

Panel 1.1.3 Consumption of wood, energy transitions and woodland management from a historical perspective.

Are rural women to blame for misusing wood for livelihood and household use in Burnt Forest Area, Kenya

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ABSTRACT: *The consumption of wood fuel by women in rural Kenya, specifically in the Rift Valley has a direct ecological link to the Mau Forest, the source of water supply to most parts of the country including the capital city Nairobi. When Kenya became a crown colony of the British Government 1920 all the land was assumed to belong to the crown and these rendered Africans landless. Many Africans choose to encroach on forest land as a way of sustaining their livelihood. Further, they exploited the forest by selling wood fuels and converting firewood to charcoal and sell it to the populations in the urban areas that were rising rapidly.*

Introduction

Kenya like most African countries depends on wood and charcoal for cooking and heating in households. In 2005, a National Charcoal survey conducted by the Energy for Sustainable Development in Africa organization established that that about 500 million tons of wood in form of firewood and charcoal is consumed by households in Sub-Saharan Africa which is more wood per capita than any other region in the world. In Kenya, over 90 percent of rural households use firewood for cooking (ESDA, 2005:5). Charcoal is produced in the rural areas inefficiently and often done in an unsustainable manner. However the root cause of charcoal production is poverty. Many people in the rural areas depend on charcoal for income

generation. The fact that about 2.5 million people depend on charcoal either directly or indirectly and that charcoal trade contributes 32 billion Kenya shillings to the national economy annually is significant and thus a policy – the Forest Act - was developed in 2005 to give a clear direction in this trade (Mugo, 1999:7).

The Mau Forests Complex is the largest closed-canopy forest ecosystem of Kenya. It is the home of a minority group of indigenous forest dwellers, such as the Ogiek sub ethnic community of the Kalenjin, and provides livelihood support for many communities who are living in the immediate surroundings of the forests. The Mau Forest Complex comprises of 22 forest blocks, 21 of which are gazetted and managed by the Kenya Forest Service formerly known as the Forest Department. Yet the Mau Forests Complex has been, and continues to be seriously degraded through irregular and ill-planned settlements, as well as through uncontrolled and illegal forest resource extraction and conversion to agricultural production.

