



**Wood for the kitchen: Towards a history of the supply and use of fuelwood
in an urban setting of West Africa: The case of Lome (from 1907 to 2017)**

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Summary

The primacy of fuelwood¹ (mainly firewood and charcoal) as a private domestic cooking fuel for both rural and urban dwellers in Togo is a longstanding fact. In the 1980s, a butanisation programme launched by both state and private fossil energy companies (i.e., Shell and Total) aimed to stimulate a gradual shift from wood to liquefied petroleum gas in the country by targeting the capital, Lome, and other major cities. The facts that more than 50 % of the total private domestic cooking fuel both in Lome and in the countryside currently comes from wood and that the share of LPG is still less than 5 % indicate that the butanisation policy has failed. This reality, among other determining elements, reinforces the traditional predominance of fuelwood in the Togolese and Lomean domestic energy landscapes.

Despite the longstanding importance of wood as the main private domestic fuel in Togo, it was not until the official identification of the so-called woodfuel crisis in non-Western countries in the 1970s that firewood and charcoal gained attention as a critical issue for research. Consequently, foreign and national experts and natural scientists began to explore the dynamics of fuelwood energy in domestic settings in Togo. Therefore, non-historians have provided a great deal of the current knowledge about the fuelwood energy sub-sector in Togo and Lome. In reviewing the current body of literature, the *raison d'être* of this thesis arises from the traditional significance of wood as fuel in Togo. The study aims, therefore, to insert the historian's point of view into the domestic energy debate in Togo. The study achieves this by examining the reasons for changes in Lome's use, marketing and supply of fuelwood from the late nineteenth century to 2017, as well as how the fuelwood issue has been managed by colonial and post-independence authorities in charge of forest resources. More specifically, the historical investigation offers crucial historical insights into the social, economic, environmental, technological and political implications and challenges that these changes had on people at the micro and macro levels, as well as on the forest vegetation. In the same vein, the historical analysis highlights how those challenges have been addressed in different contexts and epochs by

¹ Throughout the thesis, I use the terms 'woodfuel' and 'fuelwood' to specifically refer to both firewood and charcoal. In some instances (e.g., Chapter 2), the term also includes coconut shells.

the diversity of actors involved in the realm of domestic fuelwood energy in Togo and particularly in Lome. To meet these objectives, I deployed a transdisciplinary methodological approach through which history interacted critically with other fields such as geography, anthropology, botany and development studies. In addition, the study employed a critical triangulation of both written primary and secondary archival materials with oral and visual historical data collected during several fieldwork investigations conducted between 2016 and 2017, both within and outside Togo. This resulted in four major findings.

Firstly, the study explains the complex historical shifts that have occurred in the broader private domestic energy landscape of Lome, which culminated in the current predominance of charcoal as a private domestic fuel in the Togolese capital. Here, I illustrate how the failure of the butanisation policy in the early 1980s played a significant role in indirectly fostering the domestic energy user's transition to charcoal and thus contributed to the latter's current supremacy in the Lomean domestic cooking energy landscape.

Secondly, this thesis uncovers the connections between the demographic population growth over the last four decades in Lome and its challenging impact on the demand for firewood and charcoal, as well as charcoal production technological processes and the gender dynamics and physical environment of the supply areas.

Thirdly, the study shows that the cost of firewood and charcoal has risen significantly in the Lome market since the 1970s. The constant increase in charcoal prices is viewed as the result of challenges that the supply posed to fuelwood traders (i.e., *Commerçants Généralistes*, CG) who operate simultaneously as market retailers and wholesalers. These price concerns were rooted not only in the steadily increasing distance between the supply zones and the supplied city (Lome), but also in the taxes levied on CGs, both during the transport of fuelwood and charcoal to Lome and at the urban market level. Moreover, the increased cost was linked to the concentrated demand for both firewood and charcoal in the Togolese capital from the 1980s onwards.

On the one hand, in order to meet the fuelwood price progression, users deployed multiple strategies in different contexts and situations. Some of these strategies, especially those that emerged from oral interactions among the users, ranged from mixing different types

of charcoal to implementing various domestic wood energy-saving methods. On the other hand, the challenge posed by the lack of accessibility to charcoal has crucially impacted trade by increasing competition between traders, which has affected the private lives of CGs as well as their social relationships with charcoal producers in remote supply areas over the course of the past four decades.

Fourthly, this thesis discovers a paradigm shift in the way that Togolese colonial and post-independence authorities handled the fuelwood energy sub-sector in the two historical contexts.² The argument at this level is that Germany and then France, which ruled Togo from the second half of the nineteenth century until the end of the 1950s, did not pay particular attention to the domestic fuelwood sub-sector. After gaining independence in 1960, the Togolese state likewise lacked interest in exerting control over fuelwood as a strategic sub-sector. This marginalisation, however, changed from the 1970s onwards with the emergence of the controversial ‘fuelwood crisis’ discourse at the international level and the creation of the *Office de Développement et d’Exploitation de Forêts* (ODEF), a para-statal institution, in that period. What followed was an unprecedented quest by the post-independence government for a monopoly on the supply and marketing of charcoal for Lome that, in essence, was articulated in the inception of the *Aménagement Forestier Reboisement Industriel* (AFRI) project from 1982 to 1989. The failure of this project not only led to the state’s withdrawal from fuelwood affairs in Togo, but also annihilated any attempt by the government to exert socio-political control over fuelwood energy and thus the millions of people who depend on this kind of fuel.

As a result, the historical trajectories of firewood and charcoal as the main private domestic fuels in Togo, and in Lome in particular, that emerge from this study provide a significant contribution to Togolese historiography. These trajectories illuminate the connections, challenges and tensions related to fuelwood concerns in Lome and the

² I use the term ‘sub-sector’ in reference to fuelwood energy thorough the study because “fuelwood energy” does not constitute a sector of its own in the Togolese context. It is instead considered and referred to as a part or an aspect of the broader energy sector. This explanation is embedded in my observation from the literature on fuelwood in Togo in which the majority of authors use the term “sub-sector” in reference to fuelwood energy and “energy sector” to address the broader energy landscape of Togo.

supply areas on the social, political, economic, demographic and environmental levels – and, notably, between the actors involved in the fuelwood sub-sector in Togo as a whole.

Simultaneously, the findings demonstrate how history may help provide a deeper understanding of the dynamics of fuelwood supply and consumption in Lome over time and encourage further studies in other West African capitals where fuelwood provides the lion's share of energy used in private domestic settings. Studies focusing on other capitals are needed to fill the yawning gaps which still exist in the history of wood as an urban domestic fuel, despite the surge of national and international interest in this issue which has led to the generation of useful data since the 1970s. A comparison of the historical findings for Lome with the fuelwood history of other West African capitals would enrich the broader West African historiography, as well as provide clues on the context and validity of the findings of this study for further discussion.

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Acronyms

AFRI Aménagement Forestier et Reboisements Industriels

ANOM Archives Nationales d’Outre-Mer

ANT Archives Nationales du Togo

CG Commerçants Généralistes

CSZ Current Supply Zones

FCFA Franc de la Communauté Financière d’Afrique

FSZ Former Supply Zones

IRD Institut de Recherche pour le Développement

LPG Liquefied Petroleum Gas

NGO Non-governmental Organisation

ODEF Office de Développement et d’Exploitation de Forêts

ONAB Office National du Bois

ORSTOM Office de la recherche scientifique et technique outre-mer

PBF Projet Bois de Feu

SNAFOR Société Nationale des Forêts

SODIGAZ APC Société de Distribution de Gaz African Petroleum Company

UNDP United Nations Development Programme

1 General Introduction

1.1 From research on military coups to a Ph.D. in the history of fuelwood, or: how the idea of historicising fuelwood emerged

July 2013. Agoe-Assiyeye (Lome). After an 18-month academic stay in Bayreuth, I returned to Togo, which neighbours my home country of Benin, to assemble archival and oral historical data for my Master's thesis on the country's 1963 and 1967 military coups. It was during this six-week sojourn in Lome when I made a set of observations quite by chance. First and foremost, I was surprised by the abundance of charcoal-vending locations in Lome. Not only do traditional market areas such as Hanoukopé, also commonly known as *Akaassime* – *Akaa* meaning 'charcoal' and *Assime* 'market' in Ewe – serve as ideal spaces where charcoal can be purchased, but large- and small-scale retailers also operate in the courtyards of their premises or along the sidewalks of the Togolese capital. This observation revealed to me the socio-economic vitality of fuelwood in people's daily lives in a city such as Lome.

Opting to stay with a host family in Lome's Agoe-Assiyeye district rather than at a hotel allowed me to witness first-hand my hosts' total reliance on charcoal for cooking. Through informal questioning of other families in the area, I quickly concluded that dependence on charcoal was a current and mass phenomenon. This second observation was, in essence, the piece of evidence that dispelled any doubt about the usage of charcoal as the main domestic energy provider in Lome. Between my accommodation and the Agoe-Assiyeye market, there was a parking area for trucks carrying charcoal waiting to be unloaded; the goods (charcoal) were subsequently distributed to vendors in the city. Most of the drivers transport charcoal between Lome and the various areas that supply the city with this precious fuel.

Taken together, these observations piqued my curiosity and scholarly interest in generating an historical account of wood as the main domestic fuel in Togo by focusing on the specific case of Lome. To develop this idea, I began to collect additional oral data on the theme through informal discussions with users and small- and large-scale charcoal retailers operating at the Agoe-Assiyeye market. The aim of my semi-structured

exploratory interviews with charcoal traders was to obtain an overview of the fuelwood situation, particularly in Lome (see picture 2).



Picture 1: Long truck loaded with charcoal¹



Picture 2: Charcoal traders at the Agoe-Assiyeye market (Lome)²

By the time I left Lome in September 2013 with the initial data, I had decided to write a future doctoral project on charcoal. At this stage, I was not aware that the predominant use of charcoal in Lome was the consequence of an important shift in the city's domestic energy landscape. While writing my Master's thesis in Bayreuth, I started researching the issue of fuelwood in developing countries like Togo by focusing on the particular case of

¹ I took this photograph in September 2013 during field research for my Master's thesis. This photograph is among the first empirical materials that I collected to lay the foundations and justify the relevance of what gradually emerged as my doctoral research subject, namely the fuelwood concern in Lomé. The picture was taken in a parking area near Agoe-Assiyeye market.

² These two photographs were taken during the first interview that I conducted with charcoal traders at the Agoe-Assiyeye market in September 2013. This interview gave me some primary insights into the trade of charcoal at market level in Lome. The interviewees in the photographs with whom I interacted with at this early stage of the future research project were among the first contacts that I established in the field. These interviewees facilitated my access and contact to other traders during my later empirical fieldwork in Lomé. They also allow me to use the photographs for my research.

Lome. What I learned corroborated the initial empirical information I obtained in Togo and reinforced my interest in exploring fuelwood in Lome as a historical research topic.

1.2 Woodfuel (firewood and charcoal) at the national and global levels

In contrast to Western countries, where the reliance on fuelwood for cooking and heating significantly has decreased since the mid-seventeenth century,³ a large majority of populations in sub-Saharan African countries, particularly in cities, continue to depend on firewood and charcoal as domestic fuel for cooking.⁴ Despite the centuries-old primacy of wood as fuel in the different parts of the non-Western world, especially in sub-Saharan African countries, not until the mid-1970s did fuelwood become an international political concern. This, in fact, happened as a consequence of the so-called woodfuel crisis, which occurred in developing countries around the globe when developed countries and their fossil energy economies were facing the severity of ‘[...] the first oil price shocks of 1973–4’.⁵ The first expert to draw the international attention to the ‘crisis’ was Erik Eckholm. In a paper published by the non-profit research organisation Worldwatch Institute, a non-profit research organisation, entitled *The Other Energy Crisis: Firewood* (1975), Eckholm predicts that

Dwindling reserves of petroleum and artful tampering with its distribution are the stuff of which headlines are made. [In reference to the then oil crisis]. Yet, for more than one-third of the world’s people, the real energy crisis is a daily scramble to find the wood they need to cook dinner. Their search for wood, once a simple chore and now, as forests recede, a day’s labor in some places, has

³ See Wrigley, E., A. “Energy and the English Industrial Revolution”. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, vol. 371, 2013, doi:10.1098/rsta.2011.0568.; Fouquet, R. ‘Historical Energy Transitions: Speed, Prices and System Transformation’. *Energy Research & Social Science*, vol. 22, 2016, pp. 7–12., doi:10.1016/j.erss.2016.08.014. Accessed 12 Dec. 2018.

⁴ See, among other works: Hall, David Oakley., and Yu-shi Oakley. Mao. “Introduction, Summary, Conclusions”. *Biomass Energy and Coal in Africa*, edited by Hall, David Oakley., and Yu-shi Oakley. Mao. Zed Books, 1994, p.1-4.; Cecelski, Elisabeth. “Rural energy crisis, women’s work and family welfare: perspectives and approaches to action” (Working Paper) International Labour Organisation, 1984, https://www.ilo.org/public/libdoc/ilo/1984/84B09_233_engl.pdf. Accessed 11 Jan. 2020.; Aina, O. I., and A. I. Odebiyi. “Domestic Energy Crisis in Nigeria: Impact on Women and Family Welfare”. *African Economic History*, no. 26, 1998, pp.1-14. doi:10.2307/3601688 Accessed 10 February 2020.; Heltberg, R. “Factors Determining Household Fuel Choice in Guatemala”. *Environment and Development Economics* 10, no. 3, 2005, pp. 337–61. doi:10.1017/S1355770X04001858, Accessed 14 Nov. 2018; Hondoker Abdul Mottaleb, Dil Bahadur Rahut, Akhter Ali. “An exploration into the household energy choice and expenditure in Bangladesh”. *Energy*, Volume 135, 2017, pp. 767-776. doi.org/10.1016/j.energy.2017.06.117. Accessed 12 Sep. 2019.

⁵ Leach, Gerald, and Robin Mearns. *Beyond the Woodfuel Crisis: People, Land and Trees in Africa*. 1st ed., Earthscan Publications, 1988, p.5.

been strangely neglected by diplomats, economists, and the media. But the **firewood crisis**⁶ will be making news – one way or another – for the rest of the century.⁷

From the notorious identification of the ‘firewood crisis’ to the time I am undertaking this research, the centrality of fuelwood as the main private domestic energy provider in developing countries has arguably been reduced to ‘deforestation’⁸ as a major cause of indoor air pollution with unprecedented health consequences for women and children.⁹ In a study¹⁰ by Kirk R. Smith, Sumi Mehta and Mirjam Maeusezahl-Feuz, the authors claim that ‘solid fuel use may be responsible for 800,000 to 2.4 million premature deaths each year’.¹¹ In other instances, studies have drawn the link between challenges pertaining to the supply of fuelwood and their negative implications for women and children’s welfare,¹² claiming, for instance, that ‘as fuelwood becomes scarce, women and children – who are usually responsible for heating the home and cooking the food – are the first to suffer. Rural dwellers have to walk farther and farther to collect the bare minimum of wood needed for survival’.¹³ Between political instability and the demise of state control

⁶ Highlighted by me.

⁷ Eckholm, Erik P. *The Other Energy Crisis: Firewood*. Worldwatch Institute, 1975, p. 5.

⁸ See Aina, O. I., and A. I. Odebiyi, “Domestic Energy Crisis in Nigeria: Impact on Women and Family Welfare”. For a critique, see Leach, Melissa, and Robin Mearns. *The Lie of the Land: Challenging Received Wisdom on the African Environment*. International African Institute in Association with James Currey; Heinemann, 1996, p. 2; or Fairhead, James, and Melissa Leach. *Reframing Deforestation: Global Analyses and Local Realities; Studies in West Africa*. Routledge, 2003, xiii–xxv.

⁹ See R. Smith, Kirk R., and Ajay Pillarisetti. “Household Air Pollution from Solid Cookfuels and Its Effects on Health”. *Injury Prevention and Environmental Health*, edited by Ala Alwan et al., 3rd ed., World Bank Group, 2017, pp. 133–152. For a contrast to this assumption see: Sola, Phosiso, et al. “The Environmental, Socioeconomic, and Health Impacts of Woodfuel Value Chains in Sub-Saharan Africa: a Systematic Map”. *Environmental Evidence*, vol. 6, no. 1, 2017, doi:10.1186/s13750-017-0082-2. Accessed 19 Aug. 2019.

¹⁰ Smith, Kirk R., et al. “Household Air Pollution from Solid Cookfuels and Its Effects on Health”. *Comparative Quantification of Health Risks: Global and Regional Burden of Disease Attributable to Selected Major Risk Factors*, edited by Majid Ezzati, vol. 2, World Health Organization, 2004, pp. 1435–1493.

¹¹ Smith, Kirk R. “Health Impacts of Household Fuelwood Use in Developing Countries”. *UNASYLVA -FAO-*, vol. 57, no. 2, 2006, pp. 41–44., doi:https://pdfs.semanticscholar.org/92e3/c13f1f5242d27c11099375009d9850beb30d.pdf. Accessed 31 August 2020.

¹² See Cecelski, Elisabeth, *Rural energy crisis, women's work and family welfare: perspectives and approaches to action*; Aina, O. I., and A. I. Odebiyi, “Domestic Energy Crisis in Nigeria: Impact on Women and Family Welfare”.

¹³ *Wood for Energy*. FAO, 2000, *Wood for Energy*, www.fao.org/3/q4960e/q4960e00.htm. Accessed 10 Feb. 2020. For an extensive review of the fuelwood debates, see: Arnold, M., et al. “Fuelwood Revisited What Has Changed in the Last Decade?”. CIFOR, No.39, 2003, *A Repository of Agricultural Research Outputs*, www.cifor.org/nc/online-library/browse/view-publication/publication/1197.html. Accessed 11 Feb. 2020; Nash, Robert, and Cecilia Luttrell. “Forest Policy and Environment Programme: Grey Literature Crisis to Context: The Fuelwood Debate”. *Researchgate.org*, Researchgate, www.researchgate.net/publication/

on the environmentally friendly production and distribution of fuelwood, coupled with insurrectional armed groups like Al-Shahab ‘infiltrating’ charcoal, the United Nations has observed illicit trade in countries including Somalia.¹⁴ In the Lake Tchad area, the United States Agency for International Development supports deforestation programmes which aim to track down Boko Haram fighters hidden in forests around the lake. The disadvantage of this controversial measure is that it forces women and children to travel further to collect fuelwood and therefore risk being attacked by the same fighters of the nebulous Boko Haram sect.¹⁵

Moreover, those who view the use of fuelwood through the lens of the controversial ladder theoretical approach view poverty as the main element justifying the utilisation of fuelwood in the majority of the developing world. This approach notoriously emerges from the ‘fuelwood crisis’ and holds that when the living conditions of fuelwood users ameliorate, they climb up the ‘energy ladder’ by switching from a dirty energy provider (i.e., firewood) to cleaner sources of energy (e.g., charcoal, electricity and gas). Equally, a decreasing economic performance is thought to stimulate a shift back to less clean energy carriers.¹⁶

Critics of the normative ladder theoretical framework and the top-down approach to fuelwood concerns in developing countries argue that fuelwood users do not systematically and mechanically abandon firewood for other sources of energy when their economic conditions improve. Detractors postulate that energy users in developing countries instead simultaneously combine multiple types of energy, a practice known as

265733570_Crisis_to_Context_The_Fuelwood_Debate. Accessed 21 June, 2019; DeFries, R, and D Pandey. “Urbanization, the Energy Ladder and Forest Transitions in India's Emerging Economy”. *Land Use Policy Land Use Policy*, vol. 27, no. 2, 2010, pp. 130–138., doi:<https://doi.org/10.1016/j.landusepol.2009.07.003>. Accessed 15 Jan. 2020.

¹⁴ UN Environment Programme, *How Somalia's charcoal trade is fuelling the Acacia's demise*, <https://www.unenvironment.org/news-and-stories/story/how-somalias-charcoal-trade-fuelling-acacias-demise>, 2019. Accessed 06 Aug. 2020.

¹⁵ See Perouse de Montclos, Marc-Antoine. *Une guerre perdue. La France au Sahel*. JCLattès, 2020, pp. 231–232.

¹⁶ See Hosier, Richard H., and Jeffrey Dowd. “Household Energy Use in Zimbabwe: An Analysis of Consumption Patterns and Fuel Choice”. *Energy for Rural Development in Zimbabwe*, edited by Richard H, Hosier, Beijer Institute and Scandinavian Institute of African Studies, 1988, pp. 83–105. Kowsari, Reza, and Hisham Zerriffi. “Three Dimensional Energy Profile” *Energy Policy*, vol. 39, no. 12, 2011, pp. 7505–7517., doi:[10.1016/j.enpol.2011.06.030](https://doi.org/10.1016/j.enpol.2011.06.030). Accessed on 11 Dec. 2019.

fuel stacking.¹⁷ This is simply to say that the gradual use of liquefied petroleum gas (LPG) does not imply a systematic abandonment of fuelwood. Beyond the fuel-stacking approach, a range of academic works have highlighted the importance of cultural habits, taste and level of education, among many other socio-cultural factors determining the use of both fuelwood and other modern energy sources, such as electricity and LPG.¹⁸

Togo, a country that imports 100% of its fossil fuels (i.e., gas and oil)¹⁹ and has limited wood resources, is an archetype of a developing West African nation with a proven predominance of fuelwood. Most studies conducted on fuelwood in Togo since the 1970s share the conclusion that over half of the energy used in both rural and urban areas such as Lome has been and continues to be based exclusively on firewood and charcoal.²⁰ In the 1980s, a programme called butanisation, launched by the Shell and Total oil companies and supported by the Togolese government, pursued the ambitious aim of fostering a significant shift from fuelwood to LPG. This was the first time in Togolese history that fuelwood used in private domestic settings was placed in competition with another type of energy. Reviewing the scope of this programme more than 30 years later reveals that the butanisation initiative failed to meet its core objective, given the evidence that LPG comprises less than 5% of domestic energy for cooking.²¹ This, in turn, is central in confirming the tradition of wood as the main domestic energy provider in Togo and in Lome specifically. Following the failure of the *Aménagement Forestier et Reboisements*

¹⁷ Masera, Omar R, et al. “From Linear Fuel Switching to Multiple Cooking Strategies: A Critique and Alternative to the Energy Ladder Model”. *World Development*, vol. 28, no. 12, 2000, pp. 2083–2103., doi:10.1016/s0305-750x(00)00076-0. Accessed on 12 June 2017; Campbell, B.M., et al. “The Energy Transition in Action: Urban Domestic Fuel Choices in a Changing Zimbabwe”. *Energy Policy*, vol. 31, no. 6, 2003, pp. 553–562., doi:10.1016/s0301-4215(02)00098-8. Accessed on 1 Aug. 2018.

¹⁸ See Fitzgerald, Kevin B., et al. “Interfuel Substitution and Changes in the Way Households Use Energy: The Case of Cooking and Lighting Behavior in Urban Java”. The World Bank, 1990, <http://documents1.worldbank.org/curated/en/550711468766173507/pdf/multi-page.pdf>, Accessed 12 Aug. 2020; Heltberg, *Factors Determining Household Fuel Choice in Guatemala*.

¹⁹ République du Togo. Ministère des Mines et de L’Energie du Togo. “Système d’Information Énergétique du Togo” 2009, pp. 16-19.

²⁰ See, among other reports: Bertrand, Alain. Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI. 1^{ère} Partie, Rapport de Synthèse. *Centre Technique Forestier Tropical*, Nogent-Sur-Marne ,1987 ; Thiam, Alioune Tamchir. Etude de marchés des produits ligneux Au Togo. *Ministère du Développement Rural. Organisation des Nations-Unies pour l’Alimentation et l’Agriculture*, Lomé, Décembre, 1991 ; Système d’Information Énergétique, 2009; Fontodji, Jérémie Kokou. “Déterminants de la production – consommation du charbon de Bois au Togo et vulnérabilité aux changements climatiques”, , *Université de Lomé*, 2015 (Unpublished PhD Thesis)

²¹ Système d’Information Énergétique, p. 23

Industriels, a project through which the Togolese state attempted and failed to control the fuelwood sub-sector in the 1980s, both the production and the marketing of firewood and charcoal has been in the hands of private traders and producers. This failure of the Togolese government to control the private fuelwood energy sub-sector indirectly also hampered the authorities' capacity to exert control over fuelwood users. Those who control the energy flow control the people who rely on that energy.

As an important economic activity, the production and marketing of fuelwood represent a major source of for tens of thousands of people, both in rural regions and urban areas such as Lome.²² More than 50% of all actors involved in the production and marketing of firewood and charcoal were and continue to be women.²³ This, in fact, makes the fuelwood sub-sector a women-dominated economic field. Over the last four decades, the distance between the fuelwood supply areas and supplied demographically important cities including Lome has significantly increased, from approximately 30–100 km in the 1980s²⁴ to approximately 300–500 km²⁵ in 2017 when I conducted my field research. This spatial shift has to do with the private fuelwood traders moving further into the country's interior as soon as a supply area can no longer provide them with species of wood (e.g., *Anogeissus leiocarpus*) that produce higher-quality charcoal. Thus, wood species such as *Anogeissus leiocarpus* or *Azelia africana* suffer extreme overexploitation, which is not without consequence on the ecosystem.²⁶

Equally important, the demographic growth of important fuelwood-consuming urban areas like Lome over the last four decades has not been without implications on the

²² Thiam, *Etude de marchés des produits ligneux au Togo*, p. 216; see Société Togolaise D'Études De Développement en Afrique. *Analyse de l'évolution des ressources forestières, de l'exploitation des terres et diagnostic des approvisionnements et des consommations des grands centres urbains en énergies traditionnelles. Programme Energies Traditionnelles du Togo, PET-Togo-RPTES-Banque Mondiale*, Juillet 2001.

²³ See Bertrand, *Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI.*; Thiam, *Etude de marchés des produits ligneux au Togo*; Société Togolaise D'Études de développement en Afrique, *Analyse de l'évolution des ressources forestières, de l'exploitation des terres et diagnostic des approvisionnements et des consommations des grands centres urbains en énergies traditionnelles.*

²⁴ See Bertrand, *Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI.*

²⁵ See Fontodji, *Déterminants de la production – consommation du charbon de bois au Togo et vulnérabilité aux changements climatiques.*

²⁶ Fontodji, Jérémie Kokou, et al. "Impact de la production du charbon sur la biodiversité au Togo. Cnfcg-Colloque". *Laboratoire de botanique et écologie végétale, cnfcg-colloque2012.ipsl.fr/data/documents/Po3_3_Fontodji.pdf*. Accessed Sept. 2019

demand for wood as fuel. In the same vein, current data suggest that fuelwood users in Lome rely more on charcoal than on firewood,²⁷ showing that a significant change in fuelwood usage has occurred over the course of the last decades. Finally, a kilogram of charcoal in Lome, for instance, was estimated at 40 Francs cfa (Fcfa) in 1987 and 50 Fcfa in 1991²⁸ and oscillated between 121 and 143 Fcfa in 2015.²⁹ The question that merits posing is how users have coped with this increase in charcoal prices over the years. Taken together, the above considerations clarify the political, social, economic and environmental significance of fuelwood in Togo and Lome. The question now is why a history of fuelwood in the Togolese and Lomean context is relevant at all.

Despite its centuries-long relevance in the domestic energy landscape of cities like Lome, wood as fuel was one of the least-addressed issues by both colonial and post-independence ruling authorities in Togo, given the extreme paucity of primary sources available between 1884 and the 1960s.³⁰ It was not until the mid-1970s that, following the identification of the ‘fuelwood crisis’, fuelwood became a concern that was elevated to the Togolese political agenda. Consequently, two kinds of grey literature documenting the fuelwood dynamics in Togo and Lome emerged.

One part of this literature is provided by foreign and Togolese consultants who, in the late 1970s, began to report for both the Togolese government and development partners such as the *Fonds d’Aide et de Cooperation de la République Française* (a funding programme of the French government towards developing countries³¹) on forest resources and fuelwood situation in Togo.³² This expert literature related the overall situation of fuelwood in Togo and how its supply and marketing were organised, as well as the main

²⁷ See Fontondji, Déterminants de la production – consommation du charbon de bois au Togo et vulnérabilité aux changements climatiques.

²⁸ Thiam, Etude de marchés des produits ligneux au Togo, p.27

²⁹ TOGO, Institut National de la Statistique et des Études Économiques et Démographiques (NSEED). ‘Indice Harmonisé Des Prix à La Consommation’. Raw data collected during fieldwork, 2017.

³⁰ The background of the lack of data on fuelwood experiences from the colonial period until the early 1970s is addressed in Chapter 1.

³¹ My own translation.

³² See Barbaud, Pierre. Les problèmes forestiers de la république togolaise. Mission d’évaluation des projets forestiers envisagés par le gouvernement togolais. *Centre Technique Forestier Tropical*, 1980.

features and changing dynamics of fuelwood consumption in urban areas like Lome.³³ Written for policymakers and aid agencies, most of the literature follows a straightforward, normative and top-down approach as it operates by identifying ‘problems’³⁴ – some even draw attention to the eventuality of a ‘fuelwood crisis’ for Lome, which never occurred³⁵ – and formulates appropriate preventive remedies and recommendations.³⁶ Both the normative and the top-down scope, among other factors, are central concerns when using this kind of literature³⁷ to write contemporary history in Africa, as noted by Stephen Ellis.³⁸ This can be dealt with by not taking for granted the data contained in these reports, despite the wealth of insights they offer into many facets of the fuelwood situation over the last four decades in Togo and in Lome. Their ‘trustworthiness’³⁹ needs to be critically engaged with, and they should be read against their ‘own context’.⁴⁰ The key word here is ‘source criticism’ (*Quellenkritik*), an

³³ Ibid., 4–12 ; M. Bailly. Rapport de Mission relative à une étude de la consommation de bois et des produits dérivés : charbon de bois, bois de chauffage, effectuée à la demande de la République Togolaise du 26 Août au 10 octobre 1982. *République Togolaise/CTFT/FAO*, 1982, pp. 2–3; Thiam, Etude de marchés des produits ligneux au Togo, pp. 2–31 ; Société Togolaise D’Études De Développement en Afrique, Analyse de l’évolution des ressources forestières, de l’exploitation des Terres et diagnostic des Approvisionnements et des consommations des grands centres urbains en énergies traditionnelles, pp. I-VI ; République du Togo. Direction Générale de l’Énergie. Rapport Général Provisoire. Enquête consommation des énergies domestiques au Togo. 2007, pp. 9–13. Système d’Information Énergétique, pp. 19–23.; Djassah, M’ba. Etude sur les méthodes de consommation du bois-énergie et de l’utilisation des foyers économiques. République du Togo/GIZ, 2014, pp. 13–19.

³⁴ Barbaud, Les Problèmes Forestiers De La République Togolaise. Mission d’évaluation des projets forestiers envisagés par le Gouvernement Togolais, p. 1 ; Thiam, Etude de marchés des produits ligneux au Togo, p. 219 ; Société Togolaise d’études de développement en Afrique. Analyse de l’évolution des ressources forestières, de l’exploitation des terres et diagnostic des approvisionnements et des consommations des grands centres urbains en énergies traditionnelles, 54–57; SOFRECO. Politique Nationale de l’énergie. *Rapport Préliminaire*. SOFRECO/ République Togolaise/ Ministère des Mines et de l’Énergie, 2011, pp. 206–209.

³⁵ Barbaud, Les problèmes forestiers de la République Togolaise. Mission d’évaluation des projets forestiers envisagés par le Gouvernement Togolais, p. 8.

³⁶ Ibid., 11; Bailly. Rapport de Mission relative à une étude de la consommation de bois et des produits dérivés : charbon de bois, bois de chauffage, effectuée à la demande de la République Togolaise du 26 Août au 10 octobre 1982, 17-18 ; Thiam, Etude de marchés des produits ligneux au Togo, pp. 43-45; Société Togolaise d’études de développement en Afrique, Analyse de l’évolution des ressources forestières, de l’exploitation des terres et diagnostic des approvisionnements et des consommations des grands centres urbains en énergies traditionnelles, p. 59; SOFRECO. *Politique Nationale de l’énergie. Rapport Préliminaire*, p. 213.

³⁷ Here, I am referring to the expert literature.

³⁸ Ellis, Stephen. “Writing Histories of Contemporary Africa”. *Journal of African History Journal of African History*, vol. 43, no. 1, 2002, pp. 1–26., JSTOR, www.jstor.org/stable/4100424. Accessed 23 Jan. 2019.

³⁹ Breisach, Ernst. *Historiography: Ancient, Medieval, and Modern*. 2. ed., University of Chicago Press, 1994. p. 233.

⁴⁰ Ibid.

authoritative precept propagated by the German historian Leopold von Ranke in the early nineteenth century⁴¹ that still has central currency in present historical scholarship. Put in context, it is only after questioning the data contained in reports, subjecting them to a maximum source criticism and corroborating them with oral historical narratives, as has been the case in this research, that this literature can be used as primary sources for the benefit of historical research.

The availability of expert literature, coupled with the steady significance of fuelwood as fuel material for millions of people and its socio-economic, environmental and political implications over the years, have been central in increasing the importance of fuelwood as a research topic. Drawing on data from the expert literature, Ph.D. students in geography and on the *Faculté des Sciences* at the *Université de Lomé* have explored different aspects of the fuelwood problems in Togo. Central issues addressed in this second part of the grey literature pertain to 1) production (relevant wood species) and market structures, 2) main actors involved in both production and marketing, 3) socio-economic and environmental impacts, and 4) consumption patterns. The main cases studied in these works are important fuelwood consumption areas such as Sokode⁴² and Lome,⁴³ whereas Jérémie Fontondji's recent thesis addresses the four aforementioned issues in Togo as a whole.⁴⁴ Equally important is the fact that the authors of the concerned theses base their arguments on the controversial assumptions that emerge from the so-called fuelwood crisis, namely that the use of wood as fuel in the studied areas is associated with poverty and large-scale deforestation with dramatic socio-economic and ecological consequences.⁴⁵ One of the authors, in his study on Sokode, rather uncritically states:

⁴¹ Ibid., 232.

⁴² See OURO-DJERI, A. "Approvisionnement et consommation de combustibles ligneux à Sokodé." *Université de Lomé*, 1994. (unpublished Maitrise thesis)

⁴³ See Amegna, Uwulowudu Komla. "Approvisionnement et distribution des combustibles ligneux dans la ville de Lomé". *Université de Lomé*, 2015 (Unpublished Dissertation)

⁴⁴ See Fontodji, Fontondji, Déterminants de la production – Consommation du charbon de bois au Togo et vulnérabilité aux changements climatiques.

⁴⁵ OURO-DJERI, E. "Les bassins de production et de consommation du bois-énergie de la région de Sokodé Au Togo". *Université de Lomé*, 2012, p. 10–11. (Unpublished Dissertation)

*Indubitablement, le recours au bois de feu est une (sic) des sources majeures de la déforestation. Aussi (sic) la vue sur nos routes (sic) en direction des villes de véhicules dits titans chargés de gros sacs de charbon de bois et/ou d'importants tas de bois renforce ce sentiment de déforestation et de catastrophe écologique imminente.*⁴⁶

Judged through the viewpoint of their arguments, it appears that the above authors have substantially ignored or are unaware of studies that have clearly showcased the lacunae of the fuelwood crisis narrative by refuting deforestation as the root consequence of fuelwood use in most developing countries.⁴⁷

Engaging critically with what has been reported and (scholarly) researched thus far on firewood and charcoal in Togo and in Lome and beyond since the 1970s, this dissertation provides the first historical insights into the woodfuel issue in Lome since 1884 and so introduces the woodfuel debate into the historiography of Togo and West Africa, while laying the groundwork for domestic cooking energy history on both national and regional levels. It fills an existing research gap and makes a significant contribution to the Togolese and West African historiographies. Providing a historical account of woodfuel as private domestic burning material, as intended in this dissertation, signifies charting the changes related to how wood has been produced, marketed and used from the end of the nineteenth century to the present day in Lome, while centering some of these changes at the intersection of energy debates and socio-economic, demographic and political transformations over the last decades. It also means shifting the energy debates in Togo, and Lome in particular, from a natural scientific and normative field to a social historical one. Looking at the topic through a historical lens helps assess the limits of the reductionist arguments of the 'fuelwood crisis' which have dominated the wealth of reports and the few academic works on fuelwood in Togo. It also allows ground-breaking insights into the variety of social and economic strategies that users have been deploying to meet challenges related to the constant increase of fuelwood price over the course of the last four decades. The historical contribution equally illuminates the connection between the fuelwood question and various issues including changes in both men's and

⁴⁶ Ibid., p. 10.

⁴⁷ See Gill, Jas. "Improved Stoves in Developing Countries: A Critique". *JEPO Energy Policy*, vol. 15, no. 2, 1987, pp. 135–144.; Leach, Melissa, and Robin Mearns. *The Lie of the Land: Challenging Received Wisdom on the African Environment*, pp. 2-3; Arnold, M., et al. *Fuelwood Revisited What Has Changed in the Last Decade*, pp. 15–17.

women's involvement in fuelwood production and the transformation of charcoal production techniques tailored to the changing dynamics of charcoal demand in Lome over the years.

