



What should REDD+ be about? Forest governance incentives or incentives and energy investment?

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Abstract

This paper criticises the UNFCCC recommended methodology for addressing deforestation and Forest degradation in tropical developing countries for its inability to deliver the much desired normative objectives of mitigating climate change and ensuring sustainable growth for implementing countries. A global programme called Reducing Emissions from deforestation and forest degradation (REDD) was developed following the revelation that forestry was responsible for about 17 to 20% Global Green House Gas emissions. The programme was basically designed as an 'incentive' based forest governance strategy that seeks to motivate poor forest communities to stop cutting down trees and engage more in forest protection and conservation efforts. But the question as to whether this strategy would meet the intended global objectives remain a daunting task. This is because firstly, the framing or discourse of the REDD+ global policy itself limits and tends to influence specific National Strategic responses to focus mainly on addressing forest governance and monitoring. Secondly, the idea of providing incentives to forest communities without a corresponding programme of investment in clean and affordable energy supply cannot and will not guarantee an end to, or reduction in energy led deforestation. With these perspectives, therefore, this paper addresses itself to the following four questions: Why is energy not the main issue in the climate change mitigation discourse for developing countries? Can a forest governance based strategy of providing incentives to charcoal burners and subsistence farmers reduce deforestation and significantly contribute to sustainable development efforts in developing countries? Should it be incentives alone or incentives and investment in Energy?

Key Words: Energy; Deforestation, Incentives; Investment; Climate Change; Forest Governance; REDD+; Sustainable Development

1. Introduction

The dream of every known developing country is simply to develop. This does not however come cheaply. Today, business as usual activities are highly criticized for causing climate change whose effects are detrimental even to the threatening of man's very existence (IPCC, 2007). Today the Inter-governmental Panel on Climate Change (IPCC) estimates that deforestation (led by agriculture and charcoal production) and forest degradation, mainly from tropical developing countries was contributing about 17-20 per cent to the total Global Green House Gas Emissions (IPCC, 2007). In responding to this challenge the United Nation Framework Convention on Climate Change (UNFCCC) at the 15th conference of parties (Cop15) adopted a programme aimed at reducing emissions from deforestation and forest degradation (REDD) and enhancing conservation and sustainable forest management practices (UNFCCC, 2014). The United Nations has since set up a collaborative programme in response to the UNFCCC recommendation known as UN-REDD+. The objective of UN-REDD+ is to help developing countries like Zambia, get ready to participate in the global REDD+ mechanism (UN-REDD+, 2010; Pedro and Keohane, 2008a). The programme proposes a clean sustainable development path for developing countries, through a carbon credit facility (UN-REDD, 2010). But In order to maximise benefits from carbon credits, implementing countries must demonstrate sound forestry management practices and progressive increase in carbon stock compared to the baseline quantities. The implementation process for UN-REDD+ entails among other things, national policy reforms, institutional reforms, developing of national monitoring review and verification mechanism (MRV), developing a sharing mechanisms for carbon credits and many other governance issues (Duchelle et al. 2014; UN-REDD, 2012).

This paper, however, challenges the feasibility of the UNFCCC recommended REDD+ methodology because its framing has a tendency to limit the focus of dealing with drivers of deforestation on 'incentivising' poor 'forest communities' and focusing on forest governance practices. My argument is motivated by the following critical observations: i) That the current widely proposed REDD+ approaches were purely designed and adopted for implementation based on the fact that they were the cheapest (Stern, 2007, Cortez et. al, 2010) option available and not that they could guarantee attainment of the objectives. This clearly shows that in its current frame, REDD+ cannot support large investment projects needed to deal with the seemingly expensive challenges like that of energy driven deforestation in developing countries ii) the REDD+ guiding methodological approach decision 4/cop.15 also seems to tie strategic intervention on dealing with drivers of deforestation to incentivising forest governance and paying 'poor forest communities' regardless of the types or nature of the driver of deforestation identified in a particular country iii) the national REDD+ strategies developed by countries like Tanzania, Democratic Republic of Congo and Zambia (expected) have not adequately provided interventions to deal with energy deficits despite it being identified as the major driver of deforestation in these countries (see Tanzania REDD+ Strategy 2010; Congo D.R. REDD+ Strategy 2008), iv) the suggested strategic approaches are not new and radical enough to influence political trends, trigger national policy reforms, encourage wider local participation and deliver real social economic development that developing countries are seeking.

The questions that this paper is therefore asking are: i) Can the UNFCCC recommended methodological approach for REDD+ and the subsequent national strategic approaches for

dealing with drivers of deforestation achieve real and significant reduction in emissions as well as promise sustainable development to the implementing countries ii) Can a clean energy based REDD+ strategy deliver real, significant and sustained reduction in emissions from deforestation and forest degradation as well as provide desired sustainable development for developing countries?

The rest of the paper is structured as follows: Firstly we address the motivation for this paper by clearly laying bare the problem and threats that climate change poses to the world. In this section our aim is to re-emphasise the gravity and the seriousness of this issue to the very existence of human beings.

2. Rationale

Having recognised that deforestation and forest degradation mostly in tropical forests of developing countries was contributing about 17-20% to Global Greenhouse Gases emissions, (Stern, 2007) the challenge that remain is to come up with strategic approaches which would reduce these emissions. Although the discussion of dealing with emissions from deforestation go back to 1992 Kyoto Protocol (Hiraldo and Tanner, 2011), the 2007 Bali action plan propelled the idea of creating ‘incentives’ for reducing emissions from deforestation and forest degradation (REDD) ‘+’ engaging in sound forest management practices, a concept now commonly referred to as REDD+ (UNFCCC, 2009). This mechanism is seen by many as the post Kyoto climate change agreement that binds both developing and developed countries to certain responsibilities in dealing with climate change (Schroeder and Okereke, 2013; UN-REDD, 2010).