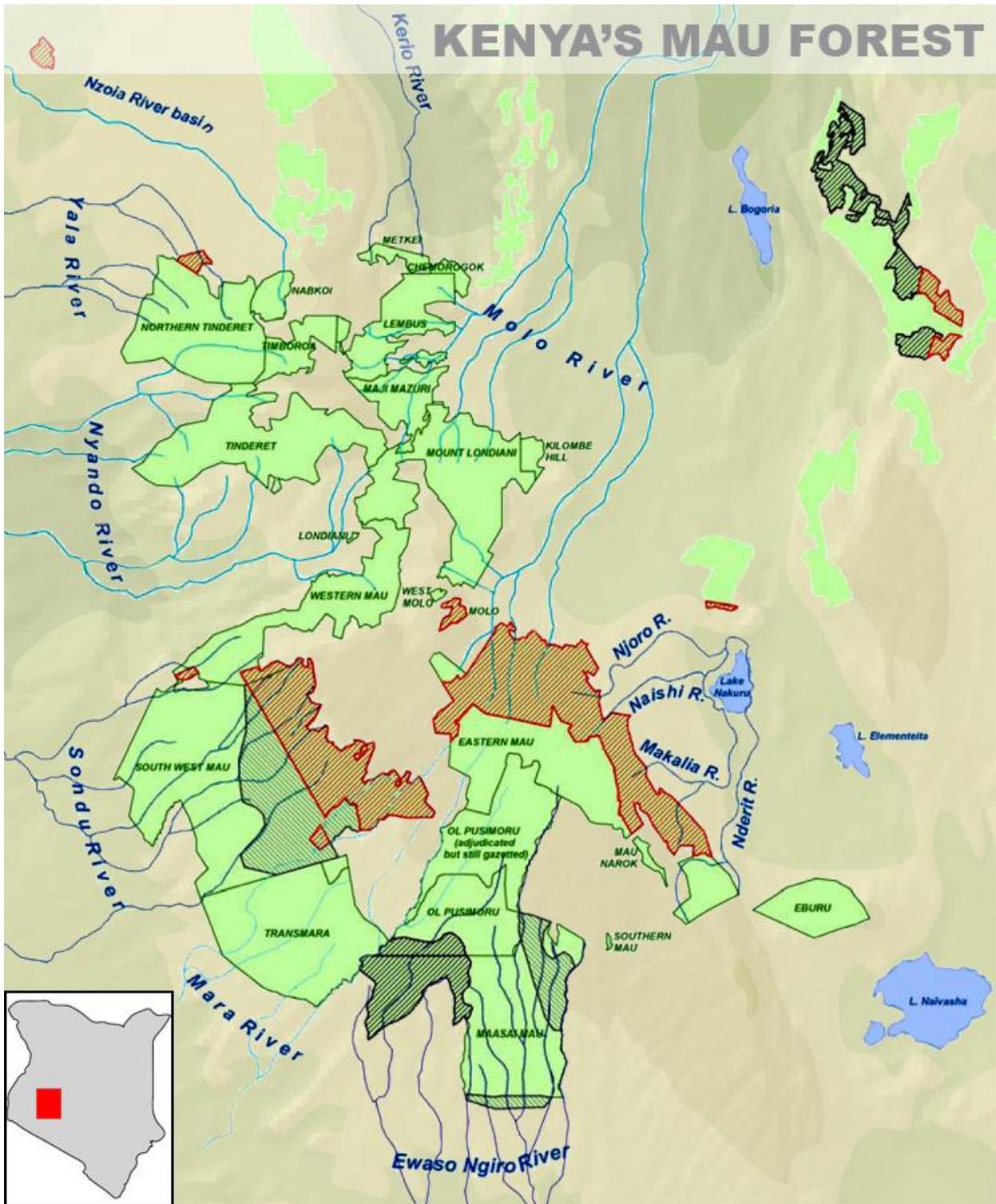
Through a series of forest excisions and encroachment, some 107,707 hectares representing approximately 25 per cent of the Mau Complex area has been converted to settlement and farmlands over the last 15 years. Through the excisions of 2001 alone, 61,586.5 hectares of forest in the Mau Forests Complex was to be converted to settlements. It is estimated that, within the remaining gazetted forests in the Complex, some additional 46,122 hectares have been encroached, posing serious threats to the sustainability of the ecosystem.

Wood fuel Consumption trends

The consumption of wood fuel by women in rural Kenya, specifically in the Rift Valley has a direct ecological link to the Mau Forest¹ complex. Several forests surrounding *Burnt Forest area* actually form part of the Mau complex and it is within these forests that the forest cover is rapidly getting depleted because of the demand for wood fuel. These forests include; the Nabkoi, Northern Tinderet and Timboroa Forest. The Burnt Forest area is situated in Ol'Leinguse location, Uasin Gishu district which is in the Rift Valley province of Kenya.

¹ Including Transmara, Ol Pusimoru, Maasai Mau, Eastern Mau, Mau Narok, South-West Mau, Western Mau, Mt.Londiani, Eburu, Molo and South Molo. In the northern section are the forests of Tinderet, Northern Tinderet, Timboroa, Nabkoi, Kilombe Hill, Metkei, Maji Mazuri, Chemorogok and Lembus

Map of the Mau Forest Complex



In the Burnt forest area the two dominant ethnic communities: Kalenjin and Kikuyu live on settlement schemes adjacent to the government forest land. The Kikuyu ethnic community lives on land that was purchased in 1965 from the British settlers who had to leave the country when Kenya attained independence in 1963. The members of the Kikuyu ethnic community are migrants from central province who arrived in the area in 1963 to work for the British colonial settlers who had displaced the Masaai from that Uasin gishu plateau area. Members of the Kikuyu community thus formed a land buying cooperative societies and purchased large tracts of land.

The members of the Kalenjin ethnic community that lives near the Kikuyu community in the area of Burnt forest are from a sub tribe popularly called “dorobos” . They named their settlement Ndungulu farm after being forcefully migrated from the Indungulu forest. Towett (2004 :7) states that the Ogiek have been ethnologically nicknamed “Dorobo” or “Ndorobo” a term adopted from the Maasai word ‘*Illtorobo*’ meaning poor. This is because the Ogiek had no cattle, which to the Maasai was a measure of wealth. In the early 1990s the Kenya Indigenous Forest Conservation Project (KIFCON) while working in South Western Mau reserve noted that the Ogiek people were scattered across that forest and recommended to settle them to secure long term conservation of the biodiversity and water catchment of the South West Mau forest reserve.