Finally, at a two-day workshop in Erlangen in November 2018, where I was privileged to discuss how the envisioned transition from fuelwood to LPG has failed in Togo and Lome, a participant asked me the following question: 'Do you think that if the technology of LPG was enhanced more people in Lome would switch to gas?'. Taking a historical approach to the question does not provide solutions to making the transition happen; instead, it explains and contextualises why it has not yet occurred.

1.3 Research questions and objectives

Building upon the above and taking Lome as a case study, this research addresses four main questions:

- (1) How has the use of wood as main private domestic fuel for cooking evolved in Lome from the colonial period (1907) to the present (2017)?
- (2) In what ways has the constant growth of population in Lome shaped both the urban demand for firewood and charcoal in the city and the environmental and social dynamics in the supply areas?
- (3) How has the private marketing of woodfuel towards and within Lome been organised over the last four decades?
- (4) How have the ruling authorities managed forest resources before and after 1960 in Togo. How and in what context did the post-colonial Togolese state change its attitude vis-à-vis wood as fuel through its interventions in the production and supply of fuelwood energy in the 1970s?

As a background to dealing with these questions, the study's main objectives are to historically explore significant changes and developments in the use, marketing and supply of Lome with fuelwood from the late nineteenth century until 2017. The analysis also focuses on the implications that the demographic has had on the demand for fuelwood from Lome, while further illuminating how fuelwood users have coped with the increase in fuelwood prices over the last four decades. Furthermore, the study will

showcase the kinds of implications that the use and marketing of woodfuel in Lome have had on the charcoal production techniques and how it has shaped the supply areas both environmentally and socially (with regard to gender). Finally, importance is given to the attitudes of both colonial and post-independence ruling authorities vis-à-vis forest resources and the fuelwood sub-sector in particular. To provide answers to the aforementioned questions and meet the research objectives, the research has chosen Lome as a case to study for a set of reasons.

1.4 Methodology

The research questions and objectives were addressed using secondary sources (literature) as well primary written, visual and oral data.

The primary written sources emerged from the archival fieldworks conducted in Berlin, Aix-en-Provence, and Lome.

My presence in the Federal Archives (*Bundesarchiv*) in Berlin-Lichterfelde, which I visited from 14 to 19 April 2016, was justified by two facts. Firstly, Togo was first occupied by Germany and hence written sources documenting the German administration period (1884–1914) are stored and publicly available in Germany. Secondly, I decided to start my search for colonial written documents on the research topic in Berlin rather than in the *Archives Nationales du Togo* (ANT) based in Lome due to the lack of financial capacity for a trip to Togo at that time.

In Berlin-Lichterfelde, I was given access to category *R1001 Reichskolonialamt* records that could be displayed as microfiches. Their contents comprised colonial annual reports, trade statistics, letters and newspapers. This first archival fieldwork resulted in the striking observation that none of the perused documents contained reference to the types of energy used for cooking in Togo. Likewise, nowhere in the sources does wood appear as a domestic burning material *per se*, neither for the Togolese people nor for the European colonialists. Equally, the trade statistics of Togo (*Handelstatistik für Togo*), a document on exported and imported products in the colony, mainly contained data on cash crops such as cotton, groundnuts, cocoa and maize. Nowhere do these statistics cover the export or import of wood or charcoal. However, wood as part of the broader category of forest resources was recorded in a microfiche volume entitled *Forstwesen in Togo*.

Allgemeines (1893–1918). This volume provides some insights into the reforestation projects designed and implemented during the tenure of Governor Julius von Zech auf Neuhofen.⁴⁸ The experience in the colonial archives in Berlin showed that the records produced by the German colonial administration do not provide a comprehensive colonial historical picture of wood as private burning material in an important urban area such as Lome.

My second archival fieldwork unfolded in France. After the First World War, Germany was stripped of its colonies in accordance with the Versailles Treaty of 1919; the Entente powers who won the war elaborated and signed a treaty. This treaty led to the division of the German colony of Togo into two territories. France was given 65% of the former Togoland,⁴⁹ which it ruled as ‘French Togo’ from 1922 to 1959. For this reason, a range of sources informing about this period are stored in the *Archives Nationales d’Outre-Mer* (ANOM; *Aix-en-Provence*). At ANOM, the body of sources I encountered pertain to the organisation of the Cameroon and Togo territories under the French mandate. Some of the documents were reports France had submitted to the League of Nations about the administration of Togo (1921, 1927/1935); minutes of proceedings (1926/1931); correspondences; and, more importantly, documents on agriculture, trade statistics, industry and labour covering the period from 1912 to 1953. Although the records from the French period provide a somewhat more comprehensive overview of how France managed wood resources, the amount of data currently available about Togo in ANOM is still insufficient for a substantial historical reconstruction of how the private production, marketing and consumption of fuelwood was organised in Togo and in Lome in the concerned period. Similar to what was reported for the German colonial period, the data currently available on Togo under French mandate enables a historical analysis of regulations of forest resources but does not yield much information as to what extent this affected fuelwood production.

During my third archival visit to the premises of the ANT, the data found there on the exported goods from 1930 to 1934 do not give any further details about wood or charcoal

⁴⁸ Julius von Zech auf Neuhofen was governor of Togo from 1905 to 1910.

⁴⁹ The remaining 35% of the land was given to Britain and, following a referendum in 1956, was attached to Ghana after the independence of the latter.

exports. This suggests that the exportation of charcoal in 1929 may have been a unique incidence.

To sum up, by excavating the colonial documents, I have discovered a substantial paucity of written primary data on fuelwood, not only for Lome, but also for Togo as a whole.

It appears, however, that the lack of written primary sources on fuelwood, as noted for the colonial period, changed strikingly after independence. For documents on fuelwood, especially in Lome, have been generated in significant numbers from the 1970s onwards. These documents are scattered in various locations in the field. The concerned sources were collected from state institutions such as the *Direction des Ressources Forestières* (Direction of Forest Resources), the *Ministère de l'Environnement et des Ressources Forestières* (Togolese Ministry of Environment⁵⁰), *Direction Générale de l'Énergie* (Direction of Energy⁵¹), ODEF, the *Institut National de la Statistique et des Études Économiques et Démographiques* (Togolese Institute of Economic and Demographic Statistics⁵²) and the *Université de Lomé* (University of Lome⁵³), as well as non-governmental entities such as the *Deutsche Gesellschaft für Internationale Zusammenarbeit* (German Development Agency) via its project *Programme pour le développement rural et l'agriculture Volet 3: Promotion de la filière bois-énergie*. The content of these sources helps assess key facets of the fuelwood issue, at least for the last four decades.

The primary oral sources were gathered in different areas in Togo between 2016 and 2017. Using oral history as a qualitative research tool qualitative approach, semi-structured interviews (three individual and three group interviews, each lasting between one and three hours) were conducted with users, producers, traders and transporters of fuelwood, as well as unionists and state officials in Lome, Notsé and its outskirts, Tsévié, Atakpamé and Guérin-Kouka. The interviewees were between 60 and 80 years old. The interviews were conducted in Mina and Ewe (the languages spoken in Lome, Notsé and Tsevié), French and, in some cases, a mixture of the three. The group conversations

⁵⁰ My own translation

⁵¹ Ibid.

⁵² Ibid.

⁵³ Ibid.

conducted in Guerin-Kouka required translation, which my research assistants provided. With the authorisation of my research partners, the bulk of these interviews were recorded, although in some cases my interlocutors only allowed me to take notes of our discussions.⁵⁴

I employed both passive and active participant observation to generate visual data. In this respect, I not only witnessed for instance the charcoal production process but also actively joined the carbonisation process myself.

The oral historical data and the visual sources that resulted from both fieldworks were evaluated and analysed using the thematic approach. This approach was embedded in the principles of qualitative coding. The rationale of choosing this data analysis approach resided in the fact that my research questions and the outcomes of both the literature review and the archival research helped to organise the semi-structured interviews around specific themes. While evaluating the interviews and considering the field notes, additional themes related to the research topic were identified. Given that the data collection itself was structured around the research questions, such as changes regarding fuelwood production, marketing and use, for example, the choice of the thematic approach to analyse the generated data helped to directly relate the respondents' answers to those questions.

Moreover, one of the original aims of the thesis was to provide an historical account of changes in the use of fuelwood as private domestic cooking fuel within Lome by using households as research unit. However, when I started to interact with interviewees (users of fuelwood) in the field, I quickly realised the conceptual limits of the term 'households'⁵⁵ for my research. Rather than a clear-cut entity of fuelwood users in each compound⁵⁶ as I had expected, the narratives provided by my interlocutors highlight the fireplace and the number of individuals whose food derives from it as the key element defining the fuelwood users' unit. This discovery suggests that the fuelwood users' unit

⁵⁴ See the list of the interviewees provided in the bibliography.

⁵⁵ Guyer, Jane I. "Household and Community in African Studies". *African Studies Review*, vol. 24, no. 2/3, 1981, pp. 87–137. *JSTOR*, www.jstor.org/stable/523903. Accessed 12 May 2020. This is among many others works which question and critically engage with the tensions and analytical limits pertaining to the definitions and the use of the label 'household' to address social organisations across the Africanist scholarships.

⁵⁶ This, in fact, was my primary conceptualisation.

as such is extremely volatile, as the exact number of individuals whose daily food comes from that fireplace changes significantly over the course of a year and even within a month or a week. The more the interviewees related their fireplace and their cooking behaviour to their social relationships with friends and family members,⁵⁷ the clearer it became to me that the concept of ‘household’, no matter which definition I may refer to,⁵⁸ does not work for my research. This situation equally complexifies the historical quantification of fuelwood usage within Lome based on the data of ‘households’ as a research unit. In the face of these challenges and based on my interlocutors’ accounts, I was forced to switch the unit of measurement from ‘households’ to a relatively less-complex and easier to manage term, namely ‘user’. A ‘user’ is an individual, alone or within a family, who is in charge of providing the fuel needed for cooking. The historical insights I provide on fuelwood changes in Lome are therefore intrinsically connected to the shifts in the life and cooking experiences of that person (user) with whom I interacted.

Interconnecting written primary and secondary sources and oral historical interviews with active and passive observations theoretically embedded in the field in what is scholarly accepted as ‘triangulation of data sources’⁵⁹ has significantly contributed to a better understanding of the fuelwood issue, especially in Lome and other relevant areas of the study.

Finally, on an ethical level, I confirm that all data that have been gathered, analysed and used to answer the research questions in this study have been collected with the authorisation and consent of the individuals and institutions mentioned in the thesis. In all of my encounters, whether in the archives or during formal and informal conversations with participants, I used my research permit to provide my interlocutors with background information and to inform them of how I intend to use the data collected. With the exception of research assistants who supported me in establishing contact with my

⁵⁷ Note that changing social relationships also imply changes in the manner in which fuelwood is used.

⁵⁸ Jane Guyer defines, for instance, the household from anthropological angle as ‘[...] a domestic unit with decision-making autonomy about production and consumption’, (Guyer, ‘Household and Community in African Studies’) whereas economists address the household as ‘an economic unit consisting of a single person living alone, a married couple or a complete family, each unit with a source of income and responsibility for its disposal’ Gilpin, Alan. Dictionary of economic terms. London, Butterworths, 1973, p. 118.

⁵⁹ Rothbauer, M. Paulette. “Triangulation”. *The SAGE Encyclopedia of Qualitative Research Methods*, vol. 2, edited by Given, Lisa, Sage Publications Ltd., 2008, pp. 892–894.

interviewees and in translating interviews from local languages into French, no other participant in my study was financially remunerated for information provided to me. The photographs and recorded interviews were taken and recorded with the explicit consent of those who appear on the photographs or whose voices were recorded. The privacy and confidentiality of the interviewees were discussed at the time of the interviews. My interlocutors requested that they be not mentioned by name and consented to the use of pseudonyms for the purposes of quoting their statements consistently throughout the thesis.

1.5 Situating the study in time

The bulk of the research covers the periods from 1907 to 1959 and from 1960 to 2017. I locate the study within these two periods for two main reasons. Firstly, because 1907 was significant in marking the beginning of a change in attitude on the part of the German colonial administration with regard to forest resources, including woodfuel in Togo, due to the appointment of Julius von Zech auf Neuhofen as governor. Von Zech implemented the colonial reforms proposed by Bernhard Jakob Ludwig Dernburg in early 1906, introducing a planting reward (*Planzungsprämie* (Tree planting reward)),⁶⁰ as well as an important decree regarding the regulation and protection of the forest (*Schutzwaldverordnung*), in 1907. The reforestation projects that emerged after 1907 aimed to develop forest resources in the colony for the exclusive purpose of colonial economic exploitation. Although the private production, use and profit from woodfuel was not fully recorded in the documentation left by the Germans and the French who took over after the First World War, 1907 remains pivotal regarding changes in how ruling structures managed forest resources in Togo until 1959. In this research, I demonstrate the continuities that existed between the German and the French administrations with regard to the motivations behind the development of forest resources in Togo between 1907 and 1959, while also emphasising that the interest of both colonial governments in wood as private domestic fuel was marginal, especially for a city such as Lome.

⁶⁰ Seemann, Markus. *Julius Graf Zech: Ein Deutscher Kolonialbeamter in Togo*. Diplomica Verlag, 2013, pp. 69–70. The translation of ‘‘*Planzungsprämie*’’ from German into English is my own.

Secondly, when Togo obtained independence in 1960, the newly established ruling authorities followed the path of their predecessors in terms of the policy regarding forest resources. Their interest in wood as fuel and as a potential economic sub-sector to control was equally marginal. However, this changed drastically when experts from the World Bank and United Nations Development Programme (UNDP) identified the notorious ‘fuelwood crisis’ for non-Western countries in the mid-1970s. The identification of this ‘crisis’ incentivised and justified state intervention in forest resource and woodfuel issues. Surfing on the then-favourable wave provided by development partners (e.g., the World Bank, UNDP and the French government), the Togolese government used its para-state agency, *Office de Développement et d’Exploitation de Forêts*, to attempt a monopolisation of woodfuel (especially charcoal) production and marketing in Lome. This marked a significant shift in the state’s attitude vis-à-vis forest resources and the woodfuel sub-sector in particular. I examine, therefore, the forest and woodfuel issues in the post-independence era by concentrating an important part of my analysis of the period from the 1970s onwards as a turning point in which this paradigm shift gradually took effect. Moreover, from that period a wealth of data began to be gradually produced regarding the woodfuel situation in countries including Togo, allowing crucial insights into the production, marketing and use of woodfuel in and around Lome in the post-independence period. I set 2017 as the terminal temporal mark of the study, for it is the timeframe in which I conducted my second important fieldwork.

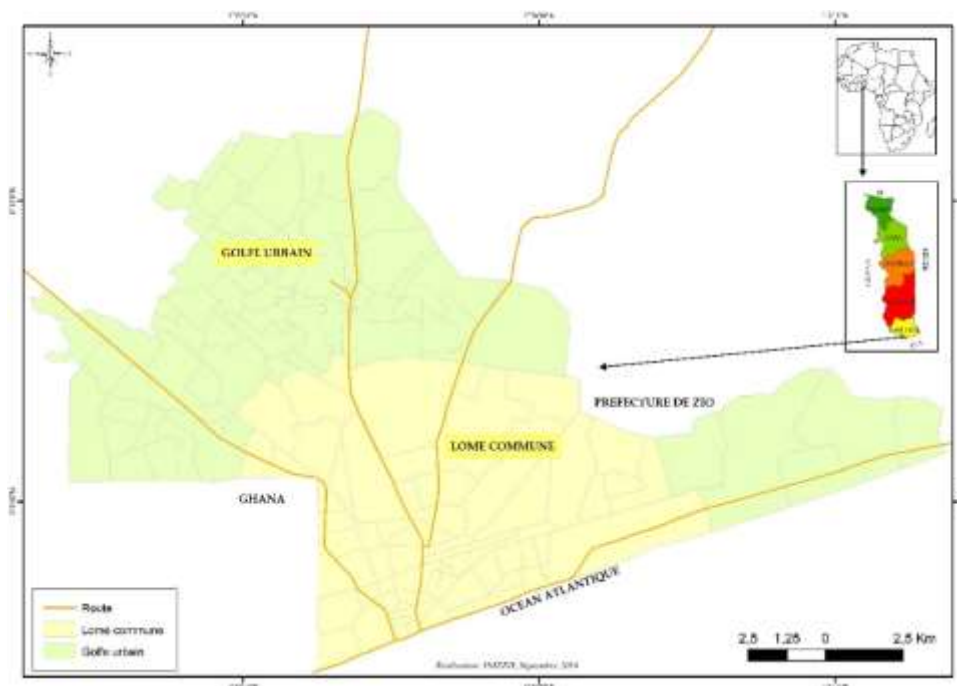
1.6 Justification of Lome as a case to study

In 1897, the German ruling administration preferred Lome to Zebe, an area near Small-Popo which is currently called Aneho, as the capital of Togo.⁶¹ As the most important political city, Lome has over the centuries become one of the main economic lungs of the country. Based on this, Lome has been and continues to be an economically attractive

⁶¹ See Sebald, Peter. “Pourquoi le siège de l’administration a-t-il été transféré de Zebé à Lomé?” *Le Centenaire de Lomé, Capitale du Togo (1897–1997) : Actes Du Colloque de Lomé (3–6 Mars 1997)*, edited by Gayibor Nicoué Lodjou, Lomé : Presses de L’UB, , 1998, pp. 51–56.

city, not only for Togolese from different regions, but also for many thousands of other African citizens.⁶²

On the geographical level, Lome is a coastal city in southern Togo with a tropical climate. Based on a classification provided by the German botanist Hartmut Ern, who identified five ecological zones in Togo,⁶³ Lome has been placed in the fifth zone, as it has low rainfall (i.e., 750–800 mm per annum).⁶⁴ This low rainfall affects the development of forest cover in Lome, which negatively impacts the availability of fuelwood resources in the city. Over time, this has inhibited the subsistence of fuelwood production within Lome, causing the city's dependence on its once close and now distant surroundings to meet its fuelwood needs.



Map 1: A map of Lome, designed by Mohammed Yandja T. KOLANI⁶⁵

⁶² See Dovi, Quamba. “Quelques aspects de la population de Lomé dans sa dynamique de peuplement” *Le Centenaire de Lomé, Capitale du Togo (1897–1997): Actes Du Colloque De Lomé (3–6 Mars 1997)*, edited by Gayibor Nicoué Lodjou, Lomé : Presses de L'UB, 1998, pp. 315–328.

⁶³ Hartmut, Ern. “Die Vegetation Togos. Gliederung, Gefährdung, Erhaltung”. *Willdenowia Willdenowia*, vol. 9, no. 2, 1979, pp. 295–312.

⁶⁴ Barbaud, Les problèmes forestiers de la République Togolaise. Mission d'évaluation des projets forestiers envisagés par le Gouvernement Togolais, p. 10).

⁶⁵ This map has been designed by Mohammed Yandja T. KOLANI, a cartographer at INSEED, during my first field research in Lomé in 2016. It informs about the geographical location of Lomé.

The benefit of its coastal geo-climatic conditions, however, lies in the fact that Lomé's soil is ideally suited for coconut plantations. This facilitated the development of the copra trade in Lomé beginning in the second half of the nineteenth century. This allowed dried coconut shells to be gathered for free and used as an alternative burning material to firewood. This situation certainly reduced Lomé's dependence on fuelwood until the end of the 1950s, when the mass felling of coconut trees in Lomé and surrounding areas led to the significant fall in the copra trade and affected the availability of dried coconut shells. The scant availability of coconut shells led to Lomé's dependence on firewood from other areas. The more the city has grown, the greater the dependence on fuelwood and the distance between Lomé and its supply areas, has gained in relevance. As such, Lomé's fuelwood concerns appear to have been more challenging than those of other important urban areas in Togo (e.g., Sokode, Togo's second-most-populated city after Lomé), where the climatic conditions make fuelwood availability less challenging. The annual rainfall in this second ecological zone, as identified by Hartmut,⁶⁶ is approximately 1330mm.⁶⁷ Therefore, the forest cover in Sokode and surrounding areas is more abundant than in Lomé. Thus, it is not surprising that the fuelwood consumed in the city comes straight from its direct surroundings⁶⁸ – a situation Lomé can only dream of. As such, concerns related to the availability and accessibility of fuelwood seem to be more challenging for Lomé than for Togo's other urban areas. Providing a historical analysis of how Lomé has coped with the above constraints makes this case study the most attractive and promising of any Togolese city.

Moreover, the first reports that emerged in the frame of the 'fuelwood crisis' debate in the mid-1970s emphasised the steady population increase in Lomé, which augmented the city's dependence on fuelwood. This was based on the predictions of Pierre Barbaud, who came to the conclusion in the early 1980s that a grave fuelwood crisis was menacing

⁶⁶ Hartmut, *Die Vegetation Togos. Gliederung, Gefährdung, Erhaltung.*, pp. 295–312.

⁶⁷ See Selassi, D. 'Les Problèmes De la contiguïté des aires protégées avec les zones agricoles au Togo : Crise d'espace ou crise d'aménagement ? (Exemple de la région De Fazao)'. *Université de Lomé*, 1995, cited by Fontondji, déterminants de la production – consommation du charbon de bois au Togo et vulnérabilité aux changements climatiques.

⁶⁸ OURO-DJERI, 'Les bassins de production et de consommation du bois-énergie de la région de Sokodé au Togo', 15.

Lome.⁶⁹ Consequently, Barbaud advocated for the AFRI reforestation project, which was exclusively dedicated to the supply of Lome with fuelwood, and was considered to be the main option to alleviate the crisis.⁷⁰ The project received financial support and was implemented between 1981 and 1988. It was the first of its kind designed and implemented by both the state and development partners for the main purpose of supplying Lome with firewood and charcoal. As such, Lome was the first site in Togo where the ‘fuelwood crisis’ assumptions were applied. The priority that Lome enjoyed in the fuelwood policy discussions in Togo, as well as the relevance of historically examining the scope of implementation and evaluation of a unique project like AFRI, are additional reasons supporting my rationale to focus on Lome rather than other Togolese cities.

Finally, the bulk of the existing expert literature, while informing about the overall fuelwood situation in Togo, tends to give greater importance to Lome in their accounts.⁷¹ Hence, unlike the other Togolese cities, there is substantial data corpus that enables a historical glimpse into the experience of Lome regarding fuelwood concerns over recent decades. This is a further reason why this research has, at the national level, favored Lome as a case to study.

Like Lome, other West African capitals such as Cotonou (the economic capital of Benin), Bamako (Mali), Niamey (Niger), Ouagadougou (Burkina Faso)⁷² and Freetown (Sierra Leone),⁷³ among others, rely heavily on fuelwood for their domestic energy demands.

⁶⁹ Barbaud, les problèmes forestiers de la République Togolaise. Mission d'évaluation des projets forestiers envisagés par Le Gouvernement Togolais, p. 8.

⁷⁰ See Ibid.,

⁷¹ Ibid. 4–5; Bailly, Rapport de Mission relative à une étude de la consommation de bois et des produits dérivés : charbon de bois, bois de chauffage, effectué à la demande de la République Togolaise du 26 Août au 10 octobre 1982, p. 5; Thiam, Etude de marchés des produits ligneux au Togo, p. 7; Société Togolaise d'Études de Développement en Afrique, Analyse de l'évolution des ressources forestières, de l'exploitation des terres et diagnostic des approvisionnements et des consommations des grands centres urbains en énergies traditionnelles, p. 28 ; SOPRECO, *Politique Nationale de l'énergie. Rapport Préliminaire*, p. 139.

⁷² Girod et al., *L'énergie en Afrique. La situation énergétique de 34 pays de l'Afrique subsaharienne et du Nord*, 56–60; Arevalo, Javier et al. *BioCarbon and Rural Development in West Africa Assessment of Solid Woodfuel Situation in Sierra Leone and Burkina Faso*, Work Package 1.4 on Sustainable Wood Energy May 2016, (report), pp. 15–16.

⁷³ See Cline-Cole, R. Akindele. “The Socio-Ecology of Firewood and Charcoal on the Freetown Peninsula”. *Africa: Journal of the International African Institute*, vol. 57, no. 4, 1987, pp. 457–497. *JSTOR*, www.jstor.org/stable/1159894. Accessed 13 September 2019; See Javier Arevalo, Yohama Puentes and Sari Pitkänen *BioCarbon and Rural*

Attempts at reducing the predominance of fuelwood through substitution with LPG and kerosene have been undertaken jointly by state and development partners⁷⁴ since the early 1980s, as has been observed for Lome. Moreover, the wealth of references used to quote the relevance of firewood and charcoal for the aforementioned West African capitals⁷⁵ acknowledge a significant preference for charcoal over firewood during the last few decades by residents of the cities concerned. Extensive research using an historic-ethnographical approach has informed about state-led forest management policies regarding the supply of Dakar with charcoal.⁷⁶ Geographer Reginal Akindele Cline-Cole's article provides insights into how Sierra-Leone's government addressed the fuelwood issue in important urban areas such as Freetown until the 1980s, while at the same time illuminating changes in fuelwood consumption on the Sierra-Leonian peninsula.⁷⁷ Despite the relevance of fuelwood as the main domestic fuel traditionally used in most capitals, West African historiography lacks extensive works by historians accounting for the trajectories and changing experiences related to fuelwood production and use in urban areas. Aside from works by scholars from disciplines such as geography and anthropology, for instance,⁷⁸ little is known about the history of wood as an urban domestic fuel, though the surge of interest in the fuelwood issue at the international level has increasingly led to the generation of useful data since the 1970s. Although 'Reframing Deforestation. Global analysis and local realities: studies in West Africa' (1998), an authoritative work by James Fairhead and Melissa Leach, slightly addresses fuelwood

Development in West Africa Assessment of Solid Woodfuel Situation in Sierra Leone and Burkina Faso, Work Package 1.4 on Sustainable Wood Energy May 2016, (report), p. 6, <https://pdfs.semanticscholar.org/8275/8ac2493992ebe8f00b3f8a34d85ec90da4cc.pdf> Accessed Aug. 2020.

⁷⁴ Girod et al: L'énergie en Afrique. *La situation énergétique de 34 pays de l'Afrique subsaharienne et du Nord*, pp. 47–48 ; p. 61, p. 146 ; p. 257–294, p. 325, pp. 356–357.

⁷⁵ Here, I am referring to footnotes 61–64.

⁷⁶ See Ribot, Jesse. "Markets, States and Environmental Policy: The Political Economy of Charcoal in Senegal". *University of California, Berkeley*, 1990. (Published Dissertation). See also the article by Juhé-Beaulaton, 'Bois de chauffe et charbon de bois dans le Sud du Bénin : évolution de la production au cours du XXe siècle. Le bois source d'énergie : naguère et aujourd'hui.' Her focus was more on fuelwood in relation to forest policies and less on the use firewood and charcoal for private domestic energy needs in cities like Cotonou or Porto-Novo.

⁷⁷ Cline-Cole, R. Akindele. "The Socio-Ecology of Firewood and Charcoal on the Freetown Peninsula".

⁷⁸ These works have been extensively quoted in footnotes 60; 61; 64.

concerns,⁷⁹ the core of the narratives more broadly ‘reframe’ the ‘West African forest history’ and the debates on environmental historical changes⁸⁰ and pays marginal attention to fuelwood as an urban domestic energy among the topics covered by the case studies contained in this book.

Moreover, while sharing many commonalities with other West African capitals, the relevance of focusing on Lome as a case study lies more in my attempt at using this case to stimulate and invite broader West African historical scholarship on the domestic cooking energy landscapes of other West African capital cities that, equally, have relied heavily on wood as cooking fuel for centuries. This would not only help examine changes in the domestic energy realm of other West African capitals, but would also give those changes and other aspects such as fuelwood substitution policies (e.g., butanisation programmes from the 1980s onwards) a broader regional historical interpretation. The regional comparison may also encompass strategies that fuelwood users in other West African cities have developed over the years to meet challenges related to the supply and the rising price of fuelwood, without overlooking how their social relationships with producers and traders have developed over time. Finally, the benefits of using Lome as a case study to stimulate and call for more historical attention to domestic cooking energy issues in other West African cities showcase the limits of Robert K. Yin’s contention that case study research is not suited to historical works.⁸¹

1.7 Structure of the thesis

The thesis is divided into six chapters. This introductory chapter provides a general overview of the study. The five sections contained in this chapter detail how my scholarly interest arose in writing a history of fuelwood by focusing on Togo and Lome in particular, as well as consider the overall issue of fuelwood at the global and national levels. The sections also present the dissertation’s central objectives and research

⁷⁹ See, for instance, Chapter 6 of the book where the section on ‘Iron smelting in West Africa’ critically discusses the links established by Candide Goucher between charcoal production and historical environmental degradation in Bassar, p. 129–135.

⁸⁰ Fairhead, James, and Melissa Leach. *Reframing Deforestation: Global Analyses and Local Realities ; Studies in West Africa*. Routledge, 1998, xiv.

⁸¹ See Yin, Robert K. *Case Study Research: Design and Methods*. Los Angeles: SAGE Publications, 2009

questions. It elaborates on the research methodology and clarifies the historical timeframe covered, as well as the rationale for choosing Lome as the main research case to study.

Chapter 2 answers the first research question. It analyses the complex historical trajectory of change with regard to the use of fuel for private consumption in Lome over the period of study. It is a history that began with coconut shells and firewood and culminated with charcoal as the major private domestic fuel in the Togolese capital. My analysis in this chapter gives an overview of the shifts observed in the Lomean private domestic cooking energy landscape and analyses the contexts in which the transitions took effect. It does so by pointing out the intricate web of interconnected facts and forces that enabled these changes. The triangulation of written sources with the oral historical data and my observations in the field help to explain, for instance, the failure of the butanisation programme implemented by both the Togolese state and foreign oil companies (i.e., Shell and Total) in the early 1980s. This, in turn, became one of the elements that significantly reinforced the private domestic energy user's transition to charcoal and the latter's current position as the main domestic fuel within the Togolese capital.

In the subsequent chapters, I deal with the remaining three research questions in a more systematic and less chronological way. In Chapter 3, I address the question of the connections between Lome's demographic population growth over the last four decades, the demand for firewood and charcoal and the effect of these factors on the social (especially gender) dynamics in the supply areas. Rather than considering urban population growth solely in terms of its negative socio-economic implications for African cities, as is common in the bulk of the existing historical works on the topic, this chapter provides a different narrative that depicts the demographic development of Lome as a challenge that shapes urban charcoal demand, the supply zones or areas⁸², technological charcoal-production processes and gender issues, as well as the physical environment.

Chapter 4 scrutinises both the firewood and charcoal price developments and their consequent social and economic implications for both private fuelwood traders and

⁸² The chapter focuses more on charcoal than on firewood, given the shift from the former to the latter that gradually took effect from the 1980s onwards. In addition, the wealth of data collected from the field informs more about the challenges regarding charcoal production and the demand for it, rather than firewood. Furthermore, 'Supply zones' and 'supply areas' are used interchangeably in this chapter as zones of provenance of the charcoal that is transported to Lome and sold in markets there.

private domestic fuelwood energy users in Lome. To do so, it triangulates written reports generated from the 1970s onwards on fuelwood in Togo, oral historical interviews and (passive and active) participant observation data collected in the field. My analysis illuminates how both private users and traders of fuelwood have experienced and reacted to challenges raised by both the economic⁸³ and physical accessibility of fuelwood since the 1970s. It sheds light on the set of economic and social strategies deployed by the two categories of actors to face those challenges over the last four decades. The outcomes of the analysis in this chapter answer this dissertation's third research question.

Chapter 5 reflects on the last question raised in the thesis. It shifts the focus to the government as a historical actor and shows the paradigm shift in the way that Togolese colonial and post-independence authorities have treated the fuelwood energy sub-sector in their different historical contexts. The chapter illustrates that neither of the two foreign powers (i.e., Germany and France) that ruled Togo from the second half of the nineteenth century until the end of the 1950s paid particular attention to the domestic fuelwood sub-sector. The post-independence Togolese authorities in the 1960s likewise lacked interest in fuelwood as a strategic sub-sector over which to exert control. This attitude, however, changed significantly from the 1970s onwards. This paradigm shift is scrutinised and illustrated in the chapter, focusing on the creation of the *Office de Développement et d'Exploitation des Forêts* (ODEF)⁸⁴ in the 1970s. Through this institution, the Togolese post-independence government aimed to create a monopoly on the supply and the marketing of woodfuel, especially charcoal, for Lome. This, in fact, notably occurred with the notorious AFRI project from 1982 to 1989. The chapter, therefore, critically investigates the background of this historical state intervention in domestic fuelwood affairs in Togo for the first time. It highlights the socio-economic and political contexts in which this project – conceived as a preventive remedy to a 'fuelwood crisis' menacing Lome – took effect.

In Chapter 6, I draw on the arguments elaborated in each chapter to expand the scope of my reflections on the historical trajectories related to woodfuel as the main private domestic source of fuel in Togo and in Lome in particular. I situate my findings within

⁸³ Here, I am referring to the increasing price of fuelwood as an economic challenge for users.

⁸⁴ ODEF is a Togolese parastatal institution that was created in 1971.

the wider discussion on fuelwood and engage with questions that remained unresolved, as well as with the possibility that my study could offer a better historical understanding of fuelwood dynamics in other West African capitals. As such, the answers provided to the research questions may pave the way for further studies focusing on other areas which would enable the assessment and judgement of the validity of this study.

2 Zooming in on the Private Domestic Cooking Energy Landscape in Lome from the Late-Nineteenth Century to 2017

Introduction

Whereas millions of dwellers in rural areas and small cities in Togo still rely on firewood as the main domestic energy provider, the vast majority of the population in demographically important cities like Lome use charcoal as their primary cooking energy source.¹ Charcoal's predominant place in Lome is viewed in this chapter as the culmination of significant transformations that occurred in the domestic settings of the Togolese capital over the last four decades. I, therefore, explore the timeframe and contexts in which these shifts progressively evolved by revealing the set of intricate, entwined facts and forces which enabled them. I meet this objective by firstly providing a general and critical overview of the term 'energy transitions' and creating a conceptual framework in which the noted changes in private domestic energy in Lome can be theoretically embedded.

In the following sections, I offer explanations for the socio-demographical, socio-economic and political backgrounds of the transformations observed in the private domestic energy setting of Lome. These changes, as I will demonstrate, suggest that private domestic energy users have gradually switched from coconut shells and firewood to charcoal. At the time of writing, the bulk of available data on domestic energy in Lome notes that in the early 1980s, a programme called butanisation was jointly implemented by the Togolese state and two foreign oil companies (i.e., Shell and Total). The program's objective was to stimulate a switch from firewood and charcoal to LPG.

Building on the above, the final section informs about the *butanisation* programme, or the programme of '*LPG-isation*', as it is called in this study, by showing how its failure reinforced the transition to and predominance of charcoal as Lome's main domestic burning fuel. It is demonstrated throughout the chapter that the transitions noted in the

¹République du Togo. Direction Générale de l'Énergie. Rapport général provisoire. *Enquête consommation des énergies domestiques au Togo*. 2007, p. 10 ; SOFRECO, *Politique Nationale de l'énergie, rapport préliminaire*, pp. 87-89.; M'ba, *Etude sur les méthodes de consommation du bois-énergie et de l'utilisation des foyers économiques*, p. 18.

domestic energy usage for cooking in Lome over the last four decades have been of a socio-technical nature, given the complex interconnections between their various drivers.

2.1 Woodfuel history of Lome within the wider energy transition debate

From the early twentieth century onwards, the private domestic energy landscape of the Togolese capital city Lome experienced complex transformations that resulted in charcoal's current predominance as the main private domestic energy source for cooking. Charcoal gradually gained this hegemonic position by coexisting with other energy sources throughout the nonlinear transformations within the private domestic energy landscape in Lome. These transformations, which occurred primarily as dynamic processes through which urban private energy users in Lome shifted from various wood-based burning materials, can be embedded in the broad and somewhat nebulous concept of 'energy transitions'. This argument requires acknowledging the 'epistemological challenges'² surrounding the term 'energy transitions'. The truth is that these difficulties are deeply rooted in the plurality of meanings given to the concept across academic disciplines, coupled with the evidence that what can be labelled as 'energy transitions' is thought to unfold differently in both time and geography on the national and transnational levels.³ Beyond these 'epistemological challenges',⁴ perceiving transitions in energy usage as processes unfolding at different historical times and contexts is what matters for this study, since (energy) transitions approached historically encompass both the notions of 'time and change', as Alain Beltran rightly states. When Clapperton Chakanetsa Mavhunga discusses transitions in relation to colonialisms in and outside Africa, he primarily means both colonial socio-political contexts and the processes through which colonialists switched 'from one energy form to another'⁵ for purely exploitative capitalist

² Pearson, P. J. G. 'Past, present and prospective energy transitions: an invitation to historians', *Journal of Energy History/Revue d'Histoire de l'Énergie [Online]*, n°1, published 04 December 2018, URL : energyhistory.eu/en/node/57, Accessed January 2020.

