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2 June 2023

Tackling Deforestation: Policy Opportunities in Haiti's Climate-Energy-Security Nexus

Executive Summary

Haiti is one of the world's poorest nations and suffers from colonial and international exploitation, political corruption and geographic susceptibility to natural disasters. Temporally inconsistent and demographically unequal development exacerbated vulnerabilities in Haiti. Deforestation overlaps heavily with these vulnerabilities, making it a top priority for government officials, international development organizations and citizens. Deforestation's deep, cross-cutting intertwinement with Haiti's development, however, offers policymakers the opportunity to attenuate problems and build resilience across agriculture, health, environment, domestic economy and risk management sectors. This brief finds that, because Haitian deforestation is largely driven by a contemporary reliance on charcoal production AND an absence of clean alternatives to charcoal from the government, policy solutions for the short-term should promote 1) the provision of solar cooking stoves, 2) implementation of agroforestry policies for land use on local levels and 3) the preservation of decentralized, informal land tenure policies, in the current power vacuum.

Statement of the Issue

Deforestation in Haiti currently is more than a prevailing environmental concern for the nation—it is a product of centuries of extractive policies from colonial structures and disproportionately unequal development, as well as a driver of ecological degradation, food insecurity, greenhouse gas emissions and rural impoverishment (Eberle, 2022; Marzelius & Droste, 2022; Tarter, *et. al.,* 2018). The prevalence of Haitian deforestation is demonstrated by its being both a driver and result of the nation's other major vulnerabilities. To resolve, or even reduce, deforestation in Haiti necessitates adapting to a power vacuum in the federal government, mitigating degrading charcoal production, adapting to renewable energy sources for cooking and fuel and offering an economic alternative to charcoal and wood fuel production (Cotton, Hammel & Noofoory, 2023; Sagbo, 2014; Tarter, Freeman, Sander, 2016).

Overview of the issue

Haiti is currently fighting against the current of political turmoil in their federal government, complicating any environmental action. Latest President Jovenel Moïse was assassinated by Colombian mercenaries in 2021, and in early 2023 Haitians watched the remaining Senators reach the natural end of their 6-year terms in the absence of any election since 2016 (Bland, 2023). The federal government is currently run by sitting Prime Minister Ariel Henry, whose term formally expired in February of 2022, but is supported by the international community (Cotton, Hammel & Noofoory, 2023, p. 3). Prime Minister Henry has recently promoted transitional governance by issuing a call for presidential elections to take place in 2024; this plan has been supported by the international community as well. This plan, however, has received criticism from a coalition of Haitian civil society organizations, called the Montana Accord Coalition, which also offered an alternative plan for transitional justice that actually accounts for the needs of the general Haitian population, rather than the commercial elites and the prevailing politicians (p. 4).

In the contours of such political tumult, and with foreign pressure to follow through on Prime Minister Henry's plan, it can be more difficult to focus on environmental needs; meaning that any efforts to mitigate deforestation *must* be geared to be implemented by local levels of governance, in a more diffused manner, as the remains of the federal government in Haiti are demonstrating little intent to actually address the nation's ailments. It is by this larger context that energy and climate policies will be most tightly constrained.

Against that backdrop, Haiti was the 147th largest emitter of greenhouse gasses in the world with a total share of 0.02% of the total global emissions. Though a miniscule contribution in the grander scheme, it is driven by Haiti's reliance on charcoal for cooking food, environmental concerns present in contemporary Haiti, deforestation is commonly cited as one of—if not *the*—most pressing facing the small island least developed country (Eberle, 2022; Sagbo, 2014; Tarter, Freeman, Sander, 2016). The

significance of the issue is underlined by its historical relevance during colonization as well as its intrinsic relationship with energy infrastructure and agriculture.

Haiti ranked 100 out of 198 countries in 2020 for tree cover loss by hectares, categorized by percent canopy cover (3,802 ha) by Global Forest Watch. The indicator demonstrates year-by-year tree cover loss, though they do also note that "tree cover loss" is not the same as deforestation because it accounts for changes in tree cover that are both naturally occurring and in planted forests.

The amount of forest coverage in Haiti appears as a widely disputed measure, as it depends highly on the methodology of its calculation (Eberle, 2022; Marzelius & Droste, 2022; Pauleus & Aide, 2020; Sagbo, 2014; Tarter, Freeman, Sander, 2016). Some estimates have heightened concerns about deforestation by asserting that as little as 2% of Haiti's original tree coverage remains, likely under a presumption that Haiti's original landmass had 100% forest coverage; others have countered this misled and outdated narrative by using GIS and satellite imaging to measure, positing that around 30% of Haitian forests actually remain (O'Connor, 2016). Some scholars believe this is likely done to position international donors and aid organizations to support reforestation efforts in Haiti by overinflating the issue at hand. Regardless of the measurement, either of these narratives poses a daunting reduction from Haiti's original 80% coverage by forests (Tarter *et. al,* 2016). Despite the fraught measure of forestry coverage, the significance of deforestation is clear in its harming the natural environment. A lack of tree cover is detrimental for long-term agricultural production; the added exposure to sun, wind and rain without tree cover leads to greater erosion and less water in soil, making it less useable for certain crops (Eberle, 2022).