Brief History of Forest depletion and land fragmentation in Rift Valley

The forest depletion and land fragmentation in Rift Valley province has its historical roots in the colonial period. In 1901, the colonial government assumed control of the alienation of land to immigrants under the authority of the East Africa (Land) Order in Council and the Crowns Land ordinance of 1902. The legislation was drafted on assumption that Africans had no entitlement to land and that accordingly the Crown could assume a title to such land and alienate it for occupation and ownership by European immigrants.

The 1902 ordinance allowed the colonial government the right to sell or lease land to Europeans for 2 rupees per 100 acres or rent the land at 15 rupees per 100 acres annually. The rupee was used as currency because at that time the legal document that the British government used to

acquire land in Kenya was the India Land Acquisition Act as applied to the British protectorate, 1894 (Sorrenson, 1967:7). In 1915 the Crown land ordinance was enacted redefining crown land to include land occupied by Africans. In 1921 the Kenya annexation order was passed which took away all native rights in land reserved for white occupation. The result was massive landlessness particularly in Central, Rift Valley and Western Kenya which were within what came to be called the White Highlands. The ethnic communities that were most affected were the Kikuyu, Kalenjin² and Luhya. It is this creation of white highlands that triggered the migration of the Kikuyu, Kalenjin and the Luhya into parts of Rift Valley to work as laborers on the European settler farms.

Harbeson (2012 :82) argues that from 1986 on, under Moi, government forest lands became a *caisse noire* of patronage resources that were used to reward the ruler's friends and to build political support (see Southall 2005:149). Evictions of Kenyatta-era forest squatters, beginning in 1986, and the declassification of new forestland created a land frontier that Moi used to settle thousands of families from the Kalenjin and related communities that he actively cultivated as his political base³. Once settled on government forestland, farming communities became constituencies that were dependent upon the discretion of regime dignitaries. In the 1990s the Moi government allowed large numbers of Kalenjin squatters to settle in the *Nabkoi* (Ainabkoi) and *Cenghalo* (Singalo) forests of Uasin-Gishu District, in forest reserve areas that were often adjacent to the preexisting settlement schemes and Land Buying Company farms in this district.

The 2009 *Report of the Prime Ministers Taskforce on the Conservation of the Mau Forest complex* states that Settlements through the excision of forests since independence began

² The Kalenjin subtribe that was mostly affected was the Ogiek "Dorobo" who were living in the forest and the Nandi from Nandi hills.

³ Harbeson (2012 :82) argues that interviewees said that that expulsion of Kenyatta-era Kikuyu settlers from the Mau forest began in 1986. As one put it, the forest evictions of 1986 "were the start of all these problems." They were evicted from forests around Londiani, Njoro, and Elburgon. "Then, this land was given to Kalenjin" (interview, Eldoret, Nov. 18, 2008). Another interviewee added that "Kalenjin" were settled in the 1980s in the Anabkoi and Singalo Forests (interview, Timbaroa, Nov. 17, 2008). The Kikuyu owner of a small plot and house located between Turi and Molo—a retired postal worker—said that "most Kikuyu were expelled from the Mau in the 1980s. Kalenjin moved in." Many Kalenjin were allowed to settle in the Mau Forest area south of Njoro. "They clear-cut and started farming." He added that others were settled on ADC farms acquired by [Moi ally and Minister of Roads from Buret] Franklin Bett (interview, Molo, Nov. 16, 2008)

since 1963 up to 2001. These excisions for settlement and other purposes have taken place to an estimated 161,871.5 hectares as per published in the gazette and legal notices. Over the years the settlements have tended to precede degazettements allegedly due to political expediency. As such there are several settlements and individual allocations of land in the Mau Forests complex that need to be finalized through regularization or revocation.