³ Ibid. Regarding the definitional complexities and diversity of approaches to the term are concerned, see section: 'Energy transitions: nature, variety and complexities' of the same article.

⁴ Ibid.

⁵ Mavhunga, Clapperton Chakanetsa. "Introduction". *Energy (and) Colonialism, Energy (in)Dependence : Africa, Europe, Greenland, North America*, edited by Clapperton Chakanetsa Mavhunga and Helmuth Trischler, RCC, 2014/5, p.5.

motivations; in other words, for the sake of Western colonial economic wealth. Mavhunga illustrates and locates the energy transitions at the confines of the colonial domination in Southern and Central Africa between 1885 and the 1960 by clarifying that ‘[...] Europeans built their first industries and transportation systems upon energy systems that Africans had already devised and used for centuries: firewood and manual labor. Then came coal, gradually replacing firewood on railroads and industries, but never human power’.⁶ Ihediwa Nkemjika Chimee’s *Coal and British Colonialism in Nigeria* provides another case of the close relationship between colonial subjugation and transition in energy production and use to the primary benefit of the then-colonial economy.⁷ Vaclav Smil, in his work *Energy Transitions. History, Requirements, Prospects* (2010), narrowly defines the term, and he rightly places emphasis on the change that is observed in ‘[...]the composition [...] of primary energy supply, or the gradual shift from a specific pattern of energy provision to a new state of an energy system’.⁸ Energy transitions in terms of usage or supply convey a meaning of the gradually changing nature of the transformation over a certain time span. The English economic historian Edward Anthony Wrigley reveals that the shift from plant-based energy to fossil fuel (i.e., coal) was pivotal to the Industrial Revolution, as it significantly fueled economic growth in the West, starting with England in the mid-seventeenth century.⁹ This argument has been relativised by economic historians like Jan Kunnas, Timo Myllyntaus,¹⁰ Gregory Clark and David Jacks¹¹ and rejected by many ‘growth economists’, who as noted by Astrid Kander and David I. Stern ‘[...] do not assign any special role to energy in economic growth’.¹²

⁶ Ibid. p. 7.

⁷ Chimee, Ihediwa Nkemjika. “Coal and British Colonialism in Nigeria” *Energy (and) Colonialism, Energy (in)Dependence : Africa, Europe, Greenland, North America*, edited by Clapperton Chakanetsa Mavhunga and Helmuth Trischler, RCC, 2014/5, p. 19.

⁸ Smil, Vaclav. *Energy Transitions: History, Requirements, Prospects*. Praeger, 2010, p. viii.

⁹ See Wrigley, E., A., “*Energy and the English Industrial Revolution*”.

¹⁰ Kunnas, Jan, and Timo Myllyntaus. “Postponed Leap in Carbon Dioxide Emissions: The Impact of Energy Efficiency, Fuel Choices and Industrial Structure on the Finnish Economy, 1800-2005”. *Globenvi Global Environment*, vol. 2, no. 3, 2009, pp. 154–189.

¹¹ Clark, Gregory and Jacks, David. “Coal and the Industrial Revolution 1700-1869”, *European Review of Economic History* 11, 2007, 39–72.

¹² Kander, Astrid, and David I Stern. “Economic Growth and the Transition from Traditional to Modern Energy in Sweden”. *Economic Growth and the Transition from Traditional to Modern Energy in Sweden*, 2013, econpapers.repec.org/RePEc:een:camaaa:2013-65.

Despite this debate on the drivers of the Industrial Revolution and economic growth, neither side can refute that several processes over the last centuries have led to significant transformations in energy production and use, nor that energy transitions occurred at different times in Western societies.¹³

Finally, energy transitions considered historically using the above examples should not be reduced or oversimplified to ‘[...] a changeover from one leading fuel or energy carrier to another’.¹⁴ On the contrary, energy transitions can also encompass the shift back to previously abandoned energy sources. Masera et al. support this, stating that the process of fuel switching is not a unidirectional phenomenon.¹⁵ In other words, political, economic and environmental challenges at particular turning points in the history of a country or region can drive societies back towards energy sources that had lost their dominance centuries beforehand. Economic variables can also stimulate this backward shift, temporarily or permanently. Gerard Leach exemplified this, taking the case of Sri Lanka where high prices and shortages of kerosene had forced households to re-adopt firewood.¹⁶ Another significant element capable of driving this shift relates to environmental strain. The evident depletion of all types of fossil fuel, their unsustainable character and greenhouse emissions caused by their production and exploitation have increasingly fostered debates and policies regarding their substitution with more sustainable energy sources (e.g. wood, wind and solar). The depletion correlated with concerns for fossil fuels, has gained in relevance in peacetime, and the return to renewable sources is currently seen as a more sustainable alternative.¹⁷ Biomass energy sources,

¹³ See Ibid.; Lovins, Amory B. “Energy, People and Industrialization”. *Resources, Environment, and Population: Present Knowledge, Future Options: Based on a Conference Held at the Hoover Institution, Stanford University, 1–3 February 1989*, edited by Kingsley Davis, Oxford Univ. Press, 1991, pp. 114–125. The authors show how a typical Danish urban household, which in 1811 consumed two tons of firewood for heating and cooking per annum, gradually switched to coal to meet the same domestic needs; see also Schrader, Mila. *Gusseisenöfen Und Küchenherde : Ein Historischer Rückblick : Geschichte, Technik, Faszination*. Anderweit, 2001. Schrader underscores how coal gradually replaced wood and became the main burning material in almost all German cities by the end of the nineteenth century (p. 35); See also Smil, Vaclav. *Prime Movers of Globalization The History and Impact of Diesel Engines and Gas Turbines*. The MIT Press, 2010. In this book, Smil addresses the changes in the USA’s energy landscape by revealing how coal and oil significantly reduced dependence on firewood by 1884.

¹⁴ Pearson, Peter J. G. “*Past, present and prospective energy transitions: an invitation to historians*”.

¹⁵ Masera, Omar R, et al. “*From Linear Fuel Switching to Multiple Cooking Strategies: A Critique and Alternative to the Energy Ladder Model*”.

¹⁶ See Leach, Gerald. *Household Energy in South Asia*. Elsevier, 1987.

¹⁷ In contrast to example given above regarding post-war years in Germany.

wood in particular, produced and consumed in a sustainable way, are then advocated as a potential energy source through which a gradual abandonment of fossil fuels can be achieved. The *Bayerisches Landesanstalt für Wald und Forstwirtschaft* (a Bavarian forest agency) stated, in the context of the German *Energiewende*, that ‘*Um die Energieversorgung langfristig sicherzustellen, ist neben der Energieeinsparung ein verstärkter Einsatz von erneuerbaren Energieträgern wie der Holzenergie notwendig*’.¹⁸ Having addressed energy transitions as dynamic processes and transformations that occurred in in energy production and use, the focus will shift to Lome as a site where a series of changes have been noted in domestic energy usage.

The climax of such transformations is charcoal’s current position as the dominant cooking fuel in Togo. It is appropriate to clarify that charcoal’s hegemony gained from the processes of changes or transitions was not achieved through the expunction of firewood or any other marginal domestic cooking fuel; instead, the transitions signified a complex gradual shift from firewood to charcoal and, more importantly, an ongoing coexistence between the two burning materials. Therefore, the term ‘transition’ is applied to Lome to describe the processes through which various domestic sources of energy for cooking ‘cohabitated’ and continue to share the same space, despite the predominant position of one or the other. These are forms of change in which a burning fuel (e.g., firewood) which has lost relevance over the years has not completely disappeared from the domestic energy landscape in Lome. The previous observation partly fits in the contention of historian Richard W. Unger who, in his introductory lines to *Energy Transitions in History: Global Cases of Continuity and Change* (2013), rightly addresses transitions as complex shifts in which ‘Older forms of energy use persisted with new ones’.¹⁹ Beyond this, Lome has provided another original angle to the energy-transition debate, namely how failing energy policies (e.g., the *LPG-isation* programme²⁰ in the Togolese context) can be a major catalyst for transformations. This having been said, in the next sections I

¹⁸ Bayerisches Staatsministerium, <http://www.lwf.bayern.de/forsttechnik-holz/holzverwendung/050613/index.php>

¹⁹ Unger, Richard W. *Energy Transitions in History: Global Cases of Continuity and Change*. Rachel Carson Center for Environment and Society, 2013/2.

²⁰ By LPG-isation programme I mean policy through which both the state and foreign oil companies have encouraged the shift from fuelwood to liquefied petroleum gas in domestic settings from the early 1980s onwards. I have elaborated more on this policy in section 3.5.

chronologically explore the noted changes in the private domestic settings in Lome by illuminating the dynamic contexts in which they took effect. The changes, as examined in the next sections, are argued to have happened in the long term and were of a socio-technical nature,²¹ deeply embedded in broader socio-economic, political, environmental and demographic transformations that occurred broadly in Togo and specifically in Lome. The changes in the private domestic setting in Lome have caused a gradual shift towards a complete abandonment of coconut shells, creating a dependence upon firewood over the course of the last several decades (see Figure 1). This full change, or the end of the transitional process, is my point of departure for the first notable transformation in private energy use in Lome. Why and how coconut shells were used as private domestic fuel, and what circumstances caused the shift away from them are the central concerns I elaborate on in the next section.

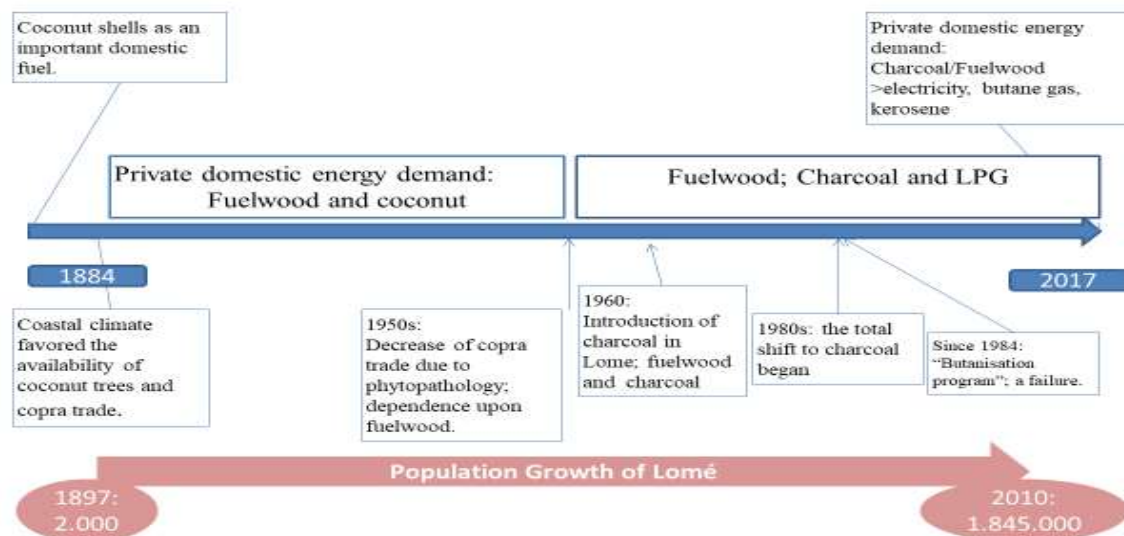


Figure 1: Transformations in private domestic energy use in Lome²²

²¹ See Pearson, Peter J. G. "Past, present and prospective energy transitions: an invitation to historians". For a substantial explanation of the socio-technical perspective of energy transitions see Geels, Franck W., and Schot, Johan W., "The dynamics of transitions: a socio-technical perspective", *Transitions to Sustainable Development: New Directions in the Study of Long-Term Transformative Change*, by Grin, John, Jan Rotmans, and J.W. Schot, Routledge, 2010, ; see also Kanger, Laur, and Johan Schot. 'Deep Transitions: Theorizing the Long-Term Patterns of Socio-Technical Change'. *EIST Environmental Innovation and Societal Transitions*, vol. 32, 2019, pp. 7–21., <https://doi.org/10.1016/j.eist.2018.07.006>

²² I owe the conception of this figure to Anna Ernst.

2.2 The heyday and decline of *yovo neto*: Understanding the first shift in the Lomean domestic cooking energy landscape (from the 1880s to the 1950s)

Coconut palms (*cocos nucifera*) can currently be found in small numbers along the beach and residential areas of Lome. Even in neighborhoods such as Dékon and Nyekonakpoe, which is referred to by older dwellers of Lome as '*netive*'²³, coconut trees are in front of few houses. A DGE report released in 2007 mentions coconut shells as part of 'green waste' used as burning material in marginal rural areas surrounding Lome but excludes its utilisation for cooking purposes in these areas.²⁴ This report, like others investigating the cooking energy sources in Lome private domestic real, is silent about the coconut trees' usage for domestic needs.²⁵ It can thus be concluded that its share in the domestic energy landscape is virtually zero in Lome. Equally, written historical primary sources perused in the archival sites in and outside Togo do not provide substantial information about coconut trees or the potential usage of their shells as domestic fuels in Lome. The point is that the previous observation genuinely hides the major role played by this plant as one of the most important cooking energy carriers for many Lome private domestic energy users.

The significance of *yovo neto*²⁶ (coconut shells), which were widely used as domestic burning material several decades ago, first emerges from the oral testimonies of interviewees in Lome. Taking this revelation as an important entry point, my first concern was to verify its scope by questioning the geo-climatic conditions of Lome in correlation with the development of coconut plants. In this process, I discovered that climatic conditions in the city were key to explaining the relevance of *yovo neto* as a domestic fuel in Lome some decades ago. The German botanist Hartmut Ern identified five ecological zones in Togo,²⁷ with Lome belonging to the fifth zone (see Map 2 below) characterised

²³ This Mina term was used by interviewees such as Attissou, Dékon to mean 'coconut bushes'; see interviews with Foly, Attissou, interviewed in Lome on 10 February 2017 and Dékon, To, interviewed in Lome on 19 March 2017.

²⁴ République du Togo. Direction Générale de l'Énergie. Rapport général provisoire. *Enquête consommation des énergies domestiques au Togo*, p. 36.

²⁵ See the reports quoted in section 1.2, footnotes 19 and 20.

²⁶ *Yovo neto* or *neto* is the Mina term used by some interviewees when they speak of coconut shells. Therefore, I take an emic perspective and use the term in the same way my interviewees did.

²⁷ See Hartmut, *Die Vegetation Togos. Gliederung, Gefährdung, Erhaltung*.

notably by insignificant rainfall (750–800 mm per annum),²⁸ compared to areas such as Badou or Kpalime (in the fourth zone) where annual rainfall can vary between 1,000 and 1,500 mm.²⁹ These climatic conditions are detrimental to the forest cover in Lome and reduce the possibility of subsistence fuelwood production and consumption for the capital.³⁰ Whereas Lome lacks sufficient forest cover for its auto-fuelwood production, its coastal position provides it with a type of soil identified by the former French research institute *Office de la recherche scientifique et technique outre-mer* (ORSTOM) as ‘*Sols peu évolués*’³¹.



Map 2: Map of Togo's ecological zones³²

In traditional soil classification, this corresponds to ‘inceptisols’, which Eswaran Hari describes as follows:

²⁸ Barbaud, *les problèmes forestiers de la république togolaise. Mission d'évaluation des projets forestiers envisagés par le gouvernement togolais*, p. 10.

²⁹ See Hartmut, *Die Vegetation Togos. Gliederung, Gefährdung, Erhaltung*.

³⁰ See Barbaud, *Les Problèmes Forestiers De La République Togolaise. Mission D'évaluation Des Projets Forestiers Envisagés Par Le Gouvernement Togolais* ; Hartmut, *Die Vegetation Togos. Gliederung, Gefährdung, Erhaltung*.

³¹ Lamouroux, M. *La Carte Pédologique du Togo au 1/1.000.000, Notice Explicative 34*, Office de la Recherche Scientifique et Technique Outre-Mer, Paris, 1969, p. 43.

³² Fontondji, *déterminants de la production – consommation du charbon de bois au Togo et vulnérabilité aux changements climatiques*, p. 21.

Generally, on young surfaces, [adding that] they occur in association with rock outcrops and sand dunes. These soils formed in recent coastal and riverine deposits. They formed in marine alluvium under brackish water conditions. [...] inceptisols are actual acid sulfate soils. When drained, potential acid sulfate soils (*sulfaquents*) are converted to actual acid sulfate soils (*sulfaquepts*).³³

Inceptisols, which exist in Lome and other coastal areas, are noted to be well-suited for coconut plantations.³⁴ Despite this evidence, there is another narrative that claims this plant has been introduced in Lome. This narrative is rooted in the term ‘*Yovo nin ti*’ (‘the tree of the white man’s nut’) used locally and specifically in most Togolese coastal areas and *Ewe- or Mina-speaking*³⁵ areas. Robert Cornevin, a French colonial administrator, historian and author of one of the first monographies on the history of Togo, uses the local designation of coconut tree to claim the foreign provenience of the plant.³⁶ In *Histoire du Togo* (1969), Cornevin refers to the local term ‘*yovo né*’ and notes that the plant was probably introduced by the Portuguese, who first circumnavigated the Togolese coasts in the second half of the fifteenth century and were later (from 1530 onwards) involved in the slave trade in the region.³⁷ Cornevin thus takes the same stance as Jonathan Sauer who also, though without using language as a benchmark, traces the origins of coconut trees along the West African, Brazilian and Caribbean coasts back to the presence of Portuguese navigators in the aforementioned areas nearly six centuries ago.³⁸ Whether coconut trees existed along the West African and Togolese coasts before the Portuguese arrived in the area is an interesting question, given the lack of a scholarly accepted consensus on the plant’s origins. As a matter of fact, the narratives in this regard are divided into two views, synthesised by Hugh C. Harries and Charles R. Clement as follows:

The location of the original home of the coconut palm, *Cocos nucifera*, and the extent of its natural dispersal are not known. Proponents of a South American origin must explain why it is not indigenous there and why it shows greatest diversity in southern Asia. Conversely, proponents of an

³³ Eswaran, Hari. “Classification of Soils: Soil Taxonomy” *Encyclopedia of Soil Science*, edited by Chesworth, Ward, Dordrecht : Springer, 2008, pp. 113–125.

³⁴ Lamouroux, *La Carte Pédologique du Togo au 1/1.000.000*, p. 43.

³⁵ Ewe is a language spoken in southern Togo

³⁶ See Cornevin, Robert. *Histoire Du Togo*. Berger-Levrault, 1959.

³⁷ Cornevin, Robert. *Histoire du Togo*. Berger-Levrault, 1969, p. 119.

³⁸ Sauer, Jonathan. “A re-evaluation of the coconut as an indicator of human dispersal” *Man across the sea*, edited by Riley, Carroll, L., Austin, TX: University of Texas Press. pp 309–319

Asian origin must explain why there are no Asian Cocosae and why the closest botanical relative to Cocos is in South America. Both hypotheses share the common problems of how, when, where and in what directions long-distance dispersal occurred.³⁹

Considering these difficulties regarding the exact origin of coconut trees, it becomes too simplistic in the absence of sophisticated historical records to argue with the introduction of the coconut tree as a Portuguese achievement based solely on the fact that the plant is locally termed ‘*yovo né*’, as observed by Robert Cornevin.⁴⁰ Therefore, precisely when and by whom coconut trees were introduced along the Togolese coast remains an open question, the answer to which is still lacking historical evidence.

However, what *is* known and historically documented is the evidence that the owner of the first coconut plantations in Lome in 1889 was Octaviano Olympio, son of Francisco Olympio, an Afro-Brazilian born in Salvador Bahia who ‘[...] came to Africa aboard one of the slave ships belonging to the rich and influential, slave trading Cerqueira Lima family in 1850’.⁴¹ By 1890, Octaviano’s coconut plantations had an estimated 12,000 plants. He was a pioneer among local traders in exporting copra to satisfy the booming and lucrative European market where, since the nineteenth century, copra had evolved into an essential component of products such as soap, margarine and candles.⁴² Realising the relevance of coconut palms and mainly their dried kernel for the colonial economy, the German colonial authorities established their own plantations in Lome and surrounding areas.⁴³

From 1893 onwards, the colonial administration through the *Deutsche-Togo Pflanzungsgesellschaft* (DTG (a German colonial plantation company⁴⁴)) expanded the cultivation of coconut groves to other coastal areas such as Aneho and Kpeme.⁴⁵ The

³⁹ Harries, Hugh C, and Charles R Clement. ‘Long-Distance Dispersal of the Coconut Palm by Migration within the Coral Atoll Ecosystem’. *Annals of Botany*, vol. 113, no. 4, 2014, pp. 565–570., doi:doi:10.1093/aob/mct293, available online at www.aob.oxfordjournals.org. Accessed 15 Sept.. 2020.

⁴⁰ Cornevin, *Histoire du Togo*, 1969, 184.

⁴¹ Amos, Alcione M. “Afro-Brazilians in Togo: the Case of the Olympio Family, 1882–1945”. *Cahiers D’études Africaines Cahiers d’études Africaines*, vol. 41, 2001, pp. 293–314.

⁴² Ibid.

⁴³ Ibid.

⁴⁴ My own translation.

⁴⁵ See (Cornevin, *Histoire du Togo*, 1969, 184).

DTG's annual reports show the increasing exports of copra from the colony: five tons (1906), 18 tons (1907), 25 tons (1908), 60 tons (1909), 85 tons (1910), 127 tons (1911), and 133 tons (1912).⁴⁶ The export increased significantly during the French mandate administration after the First World War, reaching 5,911 tons in 1954.⁴⁷ Importantly, for private domestic energy users in Lome, the copra trade made dried coconut shells available and freely accessible, to be used as a domestic fuel instead of firewood. Attissou Foly, an elderly inhabitant of Lome, remembered:

In the past and during the German colonial time, charcoal was not known here in Lome. When I was a child and young, an important energy source my grandparents and my parents used was '*neto*'⁴⁸ from 'coplal' [a corruption of copra], an important export product here in the region. The shells could be found everywhere, and one could gather them for fire in the kitchen. My grandparents told me '*neto*' was abundant everywhere around here, especially when the *dzeman* (German) were around and the copra business was flourishing. You didn't need to buy the *neto*; you could gather it for free. It is an effective burning material with the only disadvantage of not giving charcoal like firewood does.⁴⁹

Yovo neto were collected for free and used to reduce the overall dependence on firewood. The free access to coconut shells was economically justified, as it reduced the costs of firewood on the local market, especially in areas of the capital where gathering wood for free was impossible.

However, in the second half of the 1950s, a phytopathology called '*maladie de Kanyikopé*'⁵⁰ (Kanyikope disease) occurred along the Togolese coasts, harming thousands of coconut groves in Lome. The pathology first evolved in Ghanaian coastal areas before reaching Kanyikope, currently a suburb of Lome. In areas where this pathology was identified, its further propagation seemed to have been hampered by the felling of the attacked plants and replacing them with more resistant species. The implementation of this measure in the case of Togo led to a massive destruction of

⁴⁶ Deutsche-Togo Pflanzungsgesellschaft Jahresberichte: 1906-1912, Colonial Report, available at: http://www.ub.bildarchiv-dkg.uni-frankfurt.de/Bildprojekt/Lexikon/php/suche_db.php?suchname=Togo, Accessed June 2018.

⁴⁷ Cornevin, *Histoire du Togo*, 1969, p. 348. For a detailed overview of the export from 1915 to 1937 see Cornevin, Robert. *Le Togo: des origines à nos jours, avec 16 Cartes Et 53 Photographies*. Paris: Académie des Sciences d'Outre-Mer, 1988, p. 268.

⁴⁸ Term used for coconut shells in Ewe.

⁴⁹ Foly, Attissou, interviewed in Lome on 10 February 2017.

⁵⁰ Tété-Adjalogo Têtèvi Godwin. *De La Colonisation Allemande Au Deutsche-Togo Bund*. L'Harmattan, 1998, p. 100.

coconut trees, which was not followed properly by the introduction of more resistant species. The situation at international trade level, marked from the 1960s onwards by the gradual decline of the copra trade, hindered its return as a cash crop for the Togolese economy.

The situation of the coconut trees and their shells has been exacerbated by the demographic growth in Lome, which has displayed a remarkable continuity since the 1940s. The increasing population led to a spatial explosion of the city as more and more space was needed for housing.⁵¹ Consequently, the decline of the copra trade added to the spatial challenge posed by the steady population growth and facilitated the destruction of many hectares of coconut groves. Yves Marguerat concludes about Lome that ‘[...] *c’est sur [les] cocoteraies que se fit l’expansion*’.⁵² Due to the felling of coconut plantations for housing purposes, finding *yovo neto* became impossible.⁵³ The gradual shortage of coconut shells facilitated Lome private domestic cooking energy users’ progressive dependence upon firewood in Lome. As a result, firewood took over and became the fuel predominantly used in the capital.

2.3 Firewood and charcoal as the main cooking fuels from the 1960s onwards

As remembered by some interviewees,⁵⁴ firewood and charcoal were inexpensive due partly to low transport costs – one of the key determinants of the final price of fuelwood in Lome – as the distance between the main supply areas (e.g., Tsévié, Vogan and Notsé) and Lome was less than 150 km. Despite the relatively low cost of both burning materials in the 1960s, most users preferred firewood to charcoal because the former burns faster than the latter;⁵⁵ in other words, cooking with firewood is faster than with charcoal.⁵⁶ The predominance of firewood as a domestic energy source and its preference over charcoal

⁵¹ Marguerat, Yves. *Dynamique urbaine, jeunesse et histoire au Togo: articles et documents (1984–1993)*. Presses de l’université du Bénin, 1999.

⁵² *Ibid.*, p. 9.

⁵³ Dékon, To, interviewed in Lome on 19 March 2017.

⁵⁴ *Ibid.*, Foly, Attissou, interviewed in Lome on 10 February 2017; Avédji, Gnonou, interviewed in Lome on 8 February 2017.

⁵⁵ Kom, Ba Té, interviewed in Lome on 25 March 2017.

⁵⁶ *Ibid.*

in the 1970s was undeniable, according to Grut, who conducted one of the first studies on fuelwood consumption in Lome. He revealed that 148,000 people consumed 58,000 cubic metres of firewood versus 12,500 tons of charcoal in 1970.⁵⁷ In 1980, a study by Pierre Barbaud provided similar figures that testify to the hegemony of firewood as domestic fuel in Lome. The figures show that 242,000 inhabitants of Lome – note the demographic dynamic growth of 6% in 10 years – used 51,000 cubic metres of wood compared to 20,000 tons of charcoal. This suggests that, although firewood was predominantly used, its consumption started to decrease, whereas charcoal usage was in a sharp increase.⁵⁸ This, in fact, marked the beginning of the transitional process towards charcoal. Pierre Barbaud, who first noted the gradual shift to charcoal, came up with some impressions rather than solid explanations of the trend by concluding as follows: ‘*Régression progressive du bois de feu, produit encombrant, salissant (fumées) et peu adapté à la vie urbaine [...] -progression du charbon de bois en raison de l’accroissement de la population et de la diminution de consommation du bois de feu*’.⁵⁹ Barbaud’s report is valuable, as it was the first to address the early stages of the process of transition to charcoal. It also helped to trace the beginning of the trend back to 1980. However, the report revealed less about the driving forces of the ongoing switch from firewood to charcoal. Therefore, the next section outlines the socio-political, environmental, demographical and economic factors that facilitated the shift to charcoal.

2.4 Background of the gradual substitution of firewood for charcoal (from the 1980s onwards)

In their chapter, *Fuel Switching and Saving*, Gerald Leach and Robin Mearns posed the question as to whether an energy transition was happening in Africa in the 1980s. Their answer, interestingly, was ‘[...] we do not know’.⁶⁰ Additionally, Leach and Mearns,

⁵⁷ Grut, M. *Development des ressources forestieres, Togo: marche de charbon de bois, de bois de chauffage et de bois rond*. Rome, FAO, 1971 FAO, cited by Barbaud, *les problèmes forestiers de la république togolaise. Mission d’évaluation des projets forestiers envisagés par le gouvernement togolais*, p. 4.

⁵⁸ Barbaud, *les problèmes forestiers de la république togolaise. Mission d’évaluation des projets forestiers envisagés par le gouvernement togolais*, p. 5.

⁵⁹ *Ibid*, 4.

⁶⁰ Leach, Gerald, and Robin Mearns. *Beyond the Woodfuel Crisis: People, Land and Trees in Africa*, p. 238.

overlooking the dynamism and complexity of the transition process, used surveys conducted in India and Niger to determine the *sine qua non* conditions under which fuel switching in Africa is expected to happen. The essential driving forces, they thought, would be (1) access to dependable supplies of modern fuels in sufficient quantity, and (2) sufficient income to invest in devices for using them or to overcome other barriers to adopting modern fuels (i.e., LPG, kerosene and electricity).⁶¹ The reason for recalling these authors and their observations is twofold. One is to use the example of Lome to answer both authors' question as indicated at the beginning of this section. The second reason is to show how the experiences in Lome challenge some of the main aspects of the conditions defined by Leach and Mearns that, they argue, would make the transition to modern fuels happen. As evidence, in the 1980s, as is detailed below, LPG and kerosene were available in Lome in reasonable quantities,⁶² and LPG was even subsidized by the government. Despite this evidence, the gradual shift noted in the domestic energy landscape of Lome from the 1980s onwards was interestingly from firewood to charcoal rather than to LPG or kerosene. The question now is exactly how, when and under which specific conditions this shift grew over time.

In fact, while reporting for the FAO, UNDP and the Togolese government with regard to wood products in Togo in 1991, Alioune Tamchir Thiam noted that the *Région des Plateaux* and *Région Maritime* of Lome were consuming 54% and 80% of the national demand for firewood and charcoal and pointed out that the Togolese capital switched from firewood to charcoal.⁶³ This signifies that the transition from firewood to charcoal⁶⁴ which started in the 1980s, as noted above, was effective in 1990. Thiam, one of the first authors to pay significant attention⁶⁵ to the phenomenon, viewed this shift as a result of

⁶¹ Ibid, 239.

⁶² See Barandao et al. *Etude sur l'utilisation d'énergie domestique et artisanales au Togo et propositions de programmes d'économie d'énergie d'origine ligneuse*. Projet PNUD /FAO/TOG/86/008/ Ministère du développement rural, programme des nations unies pour le développement, organisation des nations unies pour l'alimentation et l'agriculture, Lome, Juillet 1992.

⁶³ Thiam, *Etude de marchés des produits ligneux au Togo*, pp. 6–7.

⁶⁴ The transition to charcoal as presented and discussed in this section does not mean that all users of fuelwood have abandoned firewood for charcoal. It is simply based on the fact that the lion's share of domestic energy is currently met with charcoal.

⁶⁵ Pierre Barbaud was the first expert to report on the beginning of the new trend, namely the shift to charcoal in Lomé without deeply explaining the driving forces of this change in his report. Barbaud, *les problèmes forestiers de la république togolaise. Mission d'évaluation des projets forestiers envisagés par le gouvernement togolais*, p. 5. Thiam's

an increase in fuelwood users' purchasing power and the improvement in living conditions.⁶⁶ However, Thiam omitted the fact that his explanation for the switch is deeply embedded in the notorious and highly normative 'ladder theory'. This approach, reminiscent of the modernisation of theoretical thought, explains the process of fuel switching using the linear metaphor of a ladder. According to Richard Hosier and Jeffrey Dowd,

The underlying assumption [of the ladder theoretical approach] is that households are faced with an array of energy supply choices which can be arranged in order of increasing technological sophistication. At the top of the list is electricity, while the low end of the range includes fuel wood, dung, and crop wastes. As a household's economic well-being increases, it is assumed to move 'up' the energy ladder to more sophisticated energy carriers. If the economic status decreases, through either a decrease in income or an increase in fuel price, the household is expected to move 'down' the energy ladder to less-sophisticated energy carriers. Thus, the energy ladder serves as a stylized extension of the economic theory of the consumer: as income rises (falls) households consume not only more (less) of the same goods, but they also shift to consuming higher (lower) quality goods.⁶⁷

Viewing Thiam's argument through the lens of the 'ladder theory' means merely that the shift to charcoal in Lomé occurred in line with the increase in income of dwellers in the Togolese capital from the 1980s onwards. In addition to being linear and simplistic, this explanation also reduces the switch to charcoal to solely economic variables. As such, it clearly ignores the complexity of change in domestic energy use as a dynamic process that cannot be captured by a straightforward economic variable. A last piece of evidence that intrinsically disputes Thiam's explanation concerns the socio-political and economic context of the 1980s in which he observed the increase in income. How could this have been possible when the whole country was faced with a severe economic downturn during in this period? Economic malaise forced the government to introduce drastic measures,

report was the first that substantially sought an explanation of the switch to charcoal in Lomé that he called '*... la première phase de transition énergétique...*' Thiam, *Etude de marchés des produits ligneux au Togo*, p. 7.

⁶⁶ Ibid, 6.

⁶⁷ Hosier, Richard H, and Jeffrey Dowd. "Household Energy Use in Zimbabwe: An Analysis of Consumption Patterns and Fuel Choice" *Energy for Rural Development in Zimbabwe*, edited by Richard Hosier, pp. 287–288. For a consistent review of the literature on the ladder theory, See Toole, Rebecca. "The Energy Ladder: A Valid Model for Household Fuel Transitions in Sub-Saharan Africa?". *Tufts University*, 2015, Master's thesis, available at <https://sites.tufts.edu/MaryDavis/files/2015/06/ThesisFinal.pdf>; Accessed May 2019.

such as a 5% reduction of salaries in the form of an ‘*impôt de solidarité*’⁶⁸ (solidarity tax). Speaking about this critical socio-economic moment, Robert Cornevin notes that

*La crise en effet était sérieuse. Durant l’euphorie de 1975, époque où le phosphate atteignait 100 dollars la tonne, alors que le dollar était au plus haut [...] Le phosphate tombait en 1981–1982 à 40 dollars la tonne alors que le dollar amorçait un déclin. Une conjoncture agricole défavorable au niveau du café, du cacao et du coton ajoutait à l’embarras financier.*⁶⁹

In short, 1983 was marked with an unprecedented budgetary austerity with significant social and economic consequences on the people in both rural and urban areas.⁷⁰ To mitigate the impacts of the crisis, the country necessitated four structural adjustment programmes from the World Bank and the International Monetary Fund between 1983 and 1988.⁷¹ In light of such a critical economic context, it seems implausible that an increase of household income in the capital could have been recorded or have stimulated a gradual transition to charcoal. Unlike Thiam, I argue that the gradual transition to charcoal in Lome was a complex and dynamic process that resulted from the interconnections between an array of fragmented elements. By arguing so, I acknowledge that the price difference between firewood and charcoal played a role in transforming the user’s attitude. Thiam reported that

*À Lomé, compte tenu des prix relatifs des sources d’énergie domestique, des habitudes culinaires, du coût et de l’efficacité thermique des équipements utilisateurs, la cuisson au charbon de bois se révèle être la moins chère. Comparativement à la cuisson au charbon de bois, la cuisson au bois de chauffe revient 1,7 fois plus chère [...].*⁷²

Thiam fails to note that most users in Lome generally cannot produce firewood or charcoal. They depended and still mostly rely on private traders or *Commerçants Généralistes* (CGs; see chapter 4) who ensure the transport of fuelwood from the supply areas to Lome and organise its sale within the capital city. As such, CGs are important agents capable of influencing not only the whole supply chain but also user behavior. The concern is that with charcoal being a domestic fuel of secondary importance in Lome until

⁶⁸ Cornevin, R. *Le Togo: des origines à nos jours, avec 16 Cartes Et 53 Photographies*, p. 433.

⁶⁹ Ibid.

⁷⁰ Ibid.

⁷¹ Girod et al., *L’énergie en Afrique. La situation énergétique de 34 pays de l’Afrique subsaharienne et du Nord*, p. 384.

⁷² Thiam, *Etude de marchés des produits ligneux au Togo*, p. 31.

the end of the 1970s, a group of CGs began to find it too strenuous to maintain Lome's supply of both charcoal and firewood.⁷³ Consequently, they decided to concentrate their trade more on charcoal and less on firewood. This decision affected the supply chain, in the sense that the few CGs who maintained the supply of both burning materials increased the price of firewood in the capital. Interestingly, this increase in the price of firewood contradicts the classical principles of the law of supply, as it did not lead to more firewood on the market. Rather than maximising profits from this change in the supply chain, the aforementioned group of CGs have clearly stuck to their decision to supply Lome with charcoal. Therefore, in the 1980s, the high quantity of charcoal on the market gradually made it cheaper than firewood. This, in turn, fueled the gradual shift to charcoal among users, a change that can be related to the law of demand, not in terms of price per kilogram, but rather because the price-quantity relationship of fuel and usage frequency made the former economically more attractive, as testified by Maman Ado:

Cooking with wood became more expensive than with charcoal. When me and my child bought charcoal for 500 francs, for example, we could use it for at least four to five days if we don't cook anything big. But when we bought wood for 500 francs, it would hardly last a day. Traders started to sell, for example, four small rods of wood for 250 francs. A pile of four big rods could cost 250 or sometimes up to 5000 francs depending on the size. A friend and me used to buy a pile for 5000 francs but often it wasn't enough wood. But when we bought a bag of charcoal for 5,000 or 8,000, it lasted longer than a pile of wood for 5,000, especially when we were lucky enough to have hard charcoal that we could mix with light one.⁷⁴

However, the switch from firewood to charcoal – the latter being more economically attractive for users – did not account for the price per kilogram, because a kilogram of firewood from the 1970s until 1986 was half the price of charcoal, as demonstrated by data from the INSEED (formerly the *Service National de la Statistique*) presented in Table 1.

