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ELEVENTH PARLIAMENT – FOURTH SESSION

DEPARTMENTAL COMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES

REPORT ON THE STUDY VISIT TO CHINA REGARDING THE BAMBOO SECTOR
HELD FROM 5TH TO 12TH SEPTEMBER, 2015

CLERK'S CHAMBERS
PARLIAMENT BUILDINGS,
NAIROBI

JUNE, 2016

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ACRONYMS/ABBREVIATIONS

INBAR	International Network of Bamboo and Rattan
ICBR	International Centre for Bamboo and Rattan
KFS	Kenya Forest Service
KEFRI	Kenya Forestry Research Institute

CHAIR'S FOREWORD

Kenya has not been exploiting bamboo following a presidential decree banning commercialization of bamboo in 1986. Following interaction with the Ministry of Environment & Natural resources, the Committee felt the need to explore the viability of bamboo commercialization in Kenya; this informed the need to benchmark with other countries that have successfully exploited bamboo.

The Committee visited China from 5th -12th September 2015 with a view to understand how China has successfully exploited bamboo to produce a multi-billion industry and how it can be replicated in Kenya.

Understand the bamboo sector in China with the aim of strengthening co-operation between Kenya and China given that Kenya is a member of the International Network of Bamboo and Rattan (INBAR).

The Committee wishes to register its appreciation to the offices of the Speaker and the Clerk of the National Assembly for the support accorded to the Committee in the execution of its mandate.

I now have the honor to present the Committee Report on the visit to China regarding the Bamboo Industry.

HON. AMINA ABDALLA, CBS, M.P

EXECUTIVE SUMMARY

This Report was informed by the Committee's Visit to China to gather information on bamboo exploitation and information available regarding the Bamboo sector in Kenya. In its visit to China to Committee set out to enhance the cooperation between Kenya and China given the fact that China was already engaging the Ministry of Environment & Natural Resources.

The report entails details from the meetings held in China and all the sites visited, key to note is a meeting with the Director General, International Centre for Bamboo and Rattan (ICBR) a non-profit research institution under the state forestry department in China involved in providing support to the bamboo sector.

The presidential ban on bamboo harvesting that was imposed in 1986 should be lifted to enable the country explore its rich resources of bamboo. The Kenya Forest Service and the Kenya Forestry Research Institute should collaborate on developing good quality bamboo seedlings in order to improve the quality of bamboo plantations in the country.

MANDATE

The Departmental Committee on Environment and Natural Resources is established under Standing Order No. 216(1).

The functions and mandate of the Committee are:

- i. Investigate, inquire into, and report on all matters relating to the mandate, management, activities, administration, operations and estimates of the assigned Ministries and departments;
- ii. Study the programme and policy objectives of the Ministries and departments and the effectiveness of the implementation;
- iii. Study and review all legislation referred to it;
- iv. Study, access and analyze the relative success of the Ministries and Departments as measured by the results obtained as compared with its stated objectives;
- v. 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;
- vi. Vet and report on all appointments where the constitution or any law requires the National Assembly to approve, except those under Standing Order 204; and
- vii. Make reports and recommendations to the House as often as possible, including recommendation of proposed legislation.

The subject matter of the Departmental Committee on Environment and Natural Resources are stated in the Second Schedule of the National Assembly Standing Order as: climate change, environment management and conservation, forestry, water resource management, wildlife, mining and natural resources, pollution and waste management.

MEMBERS OF THE COMMITTEE

Chairperson	Hon. Amina Abdalla, M.P.
Vice Chairperson	Hon. Alexander K. Kosgey, M.P.
Members	Hon. Alice Ng'ang'a, M.P.
	Hon. Samuel Ndiritu, M.P.
	Hon. Zuleikha Hassan Juma, M.P.
	Hon. Ejidius Njogu Barua, M.P.
	Hon. Jude Njomo, M.P.
	Hon. Moitalel Ole Kenta, M.P.
	Hon. Kathuri Murungi, M.P.
	Hon. Sunjeev Birdi, M.P.
	Hon. Jackson K. Rop, M.P.
	Hon. Abdi Noor Ali, M.P.
	Hon. Joyce Emanikor, M.P.
	Hon. Abdulaziz Farah, M.P.
	Hon. Ronald Tonui, M.P.
	Hon. (Dr.) Reginalda Wanyonyi, M.P.
	Hon. Gideon Mwiti, M.P.
	Hon. Hassan Dukicha, M.P.
	Hon. Chachu Ganya, M.P.
	Hon. Isaac Mwaura, M.P.
	Hon. Charles G. Mongare, M.P.
	Hon. (Dr.) Wilber K. Ottichilo, M.P.
	Hon. Richard Makenga, M.P.
	Hon. George Ogalo, M.P.
	Hon. (Major) Muluvi Mutua, M.P.
	Hon. Mohamed, Diriye M.P.