The purpose of the 2001 excisions in the Mau Forests complex was to resettle the Ogiek and the Victims of the 1990s land clashes. The 2009 *Report of the Prime Ministers Taskforce on the Conservation of the Mau Forest complex* established that beneficiaries included non deserving people such as Government officials, political leaders and companies. Some of the allocation of land was carried out by unauthorized persons. It was also established that most of the title deeds were issued prior to the degazetment of the forest land of after a High Court restraining the Government and its officials and agents from alienating the whole or any portions of the forest land as proposed in the 2001 excisions Legal notices. Multiple parcels of land amounting to well in the excess of the normal land size of 2.02 hectares (5 acres) were allocated to the same beneficiaries.

Uses of wood fuel in burnt forest area

During a research study conducted in the area, it was established that almost all households cook on a “three stone” fireplace in their kitchens. In addition, women use the wood fuel to produce changaa - an illicit alcoholic brew. In the Kalenjin ethnic community culturally, only women brew alcohol. The brewing of ***chang’aa*** can take a whole day and requires a huge amount of firewood to keep the brew boiling. Brewing and selling this illicit alcohol is important for many women as a livelihood because it is a well paying business that rural women engage in without competition from their male counterparts. In addition, most women can even purchase land from revenue earned through the sale of changaa.

According to a 2010 report on *Baseline survey of Drivers of Armed conflict areas in Rift Valley*, which was published by United Nations Development Programme in Kenya, the social factors that contribute to the ethnic conflict between Kikuyu and Kalenjin ethnic communities include illegal brewing of alcoholic drinks. The report states that most youth who drop out of school

have nothing useful to engage them hence most of them end up involving themselves in activities such as illegal brewing and drinking of alcohol such as *Changaa* and Busaa. This practice is very common in Uasin Ngishu. The most affected group are men and young males. They spend most of their time in local brewing places (Gona and Muluka 2010: 34).

Men use the wood acquired from logging in the forests for fencing, building and construction of houses. Historically, there were factors that greatly influenced the preservation of forests and hence decreased the rapid consumption of wood fuel. For example, the forests were held as sacred grounds for worship as well as for traditional rites of passage such as male and female circumcision.



This is a typical fireplace for cooking in most rural households in Kenya.

Picture sourced from myclimate⁴ documents

Burnt forest area lies at an altitude of 2418.40 m and it gets very cold at night. The charcoal stove also known as a *jiko* is used for heating the house. The most popular charcoal stove is the Kenya Ceramic Jiko (KCJ) which is a portable stove that uses charcoal as fuel. Shaped like an hourglass, the metal stove has a ceramic lining in its top half, with the bottom half being a collection box for ashes. The coals are placed into the ceramic lining at the top, which is perforated to let the ashes from the coals fall to the bottom of the stove. These ashes can then be collected and disposed of safely. The head of the stove has metal rings that hold a pot in place for cooking. The Kenya Ceramic Jiko was designed by Kenya Energy and Environment Organization (KENGO) an indigenous NGO international agencies and supported by the

⁴ Myclimate is a project that was initiated by faculty at ETH Zurich. <http://www.myclimate.org/nc/carbon-offset-projects>

International Development Research Centre (IDRC). Today, the stove is so popular that it is used in over 50% of all urban homes and about 16% of rural homes in Kenya.

Charcoal trade in Rift Valley

Wood fuel as a forest product from the Forest department in Kenya has declined in importance over the years. According to the Forest department report of 1965, in the earlier years of this century up to the mid 1950s the Forest Department was the main supplier of wood fuel mainly for running rail transport. Thereafter the railway ceased to be a major consumer and the percentage of revenue earned by the forest department from the sale of wood fuel declined from about 40.5% on average for the period 1930-1939 to 7.2% in 1965 (O'Keefe et al, 1984).

In the early 1980s Charcoal was made by private companies as a byproduct of other primary products. For example East African Tannin Extract Company (EATEC) based in Eldoret. The EATEC used to grow *Acacia mearnsi* trees for bark production. Tannin a valuable leather curing product is extracted from wattle bark. After stripping the bark from trees the land would be hired out at 3,200 Kenya shillings per hectare to anyone interested in harvesting the wood. Also EATEC would allow those buying its trees to burn charcoal in their highly efficient kilns. These Kilns , 14 in number were of the beehive brick make. Each kiln measured 12 metres long, 5 meters wide and 3 meters high. These kilns produced charcoal as a high recovery efficiency of about 25 – 32 % from oven dry wood (Mugo, 1999:7).

