

Charcoal Burning and Climate Change in Uganda: A Legal Perspective

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Abstract: This paper reviewed the legal perspectives that govern charcoal burning and climate change in Uganda. The paper unveiled legal loopholes in the current legal framework that is causing the prevalence of tree cutting for charcoal business in Uganda. The high demand for charcoal products has forced majority of the poor to engage in this Lucratic business but at the expense of climate change. So far several parts of the country are grappling with cases of droughts and floods hence a looming famine awaits and in some areas of the country, people are dying of the same. This paper recommends that unregulated tree cutting for charcoal business be streamlined by coming up with stringent policies and laws that can equally address this pandemic.

Keywords: Charcoal burning, climate change, legal framework, forest conservation, Uganda

I. INTRODUCTION

‘Climate Change, the most uttered environmental term of present time has been used to refer to the change in modern climate brought predominantly by human activities [10]. The United Nations Framework Convention on Climate Change [30] defined Climate Change as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods". On the other hand, the Intergovernmental Panel on Climate Change [34] defines climate change as "any change in climate over time whether due to natural variability or as a result of human activity". Thus in the environmental discourse climate change is mainly characterized by the change in modern climate augmented by human activities. And the adverse human activities for example burning fossil fuel, deforestation et cetera, are considered likely to bring change in some climatic aspects. According to Uganda National Climate Change Policy (2015), climate change refers to "induced human activities that change the atmosphere's composition (e.g., burning fossil fuels) or the land's surface (e.g., deforestation, reforestation, urbanization, desertification, etc.)."

In Uganda, "climate change is manifesting as prolonged droughts, unreliable rainfall patterns and floods which exert more pressure on natural resources and has implications to the Ugandan economy, which largely depends on rain-fed agriculture that is more vulnerable to climatic variability [7]". Uganda especially Eastern and Northern parts, floods cut off the road network making communication difficult; submerge crop fields and destroy crops and this results in long term

famine and increase in cost of food. However, the major cause of this dramatic climate change in Uganda is highly attributed to unregulated tree felling for charcoal burning, and agriculture.

Climate change is perhaps one of the most serious environmental issues that today's world population is facing thus its impact can no longer be ignored [33]. Ever since it emerged in the early nineteenth century, up to the late twentieth century the issue was a topic discussed exclusively within the scientific society. In the mid to-late 1980s it first emerged on the public agenda [19]. Since then, on one hand, it has been manifested by the believers that the consequence of human activities on world climate has reached an alarming state and poses critical threats to physical, and socio-economic structures [11]. On the other hand, the skeptics have presented fairly enough evidence to disqualify the anthropogenic trait of Climate Change [12]. Again, the Climate Change advocates among them have debated over the appropriate methods of addressing the eminent issue [13]. Thus with increasing public involvement in the Climate Change discourse and ensuing awareness regarding the potential risks and uncertainties attached to the issue, it has been debated and problematized from diverse standpoints, one of which being charcoal burning [32].

II. STATEMENT OF THE PROBLEM

Charcoal burning is the major source of fuel energy in Uganda mostly used for domestic cooking and boiling water [3]. It is the most preferred home economics energy in Uganda due to a variety of reasons including affordability, efficiency, high energy content, and easy to transport using the means of road transport [20]. As a result, many people consider charcoal a relatively modern fuel rather than a traditional one. Government statistics attests to this. According to Uganda Bureau of Statistics [27], "the total nominal value of household consumption of firewood and charcoal increased from \$17,000 in 2014 to \$19,000 in 2018." Notwithstanding its popularity, the charcoal sub-sector in Uganda remains plagued by inefficient production practices, lack of sustainable supplies of woody biomass and inadequate, often conflicting, policy statements [24]. The link between charcoal burning and climate change is that, as more trees get felled for charcoal production purposes, it leaves the environment to be susceptible to climate change impacts such as flooding which brings about soil erosion and destruction of crops, and green gas effects due to prolonged drought [5].

Indeed, deforestation due to high charcoal demand is the main environmental issue confronting Uganda's forest and savannah woodlands. According to [2], "the leading causes of deforestation are tree cutting for timber, firewood, and charcoal, with the root cause being policy deficiencies, and lack of sustainable laws." Furthermore, inadequate fuel alternatives perpetuate charcoal burning activities which have low returns and high costs on the environment, thus threatening adversarial climate change.

This paper looks at the extent to which government laws and policies are helping in the mitigation of unsustainable charcoal burning practices which are already culminating into hostile climate change impacts.