Hon, Peter Kinyua, MP.

Hon. Shukran Hussein Gure, M.P

Hon. Joyce Lay, M.P

COMMITTEE SECRETARIAT

Second Clerk Assistant	Ms. Tracy Chebet Koskei
Clerk Assistant	Mr. Hassan Arale
Legal Counsel	Mr. Ronald Walala
Researcher	Mr. James Muguna
Fiscal Analyst	Ms. Amran Mursal

LIST OF RECOMMENDATIONS

1. The Government of Kenya should lift the 1986 Presidential directive that banned commercial harvesting of Bamboo;
2. The Government of Kenya should enhance its cooperation on research and technical capacity building with countries such as China. This will enhance the Country's ability to benefit from resources offered by INBAR;
3. The Ministry of Industrialization should look into developing industries to carry out Bamboo exploitation and value addition to Bamboo products;
4. There is need for cooperation between the Kenya Forestry Research Institute (KEFRI) and the Kenya Forest Services (KFS) to develop quality Bamboo seedlings. It is worth noting that during consideration of the Forest Management & Conservation Bill, 2015, the Committee proposed the inclusion of the Director of KEFRI in the Board of KFS so as to bring added professional expertise to the Board and also enhance the level of collaboration between the two agencies;
5. The Ministry of Environment and Natural Resources should develop clear guidelines on exploitation, pricing and marketing strategies of Bamboo and its products. The Ministry should also develop a clear road-map of achieving Bamboo plantation targets as listed in the MTEP II.

1.0 Background

Kenya in its Medium Term Plan (MTEP II) lists Bamboo development and commercialization as one the Country's flagship projects with a target of 14,500ha in the FY 2013/14; 25,000 ha in the FY 2014/15; 35,500ha in the FY 2015/16; 46,000ha in the FY 2016/17 and 56,000ha in the FY 2017/18. However, nothing has been done so far. (Source: Kenya Forest Services, 2015)

The Committee sought to establish how viable bamboo commercialization is, and in this respect it was resolved that the Committee visits the following countries that have successfully managed to develop and manage the bamboo sectors: China, South America and in Africa, Ethiopia. The Committee chose to visit China following an invitation extended by the China's State Forestry Administration.

1.1 State of Kenya Bamboo Sector

Natural bamboo resources in Kenya are about 165,000 hectares and they are mainly found on the mountain slopes in the high potential areas in Mt Kenya, Aberdares ranges, Mau escarpment, Cherangani hills and Mt Elgon at high elevations between 2,300 and 3,200 meters above sea level. There is only one indigenous bamboo species, *Yushania alpina* (formerly *Arundinaria alpina*) which grows in single culms grouped into clumps.

Bamboo raw material is not available for use because of a Presidential ban imposed in 1986 on harvesting bamboo resources in all Government and community lands. Private and commercial farmers have however been growing bamboo in anticipation of future commercialization. A conservative estimate based on field observation puts the area at 20,000 Ha. The area is however scattered making industrial processing based on the resource a challenge. Few exceptions however occur especially in Nyeri, Laikipia, Nyamira, Siaya, Busia and Migori counties where a number of farmers have commercially viable hectares of land on bamboo.

In 1995, over twenty different species of bamboo with commercial potential were introduced into the country from Asia. The introduced bamboo was tested in different ecological regions of the country. According to KEFRI (2012), out of the twenty species which were introduced, fourteen have been successfully grown in different parts of the country.