Typically about 72 tonnes of debarked wattle trees were loaded into each brick kiln. The total carbonization is 13 days of which one day was for the loading, three days for burning eight days for cooling and one day for unloading the finished product. An average yield from 72 tonnes of wood in one kiln was 21 tonnes of charcoal. These were packed into 91 kilogramme sacks and came to about 600 sacks of charcoal. Most of the charcoal would be used in urban towns of rift valley such as Eldoret and even taken to capital city of Nairobi.

The 1990s were characterized by a period of economic decline which together with high population growth rates and collapse of government parastatals, had significant repercussions for local incomes. Particularly grievous was the sale of the forty thousand acre EATEC farm in

Uasin Gishu. This East African Tanning Extract Company (EATEC) farm was believed to have been situated on pre-colonial Nandi pastures. However the farm was sold to the then President Daniel Toroitich and his close allies and even saw the eviction of Nandi farm labourers thus enlivening resentment from the local population. Also the estimates of absolute poverty in Uasin Gishu, Nandi and Nandi districts increased from 33.5% and 41.7 percent in 1994 to 42.2% and 64.2% in 1997. (Lynch ,2011: 170).



These are three types of charcoal stoves used in Kenya. They are called “Jikos”. The first one shaped like an hour glass was designed by Kenya Energy and Environment Organization (KENGO) an indigenous NGO membership organization established in 1982.

In a focus group discussion with Kalenjin women who live on Ndungulu farm in Burnt forest area:

Respondent 1 Helen : Yes, the donkeys are important for getting the firewood from the forest. You know we are able to collect more firewood using the donkeys. The donkey also needs a place to graze so if you have land you can tie the donkey there and give it some grass.

Jemaiyo: Is it men who buy the donkey to transport firewood or is it women.

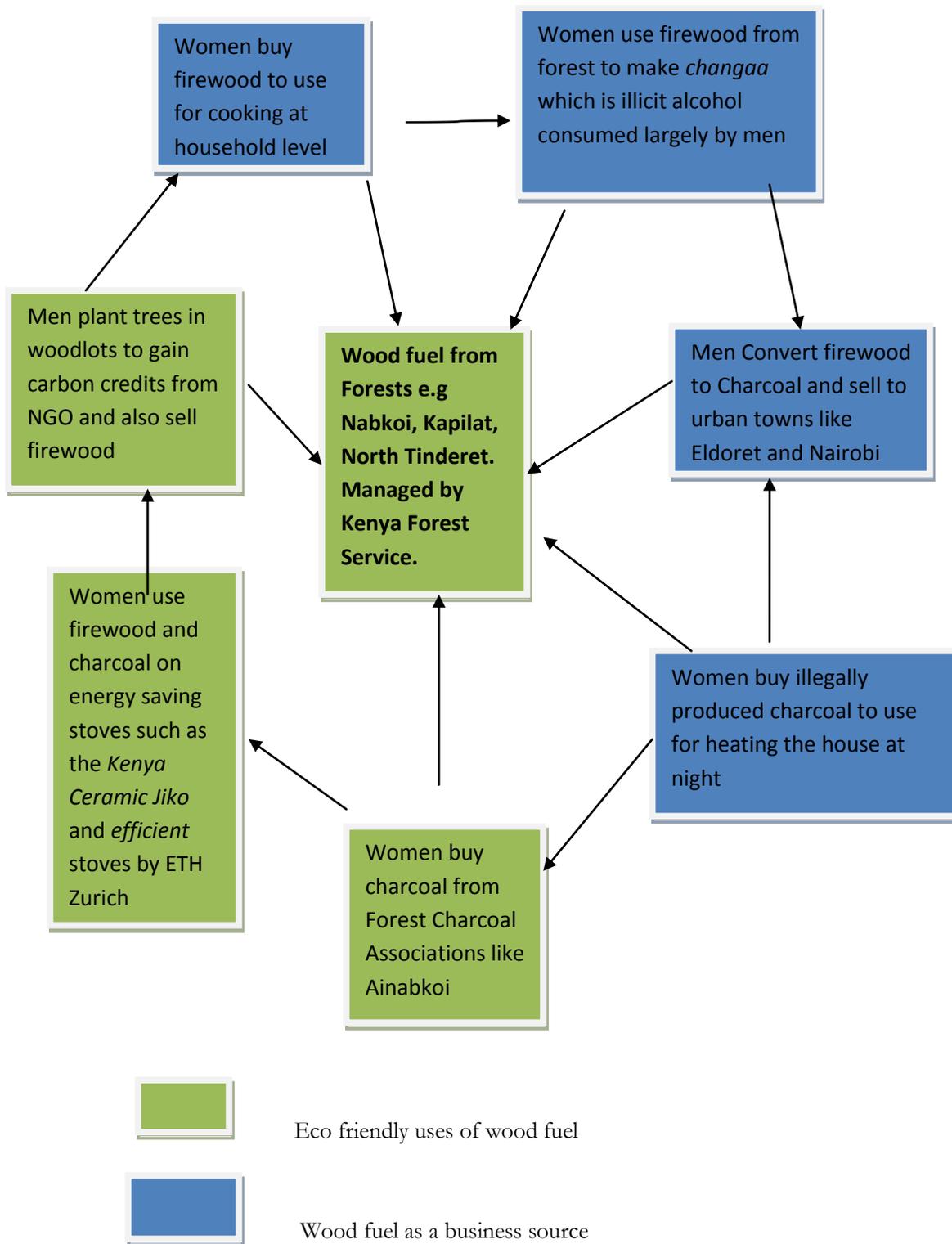
Respondent 16 Veronica Tuikon: It is old women like us who buy the donkeys. You know the forest is very far so women do all they can to look for money to buy a donkey so that they can transport the firewood, if you carry all that firewood on your back you will suffer.