The objective of REDD+ as can be seen from what it stands for is simply to reduce emissions of greenhouse gas coming from deforestation and forest degradation in tropical forests of developing countries and further support conservation and sustainable development programs by providing incentives to forest communities (Evans et al. 2014). This objective is clearly a normative global climate change mitigation and subsequent preservation of life and the interests of future generation.

In 2008, the United Nations and the World Bank decided to institutionalize and pilot REDD+ strategies in selected countries. The schema behind the piloting is to draw lessons for the out-scaling of the programme to other developing tropical countries. The UN went on to establish what it calls the UN-REDD+. This is Joint Programme on Reducing Emissions from Deforestation and Forest Degradation in developing countries. The Programme was launched in 2008 and builds on the convening role and technical expertise of the United Nations Development Programme (UNDP), the Food and Agriculture Organization (FAO), and the United National Environment Programme (UNEP).

The UN-REDD Programme is designed to support nationally led REDD+ processes and promote meaningful involvement of all stakeholders, including indigenous people, civil society organizations and other forest dependent communities, in national and international REDD+ implementation (Attafuah et al. 2014; Chagas et al. 2013; FPP, 2014). The UN-REDD Programme support has ranged from capacity building, to designing national strategies and to developing

financing approaches and institutional arrangements needed to monitor and verify reductions in deforestation and forest degradation in a more efficient and effective way.

At the start the UN-REDD+ programme identified 9 developing countries to pilot the REDD+ project with the hope of drawing lessons for the out scaling of the programme. The countries include Bolivia, Democratic Republic of Congo, Indonesia, Panama, Papua New Guinea, Paraguay, Tanzania, Viet Nam and Zambia (UN-REDD, 2014a). As at 2014 however, the number of participating countries had extended to a total of 51. Using the three phased approach these countries are expected to develop national REDD+ strategies that are capable of significantly reducing carbon emissions from deforestation and forest degradation at the same time encouraging, conservation of forest carbon stocks, sustainable forest management, enhancement of forest carbon stocks and fostering sustainable development (UN-REDD, 2014b). The first task of the UN-REDD+ national programmes was to help countries become ready for REDD+. This implies having various systems, capacities and economic incentives in place. The set systems and incentives were expected to be capable of dramatically reducing carbon emissions from deforestation and forest degradation, and at the same time encourage the “+” elements of conservation of forest carbon stocks, sustainable forest management and enhancement of forest carbon stocks. According to the UNFCCC (2009) technical capacities and systems for the measurement, reporting and verification (MRV) of REDD+ produced levels of forest carbon stocks and flows are necessary, along with agreed baseline scenarios with which these can be compared. It is clear that, without these techniques, technologies, systems and capacities for MRV, carbon benefits would be uncertain, making REDD+ a nonstarter (Murdiyarso, 2008).

3. Methodology

This study employed two qualitative research methods: Document Review and Discourse Analysis. Document analysis is a technique that involves collecting data by reviewing existing documents. These documents may be internal to a programme or organisation or external. They may also be either in hard copy or electronic copies which would include reports, performance rating funding proposals, strategies and many others. In this study documents from UNFCCC, the IPCC Conference of Parties Decision Reports (Cop) as well as REDD+ strategies from Zambia, Tanzania and the Democratic Republic of Congo were reviewed as primary sources of information. In addition, the World Energy Outlook report focussing on Africa was also extensively reviewed to provide information on the energy situation and its pressure on standing trees.

The second approach used was discourse Analysis. According to Den Besten et al. (2014) discursive approaches to environmental and forest policy analysis draw attention to policy processes as contests between forms of discourse, which is the language and practices through which meaning is given to physical and social realities, including policy problems and their potential solutions. Discourse analysis, was therefore used in critiquing the phrasing of the UNFCCC recommended REDD+ methodology so as to appreciate how state and institutional interests are reflected in the language and governance of the REDD+ methodology. This further helped in understanding how global REDD+ discourse was affecting subsequent framing of national REDD+ strategies, their implementation and outcomes.

4. Drivers of Deforestation & Forest Degradation

Energy and Deforestation:

This section provides an outlook of the energy situation mostly in developing countries of Africa. It generally demonstrate the important role that energy plays in development as well as in climate change mitigation and or adaptation. In particular the section demonstrate from literature the link between energy and deforestation in Africa and other developing countries. From the Energy Outlook Report of 2012, it clearly observable that, lack of access to affordable and reliable clean energy was putting pressure on wood fuel and charcoal and consequently the biomass in these poor countries. The report also demonstrates that demand for energy was the major driver of deforestation in Africa. Therefore a review of the energy situation and how it relates with deforestation in developing countries is clearly important as it helps us objectively answer our research question on whether REDD+ should focus on providing incentives for forest governance only or whether it should also provide financial investment in energy as well. In doing so, we must establish the relationship between energy demand/ supply and deforestation.

According to the world energy Outlook Report (WEOR) of 2012, over 1.3 billion people in the world lack access to electricity and 2.7 billion lacked clean cooking facilities (IEA, 2012). About 95 per cent of these where largely in Africa and developing Asia. About 84 percent where in rural areas. The report further indicated that the world needed about \$48 billion Dollars annual investment from a 2010 base year 2030 in order to achieve universal access to modern energy of which the bulk of the investment should be going to Africa (IEA, 2012). It is interesting to look at some of the statistics that the WEOR gave regarding access to clean energy in Africa – for example, more than 90 per cent of the population of Eastern Africa are reliant on biomass compared with 54 percent in developing Asian countries, 19 percent Latin American countries and Zero percent in the Middle East. The report further states that electricity access rates range from 1 per cent in the new State of South Sudan leaving 9.3 million people without access; 9 per cent in the Democratic Republic of Congo (DRC) with nearly 60 million without access; 12 per cent in Uganda leaving more than 27 million people without access and 14 per cent in Tanzania with nearly 38 million without access; 18 per cent in Kenya leaving more than 32 million without access and 22.5 per cent in Ethiopia where 64.5 million are estimated to have no access. Based on these states the report concluded that Africa, and particularly the Eastern Africa sub region, represents the most significant challenge to addressing the global energy access problem (IEA, 2012).

