneration occurs in areas under mangrove formations.
 - g) In many instances advance growth establishes itself and waits for an opening in the canopy to emerge.
5. On Silvicultural System (management) he stated that:
- a) In most mangrove countries except Asia, no systematic silviculture or management practice is applied to the resource. However, in Lamu, there is selective removal, enrichment planting and rehabilitation of the extreme open spaces.

b) The normal mangrove forest behaviour is that a lot of losses occur in the crop before it reaches maturity. This is due to suppress site by canopy and normal mortality. It has been noted that: -

- i) Fito 10% fail to reach Pau
- ii) Pau 50% fails to reach Mazio
- iii) Mazio 30% fail to reach Boriti
- iv) Boriti 20% fail to reach Nguzo

6. Mangrove Products include:

S/N	NAME	DIAMETER	AGE
1.	Fito	less than 4cm	7 years
2.	Pau	4.1cm to 6.0cm	15 years
3.	Mazio	6.1cm to 9cm	28years
4.	Boriti	9.1cm to 13cm	37 years
5.	Nguzo	13.1cm to 20cm	45years
6.	Banaa	20.1cm to 35cm	

7. Plantation Establishment can be done through:

- i) enrichment planting with spacing of 0.5m*0.5, 1.5m*1.5, 3m*3m to supplement natural regeneration or
- ii) direct sowing pregerminated seeds.
- iii) no weeding required but beating up in the spaces necessary.
- iv) The selective removal done periodically by the licensees serves for the thinning done in traditional plantations. Failure to do so leads to increased mortality.
- v) This is one of the justifications to allow the continuous selective harvesting/removal of Mazio, Boriti and limited Pau and Nguzo.

8. Mangrove as a forest ecosystem occurs along the Kenya Coast with distribution as follows: -

S/No	County	Forest Area	Percentages Cover (%)	Non Mangrove Areas 1120 (Ha)
1.	Lamu	37,350	61	61,836
2.	Kilifi	8,536	13.9315	12,092
3.	Kwale	8,354	13.347	7,205
4.	Mombasa	3,771	6.15	5,513

5.	Tana River	3,260	5.326	1,382
	Total	61,271	100%	80,823

Lamu has the largest percentage cover of 61%

9. The mangrove forests give range of benefits and opportunities to both local and national economic development which include:

- Improved livelihoods
- Provision of environmental goods and service such as habitat for fish and other wildlife
- Shoreline protection
- Carbon sequestration

It is these reasons that mangrove should be protected to continue providing the goods and services.

10. Mangrove types - There are 9 species found in Kenya though *Rhizophora Mucronata* and *Ceriops tagal* are the most dominant.

S/N	SPECIES	LOCAL NAME	MAIN USES
1.	<i>Rhizophora mucronata</i>	Mkoko	poles, dye firewood, fencing, charcoal
2.	<i>Ceriops tagal</i>	Mkanda	poles, firewood, charcoal
3.	<i>Sonneratia</i>	Mlilana	boat, ribs poles, firewood
4.	<i>Avecinia marina</i>	Mchuu	firewood, poles
5.	<i>Brugliera gymnorhica</i>	Muia	poles, firewood, charcoal

11. Mangrove Materials Harvested before Moratorium

S/NO	NAMES	ITEMS	SCORES	KSHS
1.	Mohamed Haroun	Boriti	280	140,000
		Vigingi	180	108,000
		Mazio	240	96,000
2.	Abderehman Lali	Boriti	80	90,000
		Vigingi	20	42,000
		Mazio	80	32,000

		Pau	70	14,000
3.	Mohamed Lali	Boriti	1200	600,000
		Vigingi	60	36,000
		Mazio	400	160,000
4.	Mohamed Rashid	Boriti	500	250,000
		Vigingi	500	300,000
		Mazio	100	40,000
5.	Hassan Idarus	Boriti	10	5,000
		Vigingi	10	6,000
		Mazio	10	4,000
		Pau	10	2,000
6.	Abdulrahman S. Abdalla	Boriti	10	5,000
		Vigingi	10	6,000
		Mazio	10	4,000
		Pau	10	2,000
7.	Fatma F. Abushiri	Boriti	10	5,000
		Vigingi	10	6,000
		Mazio	10	4,000
		Pau	10	2,000
	TOTAL			1,959,000