1.3 Constraints facing the Kenya Bamboo Sector

The following have been identified as challenges facing the bamboo sector in Kenya:

1. Lack of technical skills, expertise and tools on the proper management, harvesting and processing of bamboo;
2. Inadequate capacity for effective surveillance to prevent fire outbreaks leading to frequent destruction of bamboo plantations;
3. Restricted movement of bamboo produce;
4. Lack of clear rules and regulations on bamboo exploitation;
5. In-adequate resources to develop forest produce; and
6. In-adequate recognition of bamboo - it is only recognized as a non-timber forest product

2.0 Meetings and Visits in China

2.1 Visit to Anji County

Anji County is one of the counties in the southern part of China and is known as the famous village of bamboo and tea, it is also known as the first ecological county in China. 50 percent of the economy in Anji County is supported by the bamboo industry with 50,000 farmers involved in planting bamboo. The forest coverage in the area is 80 percent. The main species grown in the area is called Moso which is sympodial, meaning each bamboo plant grows individually.

The government offers subsidies to the farmers through providing quality seedling, training and various services such as medical insurance to encourage more people to be involved in farming. The country started serious bamboo processing in the 1980's and has successfully built a multi-billion industry. 40 percent of the products are consumed locally while 60 percent are exported especially to Europe and the USA.

The visit revealed the potential of the bamboo industry and its many benefits to the community with products ranging from using the bamboo roots to make carvings, bamboo leaves to make bamboo beverage and bamboo stem for construction. Bamboo has put Anji County on the world map as the county plays host to the annual bamboo expo.

2.2 Visit to Bamboo Processing Factories in Anji County

There are 2,400 bamboo processing factories in Anji County. The processing factories undertake primary processing of bamboo which involves stripping of the bamboo and these strips are sold as raw materials to other factories which after treating them use them for making mats, compressing them into bamboo wood and later making bamboo flooring tiles or bamboo poles used for construction.

The shells of the bamboo is used for making bamboo charcoal which has pharmaceutical benefits besides being a source of green energy. The bamboo processing industry is highly specialized with high technical expertise being employed to produce high quality bamboo products.



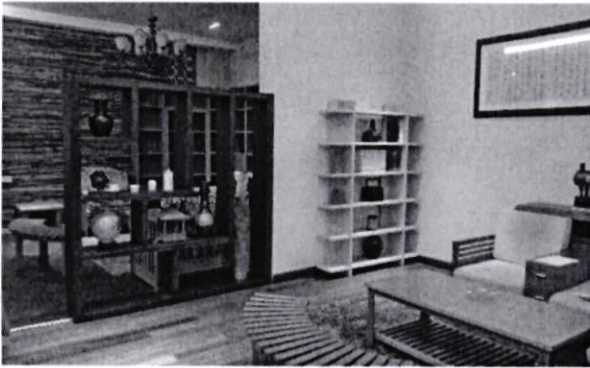
A photo of the Delegation outside a bamboo flooring tiles company

2.3 Various uses of Bamboo in China

Over 10,000 uses of bamboo have been recorded in Asia, and amongst them are:

1. Furniture production - bamboo is used in making furniture such as seats, beds and other house items. It is preferred due its durability;
2. Pharmaceutical purposes - extract from bamboo leaf is used as an anti-oxidant and anti-bacterium, it also considered to cure insanity. Bamboo charcoal is used as an air- purifier and for mummification;
3. Source of Food - bamboo shoots are considered an Asian delicacy, bamboo vinegar is used in cooking while bamboo beverage and beer are common drinks
4. Bamboo fiber is used to make clothing;
5. Used in Construction - bamboo is used for scaffolding and roofing materials;
6. Decorative and ornamental value – bamboo is used to make mats, vases and photo frames;
7. Green energy source - the shells from the bamboo are used to make bamboo charcoal which is less harmful to the environment;

8. Carbon dioxide arrester and protection of water catchment areas. According to statistics given, one acre of the Moso bamboo can absorb up to 46.74 tonnes of carbon dioxide every year.
9. Beauty products - bamboo extract is a common ingredient in making beauty creams while bamboo charcoal soap is used to heal skin diseases.
10. Spill-over effects of bamboo also include; Touristic attraction; China is biggest global producer of bamboo and has therefore attracted tourists interested in learning about bamboo; Another spill-over effect of the bamboo sector is the development of the machinery assembling plants which have sprung up to support the bamboo industry. The machines are sold both locally and internationally, these include: knitting machines, slitting machines, draw-bench and bamboo flooring press.