III. REASONS WHY PEOPLE PARTICIPATE IN CHARCOAL BURNING IN UGANDA

Charcoal is one of the key commodities within Uganda since one third of the population rely on charcoal and people prefer to use charcoal because it is affordable, and accessible to both low, middle and high income earners. According to [3], "it is evident in the rural areas of Uganda that all households use firewood and or charcoal for cooking their meals, and boiling water for family use." Charcoal is also used by both rural, semi-urban and urban sources of energy for cooking and other domestic or commercial importance [24]. The charcoal burning business remains one other lucrative trade in Uganda. Kitara [15] reported that in Uganda, "the charcoal sector earns \$38m (sh144b) annually as the majority of the households depend on charcoal". Kitara [15] adds that due to high demand, there is an unsustainable practice like indiscriminate cutting of trees without planting new ones as a consequence causing land degradation and deforestation in the rural areas.

Furthermore, charcoal burning is the source of livelihood for the majority of Ugandan households with most of them being single mothers or women who must feed their children and also send them to school [16]. This makes poverty the highest contributor to charcoal burning since it is seen as the only way of earning a living in the northeastern region of Uganda. This is because due to prolonged drought, most families in this region are unable to grow grains for food, thus resorting to charcoal burning as a source of revenue. As a result, Nakisanze [20] pointed out that every month, "about 4,000 trees are cut down for charcoal burning in the district of Kotido (northeastern Uganda), a number deemed too high for an area that experiences an intensely hot season, marked by dust storms, and a rainy season where precipitation is sparse and uneven."

IV. THE IMPACTS OF CHARCOAL BURNING ON CLIMATE CHANGE IN UGANDA

Forests provide many social, economic and environmental benefits. They also provide an important defense against climate change in that they facilitate photosynthesis which produces Oxygen (O₂) and consumes huge amounts of carbon dioxide (CO₂) known for affecting global warming [17].

However, the number of trees available to absorb CO₂ through photosynthesis has been greatly reduced through deforestation for charcoal related business [25]. With a deforestation rate of 1.8 percent, more than 73,000 hectares of private forest, and over 7,000ha of protected forest reserves being destroyed annually for timber and charcoal, it is making Uganda's forests disappear at an alarming rate and bringing about serious floods in southeastern and prolong drought in northeastern parts of the country [3].

According to [21], "over 80 percent of the population in Uganda depends on biomass as their main source of energy. By some estimates, 6 million tonnes of wood are annually transformed into 1.8 million tonnes of charcoal. But production is destructive, as charcoal producers often harvest whole trees from indigenous forests, believing that the bigger the logs, the better the charcoal. This also has knock-on effects on climate change such as greenhouse gas emissions, soil erosion and increased flooding [21]".

V. LEGAL FRAMEWORK GOVERNING CHARCOAL BURNING IN UGANDA

The most prominent policies are Uganda's Energy Policy (2002) and Renewable Energy Policy (2006) whose main aims are to meet the energy needs of the Ugandan population for social and economic development in an environmentally sustainable manner [18]. The development of renewable energy resources for both small and large-scale applications is emphasized. One of the objectives of these policies is "to increase access to modern, affordable and reliable energy services as a contribution to poverty eradication." This is to be achieved through supporting the dissemination of biomass and other renewable energy technologies to increase positive impact on the energy balance and the environment, and supporting efforts to develop biomass resource in agreement with the Uganda Forestry Policy and the National Forest Plan. The policy recognizes "biomass (firewood, charcoal and crop residues) as an important renewable sources of energy which can provide almost all the energy used to meet basic needs of cooking and water heating in rural and most urban households, institutions and commercial buildings" [7].

The National Environment Management Policy's (NEMP 1994) overall goal is "to establish sustainable social and economic development, which maintains or enhances environmental quality and resource productivity on a long-term basis that meets the needs of the present generations without compromising the ability of future generations to meet their own needs [28]". The objective of this policy is "to manage sustainably, forest resources in protected areas and public and private land, and to promote increased forest production by the private sector and communities." One of the strategies of the policy is to provide economic incentives and the necessary legal framework and technology to encourage and facilitate rural communities, wood fuel using industries and institutions and the private sector to be self-sufficient in forest product requirements [28].

Furthermore, the Uganda Forestry Policy 2001 is the main policy that is relevant to the charcoal supply side and sustainable land management and sustainable forest management [20]. The objective of this policy is “to establish an integrated forest sector that achieves sustainable increases in the economic, social and environmental benefits from forests and trees by the people of Uganda, especially the poor and vulnerable”. The policy provides information that is relevant to charcoal and sustainable land management, and sustainable forest management. The key issues tackled in the policy which have a direct impact on charcoal production are: “sustainable management and protection of permanent forest estate under government trusteeship, promoting the development and sustainable management of natural forests on private land, promoting profitable and productive forestry plantation businesses, and promoting a modern, competitive, efficient and well-regulated forest products processing industry [20]”.