Another key element in understanding the context and process of the shift to charcoal relates to the impacts and implications of the population growth. This is relevant, given the socio-economic crisis of the 1980s that led to a massive influx of thousands of rural

⁷³ See Da, Govi Hanoukopé, interviewed in Lome on 12 January 2017.; Avédji, Gnonou, interviewed in Lome on 8 February 2017; Ma, Rose, interviewed in Lome on 18 January 2017.

⁷⁴ Maman, Ado, interviewed in Lome on 19 February 2017.

inhabitants to Lome, which posed two major challenges to the capital city for the second time: demographic increase and spatial occupation.⁷⁵

F cfa/kg	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Charcoal	30	32	39	53	58	52	47	38	45	45
Firewood	5	-	12	15	15	18	-	18	22	20

Table 1: Charcoal and firewood prices in Lome from 1977 to 1986⁷⁶

Based on the 1981 census, Lome's population was estimated at 390,000, reaching 620,000 in 1990.⁷⁷ Similar to the situation in the 1950s, this demographic development affected Lome's urban space by forcing its territorial extension notably from 6,907 ha (hectares) in 1985 to 11,513 ha in 1995.⁷⁸ The combination of both factors caused a variety of problems, such as a lack of basic infrastructure, inefficient sanitation, environmental degradation, and more importantly, a housing crisis,⁷⁹ making a majority of the inhabitants in Lome – six out of 10 tenants –.⁸⁰

The impacts of demographic growth as stimuli in the process of fuel switching in the case of Lome, however, are embedded in the manner in which they shaped the social relationship between tenants and landlords in the Togolese capital. Boukary Ouedraogo, in his study on energy use in urban Ouagadougou, where 70.1% and 6.2% of households prefer firewood and charcoal respectively, reveals the role of landlords in the fuel switching process. He notes, for instance, that 'a household head who is owner of his house is not expected to have higher purchasing power than a tenant, but he is, to a certain

⁷⁵ SOFRECO. *Politique Nationale de l'énergie. Rapport préliminaire*, pp. 36-37.

⁷⁶ Relevés du Service National de la Statistique, current the *Institut National de la Statistique des Études Économiques et Démographiques*, cited by Bertrand, Alain. Bertrand, *Projet Aménagement Forestier et Reboisements Industriels (AFRI) Marchés Loméens des Produits Forestiers et Commercialisation des Productions du Projet AFRI IIIème Partie*. République du Togo Office National de Développement et d'Exploitation des Ressources Forestières (ODEF), Centre Technique Forestier Tropical, Août 1987.

⁷⁷ Biakouye, Kodjo Awussu. 'Lomé Au-Delà De Lomé : Étalement Urbain et territoires dans une capitale d'Afrique Sud-Saharienne'. *Université de Lomé and Nanterre*, 2014. Phd Thesis, p.60.

⁷⁸ *Ibid.*, p. 88.

⁷⁹ *Ibid.*, p. 3.

⁸⁰ Adjosse, Bernadin. "Pauvreté à Lomé : Analyse des données" Togo Presse, 16 January 2016, <http://togopresse.tg/pauvrete-a-lome-analyse-des-donnees/>. Accessed 10 March 2017.

extent, in charge of the management of his space (mainly for storing wood energy)'.⁸¹ Homeowners in Ouagadougou, in their attempt to maintain control over the space, urge tenants to switch to charcoal, which requires less space for storage compared to firewood.⁸² Similar to Ouagadougou, the role of landlords in the process of fuelwood switching in Lome has been pivotal, although in showing a different trend. In Lome, most tenants have to obey the *diktat* of the landlords who determine the type of energy they tolerate on their premises. This *diktat*, in fact, has been translated into the prohibition of firewood in favor of charcoal.⁸³ The reasons for the hostility of most of homeowners regarding the use of firewood are provided by a landlord:

In fact, smoke in a sheet metal house is harmful to the roofs, which are quickly punctured by the constant heat and especially by the smoke. Because the ventilation system in sheet metal houses does not allow the heat to escape. But if you look at our old houses, they are made of straw and have windows that are designed for smoke. So modern houses are not made with straws, which themselves allow the smoke to escape, nor with windows that are well adapted. So, it is because of the fact that the metal sheets spoil very quickly when fuelwood fires are constantly lit in these houses that some owners are right to prohibit them.⁸⁴

In order to avoid conflicts with landlords, most tenants unwillingly underwent what can be perceived as a 'forced transition' to charcoal. Aside from the formal ban on firewood, the use of this burning material is socially perceived among tenants as a sign of poverty and as the inability of the users to adopt 'modern' urban ways of living. Modern urban ways of living, in this case, are synonymous with adopting charcoal for cooking in lieu of firewood. In this respect, firewood is socially perceived and presented as the 'resurrection' of the 'traditional' rural cooking habits which do not fit with the modern urban life characterised by the usage of a cleaner and less-smoke-producing fuel. An illustration of this as a driving element of the transition is given by Maman Louise, who justifies her switch from firewood to charcoal as follows:

⁸¹ Ouedraogo, B. 'Household Energy Preferences for Cooking in Urban Ouagadougou, Burkina Faso'. *ENERGY POLICY*, vol. 34, no. 18, 2006, pp. 3787–3795.

⁸² Ibid.

⁸³ Maman, Louise, interviewed in Lome on 22 January 2017.

⁸⁴ Dékon, To, interviewed in Lome on 19 March 2017.

When you are tenant and you cook with firewood, it means that you are not modern. But when you cook food for selling, you sell something like com⁸⁵ for example, then you can easily use firewood because in this case you cook in large quantities and a food like com consumes much fuel. But suppose that you are living in a rented accommodation and share your yard with 10, 8, 6 other tenants. If in such a situation you decide to cook with wood every time, the other tenants make fun of you; it's like you are too poor or that you have remained like a village girl because as you know, it is in the village that people cook more with wood at home.⁸⁶

As should now be clear, it is the holistic consideration of the array of elements rooted, as indicated above, in 1) how the traders managed the fuelwood supply; 2) changing and challenging price concerns for both charcoal and firewood, especially for users; 3) implications of the demographic dynamics and the challenges they posed to the social relationships between landlords and tenants, and tenants amongst themselves; and 4) the complexity of the interconnections between the three previous elements that help better capture the conditions in which the gradual shift from firewood to charcoal emerged in the 1980s.

2.5 The LPG-isation programme and its links to the transition to charcoal in Lome (1980s to 2017)

To allow a complete picture of the transition process, this section focuses on the policy of *LPG-isation* undertaken by the Togolese in the 1980s. The aim was to facilitate a substitution of charcoal with LPG and show the ties between the implementation of this policy and the shift to charcoal. Through the *LPG-isation* program, critically contextualised in Chapter 5 as the indirect intervention of the state in the domestic energy issue, oil companies (i.e., Shell and Total) benefited from an exemption from the general turnover tax and a reduction of the customs tariff on LPG.⁸⁷ Consequently, Shell and Total, the main LPG suppliers in the country, launched ‘Operation *Adopko Gbadza*’ in 1984 and ‘Operation *Nopeli*’, respectively, in 1986.⁸⁸ It was the first time in Togolese

⁸⁵ Local food made of fermented maize

⁸⁶ Maman, Louise, interviewed in Lome on 22 January 2017.

⁸⁷ See Barandao et al. *Etude sur l'utilisation d'énergie domestique et artisanales au Togo et propositions de programmes d'économie d'énergie d'origine ligneuse*.

⁸⁸ *Ibid*, 77.

energy history that such large-scale operations targeted private domestic energy users of all social layers, notably those in the capital.

Prior to 1984, LPG was available on the Togolese energy market. Its usage, however, was exclusively restricted to hotels, expatriates and a small number of wealthy Togolese citizens. It was sold in 12.5 kg and 38 kg bottles. Until 1983, a bottle of 12.5 kg LPG cost 6,065 Fcfa.⁸⁹ Shell made use of the local terms ‘*adokpo*’ meaning cooking stove and ‘*gbadza*’ (for everyone, for all),⁹⁰ certainly borrowed from the 1980s Togolese popstar, Julie Akofa Akoussah, who had released her hit ‘*Adokpo Gbadza*’ a year earlier. Since Shell’s aim was to reach as many private domestic energy users as possible,⁹¹ using a local term from a popular song was evidently a marketing strategy to bind the product with the social and psychological environment, in order to promote its acceptance among users in Ewe-speaking areas as a whole and Lome in particular. Shell, in light of this operation, expanded the LPG models in terms of their reservoir capacity with two additional bottle sizes: 2.75 kg and 6 kg. In terms of the accessibility of both bottles, authors of a project conducted for the FAO on domestic energy in Togo conclude that

*‘Adokpo Gbadza’ de 2.75 kg, dont le prix total (bouteille, trépied, brûleur) à (sic) est de 16.161 F. On peut considérer que ce prix d’acquisition soit accessible aux couches des populations des villes surtout ayant un revenu mensuel permettant outre des recharges mensuelles de la bouteille au prix de 284 F/kg de gaz butane soit 781 F la bouteille. L’introduction du modèle de 6 kg offre en effet un choix aux consommateurs. La seule contrainte se situe au niveau du prix d’acquisition et de recharge qui sont respectivement de 20.855 F et 1.0704 F’.*⁹²

Two years later in 1986, the French oil company Total, present in Togo since 1956, entered the domestic gas sector with a 6 kg bottle. Guided by the same motivation as its rival Shell, the aim of embedding the product in the social milieu to facilitate its diffusion saw Total to introduce its ‘*Nopeli*’ campaign, meaning literally ‘there is a place for living’ in Ewe.⁹³ Total’s 6-kg LPG bottle offered users a savings of 2,275 Fcfa compared to Shell’s bottle of the same capacity. However, Shell’s strategy of having four types of LPG

⁸⁹ Ibid, 78.

⁹⁰ Ewe and Mina, both Languages are spoken in the southern part of Togo and in Lomé

⁹¹ Ibid., 78

⁹² Ibid., 78–79.

⁹³ Ibid., 79.

bottles on the market (i.e., 2.75 kg, 6 kg, 12.5 kg and 32 kg) offered several alternatives to users, depending on their needs and purchasing power.

Shell and Total were joined later by the US company Mobil Oil which started its operation of LPG gas supply. The three companies, which were based in the capital where a majority of consumers were located, recorded an increase in the quantity they provided in the Togolese LPG market as a whole, with a particular focus on Lome. In October 2010, after Shell's withdrawal as an LPG supplier,⁹⁴ the Burkinabe *Société de Distribution de Gaz African Petroleum Company* (SODIGAZ APC⁹⁵) inaugurated its activities in Lome and brought five sizes of LPG bottles (i.e., 3 kg, 6 kg, 12.5 kg, 25 kg and 50 kg) to the market. Becoming the second company in the realm of LPG supply, SODIGAZ APC likewise benefited from the governmental subsidy, as acknowledged in a report on energy subsidy in Togo:

*Le prix à l'importation du gaz [...] est 800 à 900 FCFA le kilogramme y compris les frais de douanes et tous les autres frais. Sans la subvention, le produit devrait coûter entre 950 et 1000 FCFA le kilogramme aux consommateurs. Mais les frais alloués pour la subvention réduisent les coûts ce qui ramène le kilogramme à 450 Fcfa.*⁹⁶

In 2015, Corlay Togo SA, a subsidiary of MRS Holdings LTD that was founded in 1995 in Nigeria as an oil and gas conglomerate, appeared in Togo as a fuel (including LPG) and lubricant supplier. Since the 1980s, all companies supplying Togo and Lome in particular with LPG, in the process of diffusing the product on the market, resorted to three main strategies. The first was to negotiate with Togolese authorities on a reduction of taxes on butane gas in order to reduce its price for users. The second consisted of making LPG available to consumers through a chain of retail stores in the capital where the product could not only be purchased, but empty bottles could also be discarded or exchanged. The third strategy concerns radio and television advertising campaigns and exhibitions and demonstrations of LPG by travelling agents to people in different areas

⁹⁴ When exactly and why Shell withdraw is still unclear. The reports that I accessed on the fuelwood issue in Togo do not provide consistent information on this topic .

⁹⁵ SODIGAZ APC is a Burkinabe gas distribution company.

⁹⁶ Gnrandou, K. M et Sena, A: Rapport d'Étude: Subvention à l'Énergie au Togo. Mai-Septembre 2013.

of the city.⁹⁷ Due to the governmental subsidy, the price of LPG per kg fell from 485 Fcfa to 284 Fcfa in the early 1990s, representing a 40% reduction from the initial price.⁹⁸ Pursuing its aim to support the substitution from wood energy to fossil fuels, the Togolese government subsidy allocated to LPG led to a significant reduction in the butane gas price per kg from 680 Fcfa to 280 Fcfa, a decrease of 59% between 1998 and 2006.⁹⁹ However, from 2006 to February 2017, the LPG price per kg increased from 280 Fcfa to 520 Fcfa. As an oil product, the increase or decrease in LPG cost depends strongly on the fluctuation of oil prices in the international markets, which in turn determines the size of the subsidy the government has to allocate to LPG suppliers.

This is an evidence that publicity, combined with multiple retail stores in different areas of Lome, contributed to making LPG more visible in the private domestic energy landscape. Nevertheless, LPG consumption since the 1980s is still below 5% at national level, with 4.3% estimated in urban areas and 0.02% in rural regions. This means that, like in Senegal, which is considered a pioneer in the butanisation programme in West Africa,¹⁰⁰ the transition stimulated by subsidy has failed. The projected and expected transition has not occurred, and charcoal has remained an important domestic energy source, specifically in Lome, due to certain factors.

Gupta and Köhlin Kolkata highlight the ‘reliability of supply’ as one of the key elements that explained the failing transition to fossil fuels (LPG) in Kolkata.¹⁰¹ This does not seem applicable to Lome because LPG shortages are uncommon, possibly due to the concentration of the supply companies in the capital. Constraints regarding the failed adoption of LPG in Lome, despite the subsidies, can instead be linked to what Edwards

⁹⁷ Barandao et al. *Etude sur l'utilisation d'énergie domestique et artisanales au Togo et propositions de programmes d'économie d'énergie d'origine ligneuse*, p. 80.

⁹⁸ Ibid.,

⁹⁹ République du Togo. Direction Générale de l'Énergie. Rapport général provisoire. *Enquête consommation des énergies domestiques au Togo*, p. 13.

¹⁰⁰ Communauté Économique des États de l'Afrique de l'Ouest. Union Économique et Monétaire de l'Afrique de l'Ouest. *Livre Blanc pour une Politique Régionale sur l'Accès aux services énergétiques des populations rurales et périurbaines pour l'atteinte des objectifs du Millénaire pour le Développement*, Janvier 2006, p.17.

¹⁰¹ Gupta, Gautam, and Gunnar Köhlin. “Preferences for Domestic Fuel: Analysis with Socio-Economic Factors and Rankings in Kolkata, India”. *ECOLEC Ecological Economics*, vol. 57, no. 1, 2006, pp. 107–121.

and Langpap identify as ‘start-up cost’¹⁰² or ‘stove barrier’.¹⁰³ The high cost that domestic energy users have to pay to acquire LPG equipment is perceived, in the logic of this approach, as a hindrance to their transition to butane fuel.¹⁰⁴ This, in the case of Lome in particular, is illustrated in a survey on consumption of domestic energies in Togo which underlined

*En effet, pour l'utilisation de ce combustible [GPL], le premier achat par le client consiste en l'acquisition de tout un équipement comprenant la bouteille de gaz, le brûleur, le support (ou le trépied), un réchaud ou une cuisinière. Ainsi, [...] ceux qui connaissent ce combustible, qu'ils soient utilisateurs ou non, avancent que le coût d'acquisition du gaz et surtout des équipements nécessaires pour son usage revient extrêmement très cher [...]*¹⁰⁵

In concrete terms, the acquisition of a 6-kg bottle (gas, burner, tripod and cooker) required during Total's ‘Operation *Nopeli*’ in 1986 was estimated at 18,610 Fcfa¹⁰⁶ and 15,000 Fcfa in 2018.¹⁰⁷ According to SODIGAZ APC the initial acquisition of the required equipment at 45,860 Fcfa (for a 12-kg bottle) and 24,110 Fcfa, respectively, to acquire the 6-kg bottle.¹⁰⁸ At the same time and in the same context, the first acquisition of firewood- or charcoal-cooking stoves requires less investment; based on data collected in the field, the price of charcoal-cooking stoves locally produced and sold on the streets of Lome was less than 1,500 Fcfa in the 1980s and early 1990s¹⁰⁹ and is currently between

¹⁰² John, H Y Edwards, and Christian Langpap. “Startup Costs and the Decision to Switch from Firewood to Gas Fuel”. *Landeconomics Land Economics*, vol. 81, no. 4, 2005, pp. 570–586.

¹⁰³ Van, Der Kroon, Bianca, et al. “The Energy Ladder: Theoretical Myth or Empirical Truth? Results from a Meta-Analysis”. *Renewable and Sustainable Energy Reviews Renewable and Sustainable Energy Reviews*, vol. 20, 2013, pp. 504–513.

¹⁰⁴ Sathaye, Jayant, and Stephen Tyler. “Transitions in Household Energy Use in Urban China, India, the Philippines, Thailand and Hong Kong”. *Transitions in Household Energy Use in Urban China, India, the Philippines, Thailand and Hong Kong*, Annu. Rev. Energy Environ. 1991. 16:295-335, 1991, hdl.handle.net/10625/16983. Accessed 16 March 2020.

¹⁰⁵ République du Togo. Direction Générale de l'Énergie. Rapport Général Provisoire. *Enquête consommation des énergies domestiques au Togo*, p. 82.

¹⁰⁶ Barandao et al. *Etude sur l'utilisation d'énergie domestique et artisanales au Togo et propositions de programmes d'économie d'énergie d'origine ligneuse*, p. 79.

¹⁰⁷ Total Togo. Bouteilles de Gaz. <http://www.totaltogo.com/ga/bouteilles-gaz-b2c.html> Accessed 17 January 2018.

¹⁰⁸ SOFRECO. *POLITIQUE NATIONALE DE L'ENERGIE. Rapport Préliminaire*, p. 123.

¹⁰⁹ Barandao et al. *Etude sur l'utilisation d'énergie domestique et artisanales au Togo et propositions de programmes d'économie d'énergie d'origine ligneuse*, p. 98.

1,000 and 5,000 Fcfa.¹¹⁰ The durability of such cooking stoves, according to local producers, is between one and three years, depending on frequency of use and strict adherence to usage guidelines.¹¹¹ Likewise, the acquisition of improved cooking stoves, the price of which was estimated to vary between 2,500 and 3,800 Fcfa in the 1990s,¹¹² and is currently between 1,000 and 5,000 Fcfa at markets in Lome, is much less expensive than LPG equipment.

This shows the hidden face of the subsidy that identifies the price per kilogram per se, even though the use of LPG depends firstly on the acquisition of the initial equipment. In so arguing, I join Rasmus Heltberg's criticism of the subsidies expressed as follows: 'Price subsidies for modern fuels have historically been used in the name of promoting fuel switching but price subsidies are often undesirable because of their high fiscal costs, poor targeting (especially in the case of LPG) [...]'¹¹³. Many studies in recent years which criticised the subsidies and called for their reforms mostly deplored the fact that the subsidies miss the social layers that are supposed to benefit from them.¹¹⁴ Only a small portion of the urban rich in Dakar¹¹⁵ and Lome can afford the high initial investment cost, which has hindered the switch to LPG.

Furthermore, the non-shift to LPG is also rooted in the possibilities available for users to decide about the quantity of charcoal they acquire depending on their needs. This is to

¹¹⁰ Adokpo, Woto, Avedji, interviewed in Lome on 15 March 2017.

¹¹¹ Ibid.

¹¹² Barandao et al. *Etude sur l'utilisation d'énergie domestique et artisanales au Togo et propositions de programmes d'économie d'énergie d'origine ligneuse*, p. 98.

¹¹³ Heltberg, Rasmus. "Fuel Switching: Evidence from Eight Developing Countries". *Energy Economics*, vol. 26, no. 5, 2004, pp. 869–887.

¹¹⁴ Laan, Tara, et al. "Strategies for Reforming Fossil-Fuel Subsidies: Practical Lessons from Ghana, France and Senegal. Strategies for Reforming Fossil-Fuel Subsidies: Practical Lessons from Ghana, France and Senegal" *International Institute for Sustainable Development*. (IISD), Geneva, 2010, lac.gc.ca/.item?id=strategies_for_reformin&op=pdf&app=Library. Accessed 5 December 2017; Whitley, Shelagh, and Laurie Van der Burg. *Fossil Fuel Subsidy Reform in Sub-Saharan Africa: from Rhetoric to Reality*. The New Climate Economy, 2010, pp. 1–88, http://newclimateeconomy.report/2015/wp-content/uploads/sites/3/2015/11/Fossil-fuel-subsidy-reform_from-rhetoric-to-reality.pdf Accessed 11 March 2018; Alleyne, Trevor. "Energy Subsidy Reform in Sub-Saharan Africa: Experiences and Lessons". *Energy Subsidy Reform in Sub-Saharan Africa: Experiences and Lessons*., International Monetary Fund, 2013, www.imf.org/external/pubs/ft/dp/2013/afr1302.pdf. Accessed 16 March 2019.

¹¹⁵ Communauté Économique des États de l'Afrique de l'Ouest. Union Économique et Monétaire de l'Afrique de l'Ouest. *Livre Blanc pour une Politique Régionale sur l'Accès aux services énergétiques des populations rurales et périurbaines pour l'atteinte des objectifs du Millénaire pour le Développement*, p. 17.

say that, unlike LPG, charcoal in Lome can be purchased whether in high amounts (a 50-kg or 100-kg bag costs 7,500 Fcfa and 15,000–17,000 Fcfa, respectively) or small amounts of 50 Fcfa to 500 Fcfa for daily or weekly needs. Responding to the question of why she still uses charcoal and not LPG, Nana explained that:

Before, as now, it is easier to go and buy charcoal for 50 or 100 francs at the roadside. If I have the money for a bag, then I buy it for either 7,000 or 8,000 francs depending on my means and my pocket. But I can't do the same with gas. Who can sell me gas for 200 francs or 150 francs?¹¹⁶

To avoid paying ‘large lump sums’¹¹⁷ for LPG, most users in Lome prefer not to switch from charcoal based on the above explanation. Moreover, oil companies involved in the supply of LPG, in their aim to reach as many consumers as possible, deployed a set of marketing strategies (e.g., media publicity, reference to local terms) and attempted to create a social environment for the acceptance of the fuel as mentioned above. After three decades of governmental subsidies to support the *LPG-isation* programme, the shift to LPG has clearly not occurred. In addition to the aforementioned reasons, repeated accidents have been caused by LPG usage among the small number of private domestic energy users that have dared to adopt it. This has created a sensitive social environment in which LPG is perceived as a ‘danger’ rather than a convenient and controllable fuel. Many domestic users have become over-reluctant vis-à-vis LPG, based on common related accidents, as one can read in the following narratives:

I witnessed an accident in a villa here in Gbadago where many people died. Apparently, it was caused by the use of gas by the victims. That is why it will be very difficult for me to use gas, which I don't like very much. Maybe one day my children will use it, but as far as I'm concerned, I don't find myself using gas. It's too dangerous.¹¹⁸

Madame Kom Ba Té, another interviewee, underlined with tears in her eyes that

One of my sisters burned herself recently and we buried her, she was in hospital for a fortnight, but it didn't work out and finally she passed away. It hasn't even been two months yet. Her husband also

¹¹⁶ Mama, Nana, interviewed in Lome on 13 February 2017.

¹¹⁷ Van, Der Kroon, Bianca, et al. “*The Energy Ladder: Theoretical Myth or Empirical Truth? Results from a Meta-Analysis*”

¹¹⁸ Mama, Nana, interviewed in Lome on 13 February 2017.

got burnt trying to save his wife. When you consider all these accidents, you will be discouraged and afraid to use gas.¹¹⁹

In fact, most LPG suppliers provide users with a range of basic instructions for its utilisation.¹²⁰ According to one LPG user, these consist of lighting a match, then turning on the butane gas on the cooker.¹²¹ Both steps form an essential stage in the process of using LPG, and any error would cause an explosion like those described by the interviewees above. The occurrence of those accidents, however, cannot always be related to users' inaptitude with regard to potential mistakes while turning on the LPG. Another relevant parameter relates to the introduction of LPG into housing infrastructures and failing to consider, in the case of Lome, their lack of adequate and appropriate operating grids specifically designed for safe storage and usage of an easily combustible fuel like butane gas. This evidence has added to frequent handling mistakes which have led to recurrent accidents that, in turn, have contributed to creating an atmosphere of mistrust regarding the use of butane gas. It is a matter of fact that information and communications technologies, namely the use of mobile phones, have shaped and continue to transform the economic, social and political life of many African rural and urban areas.

Mobile phones shape economic, social and political life in Africa in multiple ways.¹²² In the case of Lome, one is the use of mobile phones and social media, such as Facebook and WhatsApp, channels through which accidents caused by the usage of LPG are largely spread, whether in the form of voice messages, pictures or videos. This, in turn, has reinforced the reluctance of many users of charcoal to switch to gas, leading to radical statements of some respondents, like Dekon To, towards any transition to LPG in the following terms: 'I will never use gas. Because it is too dangerous. Never until I die. I would rather die naturally than be killed by gas'.¹²³

¹¹⁹ Kom, Ba Té, interviewed in Lome on 25 March 2017.

¹²⁰ See Instructions provided by Total Togo on how to use LPG. <http://www.totaltogo.com/ga/bouteilles-gaz-b2c/utiliser-bouteille-gaz.html> Accessed on 11 March 2018.

¹²¹ Kom, Ba Té, interviewed in Lome on 25 March 2017.

¹²² See De, Bruijn Mirjam, et al. *Mobile Phones the New Talking Drums of Everyday Africa*. Langaa African Studies Centre, 2009.

¹²³ Dékon, To, interviewed in Lome on 19 March 2017.

These various socio-cultural and technical reasons for the failure of the *LPG-isation* programme, interrelated with the accounts generated in the above sections provide the range of the main drivers that have substantially fostered, accelerated and reinforced the shift to charcoal that began *peu à peu* from the 1980s in the domestic settings of the Togolese capital. The culmination is the current predominance of charcoal based not on the user's total abandonment of firewood, but rather in relation to the insignificant role the latter presently plays in the private domestic setting in Lome, coupled with the present extremely marginal usage of LPG in the capital as discussed throughout this section.

Conclusion to Chapter Two

The purpose of this chapter was to assess the changes that occurred in private domestic energy use for cooking within Lome over the last decades and through which charcoal has gradually become the main domestic fuel. To this end, I provided insights into the complex concept of 'energy transitions' in which the transformations noted in the fuel usage within Lome throughout the chapter are embedded. I further show the significance of coconut shells, which in fact is largely forgotten as one of the most important domestic burning materials in Lome at a time when the city profited from the copra trade. Following the decrease of the copra trade in the late 1950s caused by a phytopathology that led to the felling of thousands of coconut trees, coconut shells were gradually abandoned, and the dependence upon firewood took effect. This situation has been exacerbated by the demographic challenges in Lome resulting in the scarcity of coconut shells and the shift to firewood as the main private energy source within the city. Even though charcoal became the second private domestic fuel in Lome, the private domestic energy landscape in the capital was strongly dominated by the preference for firewood in the 1960s and 1970s. In the 1980s, the city gradually started to experience a switch from firewood to charcoal. The substitution to charcoal has been noted to be effective from the 1990s onwards, culminating in charcoal's current predominance as the main private domestic fuel in Lome.

Pivotal to this change were a variety of interrelated elements in the way traders handled the fuelwood supply from the 1980s onwards, the challenges posed by changing prices of both charcoal and firewood, especially for users, and the impacts of Lome's demographic growth and the implications it had on the social relationships both between landlords and

tenants and amongst tenants. The shift to charcoal was fueled not only by the above elements, but also by the failure of the *LPG-isation* programme launched by oil companies in the 1980s with the support of the Togolese state, which was and remains an important issue that fostered charcoal becoming the predominant domestic energy source in Lome. Recalling and interconnecting these issues help to observe the transformations in domestic energy usage in general, and the shift to charcoal in particular, as the result of a process shaped in different ways by nature (i.e., phytopathology); economy; demography; social relationships and interactions; and policy implementation. By illustrating the shift to charcoal, I show the fragmentary issues that, taken together, provide a full picture of the transition to charcoal in Lome.

The gradual nature of the shift to charcoal implies that this change has not been ‘brutal’. It occurred as a process in which the use of firewood and charcoal overlapped or both burning materials were combined depending on the economic situation, to satisfy particular culinary needs or as an energy- and money-saving strategy.¹²⁴ The current predominance of charcoal does not signify a complete absence of firewood in the domestic energy landscape in Lome. Despite the shift, there are still firewood users in the capital, though marginal in number, who sporadically resort to the former, or purposely combine both.¹²⁵ Finally, there are several minor instances of charcoal (and firewood) users occasionally resorting to LPG or LPG users utilising charcoal or firewood.¹²⁶ These examples illustrate the complex scope of the transformations as noted for private domestic energy usage in Lome throughout this chapter.

¹²⁴ A prime example of the overlapping relates to the use of firewood for cooking items like beans and palm nuts (*dekou*) which are thought to consume more energy. Therefore, charcoal appears to be unsuitable for these items. To save energy costs, some users, even though they use charcoal as their main energy source, occasionally resort to firewood for cooking the aforementioned items. (See interviews with: Dékon, To, interviewed in Lome on 19 March 2017; Kom, Ba Té, interviewed in Lome on 25 March 2017; Mama, Nana, interviewed in Lome on 13 February 2017.)

¹²⁵ See Maman, Tchoukoutou, interviewed in Lome on 24 February 2017.

¹²⁶ Kom, Ba Té, interviewed in Lome on 25 March 2017.

3 The Demographic Growth of Lome and Its Implications For the Demand and Production of Charcoal

Introduction

Sub-Saharan Africa has experienced significant population growth over the last five decades. The noted historian of African cities Bill Freund saw what he called ‘a disturbing feature of rapid urbanisation in Africa’ in the expansion of Africa’s urban populations, which, by the beginning of the 1970s, had reached ‘levels that the local business worlds could not absorb’. In the same vein, Freund suggested that the inadequacy of urban employment opportunities in the African context coupled with the exponential size of urban job seekers paved the road to socioeconomic challenges.¹ Catherine Coquery-Vidrovitch, another respected investigator of African urban history, equally poignantly suggested the nefarious social effects of the rising urban populations by highlighting the miserable conditions young urban dwellers lacking prospects had to bear in the end of the 1950s.² Coquery-Vidrovitch further revealed the lack of an adequate urban housing policy tailored to the urban demographic pressure confronting African cities, leading to what she called ‘*l’instabilité urbaine*’ (urban instability).³ The increase in tropical African cities’ demography has also been accused as a core catalyst of the rising in number of ‘urban poor’, especially in the colonial period when poverty was depicted as an urban issue. Furthermore, in contrast to the colonial experience, John Iliffe (previously paraphrased) links the growing size of the African urban poor to the economic malaise most countries faced in the late 1970s and underlines the fact that the continuity of urban demographic growth reduced most urban dwellers’ access to resources.⁴ As such, the discourses referred to above emphasise the negative side of the urban growth.

This chapter, in contrast, does not look at urban growth primarily from the point of view of its socio-economic effects, as the previous quotations tend to do, nor does it engage in

¹ Freund, Bill. *The African City: A History*. Cambridge University Press, 2007, p. 148.

² Coquery-Vidrovitch, Catherine. “Villes Coloniales Et Histoire Des Africains ‘’. *Vingtième Siècle. Revue D'histoire.*, no. 20, Oct. 1988, pp. 49–73.

³ Ibid.

⁴ See Iliffe, John. *The African Poor A history*. Cambridge University Press, 1987, pp.164–171.

an in-depth discussion on the validity of existing debates on this matter. Instead, the chapter aims to historically address the demographic development of Lome in light of how it significantly challenged the urban charcoal demand,⁵ the supply zones or areas,⁶ the changes in charcoal production techniques and gender relations, as well as the environment (flora). This chapter takes the demographic growth of a postcolonial African city like Lome as a fact – rather than as a cause of social problems – and as a stimulus of related transformations in the private wood-based energy production for the Togolese capital. At the same time, it seeks to articulate and situate the changes concerned within the debates on wood energy production in Togo that gained importance from the second half of the 1970s onwards. James Fairhead and Melissa Leach critically discuss and counter-argue the hypothesis of a linear relationship between ‘fuel production and environmental degradation’ in their book, *Reframing Deforestation: Global Analyses and Local Realities: Studies in West Africa* (1998). My hypothesis based on this research is that, while sharing and using the critiques formulated by Fairhead and Leach to a certain extent, it is important to combine their analysis with recent historical developments and current field experiences to pin down the interrelated changes to which the fuelwood production sector has been subjected.

3.1 Preliminary Remarks

Before getting to the heart of the matter in the core of this chapter, some adjustments in are necessary to provide clarity and avoid misinterpretation. Firstly, the chapter focuses on private charcoal production due to its historical relevance, supported by the state’s failure to control this sector of activity which resulted in the government’s withdrawal from this sector in the end of the 1980s. The private charcoal producers mentioned in this chapter process wood from their own forest land. They operate under the control of the article 45 of the Code Forestier that stipulates that *‘Les forêts ou boisements des particuliers peuvent être exploités librement par ces particuliers ou par un ou plusieurs*

⁵ The chapter focuses more on charcoal than firewood, given the shift from the former to the latter that gradually took effect from the 1980s onwards. In addition, the wealth of data collected from the field pertains more to challenges regarding charcoal production and demand, rather than firewood.

⁶ The terms ‘supply zones’ and ‘supply areas’ are used interchangeably in this chapter as areas or zones of provenience of the fuelwood and charcoal that is transferred to and sold at markets in Lome.

*contrats d'approvisionnement conclus entre eux et une ou plusieurs sociétés de transformation locale[...]*⁷

Secondly, the existing studies on fuelwood in Togo all point to the spatial fragmentation of charcoal production zones.⁸ It would, however, be impossible to indicate the exact size and scope of all areas that supplied or continue to supply the city of Lome with charcoal. A realistic manner to bypass this methodological challenge and provide an historical insight into this activity seems, in my view, to be a selection of some important supply areas. In the case of this research, this selection includes Santo, Notse-Kpota, Kpehoun I and Itoutchan. Central to this selection is the fact that all four areas historically inform about the spatial shifts in charcoal supply zones in Lome, through which two main categories of supply areas have emerged:⁹ former supply zones (FSZ) and current supply zones (CSZ). Geographically, the four aforementioned areas that form both the FSZ and the CSZ are respectively located in southern, central and northern Togo (see Map 3 below).

The narratives collected from these four selected areas and analysed in this chapter shall not be taken as representative accounts for the indefinite number of areas of provenience of fuelwood and charcoal towards Lome and the multitude of private people involved in the production of charcoal as economic activity. Rather, the narratives and explanations primarily reflect noted societal and environmental transformations regarding fuelwood and charcoal production in the selected areas, though the arguments made here may serve as a basis to further explore and fuel discussion in and for other supply areas that this study does not cover. This is to assume that further research focusing on areas unconsidered by this study has the potential of judging the interpretive and the analytic scope of the arguments made in this chapter.

⁷ Loi N°2008-09 Portant Code Forestier en République du Togo, p. 11.

⁸ Here, I am referring to the range of the existing grey literature on fuelwood in Togo, namely the reports by Bertrand, Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI. 1^{ère} Partie, Rapport de Synthèse, p. 11; Thiam, Etude de marchés des produits ligneux au Togo, p. 100; République du Togo. Direction Générale de l'Énergie. Rapport Général Provisoire. Enquête consommation des énergies domestiques au Togo, 2007 which all agree on the multiplicity of the supply basins and their spatial dispersion.

⁹ Da, Govi Hanoukopé, interviewed in Lome on 12 January 2017; Ri, Ta, interviewed in Lome on 10 March 2017.