Various products made from Bamboo

2.4 Meeting at the International Centre for Bamboo and Rattan (ICBR), Beijing

The delegation was received by Ms. Li Xiaohua, the Deputy Director General, ICBR and other key Directors at the institution.

Ms. Li informed the delegation that:

1. The visit by the Kenyan delegation showed that there was keen interest in the bamboo sector;
2. The International Centre for Bamboo and Rattan (ICBR) is a non-profit research institution under the state forestry department in China. It was established in 2000 and its mission is to build direct support to and cooperate with International Network of Bamboo and Rattan (INBAR);
3. INBAR which is headquartered in Beijing is intergovernmental and international body involved in bamboo global cooperation, the body has 41 member countries; In Africa INBAR has regional offices in Ghana and Ethiopia;
4. ICBR was formed by the Chinese government under the forestry department, it was involved in research, training to provide better services to INBAR;
5. China through ICBR and INBAR has been involved in various bamboo projects in Africa, one of the projects is the Eastern African Bamboo Project 2007-2013 which was based in Ethiopia;
6. The Committee should push for the lifting of the existing ban of harvesting and commercialization of bamboo as China was keen on enhancing the co-operation with Kenya on the bamboo sector;
7. Kenya needs to develop more bamboo plantations as 60 year old bamboo cannot be used. Bamboo is best harvested when it is 3-4 years old; and
8. China has over 530 species of bamboo with over 10,000 products of bamboo and to encourage bamboo planting the government provides seedlings to farmers.


3.0 Observations

Having visited various bamboo sites and factories in China, the Committee observed that:-

1. According to the Kenya Forest Services, Kenya has 165,000 hectares of indigenous bamboo plantation and receives no income out of it while China has 70,000 hectares of bamboo and has built an industry raking in \$18 billion per annum;
2. Use of bamboo will ease pressure off our forests and contribute to the achievement of the targeted 10 percent forest cover by 2030, at the moment Kenya is at 6.99 percent forest coverage; and
3. Bamboo is a renewable resource which regenerates after being cut. Given its fast maturity rate of 3-4 years, bamboo can be used as an alternative to wood.

4.0 Recommendations

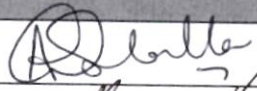
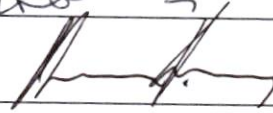

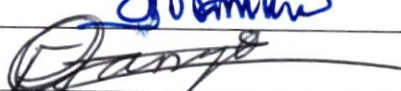



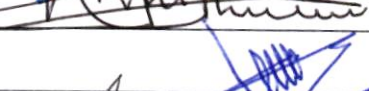

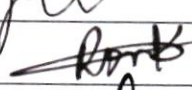
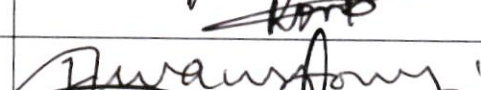
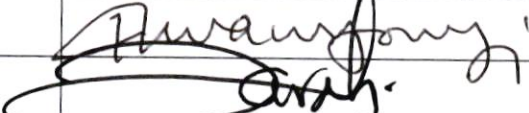



1. The Government of Kenya should lift the 1986 Presidential directive that banned commercial harvesting of Bamboo;
2. The Government of Kenya should enhance its cooperation on research and technical capacity building with countries such as China. This will enhance the Country's ability to benefit from resources offered by INBAR;
3. The Ministry of Industrialization should look into developing industries to carry out Bamboo exploitation and value addition to Bamboo products;
4. There is need for cooperation between the Kenya Forestry Research Institute (KEFRI) and the Kenya Forest Services (KFS) to develop quality Bamboo seedlings. It is worth noting that during consideration of the Forest Management & Conservation Bill, 2015, the Committee proposed the inclusion of the Director of KEFRI in the Board of KFS so as to bring added professional expertise to the Board and also enhance the level of collaboration between the two agencies; and
5. The Ministry of Environment and Natural Resources should develop clear guidelines on exploitation, pricing and marketing strategies of Bamboo and its products. The Ministry should also develop a clear road-map of achieving Bamboo plantation targets as listed in the MTEP II.