Deforestation in Haiti is not, by any means, a new or recently observed phenomenon (Marzelius & Droste, 2022); its indivisible relationship with Haiti's agricultural, political and developmental histories renders its major causes particularly complex to parse out. Land degradation practices have been traced back to the colonial plantation model of agricultural production instituted by French enslavers in the 18th century, which centered on cash-crop production and severely degraded forest resources for exportation (Eberle, 2022). Following Haitian Independence in 1804, France demanded reparations from its former colony amounting to 90 million francs; Haitians responded by forking over 80% of their national expenditure and cutting down as much fuelwood as was reachable in the low-lying coastal areas as exports to France (Marzelius & Droste, 2022). The added context of a nearly insurmountable debt, which early Haiti financed, and compounded upon, with additional loans from U.S. and European banks, had nearly irreversible effects on the economy and, as a result, the use of forest and agricultural resources

Contemporary deforestation cannot be solely blamed on charcoal production as a standalone, self-contained cause. As Eberle from UNU-EHS helpfully posits: "[t]he land in Haiti was treated as an extractive source with little regard for the health and longevity of the environment as a whole, leading to its detriment and increased disaster risk," (2022, p. 11), speaking to the generations-long pattern of instilling and reaffirming an agricultural/economic mindset that only conceived of the short-term need for wood and timber as easily extracted/processed exports and fuel, made more urgent by sustained economic depravity.

The citizens of Haiti are not ignorant to the effects of their use of the nation's forests. A survey completed by researchers to understand the failure of reforestation efforts in Haiti (discussed in following section) included questions regarding the Haitians' perceptions of sustainable forestry, deforestation and how cutting down trees or cooking with charcoal affects the natural environment (François *et. al*, 2022). Through asking questions like these, the researchers demonstrate that the citizens can easily perceive the negative impacts of deforestation, meaning, too, that the cause of deforestation is also not as simple as economic depravity making urgent the need for fuelwood. The researchers noted that in previous Haitian contexts, the household size, education of the household head, as well as farm labor and land tenure regime types were linked to the causes of deforestation; in the context of their 2022 work, deforestation and charcoal production were linked to a "lack of livelihood and fuel alternatives" (François *et. al*, 2022 p.7) The researchers also report, auspiciously, that 90% of the local authorities who participated responded that they would be willing to finance 50% of cleaner cooking stoves to replace their charcoal cookers if the federal government would be willing to cover the remaining 50% of the cost. Their findings demonstrate that a charcoal transition is something favored by Haitians, who tend to be solely blamed for deforestation due to their charcoal reliance, and that it is, instead, the government's lacking capacity to facilitate this transition and the fiscal constraints felt by 90% of Haiti's population to blame.

The issue's complexity is compounded by a divergence between narratives about deforestation in Haiti that either overemphasize the environmental doom by Haiti, or that Haiti's miniscule size and contributions to global emissions should be taken with regard to the majority of global emissions coming from much larger developed nations with better and reliable access to power and greater capacities to implement renewable energy sources (Eberle, 2022; O'Connor, 2016; Pauleus & Aide, 2020). The level of urgency necessary to respond to Haiti's fraught energy infrastructure and need for alternative fuel sources with the added contours of the political turmoil should, ideally, be in the middle of these two ends, with the local and community levels of governance in mind.

Responses and policy options

Banning charcoal production processes in Haiti is a crucial step in successfully reforesting Haiti (Tarter *et al.* 2016). The trouble is that the production of charcoal is a crucial income provider for households (Chamberlin, Keller-Coffey, Jacob, 2021). In the same study that described the failures of reforestation efforts by international actors, however, found that for-sale charcoal production was one of the main occupation of young men living in rural portions of the North and Northeast departments, but that the respondents would be willing to stop cutting trees if they had alternative economic activities (François *et. al*, 2022, p. 7).

The Ministry of Environment began formulating the National Adaptation Plan in 2017 with help from the Global Adaptation Network and finally submitted their completed version in January 2023, despite the background of an absent federal government (Gouvernement d'Haïti, 2022). In this plan, they note that their priority sectors are agriculture, water, health and infrastructure. Although these were the proposed

priorities by the government, their plan also, helpfully, includes responses from local authorities in the different departments of the country, offering insight into attitudes at the level that is best to consult for forestry. As Figure 1 demonstrates, reforestation is a primary adaptation concern among five out of the eight provinces that were accounted for in this survey.