It is evidently clear that energy concerns in terms of access affordability and reliability have led to a rapid growth in demand for wood and charcoal in most parts of Africa. This has further resulted in dwindling of forest resources. For example, percentage changes in forest cover based on forest resources from 1990 as a base reference declined by nearly 20 per cent in Ethiopia, Somalia and Tanzania, 40 percent in Uganda and Burundi and about 75 percent in Comoros (IEA, 2012). A marginal decline in percentage in Democratic Republic of Congo of about 4 percent was observed although in actual sense this represented a land area out of 160 million hectares in 1990. This revelation demonstrates a close and direct link between energy demand and deforestation rates in most African countries.

The importance and role that energy plays in development and eradication of poverty has been highlighted both by the World Energy Outlook Report (2012) and the Johannesburg Plan of Implementation (2002). The Rio+20 conference also noted that energy was a crucial complement in development as access to modern energy contributed to poverty reduction, improvement in health care and provision of basic human needs. This therefore makes reliable, affordable, socially and environmentally acceptable energy very crucial for developing countries (.

The United Nations Secretary General Mr. Ban Ki-moon was quoted in the World Energy Outlook Report as having declared sustainable energy for all as a top priority because it was central to all aspects of sustainable development (WEOR, 2012). In essence, there is an agreement that without access to clean, affordable and reliable energy, and sustainable development, can never be realised.

Electricity Demand in Zambia and the implications on forests:

About 99.9 percent of electricity generated in Zambia is from hydro and as at 2006, the capacity of production was at 1631 megawatts (Shinagandu, 2008). The countries connected demand for electricity in the same period stood at 1,200 (MW) leaving an excess of 431 (MW) which was mainly exported. However, due to lack of capitalization and aging of equipment, production levels reduced drastically to 1000 (MW) while corresponding demand of those already connected to the grid increased to 1300 MW (Shing'andu, 2008). A further increase in demand for hydro energy in Zambia was expected to go as high as 2500 (MW) in a period of five years.

The case of Energy in Zambia and the revelation about the general energy situation in Africa, addressed in previous section, clearly point to the fact that there was an exponential and fast growing demand for clean energy in these places but there wasn't a significant corresponding increase in energy production and supply. It is therefore expected that as long as this energy demand continue to exist, human beings in these countries will turn to immediate substitutes – charcoal and wood fuel- to meet their basic energy needs. Furthermore, the demand would also continue to create a viable business opportunity for charcoal burners and traders consequently exerting more pressure on trees and forests.

Drivers of Deforestation: The Case of Zambia:

Zambia is regarded as one of the highly forested countries in sub-Saharan Africa with a forest cover accounting for about 60% of the total land area which is estimated to be 64 million hectares (Kalaba, 2013; Kokwe, 2012). The countries forest resources are under the direct management of the forest department in the ministry of Land, Natural Resources and Environmental Protection. The forestry department is responsible for implementing the national policies and plans as well as providing the general control of forest resources with the sole purpose of meeting national and local demands in a sustainable manner. However, since its establishment in 1946, the department has failed to facilitate meaningful involvement of other stakeholder's such as the local community and NGO in the management of the natural resource (Vinya et.al, 2012). Although in 1998 through a forest policy, serious attempts to democratize the department and make it more inclusive, were made, implementing of the policy just stalled and nothing has materialized from it ever since.

In terms of legislative framework, the forestry sector in Zambia is still governed by the 1973 forestry Act despite the subsequent formulation of the 1999 forestry act, which has also been another failed project. A number of other novel strategies and global treaties have been put in place to help manage the natural resources. Some of the notable strategies and legislations include:

- The World Conservation Strategy of 1980
- The Zambia Forestry Action Plan launched in 1998
- The Joint Forestry Management, which ushered in the 1999 Forestry Act
- The National Policy on Environment, with the aim of promoting holistic and sound environmental management
- The National Heritage conservation commission act
- The Environmental Management Act of 2011, which establishes that Zambia Environmental Management Agency

While all these and indeed many other positive legislation and strategies are or have been in place, there has been a widespread failure in their implementation and enforcement in as far as natural resource management in Zambia is concerned (Vinya et.al, 2012). Deforestation and encroachment in forest protected areas has continued to be on the rise. Illegal logging and exportation of indigenous trees has also been increasing (Kalaba, 2013). Some of the reasons for the failure in the management of the forestry sector in Zambia include but not limited to: 1) lack of political will 2) Low level of support for implementation 3) inconsistencies in both policy and legislation 4) Institutional overlap in the management of the sector (Vinya et.al, 2012).

It would be interesting to see how the REDD+ programme will navigate some of the challenges that these previous forest governance strategies have stumbled upon. Considering that there is an emphasis on REDD+ Strategies to identify already existing programmes with close link to REDD+ objectives and build on those for implementation, the case of the Zambian forest sector provides a clear indication of what lies ahead for REDD+. Unless there is a radical shift in legislation and focus of the National REDD+ strategy, REDD+ is in its current framing and financing regime is likely to fail.

But What Really is the Main Driver of Deforestation in Zambia?

In understanding the issues of deforestation and what drives it in Zambia, this study draws much of the information from the UN-REDD+ sanctioned report dubbed Preliminary Study on the Drivers of deforestation and Potential for REDD+ in Zambia. It was prepared by Vinya et.al in 2012. This report is therefore highly referenced under this section because it forms part of the main sources of information that will be used in the development of the REDD+ national strategy.