3.2 Observed spatial shifts of the charcoal supply zones

This section draws attention to the evidence of the spatial changes of the supply areas, using both oral historical testimonies and written primary and secondary sources. In an interview given to Radio France International, Dagbovi Afiwa, a fuelwood trader at Hanoukopé market in Lome, revealed that ‘currently the lack of wood in the outskirts of Lome has forced most of charcoal traders [CGs] to travel further to the northern areas such as Bassar [ca. 395 km from Lome], Kantè [ca. 430 km] since these are the main areas where a “bit” of wood for charcoal can still be found’.¹⁰ Similar testimony appeared in another interviewee’s statements (Rita, who is also a CG) when I recorded her experiences at the Atikpodji market (Lome). According to the approximately 70-year-old Rita, who inherited the charcoal marketing from her mother,

Villages such as Kantchi Kopé located in the environs of Notsé [95 km from Lome] appeared to be the main charcoal supply areas some decades ago. In the present day, however, one has to voyage across northern villages before accessing charcoal for domestic usage in the capital.¹¹

The previous two narratives corroborate existing findings regarding charcoal supply zones. In the late 1980s, prefectures such as Haho, including Notsé and the surrounding area, were reported as the main charcoal supply zones for the capital.¹² In 2001, a final report submitted to the World Bank on the main supply areas of urban areas such as Lome with fuelwood recorded Bassar, Pagala, Tchamba (380 km from Lome) and Sotouboua (300 km from Lome) as other areas supplying the Togolese capital with charcoal.¹³ Interestingly, none of the areas reported in 1987 appeared on the list provided by the aforementioned final report on the main charcoal supply basins of Lome. In the same

¹⁰ The interview was conducted in French: ‘*Le bois vient maintenant du Nord. Les villages les plus proches de Lomé sont dépourvus de bois et nous courrons vers le Nord, Bassar, Kantè, Pagala pour récupérer du charbon maintenant puisque c’est là-bas qu’on peut trouver maintenant encore un peu de bois*’. Bras, Anne-Cécile. Radio France Internationale. *C’est Pas Du Vent-Togo: Pas D’arbres, Pas De Charbon*, 2013, www.dailymotion.com/video/xxanpy. Accessed on 17 March 2020. The English quote in the text is my own translation of the French version of the interview.

¹¹ Ri, Ta, interviewed in Lome on 10 March 2017.

¹² Bertrand, Alain. *Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI*, Troisième partie, Nogent-Sur-Marne : Centre Technique Forestier Tropical, 1987, p. 10.

¹³ Société Togolaise d’études de développement en Afrique, *analyse de l’évolution des ressources forestières, de l’exploitation des terres et diagnostic des approvisionnements et des consommations des grands centres urbains en énergies traditionnelles*, p.31.

vein, recent studies by Fontodji et al. identified four main areas of charcoal production for important consumption areas such as Lome are located.¹⁴



Map 3: FSZ (in green) and CSZ (in red)¹⁵

¹⁴ Fontodji, Kokou Jeremie, et al. "Impact of Charcoal Production on Biodiversity in Togo (West Africa)". *The Importance of Biological Interactions in the Study of Biodiversity*, edited by Dr. López-Pujol, Jordi, Published online <http://Library.umac.mo/Ebooks/b28113196.Pdf>, 2011, pp. 212–230.

¹⁵ Map designed by Kolani Yandja, INSEED-Togo

Fontondji and his colleagues have mapped Badou (approximately 250 km from Lome), Atakpamé (160 km), Elavagnon (230 km), Bassar, Tchamba, Kantè, Mango (550 km) and their neighbourhoods as the main sources of the charcoal produced to meet the demand in Lome. The map provided in this regard by Fontondji et al. excludes areas such as Notsé and surroundings, which were known in the 1980s as important supply areas of Lome (see map 4 in section 3.6).

Taken together, the oral historical narratives, reports and aforementioned research all evidence that charcoal supply areas of Lome have been subjected to significant spatial changes over the last 30 years. These changes lay the foundation of the FSZ and the CSZ, the two categories that host the four areas selected for this study.

These shifts between the supply zones have also shaped the transportation means by which charcoal has been conveyed from the supply zones to Lome though in a marginal manner. For example, trains,¹⁶ small trucks and portage¹⁷ were the main transportation means used to bring charcoal from FSZ including Tsévié and Notsé to Lome.¹⁸ Due to the shift to CSZ, which has increased the distance between the supply zones and the supplied city, Lome, some means of transportation such as the train and small trucks have lost significance, whereas others like moto-taxis¹⁹ and long trucks known as ‘Titans’ have been introduced.²⁰

¹⁶ The use of train has significantly decreased over the years. Ma, Route, interviewed in Lome on 15 April 2017; Da, Govi Hanoukopé, interviewed in Lome on 12 January 2017; Ri, Ta, interviewed in Lome on 10 March 2017.

¹⁷ Portage was used as transportation mean between the charcoal production site to the nearest place where the vehicle or the train can be loaded. Portage was also and is still used during the unloading in Lomé.

¹⁸ See Ma, Route, interviewed in Lome on 15 April 2017; Da, Govi Hanoukopé, interviewed in Lome on 12 January 2017; Ri, Ta, interviewed in Lome on 10 March 2017.

¹⁹ In some areas, moto-taxis have replaced the portage: from the interviews conducted with Ma, Route, interviewed in Lome on 15 April 2017; Da, Govi Hanoukopé, interviewed in Lome on 12 January 2017; Ri, Ta, interviewed in Lome on 10 March 2017.

²⁰ Ibid.

3.3 Understanding the connections between the demographic growth of Lome, the fuelwood demand and the spatial shifts of the supply zones

This section explores the historical period and context in which the gradual spatial shifts gradually evolved and addresses the range of plausible issues that enabled them. By examining at the spatial changes of the charcoal supply zones, it seems that these shifts cannot be dissociated from the steady increase in Lome's population, especially during the 1980s, a period in which the city doubled its size, as discussed in Chapter 2. This is to argue that the city's population had an impact on the demand for charcoal in the early 1980s when the switch from firewood gradually began to take effect. However, the problem with drawing a link between population growth and the clear increase in demand for charcoal is, that such an argument can readily be misunderstood and misrelated to the controversial 'fuelwood orthodoxy' discourses of the of the mid-1970s and 1980s that claimed linear associations between urban demographic growth and urban increasing demand in fuelwood. Though I cautiously acknowledge some implications growth of Lome has had on the demand of charcoal, I distance my argument from the one made by the proponents of 'fuelwood orthodoxy' for two reasons. Before clarifying these reasons, it is relevant to provide details on the fuelwood orthodoxy and the critics of those authors who reject this argument. In fact, the fuelwood orthodoxy narratives, as noted by R.A. Cline-Cole et al., are '[...] based on debatable assumptions concerning the relationships linking urbanisation, rapid population growth and the demand for fuelwood'.²¹ Those who criticised the fuelwood orthodoxy (e.g., Jas Gill,²² David French,²³ R.A. Cline-Cole et al., Melissa Leach and Robin Mearns)²⁴ did reject the link its advocates draw between fuelwood demand and demographic dynamics,²⁵ especially in the urban areas of developing countries. In the view of the proponents, urban dwellers' demand for energy

²¹ Cline-Cole, R A, et al. "On Fuelwood Consumption, Population Dynamics and Deforestation in Africa". *World Development*, vol. 18, no. 4, 1990, pp. 513–527.

²² Gill, Jas. "Improved stoves in developing countries: A critique". *Energy Policy*, vol. 15, n° 2, 1987, pp. 135–144.

²³ French, David. "Confronting an unsolvable Problem: Deforestation in Malawi". *World Development*, vol. 14, April 1986, pp. 531–540.

²⁴ Leach, Melissa, and Robin Mearns. *The Lie of the Land : Challenging Received Wisdom on the African Environment*, pp. 1-2.

²⁵ Cline-Cole, R A, et al. "On Fuelwood Consumption, Population Dynamics and Deforestation in Africa".

more critically affected wood stocks than did the rural fuelwood users' demand. This thought wrongly implies that urban users consumed more domestic energy per capita than rural people.²⁶ The issue invited more criticism when institutions such as the World Bank relied on conclusions of scholars including Morgan W.B. and Moss R. P.,²⁷ Pierre Venettier²⁸ and Sirven P.²⁹ and his article, '*Le rôle des centres urbains dans la déforestation de la campagne rwandaise*' (1981),³⁰ to formulate future projections with regard to population growth and the subsequent increase in per capita urban energy demand.³¹ Scholars who argued against the fuelwood orthodoxy accused its advocates of overhighlighting the impact of growing population on the urban domestic energy demand and consumption with its array of environmental consequences, not only for the period captured by the World Bank, but also in a futuristic fashion by means of predictions. These critics are one of the reasons explaining my distance vis-à-vis the advocates of fuelwood orthodoxy. The link I am drawing here between population growth and the increase in urban domestic energy demand is neither linear nor embedded in the demand per capita as the advocates of the fuelwood orthodoxy would suggest. Instead, it has to do with the fact that the population increase in Lome since the 1980s has led to a concentrated demand for charcoal, thereby putting pressure on the supply zones near Lome to meet the increasing demand from the capital. In 1987, for instance, the population size of Lome was estimated at 550,000.³² In that year, a thoroughly conducted study by Alain Bertrand and his colleagues reported that the prefectures of Zio (hosting the Tsévié FSZ, approximately 35 km from Lome) and Haho (hosting the Notsé FSZ,

²⁶ Ibid.

²⁷ See Moss, R P, and William B Morgan. *Fuelwood and Rural Energy Production and Supply in the Humid Tropics : a Report for the United Nations University with Special Reference to Tropical Africa and South-East Asia*. United Nations University, Tycooly International, 1981.

²⁸ Venettier, Pierre. "La consommation de l'énergie traditionnelle en milieu africain: L'exemple de Ngaoundéré (Cameroun)" *Travaux et documents de géographie tropicale*, N° 43, Juillet 1981, pp. 255–267.

²⁹ P., Sirven. "Le rôle des centres urbains dans la déforestation de la campagne rwandaise", *L'énergie dans les communautés Rurales du tiers monde*, Actes du colloque International de l'Université des Nations-Unies, CEGET-Bordeaux, 5–10 Mai 1980, edited by Centre National de Recherches Scientifiques, 1981, pp. 243–254.

³⁰ See R.A. Cline-Cole et al: "*On Fuelwood Consumption, Population Dynamics and Deforestation in Africa*".

³¹ See Ibid.

³² Barbaud, Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI. 1^{ère} Partie, Rapport de Synthèse, p. 19.

approximately 95 km from Lome) were among other main zones that supplied Lome with 85,000 tons of charcoal.³³ Five years earlier, when the population was approximately 369,926, M. Bailly, a FAO consultant who reported the consumption of fuelwood and related products for the then Togolese government, estimated the demand for charcoal in Lome at 56,000 tons.³⁴ In 1991, Thiam estimated the national demand for charcoal at 216,000 tons, an important share (80%) of which was consumed in the two main regions of the country, notably the maritime region – in which Lome is located with a population then estimated at approximately 600,000 – and the plateaux region.³⁵ Fontondji estimated the quantity of charcoal conveyed to Lome between 2004 and 2008 to oscillate between 93,026 tons and 99,737 tons,³⁶ at a time when the population of the city exceeded one million.

The above estimations, however, must be taken with a certain caution, as there is no institution in Togo where data on the exact quantity of charcoal entering Lome can be assessed. These estimations derive mainly from data the authors collected at different toll stations located at the two main entry points of the capital (i.e., Zanguéra and Davié), the diverse ‘*Postes de Contrôles Forestiers*’ throughout the country,³⁷ were gathered from state entities such as the DRF or emanated from quantitative surveys conducted by the authors themselves. Explaining, for instance, the circumstances under which the total of 85,000 tons had been reported for Lome in 1987, Alain Bertrand and colleagues informed that: ‘*Il a été possible d’obtenir la collaboration des forces de l’ordre dans des postes de contrôle et d’installer à leur côté les enquêteurs opérant de manière discrète à l’occasion du contrôle policier des véhicules*’.³⁸ Given that some quantities of charcoal towards Lome escape the official controls of the Togolese authorities as revealed by Thiam³⁹ and

³³ Ibid., 43.

³⁴ Based on the data collected from the archives *Institut National de Statistique et des Études Économiques et Démographiques* (INSEED) during fieldwork conducted in August and September 2016.

³⁵ Thiam, *Etude de marchés des produits ligneux au Togo*, pp. 1–6.

³⁶ Fontondji, *déterminants de la production – consommation du charbon de bois au Togo et vulnérabilité aux changements climatiques*, p. 52.

³⁷ Ibid., 27.

³⁸ Bertrand, *Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI. 1^{ère} Partie, Rapport de Synthèse*, p. 35.

³⁹ Thiam, *Etude de marchés des produits ligneux au Togo*, p. 4.

confirmed by Fontondji,⁴⁰ the actual demand for charcoal may certainly exceed the estimations provided above, considering the demographic trend of Lome since the 1980s. Despite the obvious gap in the data, these estimations deserve consideration, as they help provide general insights into the concentrated quantities of charcoal demanded by private users in Lome since the 1980s. This concentrated demand, as the above figures suggest, has progressed over the years following the growth of the urban population in Lome.⁴¹ Both the demographic growth in Lome and the concentration of the demand coming from the capital have not only fuelled the shifts in the supply zones as noted with the distinction made between the FSZ and the CSZ, but also brought changes in the manner by which wood is transformed into charcoal. The concerned changes, addressed in the next section, emerged to meet the consequent growing demand for charcoal.

3.4 Changing charcoal production techniques

The process of transforming wood into charcoal unfolds as a chemical operation known as pyrolysis. The techniques of carbonising wood into charcoal are multifarious and differ across the globe, as noted by Walter Emrich in his *Handbook of Charcoal Making* (1985). Emrich provides a perfunctory review of more than 20 ways of producing charcoal across the globe while differentiating between ‘traditional’ and ‘industrial’ methods.⁴² Hubert Stassen noted that the traditional methods were predominantly applied until the beginning of the twentieth century. He described, for example, that

Le bois était déposé dans des fosses creusées dans le sol, allumé et recouvert de terre. La combustion d'une partie du bois produisait suffisamment de chaleur pour carboniser le reste. Dans d'autres cas, des piles de bois étaient recouvertes de terre et de mottes de gazon, et on allumait le feu à travers des événements pratiqués dans la couverture en terre (meules).⁴³

⁴⁰ Fontondji, *Déterminants de la production – consommation du charbon de bois au Togo et vulnérabilité aux changements climatiques*, p. 27.

⁴¹ Similar argument has been made by Moss, R P, and William B Morgan. *Fuelwood and Rural Energy Production and Supply in the Humid Tropics : a Report for the United Nations University with Special Reference to Tropical Africa and South-East Asia*, p.33; and R.A. Cline-Cole et al.: “On Fuelwood Consumption, Population Dynamics and Deforestation in Africa”.

⁴² Emrich, Walter. *Handbook of Charcoal Making : the Traditional and Industrial Methods*. Reidel Pub. Comp, 1985; pp. vii-viii; *Encyclopedia of Energy*.

⁴³ Stassen, Hubert E. ‘Faits nouveaux concernant la technologie de production du charbon’.’. *La dandroénergie, Revue internationale des forêts et des industries forestières*, Vol. 53 2002/4 Unasylva, <http://www.fao.org/3/y4450f/y4450f11.htm>, Accessed 18 March 2019.

Unlike Emrich, Stassen identified two additional techniques of carbonising wood into charcoal, namely the improved traditional methods and the new systems with high yield and marginal emissions.⁴⁴

In regard to Togo, Candice Lee Gouchers is among other scholars who reveal contemporary insights into charcoal production in the northern part of the German colony of Togo by analysing colonial documents in her dissertation, *The Iron Industry of Bassar, Togo: An Interdisciplinary Investigation of African Technological History* (1984).⁴⁵ Gouchers' argument blamed the charcoal industry for having largely contributed to forest degradation in Bassar, sparking vehement critics from Melissa Leach and James Fairhead.⁴⁶ The latter authors focused their critiques on Gouchers' conclusion by claiming her incapacity to support most of her statements with consistent and convincing evidence.⁴⁷ However, all studies conducted on fuelwood in Togo since the late 1980s have acknowledged the traditional method⁴⁸ as the one largely used by private charcoal producers in Togo.⁴⁹ Notably, the transformation of wood into charcoal, though traditionally operated, did undergo significant changes, as revealed by a former charcoal producer from Santo (near Notse, an FSZ). The interviewee testifies that

⁴⁴ Ibid. For an historical overview on the techniques of charcoal production see also Rolando, Victor R. "19th-Century Charcoal Production in Vermont". *Iajsocinduararch IA. The Journal of the Society for Industrial Archeology*, vol. 17, no. 2, 1991, pp. 15–36., doi:<https://www.jstor.org/stable/40968858>. Accessed September 2018.; Paysen, Arne. Arne Paysen Arne Paysen Nachhaltige Energiewirtschaft? Brenn- Und Kohlholznutzung in Schleswig-Holstein in Mittelalter Und Früher Neuzeit'. *Kiel*, 2011. (Published Phd. Thesis)

⁴⁵ See also Kuevi, D. "Le travail et le commerce du fer au Togo avant l'arrivée des Européens", *Etudes Togolaises*, NS 11 and 12, 1975, pp. 24–43 cited by Fairhead, James, and Melissa Leach. *Reframing Deforestation: Global Analyses and Local Realities; Studies in West Africa*. and De Barros, Philipp. "Bassar: a quantified, chronologically controlled, regional approach to a traditional iron production centre in West Africa", *Africa*, vol. 56, no. 2, pp. 148–173. These authors investigated the importance of the iron smelting industry among the Bassar of northern Togo. The figures they reported helped reflect the quantity of charcoal produced for this purpose in the concerned areas in different historical periods.

⁴⁶ Fairhead, James, and Melissa Leach. *Reframing Deforestation: Global Analyses and Local Realities; Studies in West Africa*, p. 129

⁴⁷ Ibid, p. 128; p. 131.

⁴⁸ The term 'traditional method' is used in this study, not as antonym to 'modern method', but rather in reference to the fact that this is an old way of producing charcoal.

⁴⁹ See Thiam, Etude de marchés des produits ligneux au Togo; Bertrand., Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI.; Société Togolaise d'études de développement en Afrique, *analyse de l'évolution des ressources forestières, de l'exploitation des terres et diagnostic des approvisionnements et des consommations des grands centres urbains en énergies traditionnelles*.

Before, I would say that charcoal was produced directly in the fields, especially when the soil had to be prepared for sowing. We mainly used large trees that we could not be easily cut down with our tools. What we did was to burn the tree from the bottom by setting it on fire. Then we would wait a few days to see if the tree was dead, and then we would push it down to lay it on the ground. The third phase consisted of cutting off unnecessary branches, covering the tree with dry branches and soil, and making vents in the tree. After a few days of monitoring, the burning wood was extinguished with water to collect the charcoal.⁵⁰

The above description of the technique of charcoal production as given by the respondent has been demonstrated exceptionally in the field as follows (see Picture 3 below).



Picture 3: Demonstration of the carbonisation process⁵¹

Precisely when this technique originated is still unknown. The only time reference raised by the interviewees⁵² in this regard was the fact that they witnessed this technique when they were young and had to help their parents clear the land for agriculture. The fact that the interviewee who provided the above narrative is currently approximately 70 years old and assumes to have witnessed this in his childhood is my only important indicator of the relatively recent history of this way of producing charcoal in this region.

While interacting in a group with the same actors, they described how they shifted from carbonising wood into charcoal by positioning the wood horizontally on the ground, as explained in the quotation, to adopt a new technique that consisted of digging pits which

⁵⁰ Ko, Longui Yaovi; Anoumou, Sossa; Adjigo, Fofu; Fo, Mensah. Group interview with charcoal producers in Santo near Notsé on 12 March 2017.

⁵¹ These pictures were taken in Santo after my group interview with the respondents in footnote 50 who demonstrated the carbonisation process (image on the right) using the technique of positioning the wood horizontally (image on the left).

⁵² Ko, Longui Yaovi; Anoumou, Sossa; Adjigo, Fofu; Fo, Mensah. Group interview with charcoal producers in Santo near Notsé on 12 March 2017.

were filled with wood;⁵³ this technique is known worldwide as a charcoal pit (see Figure 2).⁵⁴

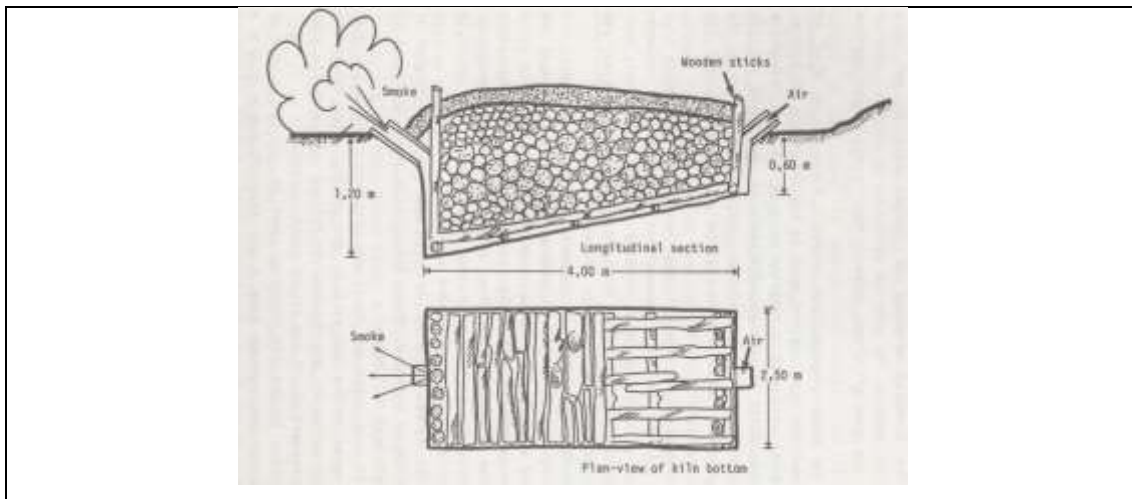


Figure 2: Charcoal pit technique⁵⁵

While the producers in central Togo (i.e., Atakpamé region, Kpéhoun 1 village) and in Itoutchan (near Guérin Kouka) in northern Togo ignored the existence of producing charcoal using ‘the horizontal positioning of the wood’ technique, they did use the charcoal pit technique. The narratives of these producers reveal that the charcoal pit technique has been in use in both regions.⁵⁶ The charcoal pit technique appeared in the narratives of interviewees in Itoutchan to be one of the most ancient ways of transforming wood into charcoal, as recapped by one participant in the group interview: ‘Before the arrival of the white people [Europeans], small quantities of wood were put in the hole to be transformed into charcoal for forging iron, making tools needed to cultivate the land’.⁵⁷

Even though the temporal reference, ‘*Avant l’arrivée des Blancs*’, or ‘before the arrival of the Europeans’, challenges temporal specificity, the purposes for which wood was transformed into charcoal, notably for iron smelting, is a significant indicator of the antiquity of charcoal production and the charcoal pit technique in this regard. The long

⁵³ Kodjo, Yo Ko; Ko, longuè Yaovi; Lokossou, Kodjovi, Nodjigou, Kossi. Group interview with charcoal producers in Santo on 12 March 2017.

⁵⁴ Emrich, Walter. *Handbook of Charcoal Making : the Traditional and Industrial Methods*, p. 24.

⁵⁵ Ibid, p. 26.

⁵⁶ Group interview with charcoal producers in Itoutchan near Guérin Kouka on 28 March 2017; Group interview with charcoal producers in Atakpamé, Kpéhoun 1 village on 21 March 2017.

⁵⁷ Group interview with charcoal producers in Itoutchan near Guérin Kouka on 28 March 2017.

tradition of iron smelting in Bassar, as documented by Gouchers, certainly had an influence on the surrounding areas, including Itoutchan.

What could be noted from the narratives gathered in Santo, Kpéhoun I and Itoutchan is the contrasting observations about the purposes for which wood was assembled and transformed into charcoal. In Santo, for instance, interviewees revealed charcoal production to be a marginal and minor activity some decades ago, as their main source of income then was agriculture. The charcoal produced from wood gathered after land clearance was traded, but on an insignificant scale.⁵⁸ This view, however, was contradicted by the oral historical accounts given by producers in Itoutchan, where charcoal production has long been an important secondary activity after agriculture, based on the fact that charcoal had been relevant for the iron smelting industry until the decrease of this activity.⁵⁹

Nevertheless, field observations conducted in the aforementioned three regions help to note that the charcoal pit technique has been completely abandoned and replaced by the current earthmound kiln technique (see Picture 4). Prior to this observation, a body of studies available on fuelwood use, trade and transformation that lacked interest in the changes discussed above largely identified the earthmound kiln as the main technique in use to produce charcoal in a major part of the areas covered by the concerned studies. Alain Bertrand and his colleagues, who authored one of the most detailed reports on wood resources and especially firewood and charcoal production, transformation and marketing for Lome in their first report (of five volumes in total), highlighted the importance of charcoal production in rural areas of southern Togo⁶⁰ that could include Santo near Notsé. With regard to the transformation technique, Alain Bertrand observed that '*la carbonisation est réalisée en petites meules (1 à 3 sacs de 50 kg) par des paysans sur leur terroir*' before judging this technique to be highly 'primitive' and 'less effective'.⁶¹

⁵⁸ Kodjo, Yo Ko; Ko, longuè Yaovi; Lokossou, Kodjovi, Nodjigou, Kossi. Group interview with charcoal producers in Santo on 12 March 2017.; Group interview with charcoal producers in Atakpamé, Kpéhoun I village on 21 March 2017.

⁵⁹ Group interview with charcoal producers in Itoutchan near Guérin Kouka on 28 March 2017.

⁶⁰ Bertrand, Marchés loméens des produits forestiers et commercialisation des productions du projet AFRI. 1^{ère} Partie, Rapport de Synthèse, p. 11.

⁶¹ Ibid.

Bertrand and colleagues' judgement of the primitiveness and ineffectiveness of the referenced technique was not, however, supported with further convincing, consistent or consequent data and arguments. What is relevant here is not whether the technique used was effective or not but rather whether the observation is correct that it was utilised at the time when Bertrand et al. conducted their investigation in the second half of 1980s. In the early 1990s, Thiam's report for the FAO in the framework of the Project PNUD/FAO/TOG/008/A/01/02 highlighted in the section '*Producteurs et Modes de Production*' that '*Au Togo [...] Plus de 90% de la production sont assurées par les meules en banco, avec des rendements de l'ordre de 10 à 18%*', clearly showing the predominance of the earthmound kiln.⁶² Despite the recent introduction of the 'Casamance improved mound kiln' in Togo, which some scholars⁶³ advocate as a better alternative to traditional methods such as the earthmound kiln technique, Fontodji's conclusions in '*Diagnostic analysis of the techniques of carbonization in Togo*' (2013)⁶⁴ appear to confirm the hegemony of the earthmound kiln technique in Togo. This, in turn, shows that the technique of transforming wood into charcoal has shifted over the years from the charcoal pit to the earthmound kiln technique. The interesting question now is how and under what particular circumstances the earthmound kiln technique came to replace the charcoal pit technique, especially in areas such as Notsé and its environs. What happened, as I would argue here, is rooted in a set of intertwined elements present in the 1980s. The concerned elements relate to the population increase in supplied areas like Lome, where a concentrated demand for charcoal in lieu of firewood emerged gradually in the 1980s, as extensively discussed in Chapter 2. Prior to the 1980s, when coconut shells and then firewood were predominantly used, charcoal production was less important, especially in the southern and central FSZ such as Santo and Kpéhoun 1.

⁶² Thiam, *Etude de marchés des produits ligneux au Togo*, 170.)

⁶³ See Fontodji et al. "Diagnostic analysis of the techniques of carbonization in Togo (West Africa)". *SJES*, 2(6), 2013, 106–117. ; Sawadogo, B. "Les stratégies d'exploitation forestière à vocation énergétique au Burkina Faso pour un développement durable, cas de la filière de carbonisation". Mémoire de DESS, Université de Dschang, CRESA, 2007. These studies argue that the yield from the Casamance method is between 25% and 35%, whereas the other traditional methods' yield is below 20%.

⁶⁴ See Fontodji et al. "*Diagnostic analysis of the techniques of carbonization in Togo (West Africa)*"



Picture 4: Earthmound kiln⁶⁵

Charcoal production in these areas during this period was marginal, as addressed above. This, in fact, was the consequence of the fact that charcoal was only produced when land had to be cleared for agriculture, as witnessed by Anika Komi Agblévi, teacher and former charcoal producer in Notsé-Kpota: ‘Charcoal making was not the primary objective, rather agriculture. In those days, when the women brought the little charcoal they produced to market, there were very few buyers’.⁶⁶ In other words, charcoal production was a minor and marginal source of income, as the urban demand was insignificant and cultivation of food crops was the main occupation. This, in turn, could explain the types of techniques used in the concerned period, notably the horizontal wood positioning and the charcoal pit technique, noted specifically in southern FSZ like Notsé. In the northern CSZ like Itoutchan, however, charcoal production coexisted with agriculture due to the iron smelting industry, until its decrease in the late nineteenth century, when the charcoal pit appeared to be the main technique used. This suggests that the decrease in the iron smelting industry reduced the production of charcoal in this area, based on the fact that the demand from urban areas such as Lome in that period was quasi-inexistent. The reason for the inexistence of the demand from Lome in that period was

⁶⁵ This photograph was taken at a charcoal production site in Notsé-Kpota

⁶⁶ Anika, Ko Mi, Agblévi, interviewed in Notsé-Kpota on 14 February 2017.

certainly due to the insignificance of the urban demand in charcoal as a whole before the 1980s, coupled with the possibility that southern and central areas such as Santo and Kpehoun I could cover the minute demand coming from the capital. In other words, as areas surrounding Lome were capable of supplying the capital with charcoal, CGs found it easier not to travel further to areas such as Itoutchan that are far from the supplied city and thus reduce transport costs. However, charcoal production did not disappear completely in Itoutchan as a consequence of the decrease of the iron smelting industry, the lack of demand from urban areas like Lome, and the capability of FSZ to cope with the low demand coming from the Lome prior to the 1980s. Instead, charcoal production continued in Itoutchan at a low scale, as noted by one interviewee: ‘Although charcoal was produced using pit technology, it was produced in very small quantities and sold on the market’.⁶⁷ The only significant change perhaps was the fact that charcoal production was no longer secondary to agriculture.

Therefore, what certainly challenged the production technique translated into a shift from the charcoal pit technique to the use of the earthmound technique in southern and central FSZ was the necessity to meet the increasing demand for charcoal consequent to the demographic dynamic coupled with private users’ gradual preference for charcoal over firewood from the 1980s onwards. The technique had to be adapted to the situation, as charcoal gradually began to be perceived as a secondary revenue-generating activity in addition to agriculture for most of farmers, especially in the southern FSZ. In other words, with charcoal replacing firewood as the main energy source, there was a necessity to transform more wood into charcoal in the FSZ to address the increasing concentrated demand coming from Lome from the 1980s onwards. This, in turn, called for a technique through which more charcoal could be produced. To adapt to the ‘new’ situation, a technique that could facilitate transformation at a high scale, (i.e., the earthmound kiln) gained relevance. A marginal activity when the demand from urban areas such as Lome was low, charcoal production gradually started to be a second major activity for farmers in FSZ such as Notsé. The previous observation also applies to Itoutchan, where the interviewed producers affirm to have abandoned ‘the technique of processing charcoal in

⁶⁷ Group interview with charcoal producers in Itoutchan near Guérin Kouka on 28 March 2017.

holes for production in heaps, as is currently done in the south, with the aim of producing large quantities of charcoal and then marketing them in Lome'.⁶⁸

Two further crucial elements contribute to strengthening the point made above. The first related to the two severe droughts which affected most sub-Saharan and Sahelian countries after the 1960s, including Togo. In fact, Jacques-Henri Durand, who investigated the severity the 1970s drought in the Sahel zone in his article, *A propos de la secheresse et ses consequences au Sahel* (1977), depicted the consequences of the lack of rainfall using the 1959 and 1974 rainfall records, and noted that

[...] the pastures shrank, obliging the herds to migrate farther and farther and during the course of which many animals died from starvation and exhaustion. All crops, even those benefiting from irrigation, suffered, causing famine for men and animals although drinking water wasn't lacking. A great exodus towards the valleys that were not as affected occurred, creating many human problems.⁶⁹

Among other series of measures recommended by Jacques-Henri Durand to mitigate or prevent the occurrence of a similar drought were the creation of food stocks to be sustainably, timely and technically managed, as well as the installation of additional sources to strengthen the water supply.⁷⁰ Whether the suggested measures were taken into consideration is hardly worth arguing, as in the early 1980s, the Sahelian zone experienced its second consecutive unprecedented drought. In *Quinze années de secheresse au Sahel Impacts et moyens de lutte*, published in 1984, Jacques Sircoulon highlighted that 'after a first peak observed in 1972 and 1973, the second peak which has occurred in 1982 and 1983 can be considered as the worst in recent history'. Furthermore, the author noted that 'the readings obtained from the oldest rainfall-and-stream gauge stations illustrate the intensity, duration and extension of this phenomenon'.⁷¹ In a notice

⁶⁸ Group interview with charcoal producers in Itoutchan near Guérin Kouka on 28 March 2017.

⁶⁹ Durand, Jacques-Henri: 'A propos de la secheresse et ses consequences au Sahel' *Les Cahiers d'Outre-Mer*, Année 1977, N° 30–120, pp. 383–403. Available on https://www.persee.fr/doc/AsPDF/caoum_0373-5834_1977_num_30_120_2836.pdf. Accessed 19 March 2018.

⁷⁰ Ibid.

⁷¹ Sircoulon, Jacques. *Quinze années de sécheresse au Sahel: impact sur les ressources et moyens de lute* (1984). The article was found as an archive document on https://horizon.documentation.ird.fr/exl-doc/pleins_textes/pleins_textes_6/b_fdi_35-36/41591.pdf; for extensive insights into the droughts in the Sahel zone in the concerned period, see: Bret, Bernard. *Les Hommes Face Aux sécheresses Nordeste brésilien, Sahel Africain*. Éditions De l'IHEAL, 1989. In this book, Jacques Sircoulon provides a comparative overview of the different droughts in the Sahel zone in his contribution entitled, 'Bilan hydropluviométrique de la sécheresse 1968–84, au Sahel et comparaison avec les sécheresses des années 1910 à 1916 et 1940 à 1949', pp. 107–114.

produced for the former French office, ORSTOM (currently *Institut de Recherche pour le Développement* [IRD]), Luc Le Barbe and K. Wome observed the consequences of the 1983 drought, and the particular effect it had on the dissipation of Togo's rivers.⁷² Thiam made a similar observation, relating the negative impacts of the 1981 and 1983 droughts to the food-crop production in Togo as a whole. Due to the non-rentability of agriculture in the concerned period, many farmers (especially in southern Togo) resorted to charcoal production to compensate for the loss of revenue caused by the decrease in food-crop production.⁷³ The shift from charcoal pit technique to the earthmound kiln certainly enabled the intensification of charcoal production activity in the southern FSZ of Togo, which in turn led to a decrease in charcoal prices in Lome for the period between 1981 and 1983, as discussed in Chapter 4.

The second major element pertains to the socio-economic and political challenges Togo has faced since the 1980s. These challenges translated first into the structural adjustment of the country's economy and then to the political turmoil of the early 1990s. As detailed in Chapters 2 and 5, both the socio-economic and political struggles from the early 1980s onwards facilitated the propensity of farmers in the FSZ to intensify charcoal production by using a technique of production (i.e., the earthmound kiln) that enables mass production. This was effective not only because of the financial difficulties both rural and urban dwellers were confronted with at that time, but also due to the decrease of state control over forest resources in the concerned period. The previous observation is rooted in the explanation given by Ko longuè Yao, who stated that 'the period of the strikes in the 1990s was the period when there was a lot of felling of wood used for charcoal production, especially in our region'⁷⁴ This quotation merits mention, judging its consistency with the official narrative acknowledging the incapacity of the Togolese

⁷² Le Barbé, K. Wome, Luc. La sécheresse de 1983 au Togo: quelques données concernant l'écoulement des rivières, comparaison des régimes pluviométriques de 1983 à ceux des années de sécheresse 1972 et 1958. Lomé: ORSTOM, 1983. PDF found in the digital archives of Institut de Recherche pour le Développement France (IRD-France), <http://www.documentation.ird.fr/hor/fdi:33795>, Accessed 20 March 2019.

⁷³ Thiam, *Etude de marchés des produits ligneux au Togo*, pp. 59-60.