Figure 1: *List of Top 2 Priority Adaptation Actions by province*
(Gouvernement d'Haïti, 2022, p. 68)

Tableau 5 **Liste des deux premières actions d'adaptation prioritaires par département**

Département	Actions d'adaptation prioritaires	Objectif	Indicateur[8]
Nord	1) Reboisement avec accent sur l'agroforesterie	Augmenter la couverture forestière	Le nombre d'hectares de terre reboisés
	2) Mise en place de systèmes d'irrigation dans des zones stratégiques	Améliorer l'accès à l'eau d'irrigation	Le nombre d'hectares de terre irrigués
Nord-Est	3) Mise en place d'un système agricole intelligent au climat	Réduire les impacts négatifs des changements climatiques sur la productivité agricole	Maintien ou augmentation des rendements des principales cultures pratiquées dans le pays
	4) Mise en œuvre d'une initiative départementale de relance agricole	Revaloriser le secteur agricole	Les investissements de grande envergure réalisés dans le secteur
Nord-Ouest	5) Protection de l'environnement	Préserver et restaurer les ressources naturelles	Le nombre d'écosystèmes préservés ou restaurés
	6) Actions d'irrigation (valorisation des cours d'eau)	Améliorer l'accès à l'eau d'irrigation	Le nombre d'hectares de terre irrigués
Grand'Anse	7) Reboisement	Augmenter la couverture forestière	Le nombre d'hectares de terre reboisés
	8) Reboisement et conservation des sols	Augmenter la couverture forestière et réduire l'érosion hydrique des sols	Le taux d'érosion des sols
Sud	9) Développement de Systèmes d'irrigation et reboisement des bassins versants	Améliorer l'accès à l'eau d'irrigation et augmenter la couverture forestière	Le nombre d'hectares de terre irrigués et sous couvert forestier
	10) Prévention sanitaire	Réduire la prévalence de certaines maladies	Le nombre de personnes souffrant des maladies ciblées
Nippes	11) Reboisement	Augmenter la couverture forestière	Le nombre d'hectares de terre reboisés
	12) Développement et aménagement d'espaces verts (parcs) dans les différentes communes	Augmenter la couverture forestière	Le nombre d'hectares de terre reboisés
Sud-Est	13) Renforcement des capacités techniques des agriculteurs	Doter les agriculteurs de connaissances et de pratiques pour mieux faire face aux mauvaises conditions climatiques	Le nombre d'agriculteurs formés
	14) Vaste programme de relance agricole (Retour à la Terre)	Revaloriser le secteur agricole	Les investissements de grande envergure réalisés dans le secteur
Ouest	15) Reboisement	Augmenter la couverture forestière	Le nombre d'hectares de terre reboisés
	16) Aménagement et gestion des bassins versants	Réduire la dégradation des bassins versants	Le taux de couverture végétale et d'érosion des sols, la disponibilité des ressources en eau, l'état de la qualité de l'air

As explained, the current sociopolitical crisis facing Haiti majorly limits feasible policy options. The Ministry of Environment is still, seemingly, functioning, considering they submitted the National Adaptation Plan at the beginning of this year; the issue, however, is that though the Ministry of

Environment is the office that liaises with the Green Climate Fund, it only receives 2% of the federal government's budget, demonstrating even further fiscal constraint on policy options.

Recommendations

- **First Recommendation Agroforestry Policies, implemented at local/community level.**
    - Agroforestry refers to a method of farming that plants trees in between crops to add tree cover to agricultural plots (Westerberg, McCann, Costa, 2022). It helps to renourish soil for crops, promotes moisture retention in soil and encourages further growth of greenery. This can be done beginning with consultations of varying informal local/communal level organizations. These organizations should be the decisive authority on which seeds/seedlings are planted in their specific environment, to ensure that efforts are productive, unlike those discussed by François *et. al.*.
    - Cross cutting: will renourish ground soil, promote growth of shrubs and smaller vegetation, which can lay groundwork for increased yields of crops and, thus, food security, addresses landslide concerns, helps with soil preservation (which promotes greater biodiversity and prevents droughts), helps with erosion, can improve food yields by more than double (quote that one study on agroecology)
    - Can help strengthen the already strong bonds among (namely, rural) Haitian communities, in the absence of a reliable federal government. This can, further, promote community-level resilience among Haiti's most vulnerable highlands populations by reinforcing horizontal social links (Chamberlin, Keller-Coffey, Jacob, 2021). This should be done with a gender sensitivity regarding land tenure and usage in mind, as well.

- **Second Recommendation: Solar cooking stoves as short-term charcoal alternative**
    - Though the federal government is nearly defunct, namely, in the judiciary, legislation and executive branch, this solution should be another high priority of the Haitian Ministry of Environment, which is, seemingly, actively liaising with international organizations like the Global Adaptation Network and the Green Climate Fund for financing.
    - Cross-cutting: improves health by decreasing in-home pollution from charcoal cookers, addresses food insecurity, relieves resource pressure from forests, reduces GHG emissions by providing alternative clean cooking method.
    - Also helps remove reliance on state-provided energy infrastructure by providing non-electric mode of cooking.

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