According to this report, deforestation in Zambia was closely associated with urbanization as seen in the map in figure 1, which shows deforestation hotspots.

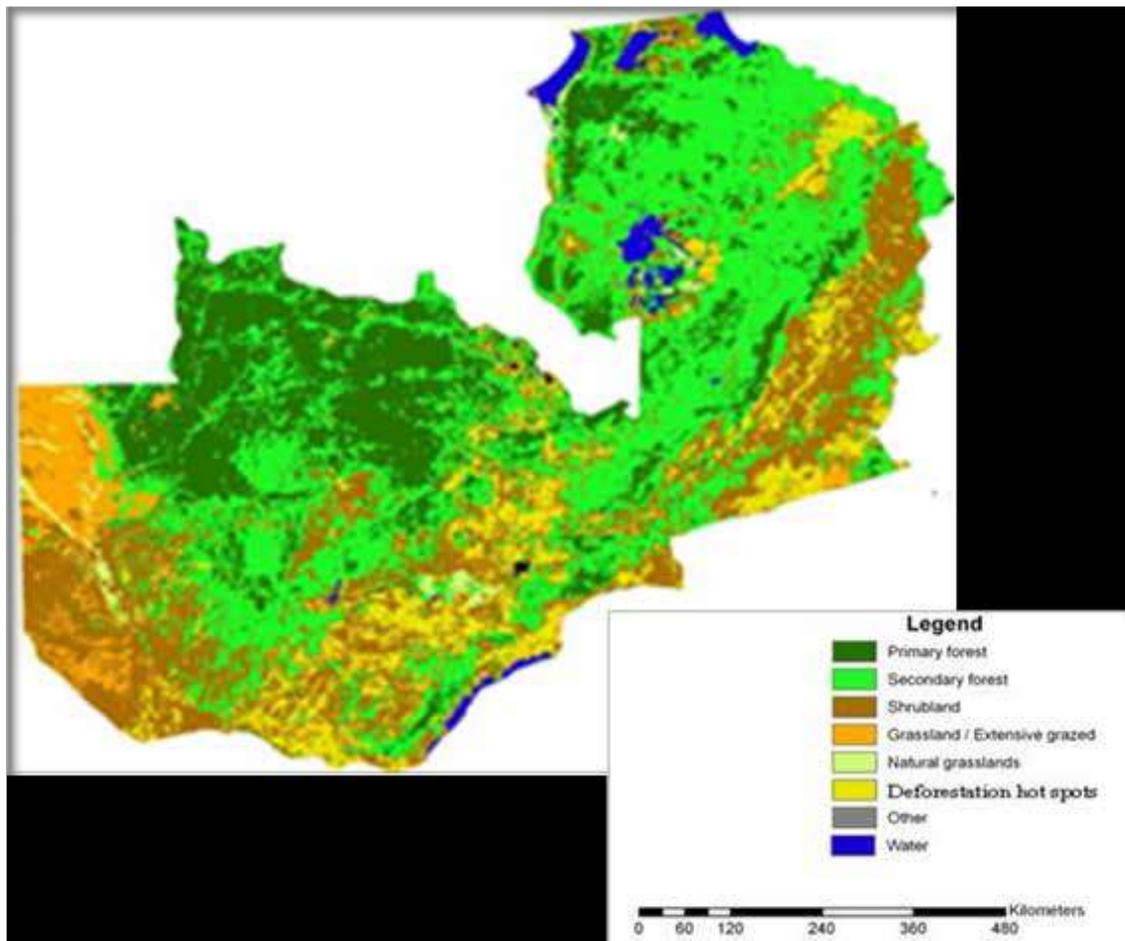


Figure 1: Deforestation Hotspots in Zambia (Source Vinya et.al, 2012)

The area covers the rail link from Chililabombwe Town on the Copperbelt province down to Livingstone in the southern province. Vinya et al. (2012) concluded that places that were experiencing high population growth, like Solwezi town in North western province, were more likely to be severely affected by deforestation in the near future.

What is ironic about this revelation is that it is at variance with the global REDD+ general perception that deforestation was mainly taking place in rural ‘forest communities’ and that by targeting incentives to forest communities deforestation would reduce. It is clear from the study that in Zambia the challenge was around urban areas and thus there is need to target interventions in these areas if energy led deforestation is to be addressed.

What then drives deforestation in Zambia? Vinya et.al (2012) Identified and classified the drivers into two categories that is 1) proximate drivers and 2) underlying drivers. Figure 2 below shows the link between the two categories of the drivers:

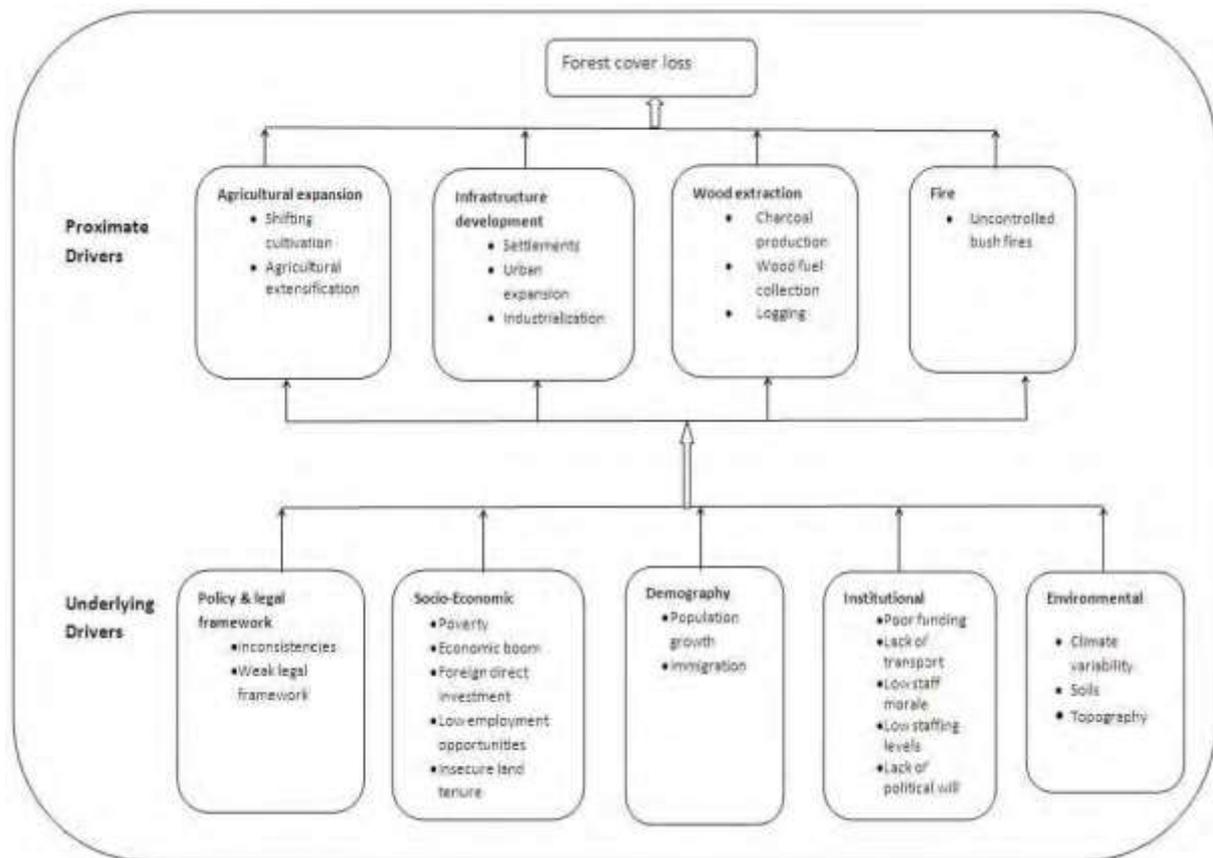
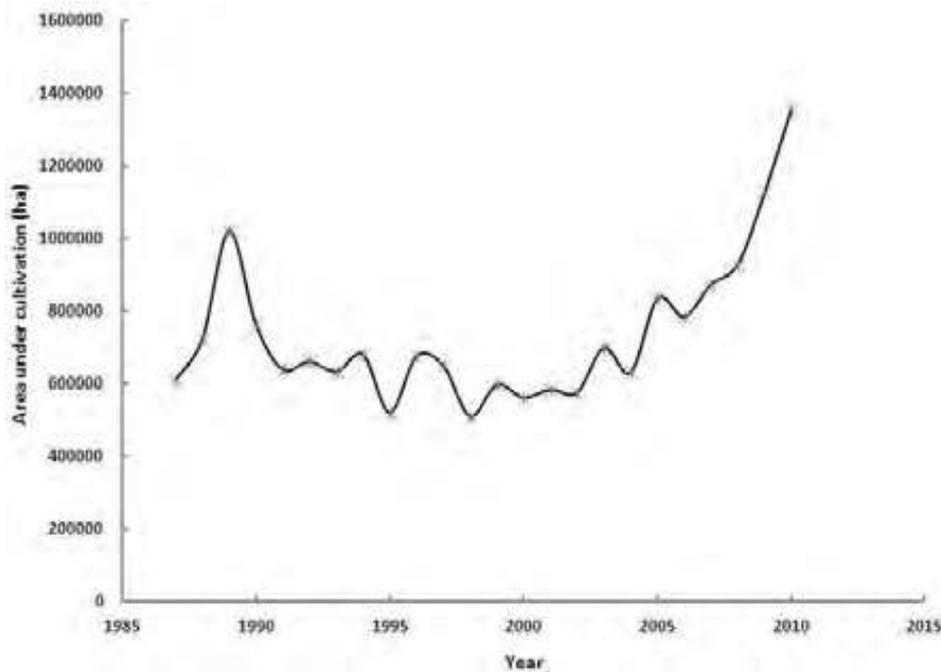


Figure 2: Proximate and Underlying Drivers (Source Vinya et.al, 2012)

Although in the figure above, charcoal is identified as a proximate driver, Vinya et. al (2012) did not link low access to clean energy, inefficient clean energy supply and the high cost of clean energy as underlying drivers for charcoal and wood fuel led deforestation. However, they make mention to a less extent, in the later sections of the report the impact that energy had on charcoal and wood fuel led deforestation.

Although they were able to show how much agriculture expansion was contributing to the national deforestation empirically, they could not show the same for charcoal and fuel wood led deforestation due to what they termed poor record keeping. In terms of agriculture led deforestation, land cleared for cultivation had been steadily increasing since the late 1980 with sharp increase observed between the year 2000 and 2010 (see figure 3 below).