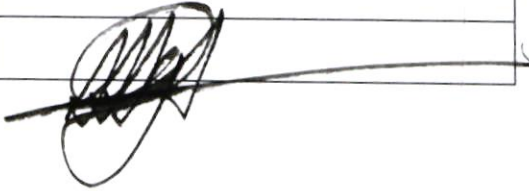
Signed..........Date.....28/6/2016.....

Hon. Amina Abdalla, CBS, MP

Chairperson, Departmental Committee on Environment and Natural Resources

ADOPTION LIST OF THE REPORT OF THE STUDY VISIT TO CHINA REGARDING THE BAMBOO SECTOR

	NAME	SIGNATURE
1	Hon. Abdalla, Amina, MP, CBS-CHAIRPERSON	
2	Hon. Alexander Kosgey, MP Vice Chairperson	
3	Hon. Dukicha, Hassan Abdi, MP	
4	Hon. Emanikor, Joyce Akai, MP	
5	Hon. Ganya, Francis Chachu, MP	
6	Hon. Geni, Charles Mongare, MP	
7	Hon. Gure, Shukra Hussein, MP	
8	Hon. Ole Kenta, Richard Moitalel, MP	
9	Hon. Mohamed, Diriye Abdullahi, MP	
10	Hon. Murungi, Kathuri, MP	
11	Hon. Ogalo, George Oner, MP	
12	Hon. Sunjeev Kour Birdi, MP	
13	Hon. Tonui, Ronald Kiprotich, MP	
14	Hon. Dr. Wanyonyi, Reginalda N, MP	
15	Hon. Farah, Abdulaziz Ali, MP	
16	Hon. Barua, Ejidius Njogu, MP	
17	Hon. Irea, Gideon Mwiti, MP	
18	Hon. Muluvi, Marcus Mutua, MP	
19	Hon. Mwashetani, Khatib, MP	
20	Hon. Ndiritu, Samuel Mathenge, MP	
21	Hon. Ottichilo, Wilber Khasilwa, MP	
22	Hon. Rop, Jackson Kipkorir, MP	
23	Hon. Abdinoor, Mohammed Ali, MP	

24	Hon. Ng'ang'a, Alice Wambui, MP	
25	Hon. Peter Kinyua, MP	
26	Hon. Wandayi, James Opiyo, MP	
27	Hon. Katana, Aisha Jumwa, MP	
28	Hon. Jude Njomo, MP	

MINUTES OF THE 14TH SITTING OF THE DEPARTMENTAL COMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES HELD ON THURSDAY MARCH 10TH, 2016 AT 10.30 AM IN 9TH FLOOR HARAMBEE SACCO PLAZA PARLIAMENT BUILDING.

PRESENT

1. Hon. Abdalla Amina, M.P. – **Chairperson.**
2. Hon. Wandayi James Opiyo, M.P.
3. Hon. Dr. Wanyonyi Reginalda N. M.P.
4. Hon. Ole Kenta Richard Moitalel, M.P.
5. Hon. Farah, Abdulaziz Ali, M.P.
6. Hon. Gure Shukra Hussein, M.P.
7. Hon. Dukicha Hassan Abdi, M.P.
8. Hon. Emanikor Joyce, M.P.
9. Hon. Ganya Francis Chachu, M.P.
10. Hon. Kathuri Murungi, M.P.
11. Hon. Ndiritu Samuel Mathenge, M.P.
12. Hon. Ottichillo K. Wilber, M.P.
13. Hon. Peter Kinyua, M.P.
14. Hon. Katana Aisha Jumwa, M.P.