⁷⁴ Kodjo, Yo Ko; Ko, longuè Yaovi; Lokossou, Kodjovi, Nodjigou, Kossi. Group interview with charcoal producers in Santo on 12 March 2017.

forest administration to maintain a minimum of control over forest resources in the concerned period.⁷⁵

As such, it is not exaggerated to state that the severe socio-economic conditions and the political turmoil of the period between the 1980s and 1990s and its effects on the ability of the state to control forest resources have worsened. Evidence in this regard has been provided by Alain Bertrand, who prominently explained the Togolese forest authorities' lack of control over the private production of fuelwood, notably charcoal, in particular as follows: '*La dispersion des producteurs, leur multiplicité et les faibles effectifs (sans grands moyens) des agents forestiers interdisent donc tout control de l'exploitation*'.⁷⁶

The same conclusion was made by Thiam, who linked the forest authorities failing control to the informal character of the private fuelwood (mainly charcoal) production.⁷⁷

The observations made by Bertrand and Thiam in 1987 and 1991 respectively are still valid, as recent studies appear to make the same observations.⁷⁸ In summation, the shift to earthmound kiln technique can be seen as the need of the farmers and charcoal producers in southern and central FSZ to meet the rise in concentrated demand for charcoal that gradually emerged in Lome from the 1980s onwards. This change benefited from the range of climatic, socioeconomic and political challenges, while contributing to the development of charcoal production into a second source of income generation, primarily in the FSZ.

⁷⁵ SOFRECO. *Politique Nationale de l'énergie. Rapport Préliminaire*, 147) „...les troubles sociopolitiques et l'anarchie qu'a connus le Togo pendant les années 1990 ont conduit: à la mise à mal de l'administration forestière par les populations, lui reprochant ses actions répressives, au point que celle-ci, très impopulaire, a bien failli disparaître ; □ à l'envahissement du domaine forestier permanent (DFP) de l'État ainsi affaibli, par les populations désireuses de récupérer les terres de leurs ancêtres, anciennement mises en défens par le colonisateur et conservées par l'État ;'

⁷⁶ Bertrand, *Marchés loméens des produits forestiers et commercialisation des productions du projet AFRI. 1^{ère} Partie, Rapport de Synthèse*, p. 11.

⁷⁷ Thiam, *Etude de marchés des produits ligneux au Togo*, p. 4.

⁷⁸ See République du Togo. Direction Générale de l'Énergie. *Rapport Général Provisoire. Enquête consommation des énergies domestiques au Togo*, pp. 99-100. ; See SOFRECO. *Politique Nationale de l'énergie. Rapport Préliminaire*, p. 211. See also Ribot Jesse who came up with a similar conclusion for senegal in: Ribot, Jesse C. "*Forestry Policy and Charcoal Production in Senegal*".

3.5 Charcoal making and gender: Explaining and challenging the so-called ‘women’s monopoly’ over charcoal production activity

This section draws on the above observations and arguments to show how the noted changes significantly shape gender. The account I generate challenges the well-established existing narrative in which women are thought to be the main actors involved in charcoal production activity. One of the most dominant discourses on charcoal production sector in Togo is the high representation of women depicted as the main actors in this field. This assumption stems from the large body of writings that has thus far focused on charcoal production in Togo.⁷⁹ In 2014, a document produced jointly by the Togolese state and the German Development Agency (GIZ) confirmed the predominance of women, as did previous studies, by revealing that

*[...] l'une des caractéristiques du Togo est l'importance numérique des femmes dans l'activité de production de bois de chauffe et de charbon de bois. Au Togo les femmes représentent plus de 90% de la production du bois-énergie, et elles se comptent par milliers de productrices dans les circuits de commercialisation du bois de chauffe et du charbon de bois.*⁸⁰

Viewed from a broader perspective, the above illustrates the core role of women especially in wood energy generation, utilisation and distribution in developing countries, as has been identified and discussed in several studies.⁸¹ Nevertheless, geographer Jesse Ribot's work regarding charcoal production in Senegal using a historical approach is among few studies that show that women as main actors in the field of fuelwood, and specifically charcoal production, cannot be generalised to all developing countries. Ribot, while investigating the relationship between charcoal demand in urban areas and its

⁷⁹ See Bertrand, Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI . IIIème partie, pp. 100-101; Thiam, Etude de marchés des produits ligneux au Togo, p. 60); République du Togo. Direction Générale de l'Énergie. Rapport Général Provisoire. Enquête consommation des énergies domestiques au Togo, p. 11.

⁸⁰ Dossou, Krystel M.R. Production et Consommation du Bois-Energie Au Togo. Ministère de l'Environnement et des Ressources Forestières, Direction des Eaux et Forêts, GIZ: Programme de Développement Rurale y compris l'Agriculture ProDRA-Volet III. Lomé, 2014, p. 10.

⁸¹ See Habtezion, Senay. *Gender and Climate Change. Capacity development series. Africa. Training module 3. Gender and Energy*. United Nations Development Programme, 2012, p.8. https://www.undp.org/content/dam/undp/library/gender/Gender%20and%20Environment/TM3-Africa_Gender-and-Energy.pdf Accessed 21 March 2018. See also the extensive overview related to Gender and Energy Debates provided by Khamati-Njenga, Beatrice, and Joy Clancy. *Concepts and Issues in Gender and Energy*. Energia, 2003, p. 24.

impacts on the environment, depicted the Senegalese charcoal production sector through an emphasis on the six groups of actors that compose the chain, notably the

surga (rural charcoal producers), *kontrapalaas* (rural foremen – intermediaries between *surga* and their patrons), *patrons charbonniers* (rural charcoal merchants, or ‘charcoal bosses’), *transporteurs* (trucking companies and their drivers), *coxeurs* (urban wholesalers) and *Diallo keriiñ* (urban charcoal retailers)⁸²

Here, it is relevant to emphasise the fact that, unlike in Togo, charcoal production in Senegal is mostly controlled by ‘cooperatives’ with a high implication of the state structures via the distribution of ‘quotas’⁸³ and one of the main actors in the production channel, the *surga* are men. The *surga*, as Ribot notes

[...]are almost all Pulaar speaking Fulbe from the Fouta Djallon region of Guinea. They are migrant labourers. Most came to Senegal in search of work in agriculture or small commerce. The word *surga* typically refers to a young man (**no women produce charcoal**)⁸⁴ living in the compound of a peasant farmer, working in the fields for a bed, meals and a share of the crop.⁸⁵

With the above in mind, data gathered from charcoal production areas in Togo seem to challenge the dominant discourse of women being the main actors involved in charcoal production in Togo. It could be observed in the field, for instance, that men are currently largely involved in charcoal making, showing that a change has occurred in this realm. To grasp this change, it would be interesting to start by proposing an explanation of how women came to be regarded as the main actors and finish with how and why men have gradually become involved in charcoal making. In fact, confronted with the question of the dominating role of women in charcoal production, as reported in most of the studies referred to at the beginning of this section, male interviewees in Notsé-Kpota responded that

Women are the pioneers in the production of wood energy because it is the men who prepare the ground for planting, i.e. weeding, cutting the big trees. Then the women intervened to continue the rest of the work: collecting the cut grass, assembling the twigs and tree branches cut by the men.

⁸² Ribot, Jesse C. “Forestry Policy and Charcoal Production in Senegal”.

⁸³ Jesse Ribot has emphasised on bias related to the “quotas” system in Senegal.

⁸⁴ My emphasis.

⁸⁵ Ribot, Jesse C. “Forestry Policy and Charcoal Production in Senegal”.

The women set aside the small wood for cooking and then had the idea of transforming the rest into charcoal which they sold in small quantities on the market.⁸⁶

Building upon the narratives provided above, it seems that women's pioneering role in energy and charcoal production was essentially linked to domestic activities in general, although men were not absent from this process. In FSZ such as Santo and Kpehoun I, however, the narratives recorded on the same matter did not clearly highlight women as being more active than men in charcoal production at a time when this activity was marginally practiced. Therefore, group interviews conducted in Santo and Kpehoun I were not effective in providing historical insights into the role women have played in charcoal production. Whether the silence of respondents in Santo and Kpehoun I on the issue has to do with the group dynamic during the interview or with the way the question was addressed remains unclear. Despite the contrast provided by interviewees in Santo and Kpehoun I regarding the origins of women's predominant involvement in charcoal production, there are certain common ties the three FSZ share that are worth mentioning to track the historical backgrounds of women in this sector of activity.

In fact, as shown in a previous section, it has been argued that charcoal making did exist as a marginal activity prior to the 1980s in Notsé-Kpota, Santo and Kpehoun I, as the demand then was insignificant. As such, this activity was economically less attractive, especially for men. Men likely participated indirectly in the production since the wood transformed into charcoal derived from land clearance for agriculture, which evidently required the commitment of both men and women. The men's part of the task was mainly weeding the land, and women were generally tasked with cleaning up the land by gathering and collecting logs left on the ground. Women gathered logs for domestic use and transformed some of them into charcoal, which in turn was marketed at a low scale, according to interviewees in Notsé-Kpota.⁸⁷ While fulfilling their task as gatherers and collectors of wood logs for domestic purposes, women identified charcoal production as an additional source of income other than agriculture. Put in other words, women foregrounded charcoal production prior to the 1980s in the three concerned areas, as this activity was closely related to their main role as domestic energy producers.

⁸⁶ See Anika, Agblévi, interviewed in Notsé-Kpota on 14 February 2017.

⁸⁷ See *ibid.*, quotation 84, last sentence.

Furthermore, the smallness of the charcoal market at that time, coupled with the importance of crop cultivation, clearly made charcoal production less attractive to men in these areas. In addition, the arduousness of the work and the disreputable image of the charcoal producer explain why men got less involved in this activity. In Santo, for instance, male interviewees referred to charcoal production as an activity they would have never embraced if they were economically given the choice and an alternative, and cited ‘extreme poverty’ as one of the main reasons why they engaged in this sort of activity. An interviewee noted that ‘Poverty is the fundamental reason why we got into this business. Charcoal production is the work of the poor; it is a risky job’.⁸⁸ Similar depictions of charcoal making as ‘a risky activity reserved for poor people’ due its arduousness as presented by previous interviewees, appeared in the narratives of producers in Kpéhoun I, where individuals’ steady lack of financial resources explain why most farmers have unwillingly engaged in charcoal production.⁸⁹ One interviewee metaphorically described charcoal making as an activity that sucks one’s blood and predisposes one’s body to be attacked by all kind of diseases due to the extreme heat to which the producer is exposed. The same interviewee stated that ‘*Charcoal money is a “hot money”⁹⁰ that you unwillingly work for to solve “hot” (i.e., unexpected) problems. You hate the job, but you need the money, what will you do?*’⁹¹ By the same token, men producers in the Itoutchan CSZ discussed charcoal using the term ‘cash and carry’⁹² (i.e., one produces charcoal because one needs money to deal with burning problems). A last and telling statement from an interviewee in Kpéhoun I that summarises the disreputable image of the charcoal producer in the visited areas suggests that ‘you can claim publicly that you are a farmer, but being a charcoal producer is something you will never openly tell people. Because this will clearly show how deep your poverty status is compared to the others!’⁹³

⁸⁸ Kodjo, Yo Ko; Ko, longuè Yaovi; Lokossou, Kodjovi, Nodjigou, Kossi. Group interview with charcoal producers in Santo on 12 March 2017.

⁸⁹ Group interview with charcoal producers in Atakpamé, Kpéhoun 1 village on 21 March 2017.

⁹⁰ Kodjo, Yo Ko; Ko, longuè Yaovi; Lokossou, Kodjovi, Nodjigou, Kossi. Group interview with charcoal producers in Santo on 12 March 2017.

⁹¹ Group interview with charcoal producers in Atakpamé, Kpéhoun 1 village on 21 March 2017.

⁹² Group interview with charcoal producers in Itoutchan near Guérin Kouka on 28 March 2017.

⁹³ Group interview with charcoal producers in Atakpamé, Kpéhoun 1 village on 21 March 2017.

Although these narratives are contemporary perceptions of the producers regarding their activity, their content clearly shows that relatively better living conditions, coupled with the absence of demand from urban areas, male farmers would not have embraced this activity. This perhaps substantially explains their disinterest vis-à-vis charcoal making some decades earlier, which in turn contributed to making this field a relatively 'free space' for women. However, this situation in the three areas has changed significantly, as will be shown further. Before continuing with the gender shift in the areas discussed thus far, I will address the issue in Itoutchan, the northern CSZ.

In Itoutchan, where charcoal production has a relatively longer past than most southern Togolese areas due to the renowned iron smelting industry in this area, the role of women clearly appeared in the interviewees' narratives: 'Charcoal production was a women's activity and they have been doing it in order to be financially independent'.⁹⁴ Considering the fact that the iron industry increased the demand for charcoal, producing it may have attracted both men and women, as charcoal making in this area appeared to be an important income-generating source in addition to agriculture. In this sense, what is revealed is that the active role of women in charcoal production occurred gradually as a consequence of the decrease of the iron industry, followed by the diminution of demand. This likely led to a gradual withdrawal of men from this activity. Consequently, both men and women had to concentrate on the remaining main activity: agriculture. Charcoal production decreased in this region because of the decrease of the iron smelting industry and, more importantly, due to the insignificance of the demand, especially from major urban areas such as Lome, as nearby areas supplied charcoal in the early 1980s. Women certainly continued to produce charcoal in Itoutchan despite the insignificance of the demand, as they still gathered wood logs after land clearance for domestic use; the surplus was perhaps transformed into charcoal and commercialised. As such, women's involvement in charcoal production in Itoutchan after the decrease of the iron smelting industry seemed to be similar to what has been observed for the FSZ (i.e., Notsé-Kpota, Santo and Kpehoun I) prior to the 1980s.

This illustrates a certain predominance of women in charcoal production in a particular time and context. However, the sector has experienced developments that must be

⁹⁴ Group interview with charcoal producers in Itoutchan near Guérin Kouka on 28 March 2017.

considered, as they provide insights that challenge the current, widespread and dominant discourse of women being the main actor in the sector. The reason for the relevance of the previous observation resides in the fact that most of the current narratives⁹⁵ tend to replicate, without solid self-conducted investigations, what has been found in studies and reports from the 1980s⁹⁶ and the early 1990s,⁹⁷ when the sector was increasingly subjected to shifts. Some recent studies have built their observations upon approximately 30-year-old reports and, in some cases, without referring to the original provenience of their observations. For example, Krystel M. Dossou reported recently for the Togolese government and the GIZ that

*Il n'existe pas au Togo des entités sous forme de coopératives forestières pour l'exploitation du combustible ligneux, comme c'est le cas au Sénégal, au Mali. Il convient de noter que l'une des caractéristiques du Togo est l'importance numérique des femmes dans l'activité de production de bois de chauffe et de charbon de bois. Au Togo les femmes représentent plus de 90% de la production du bois-énergie.*⁹⁸

The concern, however, is that the statement, and particularly its claim that 90% of charcoal production is controlled by women, is an exact copy of the observation made by the Thiam in 1991,⁹⁹ which Dossou has borrowed without appropriate citation. Equally, Koffi Sessi's report, intended to provide the European Commission, FAO, the African Development Bank and the Togolese government with reliable data on fuelwood energy in Togo, reproduced *in extenso* the observations made by Thiam 10 years earlier to support the assumption that charcoal production in Togo in 2001 – the year the report was released – was monopolised by women.¹⁰⁰ Although a high number of women may have been active in the charcoal production at the time the studies were conducted and reported,

⁹⁵ See Thiam, Etude de marchés des produits ligneux Au Togo or Dossou, Krystel M.R. Production et Consommation du Bois-Energie Au Togo, p. 10.

⁹⁶ See namely Bertrand, Marchés loméens des produits forestiers et commercialisation des productions du projet AFRI. and Barbaud, Les problèmes forestiers de la république togolaise. Mission d'évaluation des projets forestiers envisagés par le Gouvernement Togolais.

⁹⁷ See notably Thiam, Etude de marchés des produits ligneux Au Togo.

⁹⁸ Dossou, Krystel M.R. Production et Consommation du Bois-Energie Au Togo, p. 10.

⁹⁹ See the original statement in Thiam, Etude de marchés des produits ligneux au Togo, p. 95.

¹⁰⁰ SESSI, Koffi. *Collecte et analyse de données pour l'aménagement durable des forêts-joindre les efforts nationaux et internationaux. Programme de partenariat CE-FAO (1998-2002) Ligne budgétaire forêt tropicale B7-6201/97-15/VIII/FOR Projet GCP/INT/679/EC. Rapport d'étude sur les données du bois-énergie au Togo.* Mars 2001., p. 18. <http://www.fao.org/docrep/004/X6801F/X6801F14.htm#7437>, Accessed 22 June 2018. See the source of this observation in Thiam, Etude de marchés des produits ligneux au Togo, p. 95.

using such old data can be interpreted as if things remained static in the fuelwood production sector, which, based on the developments the sector went through, appears not to be the case. Using old data to discuss the current situation, as done by the authors above, could deliver a debatable picture of the function and the dynamics of the charcoal production sector.

The relevance and pertinence of such critiques for the particular case of Togo reside in the fact that observations made during recent fieldwork helped to document important shifts with regard to the actors involved in the charcoal production sector. One of the changes is illustrated in the way more men are engaging in charcoal production, as shown by the group interviews conducted in the field.



Picture 5: Interview with male charcoal producers¹⁰¹

When approached, male interviewees cited the lack of employment opportunities, difficult socio-economic conditions ('poverty' is the reason typically given in the interviews), low rainfall (i.e., 'delay and lack of rain', according to the interviews'), and the attempt to have an occupation in the dry season were repeatedly evoked reasons to

¹⁰¹ This photograph was taken during a group interview in Atapkamé. The interviewees allow me to use it for the sole purpose of this research.

justify their participation in the charcoal production sector.¹⁰² The complex issue, however, is that the previously enumerated reasons present the overall picture of the daily social realities of both genders, irrespective of the sectors of activity they are engaged in. Therefore, it is not tenable simply to relate these reasons exclusively to the charcoal production sector. However, it seems possible to extend the scope of some of these reasons while correlating them with the core issues addressed above.

In fact, the droughts of the 1980s had an unprecedented consequence on the economic situation of most farmers and significantly contributed to the importance of charcoal production, as shown above. Since farmers (both men and women) were affected by the severity of the droughts, the search for a new income source to close the gap created by the decrease of agriculture and face the consequent economic challenges became a potential factor that attracted men to charcoal production. This assumes that the poor harvests of the 1980s likely forced men to gradually integrate and share the charcoal production domain with women and therefore attenuate the economic difficulties caused by agricultural under-performance.

After the droughts, when the agricultural sector revived, charcoal production did not disappear but rather established itself as a second method of income generation. The concentrated demand that emerged with the population growth in Lome and the gradual shift to charcoal from the 1980s onwards contributed significantly to the reinforcement of charcoal production as secondary source of income for farmers of both genders. Consequently, the transformation of techniques to produce at a higher scale to meet the demand occurred. This suggests that male actors who engaged in charcoal production in FSZ including Santo and Kpehoun I, as a consequence of the droughts in the 1980s, did not abandon this activity when the agricultural sector recovered. Instead, they continued the work, as changes in consumption behaviour in urban areas such as Lome increased the demand from the production areas, especially those in the south and closer to the capital. For male farmers, charcoal production, although an arduous activity, procured economic gains and employment, especially in the dry season when farming diminishes.

¹⁰² See Group interview with charcoal producers in Atakpamé, Kpéhoun 1 village on 21 March 2017; Group interview with charcoal producers in Itoutchan near Guérin Kouka on 28 March 2017; Kodjo, Yo Ko; Ko, Longuè Yaovi; Lokossou, Kodjovi, Nodjigou, Kossi. Group interview with charcoal producers in Santo on 12 March 2017; Anika, Agblévi, interviewed in Notsé-Kpota on 14 February 2017.

Consequently, women as well as men appear to increasingly share the economic dividends provided by charcoal production based upon the high demand from urban areas such as Lome, a situation exacerbated by the constant endeavours of both genders to provide solutions to urgent financial difficulties in their daily lives. After all, as we have seen, male interviewees readily pointed to ‘poverty’ as a determining factor that explains why they chose to become charcoal producers. Producing large quantities of charcoal to supply the steady growing demand coming from Lome cannot be achieved without the participation of both men and women, to whom the activity procured an additional opportunity to meet socio-economic challenges.

3.6 Unpacking charcoal production and its environmental implications based on the experiences in the former supply zones

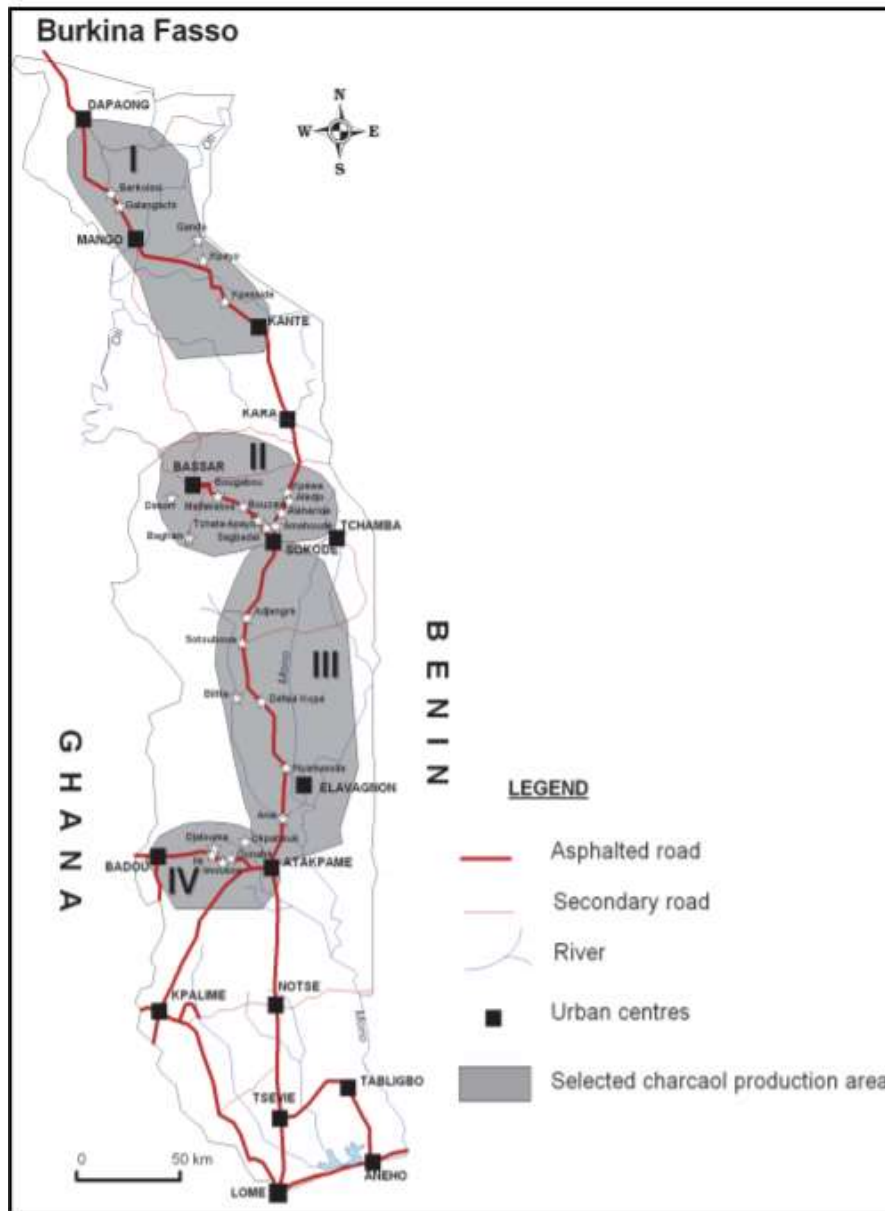
As illustrated in the previous section, in the second half of the 1980s, most supply zones were located relatively close to the capital, namely in the prefectures of Zio, Haho, Ogou and Kloto;¹⁰³ thus, the distance between the main supply basins and Lome was within a radius of approximately 35 km to 200 km,¹⁰⁴ as mapped at the beginning of this chapter. In 2011, botanists and zoologists at the *Université de Lome* revealed the concentration of charcoal production in three main areas, notably in the plateau, central and savanna regions (see Map 4).

This observation corroborates the interviewees’ narratives referred to at the beginning of this chapter.¹⁰⁵ In the light of the above, it is interesting to examine the link that has been drawn by scholars between fuelwood production and its environmental implications in the supply zones and determine how the experiences in the FSZ provide historical empirical evidences to contextualise the existing discourses. Before focusing on my case study, a brief informative detour to non-African areas where similar discourses found a historical precedent may be instructive.

¹⁰³ (Bertrand, *Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI*. 1^{ère} Partie, Rapport de Synthèse, 10.)

¹⁰⁴ See (Bailly. *Rapport de Mission relative à une étude de la consommation de bois et des produits dérivés : charbon de bois, bois de chauffage, effectuée à la demande de la République Togolaise du 26 Août au 10 octobre 1982*, 4.)

¹⁰⁵ See section 4.2, footnotes 10 and 11.



Map 4: Current charcoal production areas in the phytogeographical zones of Togo'.¹⁰⁶

David R. Foster and John D. Aber have found that the massive use of wood as fuel was one of the main causes of important forest lost in Massachusetts in the last centuries. According to the authors, 85% of Massachusetts was forested in the early nineteenth century, of which only 30% remained by 1870.¹⁰⁷ In 1800, the supply of the United

¹⁰⁶ This map illustrates the current charcoal production areas based on the work by Fontondji et al. "Impact of Charcoal Production on Biodiversity in Togo [West Africa]"

¹⁰⁷ See Foster, David R., and John D. Aber. *Forests in Time: the Environmental Consequences of 1,000 Years of Change in New England*. Yale University Press, 2006.

Kingdom's urban populations with woodfuel appeared to have been one of the main causes of woodland degradation.¹⁰⁸

Unlike the USA and the UK, discourse about fuelwood production and use and their potential consequences on the woodland in developing countries as a whole, and in Togo in particular, is recent. To support this observation, I refer shortly and critically to the colonial era. In fact, the German colonial forest manager Oskar Metzger, author of one of the first pioneering works on forest issues in Togo, who noted anthropic factors responsible for 'Waldarmut' (the poor state of the forest vegetation¹⁰⁹) in the territory.¹¹⁰ However, Metzger's observations were based on blaming the 'indigenous primitive' ways of gaining farmland using 'Feuer' and 'Axt' had to be taken cautiously because of the colonial context in which the narrative evolved. This colonial context was mostly characterised by discourses in which colonised people were made responsible for diverse types of environmental degradations, which in turn was used as argument to justify colonial interventions in forest resource management and control, as discussed in Chapter 5. Metzger's accusations of 'indigenous' Togolese responsibility for forest loss finds one of its major contemporary critics in Melissa Leach and Robin Mearns's works, who vigorously questioned the widespread view that overhighlighted the role of African farmers, hunters and herders as the main actors and victims of land destruction.¹¹¹ Though I am aware of such critics, I refer to Metzger's book simply because nowhere did urban domestic supply appear in his narratives as a challenge for forest cover in the colony. A 23 November 1920 decree by the French administration regulated the cutting of specific wood species in Togo and imposed taxes to be paid in this regard. Interestingly, this decree exempted wood cut on private property and wood used for cooking purposes from taxes.¹¹² Although fuelwood was undoubtedly the main urban source of energy in Lome in both periods, as shown in Chapter 2, nowhere in the consulted archival sources of the

¹⁰⁸ See Krausman, Fridolin, and Schandl, Heinz, and Sieferle, Rolf Peter. "Socio-ecological regime transitions in Austria and the United Kingdom". *Ecological Economics*, 65(1), 187–201.

¹⁰⁹ My own translation.

¹¹⁰ Metzger, *Die Forstwirtschaft im Schutzgebiet Togo*, p. 14.

¹¹¹ Leach, Melissa, and Robin Mearns. *The Lie of the Land: Challenging Received Wisdom on the African Environment*, p. 2.

¹¹² Rapports à la Société des Nations Togo (1921, 1927/1935) FR ANOM 2300 COL 39-42 Carton 39:-Rapport du 1er Juillet 1921 et le 30 Avril 1922: régime forestier dans le chapitre lid 4 1921 (p. 23)

German and French administration periods was its production linked to any form of forest degradation in supply areas. Equally, early selective works by scholars such as Raphael Zon and William N. Sparhawk,¹¹³ A. Aubréville¹¹⁴ and Charles Robequain¹¹⁵ used German and French colonial records respectively to document the forest cover in Togo. The focus of these and subsequent works until the early 1980s (as investigated and synthesised by James Fairhead and Melissa Leach) reported estimates of the total forest cover in colonial and post-colonial Togo.¹¹⁶ The narratives of the concerned works did not reveal any form of fuelwood-related forest destruction. The only work to do so was Lee Goucher's *The Iron Industry of Bassar, Togo: An Interdisciplinary Investigation of African Technological History* (1984). In this study, the author identified iron smelting among the Bassar to have been a determinant factor of important forest lost and one of the major causes of deforestation in the concerned Togolese region that until the late nineteenth century was well known for its iron industry. Goucher's argument cannot be taken for granted, as it generated profound and well-argued critiques from scholars who suggested that '[...] the impact of indigenous pre-colonial iron smelting on the environment in West Africa, and in particular in Togo, has been much exaggerated'.¹¹⁷ In the post-independence period, however, the demographic dynamics and gradual shift from firewood to charcoal in Lome in the early 1980s challenged the demand, as well the transformation processes of charcoal, as argued in the above sections. Such a situation requires situating these recent happenings within the discourse on wood transformation and its potential environmental impacts. To this end, it is noteworthy to remark that the intensification of the production to respond to the growing concentrated demand from the capital from the 1980s onwards brought experts to investigate the sector and to develop a

¹¹³ See Zon, Raphael, and William N Sparhawk. *Forests of the World: Maps from 'Forest Resources of the World'*. N.p., 1923.

¹¹⁴ Aubréville, A. 'Les forêts du Dahomey et du Togo'. Bulletin du comité d'études historiques, 29 (1) : 1-113 cited by Kokou Kouami, Adjossou Kossi et Hamberger Klaus. 'Les forêts sacrées de l'aire Ouatchi au sud-est du Togo et les contraintes actuelles des modes de gestion locale des ressources forestières'. *La revue électronique en sciences de l'environnement*, Vol. 6, n°3, décembre 2005, <https://journals.openedition.org/vertigo/2456>, Accessed 22 March 2020.

¹¹⁵ Robequain, Charles. 'La végétation forestière de l'A.O.F. et du Togo.' *Annales de Géographie*, t. 48, n°272, 1939. pp. 163-170, www.persee.fr/doc/geo_0003-4010_1939_num_48_272_11533 Accessed 18 March 2019.

¹¹⁶ Fairhead, James, and Melissa Leach. *Reframing Deforestation: Global Analyses and Local Realities*, p. 123.

¹¹⁷ *Ibid.*, 135.

set of insights. Although the situation at the international level was highly influenced by the dominant ‘fuelwood crisis’ debate, the reports of the studies conducted in Togo did not directly incriminate the increasing charcoal production for having important environmental consequences, as witnessed by Alain Bertrand.¹¹⁸ This could be explained by two facts. Firstly, charcoal production to meet the growing demand from Lome was in its early stage, coupled with the abundant existence of the main wood species, mainly those giving ‘charcoal of a good quality’,¹¹⁹ in supply areas located closer to the capital. In this particular period, woodland degradation was more related to farming methods in use in the production areas than to the transformation of wood into charcoal,¹²⁰ which, it should be stressed, did not require all wood species, but particular ones such as *Anogeissus leiocarpus* or *Butyrosperum parkii*. This, I argue, marked the beginning of a certain overexploitation of the concerned species that resulted in their depletion in FSZ including Santo and Kpehoun I. It is evident, as suggested above, that the reports produced in the 1980s did not address charcoal production as a main cause of environmental degradation and forest cover diminution in the concerned period. It has been reported, for instance, that

[...] *l’espace forestier togolais régresse d’année en année. L’exploitation des images Landsat et la plupart des observations le confirment : d’après les estimations, déboisement et dégradation touchent de 10.000 à 15.000 hectares par an. Cependant, de la même façon que pour les autres pays de la région, la cause principale de cette régression est sans doute l’extension des terres agricoles et non les prélèvements de bois à des fins énergétiques.*¹²¹

Clearly, the local agricultural practises were taken as the most determinant factor of the annual forest lost in Togo, similar to what was identified by Metzger in 1911 and criticised by scholars such as Melissa Leach and Robin Mearns, and James Fairhead and Melissa Leach.¹²²

¹¹⁸ Bertrand, Marchés loméens des produits forestiers et commercialisation des productions du projet AFRI. 1^{ère} Partie, Rapport de Synthèse, p. 4.

¹¹⁹ A charcoal is considered to be of a good quality when it is hard, long-lasting and obtained from species such as *Anogeissus leiocarpus*.

¹²⁰ Bertrand, Marchés loméens des produits forestiers et commercialisation des productions du projet AFRI. 1^{ère} Partie, Rapport de Synthèse, p. 4.

¹²¹ Bertrand, Marchés loméens des produits forestiers et commercialisation des productions du projet AFRI. 1^{ère} Partie, Rapport de Synthèse, p. 9.

¹²² See Leach, Melissa, and Robin Mearns. *The Lie of the Land: Challenging Received Wisdom on the African Environment*, pp. 2–3; Fairhead, James, and Melissa Leach. *Reframing Deforestation: Global Analyses and Local*

However, by excluding fuelwood production as a cause of forest degradation, as Alain Bertrand did in his observation above, the author joined scholars who argued that ‘[...] woodfuel in sub-Saharan Africa comes not from cutting live trees for fuel, but from surplus wood left over from clearing land for agriculture, or from lopping branches off trees standing on farms [...]’.¹²³

It is, however, important to note that the ‘fuelwood shortage’ foreseen in the reports was based on the assumption that, as the demand will be higher following the increasing demographic trend of Lome, more wood will be transformed into charcoal to meet the demand.¹²⁴ On the one hand, this illustration of the ‘fuelwood crisis debate’, as demonstrated elsewhere,¹²⁵ has been used to support government intervention in fuelwood, and especially charcoal, production in Togo. More importantly, it can be implicitly perceived, on the other hand, as a way of relating charcoal production over a long period in correlation with the demographic trend in important woodland devastation in supply zones. The term ‘deforestation’ was not used in the 1980s in Togo to refer to the woodland devastation predicted to lead to a ‘fuelwood shortage’ in Lome. However, recent developments have shown that the term has gained in importance in the narratives of both officials and scholars, to the extent that an attempt to explain this shift in the discourse and its contextualisation appears to be a necessity.

In fact, modern official and scholarly texts typically relate fuelwood usage and production, especially charcoal, to deforestation. In Togo, the previous observation is mentioned in a state policy document addressing the energy issue that states, for instance, that ‘*L’augmentation de la déforestation est à nouveau analysée comme résultant d’une exploitation des produits ligneux visant à satisfaire la demande énergétique des ménages*’.¹²⁶ The same argument is defended in works by scholars such as Jérémie Kokou Fontodji and colleagues, who relate the ‘high rate of deforestation’ in many major supply

Realities; Studies in West Africa. In which the authors referred cautiously to historical materials to demonstrate how national and international literatures overemphasised the amount of forest lost in six West African countries while showing the major role played by indigenous inhabitants to increase forest cover. (pp. xiv–xv)

¹²³ Leach, Melissa, and Robin Mearns. *The Lie of the Land: Challenging Received Wisdom on the African Environment*, pp. 2–3.

¹²⁴ The ‘fuelwood shortage’ concern is discussed in chapter 5, sections 5.3 and 5.4.

¹²⁵ Ibid.

¹²⁶ SOFRECO. *Politique Nationale de l’énergie. Rapport Préliminaire*, p. 71.

areas to the demographic growth¹²⁷ that imposes an increase in charcoal production and its use to satisfy domestic needs. There is nothing new in this discourse, as it is clearly embedded in the narrative of the ‘fuelwood gap’ and ‘the fuelwood crisis’ discourses that emerged in mid-1970s¹²⁸ and which were discussed and criticised in Chapter 2. Nevertheless, it is important to note that despite the critiques of this discourse, one would be remiss not to admit that the increase in charcoal demand from important urban areas such as Lome did not drive important environmental change in supply zones. The point to criticise and contextualise here is the fact that the concerned environmental change has been too vaguely labelled ‘deforestation’ by officials and scholars in Togo, as observed above. This ambiguous usage of the term is not particular to Togo but a well-known bias that characterised a large body of scientific works on woodfuel production and consumption in developing countries and its potential impacts on the environment.¹²⁹ Judging from the above and knowing that ‘deforestation’ is a broad¹³⁰ and multifaceted term, using it to objectively explain any environmental change that might be related to woodfuel and charcoal production and consumption may require a certain caution and precision to generate a compelling narrative.

To this end, it seems relevant to briefly define what the term means in a broader sense and then examine how the happenings in FSZ and plausible future expectations in the CSZ can be situated within this definition. The problem, however, is that the term has been given a plethora of meanings by scholars and diverse institutions,¹³¹ which makes it highly complex to capture a definite image of what exactly deforestation signifies. Scholars such as Richard Hosier highlighted the ‘loaded nature of the term deforestation’,¹³² whereas others before him drastically suggested its complete

¹²⁷ Fontondji et al. “*Impact of Charcoal Production on Biodiversity in Togo (West Africa)*”

¹²⁸ Hosier, Richard H. “Charcoal Production and Environmental Degradation: Environmental History, Selective Harvesting, and Post-Harvest Management”. *Energy Policy*, vol. 21, no. 5, 1993, pp. 491–509, doi:<https://www.sciencedirect.com/science/article/pii/03014215939003>. Accessed 21 March 2018.