Area under cultivation for the period 1987 to 2010

Figure 3 (Source: Vinya et.al 2012; citing Ministry of Agriculture)

What is interesting to observe from the graph in figure 4 above is that between the years 2000 and 2010 (which is a period of 10 years) agriculture land had increased from 600,000 hectares to about 1,200,000 hectares. This represents a margin of 600,000 hectares as added deforested land. On average there was an annual increase of about 60, 000 hectares of forest land cleared for agricultural purposes each year. Taking this from the estimated 300, 000 hectores annual deforestation (FAO, 2010) in Zambia, it would mean that over 200, 000 hectares of forest loss each year was due mainly to charcoal production, wood fuel collection and settlements. Although these estimates are based on assumptions they clearly send a signal that energy needs and demand was the main driver of deforestation in Zambia and that unless this was targeted and addressed under the UN-led REDD+, deforestation rate will continue to increase with increase in population. This assumptions is reinforced by the findings made by Vinya et,al (2012) on the frequency of deforestation by driver as seen from the graph in figure 5 below. The figure clearly shows that charcoal led deforestation had the highest frequency of occurrence at over 25% and followed by agriculture and fuelwood collection respectively. It is interesting to note that Central and Copperbelt provinces recorded the highest frequencies of charcoal led deforestation.

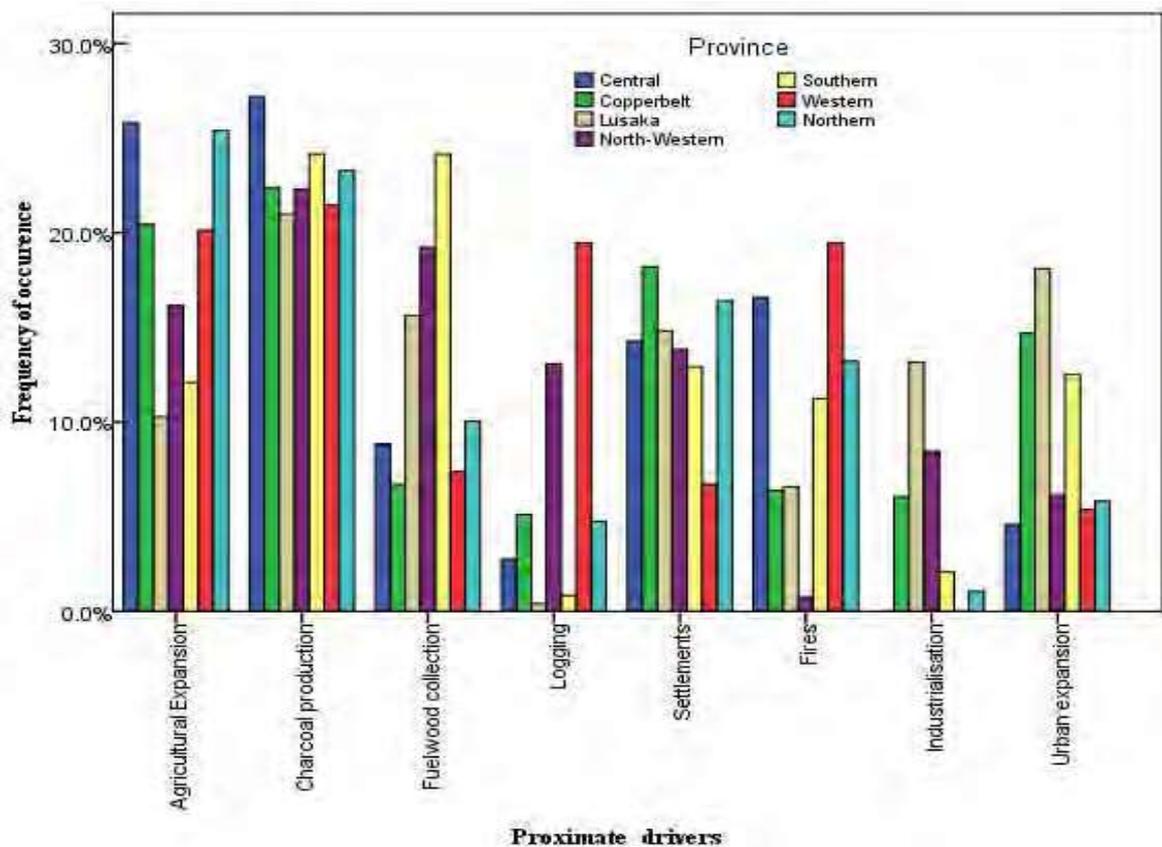


Figure 4: Deforestation Frequency by Driver (Source: Vinya et.al. 2012)

There are other studies that reinforce the argument of energy as the main driver of deforestation in Zambia. For example, Kalinda et.al (2008) reported that Fuelwood production was contributing about 3 percent to the country’s GDP, and accounted for approximately 80 percent of the economy’s total energy household balance. He further noted that production distribution and marketing of charcoal employs up to 500 000 people. Malimbwi et.al, (2010) also noted the significance contribution that Charcoal was making to socio-economic benefits for numerous actors along the chain, from producers in rural areas to consumers in urban areas.

Vinya et.al 2012, reported that low domestic earnings was forcing most rural households to intensify this non-agricultural activity, as a risk avoidance strategy. They observed that charcoal production had increased contribution to per capita income even when other sectors were not doing well in rural areas. The study by Chidumayo et.al (2007) also showed that although rural per capita income from other forestry products and agriculture had declined from USD 37.07 in 1990 to USD 17.33 in 2000, corresponding per capita income from charcoal had increased from 65% to 83% over the same period. This clearly puts charcoal production (for Energy) as a main source of livelihood for most poor communities in Zambia (Bucley, 2010). It also shows how ripe the charcoal market was and thus the need to address this issue from the business side of it.

The demand for charcoal in Zambia continues to increase due to rises in urban populations and extension of urban centres (Vinya et.al, 2012). This demand is further expected to be enhanced with increase in the proportion of city dwellers and growing and persistent urban poverty in Zambia (Syampungani et al. 2010). Charcoal is thus expected to dominate as a main source of

energy due to the fact that it is assumed cheap and also as the readily available and efficient substitute for hydroelectricity. In view of the forgoing, Vinya et.al (2012) conclude in their report that urbanization was actually an environmental problem in Zambia. They stress however that charcoal production alone was not necessarily the main lead to permanent loss in vegetation, but when followed by cultivation and late bushfires it may significantly delay forest regeneration (Chidumayo, 1997).