APOLOGIES

1. Hon. Alexander Kosgey, M.P. – **Vice Chairperson.**
2. Hon. Sunjeev Kaur Birdi, M.P.
3. Hon. Abdinoor Mohammed Ali, M.P.
4. Hon. Ogalo George Oner, M.P.
5. Hon. Geni Charles Mong'are, M.P.
6. Hon. Rop Jackson Kipkorir, M.P.
7. Hon. Ng'ang'a Alice Wambui, M.P.
8. Hon. Mwashetani Khatib, M.P.
9. Hon. Jude Njomo, M.P.
10. Hon. Barua Ejidius Njogu, M.P.
11. Hon. Irea Gideon Mwiti, M.P.
12. Hon. Tonui Ronald Kiprotich, M.P.
13. Hon. Mohamed Diriye Abdullahi, M.P.
14. Hon. Muluvi Marcus Mutua, M.P.

THE NATIONAL ASSEMBLY

1. Ms. Chebet Koskei - Clerk Assistant II
2. Mr. Hassan A. Arale -Clerk Assistant III
3. Mr. James Muguna - Research officer.

MIN.NO. DC/ENR/048/2016- PRELIMINARIES

The meeting was called to order at 10.30 am after which prayers were said. The chair then welcomed the members and the officials of Ewaso Ngiro north development Authority and Water and Resources management Authority officials to the meeting after a round of introduction.

MIN.NO.DC/ENR/049/2016: CONSIDERATION AND ADOPTION OF THE REPORT ON THE STUDY VISIT TO CHINA REGARDING THE BAMBOO SECTOR.

After lengthy deliberation on the report the committee observed and recommended the following, that, after meetings and visits to factories and bamboo forests in China the delegation made the following

Observations:-

- i Following a presidential directive in 1986 Banning Bamboo harvesting, Kenya has not been exploiting its vast Bamboo resources;
- ii According to the Kenya Forest Service, Kenya has 165,000 hectares of indigenous Bamboo plantation and receives no income out of it while Anji County, a County in Southern China has 70,000 hectares of Bamboo and has built an multi-billion industry that brings in USD 18 billion per annum.
- iii Bamboo products are wide ranging, with some products requiring very simple technology; Bamboo vinegar, charcoal, toothpicks, mats and furniture to a little more sophisticated technology to make flooring tiles. It is possible to replicate all these industries in Kenya given that it has more Bamboo resources;
- iv INBAR has been working with the Kenya Forestry Research Institute (KEFRI) and has provided the Agency with seedlings and other technical support regarding Bamboo development. KEFRI has a wealth of information on Bamboo which is not being utilized. Further, the existing ban curtails further collaboration and the Organization has set up its Eastern Africa Regional Centre in Ethiopia. Ethiopia which has the same species of Bamboo as Kenya, has started Bamboo exploitation and has already established a successful flooring tiles industry; and,
- v Bamboo is a renewable resource which regenerates after being cut. Also given its fast maturity rate of 3-4 years, bamboo can be used as an alternative source of wood. Use of bamboo will ease pressure off our forests and contribute to the achievement of the targeted 10 percent forest cover by 2030, at the moment Kenya is at 6.99 percent forest coverage.

COMMITTEE RECOMMENDATIONS

The Committee made the following recommendations based on the meetings held, site visits undertaken and the observations made:-

- i The Government of Kenya should lift the 1986 Presidential directive that banned commercial harvesting of Bamboo;
- ii The Government of Kenya should enhance its cooperation on research and technical capacity building with countries such as China. This will enhance the Country's ability to benefit from resources offered by INBAR;
- iii The Ministry of Industrialization should look into developing industries to carry out Bamboo exploitation and value addition to Bamboo products;
- iv There is need for cooperation between the Kenya Forestry Research Institute (KEFRI) and the Kenya Forest Services (KFS) to develop quality Bamboo seedlings. It is worth noting that the in the Forest Management & Conservation Bill, 2015, the Committee included the Director of KEFRI to be a member of the board of KFS so as to bring added professional expertise to the board and also enhance the level of collaboration between the two agencies;
- v The Ministry of Environment and Natural Resources should develop clear guidelines on exploitation, pricing and marketing strategies of Bamboo and its products. The Ministry should also develop a clear road-map of achieving Bamboo plantation targets as listed in the MTEP II.

MIN.NO. DC/ENR/050/2016 ADJOURNMENT

There being no other business the meeting was adjourned at 12.10 pm.

SIGNED.....

(Chairperson)

DATE.....