Respondent 2 :- The men do not care, firewood is not their problem. All they want is to come home and find food ready. You have to look after yourself and find an easier way to transport the firewood.

Jemaiyo: Which forest do you go to for the firewood?

Respondent: Cenghalo forest or even further to *Serengonik*. We pay 100 shillings to be able to cut the firewood for a period of one month and get a receipt. But this firewood business is not lucrative it is just to help you survive from day to day. It does not give us enough money to take children to secondary school. It just keeps you from staying hungry.

Diagram 1; Wood fuel and its consumption trends in Kenya



Way forward for forest conservation and harvesting of wood fuel

In 2005 the Forest Act was established so as to regulate the wood fuel harvesting and charcoal consumption in Kenya. The charcoal regulations were later established in 2009. Part of the regulations are that there should be charcoal producer forest associations established in areas where the population often go to the forest to harvest wood for charcoal production. These associations marked a “fundamental shift” in that the old legislation did not provide for community participation in forest management. The Kenya Forest Service is a semi-autonomous agency set up in 2007 to conserve, develop and sustainably manage forest resources for the country’s socio-economic development. It is managed by a board of directors drawn from both the private and public sectors that has the mandate to oversee the development of the entire forest sector. The Kenya Forest Service also regulates the harvesting of firewood by issuing licences to any persons interested in the wood fuel from the forest.

There are also some factors that in the future may lead to decreasing use of wood fuel. For example, there are projects that are encouraging establishment of woodlots by United Nations Development Programme UNDP and United Nations Environment Programme UNEP. In addition, UNEP has started a project to realize *Carbon Credits* for farmers who plant eucalyptus trees on their land. These ‘*Carbon credit*’ projects have a monetary value attached to motivate the rural communities to seek an alternative way of livelihood using wood but decreasing the forest depletion.

According to a mapping exercise carried out in 2010 with the help of the Japanese Government, the forest area in Kenya is nearly 7 per cent. The country’s forests fall into five categories: natural or indigenous forests, including mangroves; industrial plantation forests; private forests; dryland forests; and urban forests. The establishment of the Kenya Forest Service is just one of several reforms and measures taken by the Government to create an enabling environment for investment in the sustainable management of forests. UN Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation (REDD+), which seeks to create financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions and invest in low-carbon technologies to sustainable development.



This picture is sourced from myclimate ETH Zurich project document. This efficient stove has a cleaner, more efficient combustion and better heat insulation, which reduces smoke emissions and firewood consumption significantly.

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