One recommendation from Vinya's report, which is important for this study, is the solution presented on addressing charcoal demand driven deforestation. The report proposes that the country should promote synergies between forest and energy policies to deal with this issue. They go further to state that although the efforts like the rural electrification programme and other clean energy projects were taking place, the pace at which these programmes were being implemented was too slow to impact the fast growing rate of charcoal driven deforestation.

Here in forms the basis of our questions: In view of the above analysis, how should a REDD+ strategy be structured to address energy led deforestation that without doubt was the main driver of deforestation in Zambia? - How much financial support is the global REDD+ community ready to give to implementing countries to deal with the identified drivers in their countries? Should REDD+ be about providing forest incentives only or about incentives and investment in clean energy?

Critique of UNFCCC Recommended REDD+ Methodology:

The UNFCCC as a leading body adopted the REDD+ at COP 15 in Copenhagen and proposed a framework that guides the international implementation of this concept (UNFCCC, 2009). There is no doubt that the UNFCCC proposed framework is largely informed by the Bali action plan and also from how Brazil as a country handled its deforestation problem in the Amazon forests (Goncalves, 2009). The proposed framework is a three phased approach: i) REDD+ readiness ii) policy reforms and development of REDD+ strategy, and iii) the implementation phase (UN-REDD, 2010). In response to the Bali action plan and the Cop 15 UNFCCC recommendation on reducing emissions from deforestation and forest degradation, two major programmes were developed: the UN-REDD+ programme under the United Nations (UN) and the Forest Carbon Partnership Facility (FCPF) under the World Bank (Schroeber and Okereke, 2012). The initial objective of these programmes was to pilot the REDD+ initiative for purposes of drawing lessons for its global out-scaling (UN-REDD, 2012).

The REDD+ programme recognises that one of the most important steps towards a successful mitigation of emissions from deforestation and forest degradation was to correctly identify and understand what the drivers of deforestation were, and then prescribing the correct and workable interventions for dealing with these drivers. In addition, there must be an understanding of the political and social economic governance structures of the environment both at state and global levels as well as the dynamics of power and interests around these natural resources (UN-REDD+ 2010, Harison, et al, 2012; Rainforest Foundation, 2012).

The UNFCCC recommended REDD+ readiness phase shows that the framework has adequately guided on the need for all REDD+ participants to undertake a rigorous study of the drivers of

deforestation within their country context (UNFCCC, 2009; UN-REDD+ 2010). However, it is clear that the concept in its current form is to a larger extent skewed towards addressing technical aspects of forest protection and management, leaving out the fundamental aspects of governance and social economic interest surrounding natural resource utilization in most developing countries. The UNFCCC recommended diagnostic study is however still critical in the REDD+ programme as it forms the basis on which interventions are prescribed and put into national REDD+ strategy for dealing with deforestation (UNFCCC, 2009; UN-REDD+, 2010). Like in medical field, correct diagnosis of the disease is likely to lead into correct prescription of medicine, and the opposite is expected to be true.

Therefore, one of the question that this paper is asking, in as far as the fight against climate change through REDD+ is concerned is; can the methodological approach recommended by 4/CP.15 of UNFCCC conference (2009) of parties in Copenhagen, deliver significant and sustained reduction in emissions from deforestation and forest degradation?. A look at both academic and development literature indicate that there are prodigious concerns against the current REDD+ approaches, somewhat suggesting that it will be difficult or even impossible to attain the desired objectives of the programme through the UNFCCC recommended approach (Ekstrom and Moser, 2013; Streck and Parker,2012; Creed and Smita, 2011; Pistorious et al. 2010).

According to the UNFCCC decision 4/CP.15 methodological approach three outcomes must be achieved for a REDD+ strategy to be considered effective: i) significant measurable and sustainable reduction in emissions from deforestation and forest degradation must be attained; ii) a participatory forest governance system must be established ensuring equitable sharing of revenues; iii) contribution of the strategy to sustainable development of the implementing country must be realised (UNFCCC, 2009). The method further recommends the use of the following techniques to attain these objectives; i) provision of *incentives* to poor forest dependent communities in order to stop them from exploiting the resource; ii) push for policy reforms and ensure wider community participation in the process; and iii) establish monitoring reporting and verification methods for carbon stock enhancement. With these objectives and suggested interventions, a number of countries have developed strategic approaches that are clearly in line with decision 4/CP.15.

It is interesting to note that while the UNFCCC recommended REDD+ approach has made recognition of the fact that drivers of deforestation were deferent for each country, the approach had however limited the intervention to incentivising the poor forest community and improving of forest governance. Consequently, decision 4/CP.15 has not been altered in most national REDD+ strategies (see national strategies for Tanzania; Congo DR) , for the simple reason that funding of the development of these strategies is currently sourced at international level with set guidelines on usage (UNFCCC, 2009; De Gryze, 2010; Creed and Smita, 2011). This situation undermines most of the current REDD+ national strategies in delivering much needed reductions of emissions from deforestation and forest degradation.