However, the Uganda Forestry Policy 2001 does not elaborate on how the key issues will be tackled and overcome, nor does it set up structures or strategies for developing and regulating the harvesting of forest cover for fuel wood and the conversion to charcoal. This lack of elaboration about implementation remains an important set-back to most of the aforementioned policies. There is a clear need to propose a well-defined roadmap and specific agenda for the promotion of sustainable forestry and environmental management in the country.

On the other hand, the National Forestry and Tree Planting Act No. 8, 2003 of Uganda, prohibits dealings on land reserved as Central Forest Reserves (CFRs) without the authorization of the National Forestry Authority (NFA). Article 14 (1) reads in part “no person shall, in a forest reserve, cut, burn, damage, destroy any forest produce, or remove, or receive any forest produce.” Thus, in case of illegal charcoal burning, the charcoal are impounded and other lawful measures taken. They include fining owners of vehicles/vessels impounded with illegal forest produce and fining owners of illegal forest produce, while others are prosecuted in courts of law. However, over the years, the wide spread corruption among law enforcers have often let the perpetrators of indiscriminate charcoal burning go scourage free after bribing their way out and the menace keeps on increasing by the day.

Furthermore, the Constitution of Uganda, the principal legislation from which all laws, regulations and institutional policies derive validity, under Article 245, which mandates Parliament “to provide for measures intended to protect and preserve the environment from abuse, pollution and degradation; to manage the environment for sustainable development.” It is unfortunate that the Constitution of Uganda has no explicit provision for environmental protection against climate change arising from tree felling for charcoal production.

VI. LEGAL PERSPECTIVES ON CLIMATE CHANGE

The efforts to use domestic, regional and international environmental law to achieve climate change justice have been varied and far-reaching. International environmental law is a body of law composed of global treaties, conventions, regulations and policies aimed at protecting the environment and natural resources from the negative effects of human activity¹. Over the past few decades there has been a rapid and dynamic development of binding international agreements concerning environmental protection at both global and regional levels [6]. This rapid development has been characterized by multiple multilateral negotiations, which have consumed human and financial resources but that have often failed to comprehensively achieve successful implementation.

The chief international environment instruments dedicated to addressing climate change issues are the UNFCCC and the Kyoto Protocol. Under the Kyoto Protocol, certain (Annex B) countries must meet emissions reductions targets through national measures to reduce GHG emissions. The Kyoto Protocol also permits Annex B parties to participate in GHG emissions trading for the purpose of fulfilling commitments under Article 3 of the UNFCCC².

However, the Kyoto Protocol has been widely criticized. For example, the US signed the Kyoto Protocol but never ratified it, and is thus not bound to comply with the quantified emission reduction commitments contained in Annex B.³ Furthermore, the Kyoto Protocol has been criticized for the lack of ambition of its emission reduction commitments and measures to support adaptation to climate change, its overly complicated policy tools and ineffectual enforcement mechanisms.⁴ Aside from the UNFCCC and Kyoto Protocol, no other multilateral treaties are directed specifically at slowing human-caused climate change.

In Uganda, National development plan (NDP) 2010 is the policy framework that the Government is applying to guide the formulation of government policy and the implementation of government programs [9]. However, climate change is not well addressed in the NDP; the plan includes a disaster management subsector, whose objectives focus on “disaster impacts, disaster preparedness, risks and management, although not climate change adaptation.” The NDP recognizes forestry as an important sector for stimulating national development and acknowledges that forest cover has declined over the years and states “that deliberate efforts ought to be

¹ See, for example, International Law Commission, International Law Commission: Conclusions of the Work of the Study Group on the Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law (2006)

² See n 71, Kyoto Protocol (1998), Art 17.

³ The states listed in Annex B that have ratified the Kyoto Protocol are bound to reduce their GHG emissions by specified percentages below their recorded 1990 emissions.

⁴ See n 156, Richardson, Le Bouthillier, McLeod-Kilmurray and Wood (2009), 13.

made to reverse this trend.” To achieve this goal, the plan sets out the objective of “restoring degraded natural forests in forest reserves and private forests, and reducing pressure on forests as a source of firewood and charcoal.” Although the NDP highlights the importance of forestry and sets out strategies for increasing forest cover, deforestation has continued unabated. This has been linked to institutional weaknesses and challenges [23].

Likewise, the National Forest Policy (2001) recognizes the need to protect watershed and soil conservation forests given their importance for reducing the impacts of droughts. It provides that “private forest owners manage and use their forests sustainably” [21]. Although the Forestry and Tree Planting Act of 2003 requires private forest owners to manage and use their forests sustainably, it does not set out sanctions or penalties for those who fail to comply with the management rules for forests on private land, and consequently does not prevent them from converting the forests to other land uses. Over the years, non-compliance with forestry laws and administrative procedures have increased since the enactment of the national forestry and tree planting act of 2003 [7]. For instance National Forestry Authority has not at all occasions adequately followed the laws and procedures governing the award of forest concessions hence giving forest encroachers a leeway to perform their illegal activities including commercial charcoal burning.