12. Mangrove in the field

S/NO	NAME	ITEM	SCORES	KSH	SITE
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	Mohamed Haroun	Vigingi	300	180,000	Wange, Ndau
		Mazio	260	104,000	
		Boriti	200	100,000	
	Abderehman Lali	Vigingi	230	210,000	Ndau, Mkunumbi
		Mazio	240	96,000	
		Boriti	280	140,000	
	Mohamed Lali	Vigingi	230	138,000	Ndau, Wange
		Mazio	240	96,000	
		Boriti	180	90,000	
	Mohamed Rashid	Vigingi	230	138,000	
		Mazio	340	136,000	
		Boriti	250	125,000	
	Hassan Idarus	Vigingi	17	10,200	
		Mazio	20	8,000	
		Boriti	30	15,000	
	Abdulrahman S. Abdalla	Vigingi	25	15,000	
		Mazio	15	6,000	
		Boriti	10	5,000	
	Fatma F. Abushiri	Vigingi	300	180,000	
		Mazio	250	100,000	
		Boriti	400	200,000	

13. Mangrove challenges include: Increasing population, Weak governance in the past, Inadequate awareness of true value of mangrove ecosystem, High level of poverty, Lack of alternative livelihood and Inadequate mangrove prescriptions.

14. Threats to the mangrove ecosystem include: Over exploitation, Conversion of mangrove area to other land uses, Aquaculture, Pollution-oil spills, dumping, degradation, Infrastructure development, Diversion and damming of rivers and Sedimentation.
15. Measures to address the challenges: Alternative resources being promoted e.g fast growing Casuarina, Management plan of mangrove prepared, Management plan and research into value of mangrove, Alternative livelihood support system and diversification of enterprises and Mangrove prescriptions and field supervision.
16. The impacts of ban include:
 - i) 70% of Lamu population depended on mangrove and fishing for their livelihood hence a number of them had no fall back plan.
 - ii) Construction of houses and repairs are depended on mangrove products hence currently most houses on the world heritage site leaking and threaten loss of its heritage status
 - iii) Steel metal has been replaced for many years with Pau, Mazio, Boriti in the current ban status no materials available affecting major percentage of the Big Four Agenda
 - iv) Dhows making, boats repair and jetties depend on mangrove produces, this is no longer the case
 - v) Over 94% of the population in Lamu is dependent on fuelwood and charcoal for energy and based on their purchasing power, this has rendered majority unable to access source of energy for cooking.
 - vi) Employment in the island villages of Ndau, Wange, Faza, Kizingitini, Pate is purely dependent on mangrove since time in memorial and with the ban, the villages cannot feed themselves, this is a risk to especially youth who could join gangs increasing insecurity.

OBSERVATIONS

It was observed that:

1. The locals were adversely affected by the ban on logging since they relied heavily on the mangrove trees for sustenance. There was therefore an urgent need to consider lifting of the ban in Lamu County. The effects of the ban in the area included: escalated poverty levels, increase in social ills, rise in unemployment leading to possible increase in terror threat in the area and Kenya in general.
2. There was need for the Kenya Forest Service to open up the area from Ndau to Kiunga on the Somali border to mangrove harvesting which would in the long run help in conservation of the mangrove forest.
3. The locals had a natural way of harvesting the mangrove trees sustainably. There was need to encourage the same since the county had the highest concentration of mangrove trees in Kenya.

MIN.NO. DC/ENR/376/2018:

- ADJOURNMENT

There being no other business the meeting was adjourned at 1.44 pm.

SIGNED:


THE HON. KAREKE MBIUKI, M.P.

CHAIRPERSON,

DEPARTMENTAL COMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES

DATE:
14/08/2019