5. Discussion

The threat posed by Climate Change seem to have been clearly understood, but the ways to mitigate it and or adapt to its resultant impacts still pose a daunting task for both climate scientists

and development practitioners. One such mitigation/ adaptation effort being suggested is the programme on reducing emissions from deforestation and forest degradation in developing countries (Stern, 2007). However, the current widely proposed REDD+ strategic approaches do not offer confidence of reducing these emissions as they have many uncertainties needing to be addressed (Grayi et. al 2011). Observations from countries that have developed national REDD+ strategies have clearly revealed that there is a huge mismatch in terms of proposed interventions and the identified drivers of deforestation (See Tanzania REDD+ National Strategy 2010 and Congo D.R REDD+ National Strategy, 2009). According to decision 4/cop.15, (UNFCCC, 2010) a country must identify the drivers of deforestation and develop strategies to deal with those identified challenges. The same decision however, clearly prescribes that the interventions will be incentive based targeted at forest governance and poor forest communities to stop them from cutting down trees. This position thus eliminates the freedom of the country from being innovative and radical when prescribing interventions for the identified problems. In addition REDD+ was designed and arrived at to operate as a cost effective programme. This idea thus restricts interventions to incentives and not investment as most developing countries would wish for. It means that even if a country was to develop a strategy that correctly prescribes interventions to deal with specific drivers of deforestation, there was no financial guarantee expected from REDD+ to support such interventions. In addition, financing for REDD+ programmes by donors has also been targeted at such programmes as forest governance and payment for environmental services as opposed to large scale investment programmes even when the situation demands so.

There are other challenges with the UNFCCC recommended REDD+ methodological approach that have been identified. Firstly the UNFCCC methodological approach is not likely to attract real political attention or support, needed for national policy reforms for REDD+ programmes to succeed. The fact is that most developing countries have developmental dreams beyond 'incentives' and they are likely to be more interested in supporting programmes that help them achieve greater developmental goals through tangible 'investments' (Jaung and Bae, 2012; Sunderline et al, 2014). Secondly, the approaches lack innovation and radicalism. There is nothing new or different in what these approaches are proposing to do. Lastly but not the least, the approaches have failed to adequately recognise a well-known fact that energy is at the centre of anthropogenic driven climate change (Tanzania REDD+ National Strategy 2010; Congo D.R National REDD+ strategy, 2009) whether through deforestation or use of fossil fuels and either about the source of that energy, how it is extracted, how it is used and how efficient that energy is. It is therefore important at this juncture, to recognise that reducing emissions from charcoal driven deforestation for example, must be in close reference to alternative efficient, affordable and accessible energy sources to charcoal, which the current REDD+ approaches seem to have paid little to no attention.

The inadequacies in the widely adapted methodological approaches and the other associated challenges of dealing with land tenure, governance, institutional capacity and financing regime (Pedro and Keohane, 2008b; Rubio et al. 2012) necessitate a relook at the problem and using the lessons to develop a workable solution to the challenge of deforestation and forest degradation. A critical evaluation of what the problem is, where the problem is, what is involved, and an in-depth

analysis of the options available for dealing with the problem, is critical for one to efficiently get the much needed solution to the problem at hand.

The case of Zambia reveals two important facts that are critical in the design of a methodology that would guarantee success in addressing deforestation. Firstly it shows that deforestation was largely driven by the demand for energy (charcoal & wood fuel). This scenario has motivated business-men, either rich or poor, to capitalise on this demand for energy and engage in the production and trade of this fast selling 'black gold'. Unless there is an alternative, reliable and affordable energy source, the trade will continue to grow and so will deforestation.

Secondly, deforestation was mainly taking place around urban areas and not rural communities and therefore interventions needed to focus on addressing the problem in these areas. This revelation therefore challenges the idea of incentivising the 'forest communities' as they were not the main culprits leading deforestation. By using this perspective, there is a higher chance that interventions would focus on the bigger picture of development than provision of 'incentives' only. It also gives an idea of what interventions would actually work and which ones wouldn't in stopping deforestation.

6. Conclusion: Incentives or Incentives + Investment in Energy

Should REDD+ be about provision of incentives or incentives and energy investment? It is clear from our analysis and revelations obtained from Zambia's case that incentives alone cannot and will not help us achieve the much needed REDD+ objectives of reducing GHG emissions and promise sustainable development. Although, the UNFCCC recommended methodology offers credible steps in identifying drivers of deforestation as well as on monitoring, verification and reporting structures, we believe that the REDD+ founding idea of Incentivising forest governance was a significant hindrance in terms of the intervening options as well as financial flows needed to address crucial drivers of deforestation such as energy deficits. It is also clear that while energy deficits was a major driver of deforestation in developing countries of Africa, REDD+ strategies have underplayed this challenge a situation that has resulted in affecting the subsequent development of institutional frameworks as well as motivate drastic policy changes needed to address the challenges that deforestation was posing. In fact provision of incentives to forest governance not only fails as a tactical intervention but also presents a lot of uncertainties in terms of administration, addressing leakages, its sustainability and ability to influence political interest.

Further, it is our considered view that providing incentives only is likely to create a deficit in supply of charcoal in a short term but later attract more illegal charcoal traders to venture into the production and supply of the commodity. It goes without saying that currently, Charcoal is perceived as 'Black Gold' due to its attractive demand and quick sales as the immediate substitute for clean energy.

The world energy outlook report (2012) clearly shows that Africa, has huge potential in clean energy such as solar, wind, geothermal and hydro. However the majority of its people have no access to clean energy and rely on trees for cooking and heating. These revelation from clearly suggests that unless there is significant and measurable investment in clean energy in these countries, trees will continue to decline with increase in population size.

If indeed the risk posed by climate change is as scary as the IPCC presents it or as the pentagon categorizes it, the interventions for abating it must much up to this challenge. With the foregoing therefore it is our considered view that REDD+ be about both providing incentives for forest governance and also significantly supporting investment in clean energy for the developing countries in Africa. Although we are aware of the cost implications such a strategy is likely to face, we believe that it is the best option available to achieving the REDD+ objectives within the required time frames. In fact this combination is likely to eliminate the energy deficits and enhance other productive capacities and benefits, resulting in both significant reduction in GHG and the promise of sustainable development for the implementing countries. We believe that such an intervention is also likely to attract political will as well as motivate drastic policy changes required to attain the REDD+ objectives.

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