Apart from the National Environment Management Policy identifying climate change as a policy issue, key sector policies; the Energy policy for Uganda (2002) and the National Forestry policy (2001) do not identify climate change as a policy issue [5]. Failure of key sectors of the economy identifying climate change as a policy issues limits sector response to project short term response as opposed to integrated long-term sectoral approach to climate change. In addition, sectors that endeavor to implement climate actions have been challenged by limited funds and low levels of capacity.

VII. GOVERNMENT LEGAL COMMITMENT TO AVERT CHARCOAL BURNING AND CONTROL CLIMATE CHANGE

Relevant plans and programmes have been developed that affect charcoal production. These include the National Development Plan (NDP) which emphasizes the need for sustainable development through preservation of natural resources such as forests [7]. It proposes strategies which are relevant to charcoal production and includes “restoration of forest cover through reforestation and afforestation; promotion of commercial tree planting on private land; increasing involvement of the population in tree planting; supporting research and development to promote high yielding and appropriate tree varieties; strengthening the capacity of relevant sector institutions to effectively enforce forest and environmental laws and regulations; reducing pressure on forest cover as a source of wood fuel and construction

materials; scaling up incentives to promote investment in generation and use of alternative energy; promotion of the use of efficient energy saving stoves; investing in research and development for alternative energy sources; and regulating forestry activity on private land in line with the land use policy [7]”.

Furthermore, the National Forest Plan (NFP) 2011/12 - 2021/22 is a sector-wide national instrument for managing and utilizing the forestry resources in Uganda whose objective is the management of tree and forest resources as a business that contributes to economic, social and environmental benefits for all the people of Uganda. In relation to charcoal production, the NFP recognizes that: “Firewood and charcoal is one of the products and services which have high contributions towards accelerated social-economic transformation and thus need to be promoted under this NFP” [1]. However, with the increasing population, there is greater demand and increased consumption of forest products such as charcoal and firewood. Therefore, the strategies for the management and conservation of forests and trees urgently need to be recast to address the increasing demands.

Similarly, the Forest Nature Conservation Master Plan (2002) details steps to integrate the conservation of biodiversity and other environmental protection measures into forestry sector programmes. In relation to charcoal production, The National Forest Plan (2002) provides the following strategies: “outline a broad strategy for integrating nature conservation and other forest management objectives that the relevant forestry agency and its partners can refer to as a guide and describe the specific actions which need to be taken to protect biodiversity and other environmental values within the forest estate, including those related to the establishment, demarcation and management of Nature Reserves; protection activities in other management zones; institutional and financial arrangements; local community involvement; and legislation and policy requirements.”

VIII. CONCLUSION

Charcoal burning is a predominant economic activity for the majority of urban and rural dwellers in Uganda. Due to the high poverty level in the country, a substantive number of people use charcoal as the main source of fuel for cooking. The weak policies and laws that prohibit indiscriminate charcoal burning has been exploited over the years by individuals and private companies that deal in charcoal business. This charcoal burning has led to the cutting down of trees hence exposing several parts of the country to adverse climate change impacts such as drought in the north and northeastern parts of Uganda and floods in the southwest part of the country. The menace of climate change due to tree felling for charcoal production is worrying because in the near future, Uganda will not be able to control any climate changes if it does not come up with mitigation and adaptation strategies that address the core issue facing the country’s unregulated charcoal burning.

IX. RECOMMENDATIONS

The government of Uganda should support and promote reforestation, afforestation, and sustainable management of forestry resources. This can be achieved by implementing a rural electrification program, promoting the use of alternative and renewable energy sources, and promoting the use of energy-efficient technologies such kilns. Thus reducing pressure on forests as a source of charcoal production.

On the other hand, the current legal framework is too weak to address the issue of charcoal burning in Uganda. The government should draft policies that allow for the development of enabling environment for forestry management, including: community forest management groups, forest law enforcement and governance, and strengthening forest institutions responsible for forest management and development.

Furthermore, the government should promote the construction of enabling infrastructure for electricity sector development, including power lines, substations and transmission facilities connecting urban centers to villages. This is because the development of the electricity sector holds great mitigation potential for Uganda due to the potential offsetting of wood and charcoal burning, and the consequential deforestation.

Similarly, nongovernmental organizations and the government itself should support communities by promoting self-help initiatives as coping mechanisms to climate change impacts at community level. This can be achieved by financially and technically supporting diversification livelihood opportunities for household income generations especially off-farm activities.

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