¹²⁹ Ibid.

¹³⁰ Ibid.

¹³¹ See Chakravarty et al.: “Deforestation: Causes, Effects and Control Strategies” *Global Perspectives on Sustainable Forest Management* edited by Akais Okia, Clement, In Tech, 2012, pp. 3–28.

¹³² Hosier, Richard H. “Charcoal Production and Environmental Degradation: Environmental History, Selective Harvesting, and Post-Harvest Management”.

eradication from the academic debate based on the fact that ‘it obscures more than it reveals [...]’.¹³³ Lawrence S. Hamilton recommends that avoiding the ambiguity of the term is not possible unless ‘[...] it is followed by a series of phrases or whole sentences that denote specifically what activities have, in fact, occurred’.¹³⁴ In such a context, finding an appropriate and unbiased definition appears to be complex and challenging. This complexity is primarily rooted in the fact that the ‘forest’ to which ‘deforestation’ is associated is itself hard to define. In the discussion of forests, unfortunately ‘[...] there is no universal definition that is used worldwide and for all purposes’. Further, the same author states that ‘an exhaustive compilation of forest definitions has been prepared and includes more than 650 different definitions’, adding that compilation has been conducted for other forest related themes such as deforestation.¹³⁵ In light of the above, it seems relevant not to provide a definition at this stage that will fail to encompass all the facets of the term but rather to focus on how the developments in the Togolese case can specifically be helpful to adjust what has been mistakenly suggested by Togolese officials and scholars on the matter. To achieve this, it seems necessary to return to the studies conducted in the 1980s.

In fact, it was the availability of particular wood species, such as *Anogeissus leiocarpus* or *Butyrosperum parkii*, in the FSZ that justified the importance of charcoal production in these areas located closer to Lome. Charcoal traders could, for example, minimise their transportation costs due to the geographical proximity of the FSZ to Lome. With the demographic growth of Lome, followed by the gradual shift from firewood to charcoal and the steady increase in charcoal demand, these particular wood species were slowly overexploited in the FSZ. This situation led to the gradual lack of *Anogeissus leiocarpus* or *Butyrosperum parkii* in the FSZ, while stimulating the traders’ reaction to seek areas where these species can be found. Additionally, the overexploitation of the concerned species has not been followed by a concrete and specific reforestation measure from either

¹³³ Hamilton, Lawrence. “Restoration of degraded tropical forests”. *Environmental Restoration: Science And Strategies For Restoring The Earth*, 1990, pp.113–122.

¹³⁴ Hamilton, Lawrence. “*Restoration of degraded tropical forests*”

¹³⁵ Burley, J., et al. ‘Encyclopedia of Forest Sciences’. *Encyclopedia of Forest Sciences*, 2004, www.sciencedirect.com/science/referenceworks/9780121451608. Accessed 21 May 2019.

the producers' or ruling authorities' side, as recorded in the field.¹³⁶ As an illustration, Notsé, a former supply zone where *Anogeisus leiocarpus* (referred to as *Heheti* in Mina by the respondents) was abundant, has seen the total disappearance of this species. Recently, Kokou et al. identified 'preferred species for charcoal production', including *Anogeisus leiocarpus*, *Azelia africana*, *Burkea africana*, *Canthium schimperianum* and *Prosopis africana*. They revealed the abundant availability of these species far from the FSZ, in areas such as Notsé.¹³⁷ This, however, does not mean that charcoal production has disappeared in the FSZ; it does continue at low scale using *Tektona grandis*, as most government reforestation programmes have targeted this species. The problem appears to be that *Tektona grandis* yields a low-quality charcoal and is therefore less preferred by consumers and traders. The consequence has been that charcoal traders contributed to the decrease in charcoal production in the FSZ, as they tend to move gradually to the CSZ in search of species that provide the best quality charcoal. The observations here – particularly regarding Notsé – show that charcoal production has steadily decreased in the area, not because the whole woodland was harvested to satisfy the demand from the capital (as has been suggested), but rather due to the overexploitation of particular species coupled with an absence of concrete reforestation measures specific to species highly sought for charcoal making in the FSZ. This argument is an important evidence that supports the criticism formulated by Fairhead and Leach to Goucher's assumption, by suspecting that smelting wood could likely result in the extinction of certain wood species, rather than to the exhaustion of whole forest cover.¹³⁸ As such, it appears clear that charcoal production and consumption may affect the woodland through the loss of specific species and, as such change the environment. This provides material against undifferentiated and biased assumptions that suggest that 'There is no question that as the population in developing world grows, so too will the demand for firewood and charcoal,

¹³⁶ Kodjo, Yo Ko; Ko, longuè Yaovi; Lokossou, Kodjovi, Nodjigou, Kossi. Group interview with charcoal producers in Santo on 12 March 2017. Anika, Agblévi, interviewed in Notsé-Kpota on 14 February 2017.

¹³⁷ Kokou et al. "Impact of charcoal production on woody plant species in West Africa: A case study in Togo", *Scientific Research and Essay*, Vol. 4 (9), pp. 881–893, <http://www.academicjournals.org/SRE> ISSN 1992–2248 © 2009 Academic Journals, Accessed on 11 March 2018.

¹³⁸ Fairhead, James, and Melissa Leach. *Reframing Deforestation: Global Analyses and Local Realities; Studies in West Africa*, p. 129.

and deforestation will continue to accelerate'.¹³⁹ Finally, the fear remains that what has been experienced in the FSZ may be repeated in the CSZ, since charcoal is likely to remain an important domestic energy source in Lome for decades to come.

Conclusion to Chapter Three

How do demographic growth and demand for charcoal in Lome interrelate from the 1980s onwards? How does the link between the two shape charcoal production techniques, gender roles? What are the implications on the forest vegetation in FSZ and CSZ?¹⁴⁰ This chapter addresses these questions by showing how the population increase in Lome has led to a concentrated demand for charcoal since the early 1980s. It also clarifies the link between this situation and the shifts of supply zones from FSZ to CSZ, where charcoal production techniques equally underwent significant changes. The narratives generated throughout the chapter challenge the imposing assumptions that the existing grey literature on fuelwood in Togo used to depict charcoal production as a women's activity. Arguing against this assumption, I have shown in this chapter that socio-economic difficulties have gradually brought men to unwillingly embrace charcoal production as a second important source of revenue in addition to agriculture over the last decades. I used findings from the FSZ to explain the implications of the steady concentrated demand for charcoal from Lome and charcoal production as an economic activity of both men and women have had on the environment. I have argued in this respect that these implications pertain to the extinction of particular wood species in the supply zones causing traders from FSZ to CSZ to move to places where those species are found. Based on this observation, and unlike existing studies on fuelwood in Togo, I contend that the term 'deforestation' appears to be too vague to capture the consequences which charcoal production has had on the environment, unless one identifies the extinction of specific wood species, as previously indicated, with the meta-theme of 'deforestation'.

¹³⁹ Perlin, John. "History of Wood Energy". *Concise Encyclopedia of History of Energy*, 1st ed., Edited by Cleveland, Cutler J. Elsevier, 2009, pp. 323–330.

¹⁴⁰ Supply zones are former and current areas that I have identified in this research and which provide Lomé with charcoal.

4 Changing Charcoal Prices: Actors and their Strategies (from the 1970s Onwards)

Introduction

Since the 1970s, available data on fuelwood energy in Togo reveal constant changes in charcoal prices. According to the *Direction Nationale de la Statistique* (National Department of statistics¹), charcoal prices increased substantially between 1970 and the early 1980s, while strongly declining from 1986 to the early 1990s. From 1998 to 2017, the price trend indicates continuous growth with insignificant fluctuations between the seasons. This chapter addresses these charcoal price changes by underscoring the contexts in which they evolved, as well as their implications for both private charcoal traders and private domestic charcoal users in Lome. I firstly provide an overall picture of the organisation of firewood and charcoal marketing in Lome, demonstrating the complexity and heterogeneity of the marketing channels and the variety of actors involved in the marketing of charcoal in particular. Drawing on this, I explain my rationale for focusing on ‘*Commerçants généralistes*’ (CGs) as the key actors to explore the marketing of charcoal and the marketplace as their main operational space, as well as the question of the predominance of women in this activity. The chapter then clarifies the woodfuel, notably charcoal, price developments from the 1970s onwards by consequently highlighting the various strategies users have deployed to meet the constant challenge of rising fuel costs for their kitchens. These strategies, albeit of crucial importance for users and for market development, have not received enough attention in existing narratives or studies on firewood and charcoal usage in Lome. Therefore, the chapter draws on oral historical evidence to bridge this gap. Further, it illustrates the manner in which the challenges posed by the supply of fuelwood have not only fuelled the rise of charcoal prices in Lome but has substantially also shaped the business and private lives of CGs, as well their relationships with the producers in the supply zones. Lastly, the chapter concentrates more on charcoal and less on firewood, given the switch from the latter to

¹ My own translation.

the former as cooking fuel in Lome from the 1980s onwards; moreover, CGs trade a much higher quantity of charcoal than firewood.

4.1 A general overview of charcoal marketing in Lome

In the 1970s, when woodfuel issues in developing countries, and in Togo in particular, began to attract the attention of international and national ruling institutions, several expert studies sought to provide insights into how the woodfuel marketing channels in important woodfuel-consuming cities like Lome were organised.² Among other studies conducted from the 1970s onwards, Alioune Tamchir Thiam's report released in the early 1990s appears to be one of the most consistent works that captured how the marketing of woodfuel towards Lome was structured.

Providing a short and recent historical insight into the diversity of the market chain is an essential point of departure for two specific reasons. First, it will help illuminate the market chain structure by clarifying how it has changed over the last four decades. Second, and more significantly, it provides a broad and complex picture of actors who have been involved in the marketing of woodfuel (especially charcoal) in Lome. Drawing on this second reason, I shall clearly explain and justify my focus on CGs as the appropriate actors whose profile and manner of involvement within the market chain fecundly enabled the generation of the wealth of data that addresses the central concerns of this chapter.

In fact, Thiam identified three main '*circuits commerciaux*' (marketing channels) of woodfuel in Togo, namely the short, medium and long channels,³ as well as three specific '*types de marchés*' (categories of marketing channels). The '*méso-marchés*', for example, aimed at satisfying the provincial cities' demands for firewood and charcoal, whereas

² See The 'expert literature' and the scholarly works done on fuelwood in Togo as extensively mentioned in the introduction, section 1.2, footnotes 19-36 .

³ Thiam, Etude de marchés des produits ligneux au Togo, p. 13. Other studies such as Barandao et al. Etude sur l'utilisation d'énergie domestique et artisanales au Togo et propositions de programmes d'économie d'énergie d'origine ligneuse, p. 35. raised local and inter-urban markets as marketing platforms of firewood and charcoal without insightful details. The report released by Société Togolaise d'études de développement en Afrique, analyse de l'évolution des ressources forestières, de l'exploitation des terres et diagnostic des approvisionnements et des consommations des grands centres urbains en énergies traditionnelles, p. 31 is based on classifications of marketing channels proposed by Thiam.

their supply zones were located in an average distance of 50 to 100 km away. The ‘*micro-marchés*’ competed with the ‘*méso-marchés*’, as both largely depended on fuelwood and mainly charcoal from the same supply zones.⁴ The former differed, however, from the latter, as they generally engaged individual private producer-traders who ensured the production (i.e., fuelwood gathering and/or charcoal production) and the transportation to a local market or along the streets.⁵ The distances between the production area and the marketing place at that time oscillated between five and 10 km. The last category Thiam distinguished was the ‘*macro-marchés*’. The relevance of this category to this study lies in the fact that the ‘*macro-marché*’ is driven by the dynamic of the strong demand in fuelwood, mainly charcoal, coming from the capital. Thiam states that

*Le macro-marché de bois de chauffe représente environ 13% du commerce de bois de chauffe, en expansion continue, ce marché s'étend à l'heure actuelle sur plus de 2/3 du territoire du Togo, soit un circuit commercial long de plus de 500 km avec un vecteur de flux (sens de circulation des produits) orienté vers Lomé. [De même] Le macro-marché de charbon de bois représente près de 75.000 tonnes de charbon, soit 41% du commerce de charbon de bois, en expansion continue, ce marché est en voie de s'étendre sur l'ensemble du pays, avec un vecteur de flux orienté vers Lomé.*⁶

The ‘*macro-marché*’ as described by Thiam is appropriate to this study based on the consistency of its core characteristics. It is the main marketing channel through which fuelwood, and charcoal in particular, has been made available in Lome. In the 1990s, when Thiam released his report, the expansion he noted and predicted, as one can read in the quotation above, seems to be in line with major transformations that occurred in the private domestic energy landscape in Lome, notably the gradual shift from firewood to charcoal. This change, discussed in-depth in Chapter 2, reinforced not only the concentration of charcoal consumption in Lome but more importantly also the significance of the ‘*macro-marché*’ based on the fact that the major share of nationally produced charcoal is still dedicated to the capital via this marketing channel, as suggested by Thiam some 30 years ago. His observation is still valid, as it has been confirmed by recent works.⁷ What needs to be clarified is that the ‘*macro-marché*’ refers not only to

⁴ Thiam, *Etude de marchés des produits ligneux au Togo*, p. 13.

⁵ Ibid.

⁶ Ibid.

⁷ See, among others, Fontodji, *déterminants de la production – consommation du charbon de bois au Togo et vulnérabilité aux changements climatiques*; Fontodji, Kokou Jeremie, et al. *“Impact of Charcoal Production on*

the private actors (traders) who have been dominating the marketing of charcoal towards and in Lome, but also para-statal institutions such as ODEF, which from the end of 1970s onwards started charcoal production and marketing as the only ‘legal and formal entity’.⁸

To discuss the actors of the ‘*macro-marché*’, however, I focus more on the private ones because woodfuel marketing was traditionally and continues to be predominantly controlled by private traders, especially after the failure of the AFRI project (1982–1989), through which the government attempted in vain to gain the monopoly of charcoal production and marketing.⁹ By zooming in on the ‘*macro-marché*’, one can clearly note that the private traders engaged in the marketing of charcoal towards and in Lome have been diverse and have operated in various settings over the years. In the third volume of their quantitative survey conducted on firewood and charcoal markets in Lome in the 1980s Alain Bertrand, Yves Marguerat and Bozena Stomal-Weigel observed the complex and multi-layered scope of fuelwood marketing channels.¹⁰

The difficulty of capturing all actors involved in the marketing of charcoal on the ‘*macro-marché*’, as noted by Bertrand and his colleagues in 1987, is still an ongoing issue, as I was privileged to experience myself in the field. The data collected from the field in 2017 help highlight the dynamic and flexible nature, not only of the private actors but also of charcoal marketing in the wider sense. For example, it was not uncommon to note long truck drivers who operate occasionally as charcoal traders. Truck drivers become occasional traders when they transport and market charcoal in Lome as a by-product of

Biodiversity in Togo (West Africa)”; République du Togo. Direction Générale de l’Énergie. Rapport Général Provisoire. Enquête consommation des énergies domestiques au Togo.

⁸ Barandao et al. Etude sur l’utilisation d’énergie domestique et artisanales au Togo et propositions de programmes d’économie d’énergie d’origine ligneuse, p. 38. ODEF, as a state-owned institution, is depicted as the formal actor whereas all other private actors are arguably portrayed as informal actors operating illegally in the fuelwood sub-sector. See République du Togo. Direction Générale de l’Énergie. Rapport Général Provisoire. Enquête consommation des énergies domestiques au Togo., Djassah, M’ba. Etude sur les méthodes de consommation du bois-énergie et de l’utilisation des foyers économiques., Société togolaise d’études de développement en Afrique, Analyse de l’évolution des ressources forestières, de l’exploitation des Terres et diagnostic des Approvisionnements et des consommations des grands centres urbains en énergies traditionnelles; Thiam, Etude de marchés des produits ligneux au Togo. None of these studies, however, clarifies what makes the state a ‘formal’ actor and the private traders and producers ‘informal’ operators, making the use of both labels problematic.

⁹ I have elaborated more on the state failure of monopolising the production and commercialisation of fuelwood in Togo in Chapter 5, sections 5.3 to 5.6.

¹⁰ Bertrand, Marchés loméens des produits forestiers et commercialisation des productions du projet AFRI. 3^{ème} partie, p. 56.

their long voyages into the country's interior. Equally, there were cases where the same actors, as witnessed by Yo, Kpi Amedjiti, during their trips into the rural areas collect charcoal for their wives, who in turn proceeded to its marketing either in the courtyard or in surrounding markets.¹¹ Avedji Gnonou and Grand-Mère Daros, whom I interviewed, are street vendors of basic goods (e.g., matches, oil, manioc flavour) who also trade charcoal in limited quantities.¹² As a matter of fact, private actors involved in the marketing of charcoal can appear and disappear from the '*macro-marché*' depending on factors such as the material and physical access to and the availability of the resource. This flexibility and unstable nature of the marketing channel complicates any attempt to capture the exact scope of the market chain and to provide a clear picture of all categories of actors involved in the marketing of charcoal towards and within Lome.



Picture 6: Charcoal for sale in an entrepot in front of a house in Avédji (Lome)¹³

Despite the difficulties raised above, Bertrand and his colleagues succeeded in providing three important categories of actors. The first category is composed of '*détaillants*' (retailers) supplied by intermediaries.

¹¹ Yo, Kpé Amedjiti, interviewed in Lome-Adidogomé on 12 February 2017.

¹² Passive participant observation in Lomé between January and April 2017.

¹³ This photograph was taken with the permission of the vendors during my fieldwork in Lomé from January to April 2017.



Picture 7: Charcoal for sale at courtyard Agoè-Assiyéyé (Lomé)¹⁴

The retailers are not in contact with the transporters nor with the charcoal producers in the supply zones; they generally operate in their courtyards or along the streets. The second category refers to ‘*grossistes*’ (market wholesalers), and the third category is composed of CGs who act as retailers and wholesalers simultaneously at the markets.¹⁵

Though each category plays a crucial role in the marketing chain, the CG profile is most relevant to this study. There is multiple reason for choosing the CGs as a group with whom I interacted in the field, and as the one to focus on to address the core concern of this chapter. On the one hand, these are actors who have been travelling to the fuelwood supply zones for decades, meaning that they have been in a direct contact with charcoal producers in the long term. The oral historical insights they gave about their experiences during our encounters have significantly helped to note the shifts of the charcoal supply zones over the course of the last four decades.¹⁶ On the other hand, the CGs have been operating in different markets in Lomé as suppliers of retailers and wholesalers – and also as retailers themselves. As such, the CGs is the group *par excellence* that has interacted most with different other actors within and outside the charcoal marketing chain. Finally,

¹⁴ Ibid.

¹⁵ Bertrand, *Marchés loméens des produits forestiers et commercialisation des productions du projet AFRI*. 3^{ème} partie, 56.

¹⁶ See Chapter 2, section 2.2, footnotes 10 and 11.

CGs are the category of traders whose *modus operandi* challenges the narrative in the current literature on woodfuel, which depicts fuelwood marketing as an informal economic activity largely controlled by private traders.

The evident fact and the strength of this assumption is pompously articulated (by ODEF) in the categorisation of actors involved in fuelwood energy sub-sector distinctively into ‘formal and legal’ operators *versus* the dominating private ‘informal’¹⁷ traders, who by extrapolation are perceived as illegal actors. Since the withdrawal of ODEF from charcoal production and marketing in the late 1980s, this activity is thought to be fully run and controlled exclusively by ‘informal’ traders and CGs at market levels.¹⁸ However, if an informal economic activity is the kind of activity that escapes the control of the Togolese state,¹⁹ CGs who are part of the heterogeneous group of private woodfuel (notably charcoal) traders are the segment that challenges the above categorisation.

Commerçants Généralistes, at least those in this study, have been operating publicly and paying their taxes at the different toll and weighing stations at the two main entry points of Lome.²⁰ Forest administrators deliver receipts to the CGs depending on the type and the size and the quantity of charcoal to be transported towards the capital.²¹ Once in Lome, at the markets, marketing woodfuel (charcoal in particular) is subjected to the payment of taxes, known as ‘*ticket de marché*’ to market authorities who represent the state. Given the fact that CGs operate under the respect of the state tax regulations in many respects,

¹⁷ See Barandao et al. *Etude sur l'utilisation d'énergie domestique et artisanales au Togo et propositions de programmes d'économie d'énergie d'origine ligneuse*, p. 38. Thiam, *Etude de marchés des produits ligneux Au Togo*, p. 24. One can read for instance in République du Togo. Direction Générale de l'Énergie. *Rapport général provisoire. Enquête consommation des énergies domestiques au Togo*, p. 107 that : ‘En définitive, le commerce des combustibles ligneux relève pour l'essentiel des circuits informels qui échappent presque totalement à toute réglementation officielle’ Similar assumption has been made in SOFRECO. *Politique Nationale de l'énergie. Rapport Préliminaire*, pp. 49 and 207.

¹⁸ See Société Togolaise D'Études De Développement en Afrique, *Analyse de l'évolution des ressources forestières, de l'exploitation des Terres et diagnostic des Approvisionnements et des consommations des grands centres urbains en énergies traditionnelles*.

¹⁹ Late, Pater. ‘Dans les prévisions 2017 Un accroissement de crédits de 66.7% à la DOSI’. *Pour la Patrie L'Union* [Lomé, Togo], Accessed 21 Jan. 2017, p. 3.

²⁰ See Ma, Rose, interviewed in Lome on 18 January 2017; Ri, Ta, interviewed in Lome on 10 March 2017; Ma, Route, interviewed in Lome on 15 April 2017.

²¹ See Ma, Rose, interviewed in Lome on 18 January 2017.; Ri, Ta, interviewed in Lome on 10 March 2017; Da, Govi Hanoukopé, interviewed in Lome on 12 January 2017.

as illustrated above, they appear to fulfil legal rules in vigor in Togo, without which they will be denied the rights to conduct their activities, especially at the market level.



Figure 3: Three exemplars of ‘*ticket de marché*’, or ‘market taxes’²²

Furthermore, the CGs that I interviewed have been operating in the markets for decades. Markets indeed appear to be stable spaces where information about charcoal price can be better accessed. They are also places where the DNS gathered the bulk of data on prices that are used for the analysis of price developments in the subsequent sections. At the markets, the traditional predominance of women in the firewood and charcoal marketing can be observed and assessed; all CGs I spoke to were women. The next section, therefore, addresses the CGs in relation to their operational settings.

²² I collected these tickets from CGs at the Agoe-Assiyeye Market in Lomé. I obtained their permission to use them for the purpose of this study.

4.2 The *Commerçants Généralistes*, the market, and the myth of women's predominance in the marketing of charcoal

The section sheds historical light on the issue of women as the principal actors of the marketing of fuelwood, given the fact that this issue has thus far been superficially discussed in the existing studies on woodfuel in Togo. It helps provide a full and comprehensive picture of the CGs in particular while laying the ground for a subsequent analysis of firewood and charcoal price developments.

For centuries, markets played paramount role in the economic and social life of African urban and rural societies.²³ Pioneer ethnologists such as the German Willy Fröhlich were among the first in the discipline to prominently coin markets in Africa in the 1940s as

*[...] eine der wichtigsten wirtschaftlichen und gesellschaftlichen Einrichtungen im Stammesleben zahlreicher Völkergruppen, eine Einrichtung, die, wie wir heute erkennen können, fundamentale Bedeutung hat etwa für Lage und Form von Siedlungen oder für die Zeitrechnung, und die in stetiger enger Beziehung zu rechtlichen und kultischen Bestimmungen steht.*²⁴

Paul Bohannon and George Dalton's book, *Markets in Africa* (1962), re-launched and re-conceptualised the debate on understanding the functioning of African market systems and their origins back to the period before colonialism by viewing the market beyond simple economic considerations.²⁵ Further prominent historical works have highlighted women and their important role in African economies and markets. Alfons Wucherer, who investigated market dynamics in southern Togo in the 1930s, suggested that

Wie wichtig dem schwarzen Menschen der Markt erscheint, erhellt deutlich aus einer Volksetymologie der Ewe, die den gewiss nur zufälligen Gleichklang der beiden Wörter asi = Markt und asi = Frau so erklären, dass der Markt für das Volk ebenso viel bedeute, wie für den einzelnen

²³ Good, Charles M. "Markets in Africa: a Review of Research Themes and the Question of Market Origins". *Cahiers d'études Africaines*, vol. 13, no. 52, 1973, pp. 769–780., doi:https://www.persee.fr/doc/cea_0008-0055_1973_num_13_52_2687. Accessed on 23 September 2017.

²⁴ Fröhlich, Willy. 'Das Afrikanische Marktwesen'. *Zeithn Zeitschrift für Ethnologie*, vol. 72, no. 4-6, 1940, pp. 234–328.

²⁵ Bohannon, Paul, and George Dalton. *Markets in Africa*. Northwestern University Press, 1968, p. 1. For an extensive recapitulation of the theories and debates on markets and most relevant studies in this regard, see the article (Good, Charles M. 'Markets in Africa: a Review of Research Themes and the Question of Market Origins'.)

*Volksgenossen die Frau, denn er Sorge für die Befriedigung der Bedürfnisse aller ebenso, wie die einzelne Hausfrau für die ihres Mannes; darum sei der Markt gleichfalls asi genannt worden.*²⁶

The term ‘market’ in the southern Togolese language of Ewe refers equally to ‘woman’; this is not a linguistic coincidence, but rather the consequence of the fact that most market economic activities were exclusively controlled by women.²⁷ This importance of women in commercial economic activities is also valid for the particular case of firewood and charcoal marketing in Togo. All studies conducted on fuelwood in Togo from the 1980s onwards point to the common conclusion of women dominating the marketing within market spaces (e.g., female CGs), in courtyards, along the streets or in any other location where firewood and charcoal can be bought.²⁸ Thiam reveals, for instance, that 92% of the production and marketing of woodfuel (charcoal in particular) is operated by women. He notes clearly in this respect that *‘la filière combustible ligneuse est surtout l’affaire des femmes’*.²⁹ Thiam’s observation, though more than 20 years old, remains valid, as most subsequently conducted studies have made similar conclusions.³⁰ Field observations and oral historical interactions I conducted with CGs in different markets (see Map 5 and Picture 8) in Lome particular have provided data that help test and confirm the validity of what was observed in the existing studies on woodfuel in Togo. As a matter of evidence, none of the respondents (including the CGs) I approached were men.

As in 1910, as one can see in the only picture of a *‘marché au bois’* (Picture 3), the marketing of fuelwood is still a ‘women’s affair’. This is also to suggest that women’s predominance within this realm is not a contemporary phenomenon but rather fully rooted in history. Changes in this regard have been extremely marginal, if not inexistent.

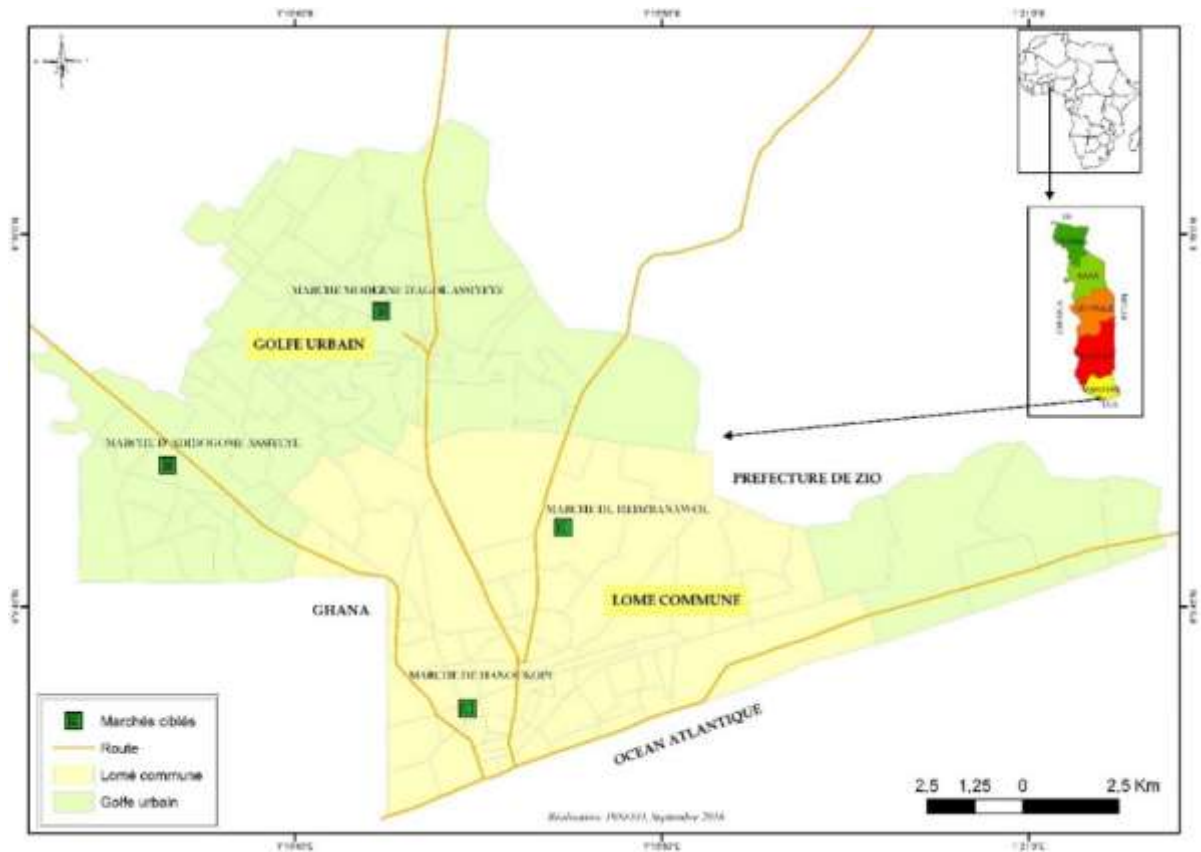
²⁶ Wucherer, Alfons. „Der Markt in Süd-Togo“. *Zeitethn Zeitschrift für Ethnologie*, vol. 67, no. 1–3, 1935, pp. 32–43., doi:<http://www.jstor.org/stable/25839508>, Accessed 11 Sept. 2017.

²⁷ Ibid.

²⁸ See Bertrand, Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI 3ème partie, pp. 82-86 ; Société Togolaise D’Études De Développement en Afrique, Analyse de l’évolution des ressources forestières, de l’exploitation des Terres et diagnostic des Approvisionnements et des consommations des grands centres urbains en énergies traditionnelles, p. 27.; Thiam, Etude de marchés des produits ligneux au Togo, p. 85.

²⁹ Thiam, Etude de marchés des produits ligneux au Togo, p. 216.

³⁰ See Fontondji, *déterminants de la production – consommation du charbon de bois au togo et vulnérabilité aux changements climatiques*.



Map 5: The four markets (in green) visited during my fieldwork³¹



Picture 8: Interview with a CG at the Adidogomé market (Lomé)³²

³¹ This map was designed by Mohammed Yandja T. KOLANI, a cartographer at INSEED, during my first field research in Lomé in 2016.

³² This photograph was taken in March 2017 at the Adidogomé market (Lomé). The interviewee allowed me to take the picture in a position that does not allow her face to be seen.

However, it may be interesting to attempt an historical explanation of this monopoly of women in the marketing of fuelwood, given the fact that none of the current studies available on the subject has addressed this issue. To address this gap, it is important to embed the issue in a broader scope by placing it within the context of the literature on African markets and women. This constantly growing body of knowledge since the colonial period³³ has thematised, among other things, the vital role of African women in the economy of the continent before, during and after colonial occupation.³⁴ Among the long list of works raising the impact of African market women on the African economy, Ester Boserup's *Woman's Role in Economic Development* (1970) continues to be counted among pioneering studies, as it grasps the subject from a comparative perspective. The section on *Sex and Race in Market Trade* genuinely addresses the sexual division of labour from a comparative viewpoint. The author revealed the exclusion of women in the trade landscape of most Hindu and Arab societies while noting that, in contrast, 'among Africans and most people in South East Asia, on the other hand, a very large share of market trading, selling as well as buying, is left entirely to women'.³⁵ Boserup exemplifies the African case with illustrations from the Western part of the continent, especially in Ghana, where women controlled 80% of the trade labour market, and in Nigeria among the Yoruba, where trade has been always regulated by women.³⁶ Boserup's observation, mainly her reference to West Africa, is supported by Ruth Simms, who discusses the historical roots of women in West Africa by revealing that 'the African woman as entrepreneur is not a twentieth-century phenomenon, but an aspect of reality deeply rooted in the history of African social, economic, and political structures. In Western Africa, in particular, women as merchants and traders have become legendary'.³⁷

³³ Ekechi, Felix K, and Midamba B. House . "Introduction" *African Market Women and Economic Power: The Role of Women in African Economic Development*. Edited by Ekechi, Felix K, and Midamba B. House. Westport Greenwood press, 1995, xi

³⁴ Ogbomo, Onaiwu W., in his chapter on "Esan Women Traders and Precolonial Economic Power", pp. 1–22. In Ekechi, Felix K, and Midamba B. House . *African Market Women and Economic Power: The Role of Women in African Economic Development*. Edited by Ekechi, Felix K, and Midamba B. House., referred to insightful works, some of which were worth consulting to better understand African women and their role in the African economy.

³⁵ Boserup, Ester. *Woman's Role in Economic Development*. Earthscan, 1970, p. 87.

³⁶ Ibid.

³⁷ Simm, Ruth. "The African Woman as Entrepreneur: Problems and Perspectives on Their Roles" *The Black Woman Cross-Culturally*. Edited by Steady, Filomina C. E. Schenkman books, 1985, pp. 141.

Although Bessie House-Midamba and Felix K. Ekechi have endeavoured to de-regionalise the debate about the influence of African women in the market economy by expanding the discussion to other African regions (i.e. East, Central and Southern Africa),³⁸ the focus in this section remains in West Africa since it is the geographical area of the dissertation.

Rita Cordonnier's prominent anthropological thesis on Ewé, Mina and Ouatchi tissue vendors in Lome is among the few studies that attempt to provide deep historical explanations of southern Togolese women in commerce. According to Cordonnier, the historical predominance of women in commerce in Lome, and particularly in tissue vending, has to do with the urbanisation of the capital, the limited opportunity of women to obtain wage employment and the ongoing search for socio-economic independence.³⁹ In other words, most southern Togolese women migrated to Lome from the colonial period onwards and engaged in commercial activities, as they lacked other opportunities to earn money.⁴⁰ This assumption merits raising, but its analytical scope is too general and weak to be applied to other economic activities such as fuelwood marketing by CGs in the markets within the Togolese capital. The absence of men in the marketing of fuelwood can be reconstructed from the fact that there are no socio-cultural barriers among Ewé, Mina or Ouatchi that hinder men from vending on markets. The market is an open space where both men and women operate without any socio-cultural discrimination and where men are even called 'to join' women, which, in turn, would enable complementarity.⁴¹ The previous assumption captured from the CG at the Cacavéli market deconstructs Rita Cordonnier's claim that the absence of men at markets in

³⁸ See Ekechi, Felix K, and Midamba B. House . "Introduction" *African Market Women and Economic Power: The Role of Women in African Economic Development*. Edited by Ekechi, Felix K, and Midamba B. House.

³⁹ Cordonnier, Rita. *Femmes Africaines Et Commerce: Les revendeuses de tissu de la ville de Lomé, Togo*. ORSTROM Paris, 1982, 39. (Published dissertation)

⁴⁰ Ibid.

⁴¹ Group interview with fuelwood traders at Cacavéli market in Lome 17 February 2017. As one of the interviewees stated, '*It would be a pleasure if the men decided to join us in the marketing of firewood here at the market*'. This assertion clearly shows the willingness of women to see men embracing the commercialisation of fuelwood at market levels.

southern Togo and in Lome in particular is the consequence of the socio-cultural division of labour that makes it unworthy for men sell at markets.⁴²

4.3 Fuelwood and charcoal price developments from the 1970s onwards

Fuelwood prices in the markets of Lome, as considered in this study, have long been defined by core supply challenges. One of these challenges relates to the distance between the supply zones and the supplied city (Lome), which positively or negatively affect the transportation costs that CGs must bear. An increase in the distance between supply zones and Lome, as noted in Chapter 4, has increased the transportation costs of charcoal brought to markets in the capital, while equally influencing the end price paid by the users. Another aspect of the supply challenges concerns the various taxes CGs must pay to representatives of the state, such as forest authorities and toll stations, during the transportation phase, as well as the aforementioned communal market taxes imposed via *'ticket de marché'*. I put this brief introduction to the dynamic of charcoal price formation into context below. Before exploring how final prices developed at the markets in Lome, it is relevant to investigate the institution which has reported the development of prices of various goods in Togo since the late 1950s and from which the data used here emanate.

In fact, the idea of endowing the Togolese territory with an institution entirely dedicated to the recording of statistical data and a centralised collection of price developments of goods brought the French mandate administration to release a decree numbered 676-56/F/AE/STAT. The concerned decree led to the institutionalisation of a section called *Service de la Statistique Générale* (Department of General Statistics⁴³) in 1956.⁴⁴ In July 1968, the military in power reorganised the *Statistique Générale* into the *Service de la Statistique Générale et de la Comptabilité Nationale* (Department of General Statistics and National Accounting⁴⁵) through decree number 68-147, as notified in the *Journal Officiel* number 396 of 1 September 1968, whereas the main office in charge of producing and diffusing the recorded statistics was the *Direction de la Statistique Générale*

⁴² Cordonnier, Rita. *Femmes africaines et commerce : les revendeuses de tissu de la ville de Lomé, Togo*, 99.

⁴³ My own translation

⁴⁴ INSEED-Togo. Official Website. <http://www.stat-togo.org/index.php/presentation/textes-et-lois/13-presentation/116-dgscn> Accessed on 23 March 2019.

⁴⁵ My own translation

(Department of General Statistics⁴⁶).⁴⁷ A series of reforms followed through which *Statistique Générale* became *Direction Générale de la Statistique et de la Comptabilité Nationale* (National Direction of Statistics and Accounting⁴⁸) in 2001, in accordance with decree 2001–149 of July 2001, before being transformed into the current INSEED in 2015.⁴⁹ Producing and disseminating accurate statistical data about diverse goods and making them available for research and other related purposes have been the main objectives of the SSG, SSGCN and INSEED, as stated above. The question of data conservation and the efficiency in the context of the aforementioned objectives, however, should be posed.

An exhaustive and comprehensive analysis is nearly impossible for the periods between the SSG's in creation 1956 and 1998, as primary sources from the archives of the state institution responsible for providing those data are difficult to acquire. One of the main reasons for this resides in the fact that the idea of efficiently and sustainably storing and conserving these records appears not to have been a priority of the authorities. Until 1998, the individuals in charge of the institution clearly lacked an interest in providing INSEED with a well-structured and managed archive premises where data generated by the institution could be accessed.⁵⁰ The point is not to blame either the state authorities or the former responsible parties of INSEED for a lack of effort to provide the institution with a consistent archive where data on price evolutions can be more easily tracked from the creation of INSEED to the present day. Instead, the observation is simply meant to illustrate some of the problems related to the sustainable conservation and management of archival data in Togo in a broader sense.

With regard to fuelwood energy, data on fuelwood price developments, at least from 1977 onwards, have existed, and they have been used to produce one of the most extensive, detailed and investigative surveys on woodfuel marketing in Lome, namely *Marchés Loméens des Produits Forestiers et Commercialisation des Productions du Projet AFRI*

⁴⁶ Ibid.

⁴⁷ INSEED-Togo. Official Website. <http://www.stat-togo.org/index.php/presentation/textes-et-lois/13-presentation/116-dgscn> Accessed on 23 March 2019.

⁴⁸ My own translation

⁴⁹ INSEED-Togo. Official Website. <http://www.stat-togo.org/index.php/presentation/textes-et-lois/13-presentation/116-dgscn> Accessed on 23 March 2019.

⁵⁰ Informal discussion with Dawara, employee at INSEED in Lome on 18 February 2017.

(1987).⁵¹ This document is the first source that gives an overview of firewood and charcoal price developments in Lome using data from the DSG rather than the *Service National de la Statistique* as mistakenly reported by C. Barbier in Table 2.⁵²

Fcfa/kg	1977	1979	1981	1983	1985	1987
Charcoal	30	39	58	47	45	47
Firewood	5	12	15	17	21	21

Table 2: Firewood and charcoal price developments in Lome (1977 – 1987)⁵³

The fortunate availability of sources such as the above table, albeit scattered in diverse reports,⁵⁴ helped partly close the data gap of INSEED, where information on fuelwood price developments is not available prior to 1998. Considering the data, gathered firewood and charcoal prices in Lome evolved from 1998 to 2015 as follows (see Table 3).

Year	Price per Kg / Month Fcfa												
1998		J	F	M	A	M	J	J	A	S	O	N	D
	Charcoal	74	74	75	72	68	69	75	81	83	71	79	73
	Firewood	29	30	33	33	29	30	29	30	32	33	33	35
1999		75	66	63	61	55	55	59	72	64	73	71	75
		34	31	35	34	42	34	33	34	37	38	37	42
2000		68	71	58	62	68	62	61	67	61	62	74	71
		52	62	58	42	39	32	29	26	24	28	29	28
2001		J	F	M	A	M	J	J	A	S	O	N	D
	Charcoal	76	78	68	64	62	60	69	70	72	63	69	68
	Firewood	29	29	38	30	31	33	31	29	28	28	31	30
2002		68	69	69	72	69	65	65	70	81	87	87	86
		30	32	38	28	28	27	28	28	31	31	30	27
2003		78	80	75	72	73	71	72	84	74	75	61	66
		27	29	26	27	27	27	27	27	28	22	26	22
2004		J	F	M	A	M	J	J	A	S	O	N	D
	Charcoal	70	72	63	74	70	67	64	73	71	87	84	76
	Firewood	22	22	23	26	25	27	24	24	24	25	27	27

⁵¹ Bertrand, Marchés loméens des produits forestiers et commercialisation des productions du projet AFRI, p. 69.

⁵² C. Barbier et al: Les plantations du projet AFRI Revue Bois et Forêts des Tropiques, n°224, 2è Trimestre 1990, p. 17.

⁵³ C. Barbier et al: ‘‘ Les plantations du projet AFRI’’ Revue Bois et Forêts des Tropiques, n°224, 2è Trimestre 1990, p. 17; Thiam, Etude de marchés des produits ligneux au Togo p. 24.

⁵⁴ Bertrand, Marchés loméens des produits forestiers et commercialisation des productions du Projet AFRI, p. 69.; C. Barbier et al: ‘Les plantations du projet AFRI ‘; Thiam, Etude de marchés des produits ligneux au Togo, p. 24;

Year	Price per Kg / Month Fcfa												
2005		92	92	86	63	73	73	67	70	70	72	80	76
		27	27	25	27	28	27	27	27	27	27	27	27
2006		81	88	83	81	80	73	76	83	96	100	104	100
		27	27	26	27	27	27	27	27	27	27	27	27
2007		J	F	M	A	M	J	J	A	S	O	N	D
	Charcoal	96	97	98	83	85	89	97	92	93	69	95	97
	Firewood	27	27	27	27	27	27	27	27	27	27	27	27
2008		102	101	97	86	87	72	73	84	107	91	90	95
		27	27	27	33	34	38	39	38	39	39	37	38
2009		106	99	104	83	85	89	91	86	88	92	100	102
		36	38	39	41	43	43	44	49	49	50	47	48
2010		J	F	M	A	M	J	J	A	S	O	N	D
	Charcoal	114	126	119	123	106	101	113	109	105	114	128	165
	Firewood	42	50	55	54	44	43	46	47	45	50	50	52
2011		156	126	131	135	121	123	110	112	118	114	121	135
		55	41	39	41	41	44	45	43	46	45	49	51
2012		128	140	133	128	116	122	113	121	118	129	127	126
		52	52	53	53	50	48	47	48	53	124	113	53
2013		J	F	M	A	M	J	J	A	S	O	N	D
	Charcoal	135	128	133	125	110	119	128	122	-	122	124	127
	Firewood	54	82	61	64	65	66	52	67	-	70	70	69
2014		128	129	127	136	133	118	125	114	121	130	135	133
		69	72	72	72	73	81	71	72	73	74	73	74
2015		143	133	139	138	131	124	855	130	134	130	132	121
		74	63	62	60	60	63	136	63	63	63	63	70

Table 3: Fuelwood price developments in Lome (1998 – 2015)⁵⁵

According to the figures in the tables above, firewood and charcoal prices have changed significantly over the years with some fluctuations between the months. Important factors explaining these variations between the months pertain to the seasons. As a matter of evidence, charcoal production can considerably decrease in the rainy season when most producers focus on cultivation. Equally, transporting charcoal and fuelwood into the capital in the rainy season may be challenging due to the impassability of the roads during this particular period of the year. Both elements substantially determine an increase in

⁵⁵ Figures collected at INSEED during my fieldwork in 2017.

fuelwood (mainly charcoal) prices in the rainy months (i.e., April, May and June) in the south, including Lome.

In view of the global picture of charcoal price progression, as it is the relevant point of discussion at this level, there have been some attempts to shed light on the concerned developments. Thiam, who devoted particular attention to the issue, identified four main periods in which he examines the development of charcoal prices in relation to the general consumer price index in Lome. The first period from 1977–1981 was characterised by a significant increase in firewood and charcoal prices as supported by the figures in Table 2. The second period from 1981–1984 was marked by a regression of firewood and charcoal prices in Lome. The last periods from 1984–1985 and 1985–1991 saw a moderate increase in firewood and charcoal prices.⁵⁶ While considering the four periods identified by Thiam, the focus here is on the first two, which are marked respectively by an increase and a decrease in charcoal prices in Lome.

With regard to the first period (1977–1981), Thiam convincingly related the increase in charcoal price to the fact that *‘L’approvisionnement de la ville [Lomé] entraînait de plus en plus de ses sillages des forêts de plus en plus éloignées. Les circuits commerciaux de moyenne portée (distance) à celui de circuits commerciaux de longue portée: du stade de méso-marché à celui de macro-marché’*⁵⁷ In other words, the catalyst of the price progression in this period had to do with the difficulties of finding charcoal in areas surrounding Lome. Distance between the supply zones and Lome began to gain in importance, which affected transportation costs and the end-user price at the markets in the capital.⁵⁸ This explanation deserves a certain validity for specific reasons. One issue is that the transition to charcoal in Lome gradually emerged from this period onwards, as discussed in Chapter 2. This implies that most private domestic users began to adopt the use of charcoal. This situation likely challenged the quantity of charcoal needed by users in Lome, making the city increasingly dependent on remote supply zones, as areas closer to the capital started to lack sufficient wood to face the demand. However, the explanation

⁵⁶ Thiam, *Etude de marchés des produits ligneux au Togo*, pp. 24-26.

⁵⁷ *Ibid*, 177.

⁵⁸ *Ibid*.

provided by Thiam needs some corrections in order to be entirely valid. The observation ‘[...] *difficultés de trouver du bois-énergie dans les environs de Lomé* [...]’⁵⁹ may suggest that distance began to be important due to ‘wood scarcity’ in supply zones surrounding the capital, as this can readily appear when one interacts with actors involved in the woodfuel marketing process. It is common for woodfuel traders to refer to ‘wood scarcity’ and the consequent difficulties of finding charcoal in supply areas near Lomé as challenging for their trade and the charcoal price in the capital.⁶⁰ This, however, relates more to the difficulties these actors faced to find particular wood species (e.g., *Anogeissus leiocarpus* and *Butyrosperum parkii*)⁶¹ appreciated by wholesalers and end users for the high quality of charcoal they give, rather than to the unavailability of wood per se.⁶²

Fuelwood, and especially charcoal, prices significantly decreased between 1981–1985 when para-statal institutions such as ODEF engaged in charcoal and firewood production and marketing. The government intervention and the effects of the consequent reaction of private traders were central in regressing the firewood and charcoal price in Lomé.⁶³ Since the mid-1980s, despite some seasonal fluctuations, the charcoal price has continued its steady increase, as suggested by Table 3. The core feature responsible for this progression appears to be the overexploitation of specific wood species (e.g., *Anogeissus leiocarpus* and *Butyrosperum parkii*), raising transportation costs between the supply zones and the capital and thus the charcoal price for users in Lomé. The transportation costs determined by the increasing distance between Lomé and the supply zones have been reinforced by further costs, including the toll charges at the two main entry points of the capital,⁶⁴ fees per bag of charcoal paid to forest agents while loading the truck in the supply areas, remuneration of helpers who discharge the truck and taxes paid at the market level to be allowed to operate at the markets. The fact that some of these costs

⁵⁹ Ibid.

⁶⁰ See Da, Govi Hanoukopé, interviewed in Lomé on 12 January 2017; Ma, Route, interviewed in Lomé on 15 April 2017.

⁶¹ Bertrand, *Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI*, 3^{ème} Partie p. 82.

⁶² Ibid.

⁶³ Thiam, *Etude de marchés des produits ligneux au Togo*, p. 177.

⁶⁴ Zanguéra and Davié (former Toglé-Copé)

have been subjected to significant changes is important in shaping the end price of fuelwood in Lome, as charcoal prices have since been freely defined on the markets by the CGs.⁶⁵ In 1987, for instance, CGs had to pay forest authorities 50 Fcfa per 50-kg bag of charcoal and 100 Fcfa per bag containing more than 50 kg.⁶⁶ According to Ri Ta, a CG based at the Atikpodji market in Lome, forest taxes on charcoal transportation to Lome have increased significantly.⁶⁷ Da Do, who operates at Hanoukope fuelwood market, traced this change back to the late 1990s and early 2000s, a period during which the gradual shifting of supply zones from Klouto (near Kpalime, approximately 120 km from Lome) further into the country's interior occurred before culminating in the current dependence upon northern supply zones, such as Bassar (approximately 400 km from Lome).⁶⁸

Commerçants Généralistes at Cacaveli market corroborated the previous narrative by revealing that forest taxes, namely the price per bag of charcoal, were low when the supply zones were near the capital. However, the increase in distance between Lome and supply zones in the north (e.g., Bassar and Pagala) has been important in shaping the taxes paid to forest authorities posted at different stations on the main route connecting Bassar and the capital.⁶⁹ The narratives generated by the CGs did not provide any hard figures on the evolution of the forest taxes in line with the increasing distance between the supply zones and the supplied capital. They deserve particular attention, however, based on the common agreement among CGs operating at different markets in Lome that the concerned taxes have risen over the years, especially with the tonnage tax system replacing the payment per bag of charcoal.⁷⁰ When exactly the forest authorities

⁶⁵ Bertrand, Alain. *Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI. 2^{ème} Partie.* Nogent-Sur-Marne : Centre Technique Forestier Tropical, 1987, pp. 12. ; Thiam, *Etude de marchés des produits ligneux au Togo*, p. 161. République du Togo. Direction Générale de l'Énergie. *Rapport Général Provisoire. Enquête consommation des énergies domestiques au Togo*, p. 102.; SOFRECO. *Politique Nationale de l'énergie. Rapport Préliminaire*, pp. 198-199.

⁶⁶ Bertrand, Alain. *Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI. 1^{ère} Partie*, p. 11.

⁶⁷ Ri, Ta, interviewed in Lome on 10 March 2017.

⁶⁸ Da Do, Vi, interviewed at Hanoukope market in Lome on 07 February 2017.

⁶⁹ Group interview with fuelwood traders at Cacaveli market in Lomé on 17 February 2017.

⁷⁰ Ri, Ta, interviewed in Lome on 10 March 2017; Da Do, Vi, interviewed at Hanoukope market in Lome on 07 February 2017; Group interview with fuelwood traders at Cacaveli market in Lome 17 February 2017.

operationalised this change in the tax system was not clear from the oral historical testimonies. What is plain, however, is that, until the second half of the 1980s, forest taxes were collected per bag of charcoal.⁷¹ The collection of these taxes relates to Articles 1 and 2 of the *ordonnance N°17/MAR* adopted in March 1985.⁷² None of the documents investigating the fuelwood issues from the early 1990s⁷³ to the mid of 2000s⁷⁴ that I accessed mentioned another way by which forest taxes on charcoal were collected. Equally, Article 52 of the *Code Forestier* adopted in 2009 states

*La circulation de bois d'œuvre, de bois d'ébénisterie, de bois de service, de bois énergie, de charbon de bois et d'autres produits forestiers, à des fins commerciales, est assujettie à l'acquittement d'une taxe dont le taux est fonction de la nature, de l'origine et de la quantité du produit.*⁷⁵

The quotation is silent with regard to the manner in which the forest taxes (e.g., on charcoal) shall be collected. This short digression merits consideration based on the need to correlate the CG testimonies on the influence of forest taxation changes on the end market price of charcoal in Lome with existing official sources. Credit must be given to the oral testimonies of the CGs on the matter based on the present lack of official sources in this regard, as the issue was unanimously raised by the CGs in individual and group interviews. The preliminary explanation of the present incapability to support the oral testimonies with existing official sources is certainly because the tonnage tax system was adopted recently, after 2011. This year is indicative, as the latest source quoted on forest taxes on fuelwood (especially charcoal) marketing in this section does not go beyond 2011. Considering the fact that the oral testimonies were all collected in 2017 helps to assume the existence of written (official) sources produced after 2011 that need to be

⁷¹ Bertrand. Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI. 1^{ère} Partie, p. 11.; République du Togo. Direction Générale de l'Énergie. Rapport Général Provisoire. Enquête consommation des énergies domestiques au Togo, p. 99.

⁷² République du Togo. Direction Générale de l'Énergie. Rapport Général Provisoire. Enquête consommation des énergies domestiques au Togo, p. 99.

⁷³ See Thiam, Etude de marchés des produits ligneux au Togo, p. 161; République du Togo. Direction Générale de l'Énergie. Rapport Général Provisoire. Enquête consommation des énergies domestiques au Togo ; Barandao et al. Etude sur l'utilisation d'énergie domestique et artisanales au Togo et propositions de programmes d'économie d'énergie d'origine ligneuse.

⁷⁴ Here, I am referring mainly to the wealth of the existing expert literature on the fuelwood concern in Togo which has been extensively cited in this study.

⁷⁵ République du Togo. Code forestier. 2009, p. 12.

accessed in order to increase the validity of the narratives generated by the CGs on this particular issue.

On the one hand, the conjunction of all the aforementioned features shaping the formation and the developments of fuelwood price called for responses from the users who, over the years, developed multiple strategies to meet charcoal price developments. Given that all deployed strategies cannot be entirely and exhaustively captured, the section below concentrates exclusively on those which emerged from the oral interactions with the charcoal users. On the other hand, CGs experienced changes related to the competitiveness of their economic activities which, in turn, have had significant incidences on the relationships with their suppliers in remote areas.

4.4 The challenge of charcoal⁷⁶ prices and selected strategies of users

Understanding and examining the implications, actions and reactions related to the rising charcoal price is the main focus of this section. Urban dwellers face economic struggles that may potentially result in their adoption of a diversity of strategies. According to Deborah Fahy Bryceson,

As the purchasing power of the urban family wage slipped away, urban households with multiple earners became the norm. Men's earnings as heads of households were increasingly supplemented by wives [...] Households experimented with a variety of income-earning activities, exercising extreme flexibility regarding their labour skills, working times and locations. By having multiple household members earning, households deflected the risk of income failure from any one economic activity.⁷⁷

Similarly, Philip Amis argued that the gradual decline of urban salaries in East African countries since the mid-1970s has led largely to the diverse survival mechanisms to which urban residents have resorted. In the case of Nairobi, the author points out that both the consequences of the oil crises of 1973–74 and 1979 and the execution of the structural adjustment measures on wages have increased the city's poor embracement of non-formal

⁷⁶ In this section, the core of the analysis focuses on charcoal rather than firewood. I proceed so partly because of the shift from firewood to charcoal that confirmed the predominance of the latter from the early 1980s to the present and also due to the focus of the CGs on the marketing of charcoal rather than firewood. Finally, because the majority of users I interviewed abandoned firewood for charcoal, the wealth of data I use here pertain to charcoal.

⁷⁷ Bryceson, Deborah Fahy. "African Urban Economies: Searching for Sources of Sustainability" *African Urban Economies Viability, Vitality or Vitiating?*, edited by Deborah Fahy Bryceson and Deborah Potts, Palgrave Macmillan Gordonsville: Macmillan, 2006, pp. 39–66.

activities. On the other hand, a significant part of the urban poor in Nairobi sought access to additional resources by engaging in agrarian activities (urban farming).⁷⁸

Discussing the case of Lome in view of the previous references, it is interesting to observe the kinds of practical and creative strategies fuelwood users have deployed in their attempt to meet the challenges of the rise in charcoal prices. One of these strategies is concerned with the revalorisation of a particular type of charcoal known as *kpevika*. In fact, this type of charcoal owed its negative reputation, literally translated in its appellation locally as ‘stone charcoal’, to multiple factors. According to Da Govi,

In the past, *kpevika* was the worst charcoal that one could have. It was not readily available on the market for the simple reason that users, especially households, did not want it. It was a hard charcoal, but its great disadvantage was that it did not light quickly, even though it was a hard and slow burning charcoal. It takes too much time to light and for this reason, as a trader, *kpevika* was one of the types of charcoal we avoided most when we went out into the bush [charcoal production area] to look for charcoal.⁷⁹

As a user of fuelwood, the same interviewee narrated her experience of *kpevika* in the form of an anecdote : ‘One day, in the middle of the rainy season, I had to cook in a hurry. I made the fire several times, but it didn't take because the charcoal used to be *kpévika*. I was so angry that I threw the pot away’.⁸⁰ Even though *kpevika* has some positive and valuable qualities as a hard and slowly burning charcoal, as stated by Da Govi in her account, it does not appear on the list of wood species appreciated by most users based on the high quality of charcoal they provide.

Judging and summarising from the evidence generated above, the effort required while burning *kpevika* has contributed to its restricted availability in markets. In the same vein, users were reluctant to burn *kpevika* in times when charcoal from wood species such as *Anogeissus leiocarpus* and *Butyrosperum parkii* was abundant in supply zones near the capital and prices were low. However, the aforementioned observation indicates that

⁷⁸ Amis, Philip. “Urban Poverty in East Africa: Nairobi and Kampala’s Comparative Trajectories”. *African Urban Economies Viability, Vitality or Vitiating?*, edited by Deborah Fahy Bryceson and Deborah Potts, Palgrave Macmillan Gordonsville: Macmillan, 2006, pp. 169–206.

⁷⁹ Da, Govi Hanoukopé, interviewed in Lome on 12 January 2017.

⁸⁰ Ibid.

kpevika has gradually become one of the most valued types of charcoal, largely appreciated by users and readily marketed. Avedji Gnonou testified as follows:

For some time now, "kpevika" has become a much sought-after charcoal. Even in the bush [charcoal production area], people fight to find it and here in Lome there are always takers (buyers, users) who are ready to buy it all at once! Some users even make special orders of 'kpevika' and pay cash in advance.⁸¹

With regard to the context that facilitated the above change, a set of facts is worth mentioning. The first one pertains to the disappearance of specific valuable wood species, such as *Anogeissus leiocarpus* and *Butyrosperum parkii*, in areas located in a radius between 50 and 100 km of Lome, which has been identified as a determining factor affecting the fuelwood (especially charcoal) price in the capital. For example, the main supply zones of charcoal in the 1980s were reported to be situated in the Zio, Haho, Ogou and Kloto prefectures.⁸² In early 2000, none of the previous regions appeared on the list of the main supply zones in Lome, as illustrated in Table 4, which was published in the final report elaborated for the World Bank.

Supplied city	Supply zones	Distance between the supplied city and the supply basins in Km
Lome	Blitta	270
	Bassar	410
	Pagala	240
	Tchamba	380
	Sotouboua	300
	Akébou	225
	Akposso	225
	Kpélé	150
	Abou	100
	Bodjè	160
	Glei	130

⁸¹ Avedji, Gnonou, interviewed in Lome on 11 February 2017.

⁸² Bertrand, *Marchés loméens des produits forestiers et commercialisation des productions du projet AFRI*, 3^{ème} Partie, p. 10.

Supplied city	Supply zones	Distance between the supplied city and the supply basins in Km
	Akparé	180
	Anié	200

Table 4: Distances between Lome and the fuelwood supply zones in 2001⁸³

Consequently, reforestation programmes initiated by state institutions and non-governmental organisations and conducted in the concerned areas focused more on another wood species, namely *Tectona grandis*,⁸⁴ locally known as *Teckiti* in southern Togo. *Tectona grandis* was introduced to Togo by the German colonial administration.⁸⁵ In technical and practical terms, it belongs to the category of wood species giving low-quality charcoal and is portrayed by some traders as being unsuitable for charcoal production.⁸⁶ However, as the gradual unavailability of *Anogeissus leiocarpus* and *Butyrosperum parkii* did not lead to a complete extinction of charcoal production in the concerned areas, most producers, especially in areas such as Notsé, shifted their activities by using *Tectona grandis*. The specialisation of producers using *Tectona grandis* has significantly increased the abundance of *Tectona-grandis*-based charcoal in the capital, despite its low quality when compared to species such as *Anogeissus leiocarpus* and *Butyrosperum parkii*. In response to increasing charcoal prices, users found it more economical to mix *kpevika* – a hard-to-burn charcoal with the economic advantage of lasting longer – with a *Tectona-grandis*-based charcoal, which burns more easily but also more quickly when used alone.

⁸³ Société Togolaise d'études de développement en Afrique, *Analyse de l'évolution des ressources forestières, de l'exploitation des Terres et diagnostic des Approvisionnements et des consommations des grands centres urbains en énergies traditionnelles*, p.33.

⁸⁴ See Bras, Radio France Internationale. *C'est Pas Du Vent-Togo: Pas D'arbres, Pas De Charbon*, 2013, www.dailymotion.com/video/xxanpy. Accessed on 17 March 2020); Ma, Route. Personal interview. Lomé. 15 April 2017; Group interview with fuelwood traders at Cacavéli market. Lomé. 17 February 2017 .

⁸⁵ See Metzger, *Die Forstwirtschaft im Schutzgebiet Togo*; Comevin, R. *Le Togo: des origines à nos jours, avec 16 Cartes Et 53 Photographies*.

⁸⁶ See Bras, Radio France Internationale. *C'est Pas Du Vent-Togo: Pas D'arbres, Pas De Charbon*, 2013, www.dailymotion.com/video/xxanpy. Accessed on 17 March 2020; Bertrand, Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI, 3^{ème} Partie.

Another strategy through which users attempt to cope with charcoal price developments is the adoption of locally produced cooking stoves coupled with conservation techniques. In fact, the notorious international debate on the ‘fuelwood crisis’, identified for most developing countries from the mid-1970s onwards and popularised by international institutions such as the World Bank and the FAO, created the framework for governments and NGOs to intervene in fuelwood energy sub-sector.⁸⁷ As increasing deforestation was largely emphasised by the proponents of the ‘fuelwood crisis’ debate to be the main ‘dramatic’ consequence of the increasing use of fuelwood, one of the consequent intervention strategies to mitigate the risk was the promotion of improved and efficient cooking stoves.⁸⁸ In Togo, this resulted in actions and programmes for domestic energy saving and energy efficiency, launched jointly by the Togolese government with international assistance and NGOs operating in the country. Put concretely, woodfuel and especially charcoal energy-saving initiatives from the 1980s onwards, as Barandao et al. reported, were implemented in order to substantially ‘*réduire la pression de l’utilisation de bois de feu sur la deforestation*’.⁸⁹ The concerned actions took the form of projects of development and outreach of improved cooking stoves with high energy efficiency.⁹⁰

Digressing on all the projects designed and implemented in this regard from the 1980s to the present is outside the scope of this study. However, mentioning some of them appears to be relevant to the argument to be made later in this section. The first initiative to evocate is the ‘*Projet TOG/87/017/A/01/99 De Diffusion des Foyers Améliorés à Charbon de Bois*’. Initiated by the *Laboratoire sur L’Énergie Solaire* of the *Université du Bénin* (now *Université de Lomé*), the *Directions Générales des Affaires Sociales et de la Condition Féminine*, *Ministère du Développement Rural*, *Union Nationale des Femmes du Togo* (UNFT) and ODEF, its main objectives were: ‘*Le développement par le ralentissement du processus de déboisement; la vulgarisation d’un foyer à faible consommation de charbon de bois techniquement et économiquement acceptable par les usagers*

⁸⁷ This observation is discussed in Chapter 5.

⁸⁸ See Gill, Jas. “Improved stoves in developing countries: A critique.”

⁸⁹ See Barandao et al. *Etude sur l’utilisation d’énergie domestique et artisanales au Togo et propositions de programmes d’économie d’énergie d’origine ligneuse*, p. 53.

⁹⁰ See *Ibid.*

potentiels'.⁹¹ The 'UB' improved cooking stoves, as they were labeled, have been promoted through diverse advertising campaigns by ODEF and other involved institutions to facilitate their social acceptance, by using the main argument that the use of fuelwood is one of the main causes of deforestation, and the necessity to save energy through the adoption of UB cooking stoves as a consequent solution. At the end of the project in the early 1980s, a total of 2,821 UB improved stoves had been marketed in Lome, and their prices oscillated between 2,000 and 3,000 Fcfa. These stoves were sold in social centers, in ODEF stores and by private traders on markets.⁹² Although subsidised by the government, because the total production cost of a UB-improved cooking stove was estimated at 4,449 Fcfa, the final market price of 3,000 Fcfa appears to have been too expensive for users. This was, in essence, one of the main factors of failure of the UB-improved cooking stove outreach.⁹³ Similar projects guided by the same motivations evolved in the same period and were implemented by non-governmental institutions. The US Peace Corps and the Swiss Cooperative for Assistance and Relief Everywhere (CARE International) integrated the Togolese improved cooking stoves market. The former brought up the '*Foyer Corps de la Paix*' (Peace-Corps-improved cooking stove) and the latter the '*Foyer amélioré ASUTO*' (ASUTO-improved cooking stove), respectively, in 1983 and 1989.⁹⁴

Since the 1980s, more than one hundred programmes and projects for the diffusion and usage of improved cooking from NGOs, governmental and foreign institutions and private producers have swamped the Lome markets with prices varying between 2,000 and 8,000 Fcfa (e.g., Foyer ALU, Foyer HOLAF⁹⁵ and Foyer Toyola). These projects were designed to address the deforestation partly caused by the use of fuelwood through the outreach at great scale of 'high-efficiency', improved cooking stoves. Most reports on the production, diffusion and scope of adoption of these improved cooking stoves marketed by governmental institutions, NGOs and private producers funded by NGOs

⁹¹ Ibid, 56.

⁹² See *ibid*, 57.

⁹³ See *ibid*, 57.

⁹⁴ See *ibid*, 60.

⁹⁵ *Ibid*, 55-75.

(e.g., Toyola) agree on the fact that the price of the concerned stoves was one of the main obstacles of their adoption by the majority of fuelwood users in the capital and other urban and rural areas.⁹⁶

Similar to what has been observed by Jas Gill in the cases of certain African and Asian countries in the late 1980s,⁹⁷ the improved cooking stoves in Togo failed to achieve the goal for which they were designed. This failure, in a context marked by a steady increase in fuelwood price, has certainly been pivotal in the attitude and the interest of most urban fuelwood users to instead resort to another type of cooking stove that evolved from the creativity of local female ‘engineers’. Judged as economically affordable, this locally produced cooking stove using clay and recycled materials (iron) evolved gradually as alternative strategy. As one user noted,

With wood fuel becoming more and more expensive, I had to opt for the clay cooking stove in order to reduce my fuelwood energy costs. I used to use the iron fireplace produced by the welders. The latter consumed more charcoal, and one would always need a large quantity of charcoal for a ‘problem-free cooking’ (smooth cooking)⁹⁸

The particularity of this type of cooking stove, as another interviewee mentioned, resides in the fact that apart from being inexpensive (i.e., between 1,000 and 3,000 Fcfa) and allowing the user to decide the size to be designed, the great quantity of clay enables the stove to conserve more heat compared to the types of improved cooking stoves largely promoted by NGOs and government institutions.⁹⁹

⁹⁶ See *ibid.*, ; Société Togolaise d'études de développement en Afrique, *Analyse de l'évolution des ressources forestières, de l'exploitation des Terres et diagnostic des Approvisionnements et des consommations des grands centres urbains en énergies traditionnelles*, pp. 51-61; République du Togo. Direction Générale de l'Énergie. *Rapport Général Provisoire. Enquête consommation des énergies domestiques au Togo*, p. 104.

⁹⁷ See Gill, Jas. “*Improved stoves in developing countries: A critique*”.

⁹⁸ Mama, Nana, interviewed in Lome on 13 February 2017

⁹⁹ Maman, Louise, interviewed in Lome on 22 January 2017.



Picture 9: Interview with a cooking stove producer¹⁰⁰

Different stages of the production process in photographs



Picture 10: Stage 1: gathering the appropriate sand

¹⁰⁰ This photograph was taken during my encounter with cooking stove producer. The interviewee authorised me to use it for the submission of dissertation and not for the publication of the thesis. Personal interview with improved cooking stove producer. Lomé. 17 March 2017.



Picture 11: Stage 2: Designing the stove



Picture 12: Stage 3: Adding the appropriate materials



Picture 13: Stage 3 Polishing



Picture 14: Stage 4 Drying up and exposing for sale



Picture 15: Vending spot of cooking stoves in Agoè-Assiyéyé (Lome)

Consequently, a small quantity of charcoal costing 100 Fcfa is enough to cook the same meal. In contrast, 200 Fcfa would have been needed for the aforementioned state- or NGO-funded improved cooking stoves.¹⁰¹ To illustrate her narrative, Na Na highlighted that ‘I sometimes, after cooking a meal, remove the charcoal embers and use the heat from the clay cooking stove to boil water for the shower, especially during the rainy season and in the months when it is a bit colder than usual’.¹⁰²

The interviewees testified in their narratives that the high energy efficiency¹⁰³ of the ‘clay cooking stove’ is coupled with retrieving the ember of charcoal in a closed recipient to avoid any air infiltration. Once the ember is completely closed off, the removed charcoal is retained for a second utilisation.¹⁰⁴ Taken together, these strategies corroborate the criticisms Leach and Mearns formulated against the ‘gap theory’ and exaggeration regarding the ‘fuelwood crisis’ discourse while emphasising the creativity and ability of actors to actively address fuelwood related challenges (e.g., fuelwood price increase) by

¹⁰¹ Na, Na, Gnadi, interviewed in Lome on 18 February 2017.

¹⁰² Ibid.

¹⁰³ The exact or approximate energy efficiency of the ‘*foyer en argile*’ in percentage remains unclear. Therefore, the assumptions made here are only based on practical considerations of the users who I interviewed.

¹⁰⁴ Massa, Eugène Non, interviewed in Lome on 15 February 2017; Dékon, To, interviewed in Lome on 19 March 2017.

developing ‘coping strategies’ and other economical and sustainable use of fuels.¹⁰⁵ The remoteness of the supply zones has been a determining factor in the charcoal price increase which, in turn, led to a series of strategies deployed by users to meet this challenge, as shown above.

The above strategies emerged from the experiences of the users with whom I interacted in the field. However, other firewood and charcoal users in Lome may deploy and develop other social measures as responses to meet the woodfuel price increase. Those measures, or ‘social strategies’, could concern, for instance, establishing and maintaining strong relationships with charcoal traders and producers in supply areas, which could help the former buy on credit, pay in instalments and even barter charcoal for other daily products. Other strategies may include adapting and adjusting social constellations (i.e., as a family or single individual) and daily and monthly expenses. Taking the previous conjectures together with their potential wealth of connections and tensions through a historical lens would certainly generate genuine insights. Unfortunately, the current scope of my data does not allow for this.

4.5 The gradual remoteness of the charcoal supply zones and its challenges for *Commerçants Généralistes*

This section sheds light on the implications of the price increase on the image of CGs. It also explores how the gradual geographical remoteness of the supply zones has helped shape the marketing of charcoal, with a focus on CGs, their private lives and their relationships with the producers.

Being a fuelwood trader nowadays is not easy. You need money, and lots of it, to keep going and you need a lot of sacrifice, stamina, and connections, otherwise, my child, you will give up. It used to be that this job was easy and profitable. Nowadays it is done just for the sake of doing it. It is no longer an activity for the poor as it used to be!¹⁰⁶

It is commonly suggested that the increase of fuelwood (namely charcoal) prices is solely profitable for CGs, at the expense of users and producers. This assumption is popular among the fuelwood users who, for many reasons, lack alternatives and therefore have to

¹⁰⁵ Leach, Gerald, and Robin Mearns. *Beyond the Woodfuel Crisis: People, Land and Trees in Africa*, p. 8.

¹⁰⁶ Ri, Ta, interviewed in Lome on 10 March 2017.

undergo the charcoal price increase. Equally, charcoal producers usually refer to the steadily increase in price to blame the CGs as the only ‘profit makers’ within the fuelwood energy sub-sector. Having confronted the CGs with such assumptions, it appears that both users and producers overlook many challenges related to charcoal as economic activity, as expressed in the testimony quoted at the beginning of this section. It is interesting to note how the CGs highlight the relevance of issues such as ‘money’ and ‘endurance’, as well as ‘good relationships’ with producers as some of the key elements that have increasingly shaped the marketing of charcoal. These elements should not be taken as direct and systematic influencing factors regarding charcoal price development per se, but rather as relevant issues overlooked by most of external actors (i.e., users and producers) who, over the years, have perceived the traders as the main actors taking economic advantages from the charcoal price increase. In reaction to this, the CGs came up with a set of explanations that illustrated the challenges they face and demonstrated that they are not profiting from the charcoal price increase.

In fact, the ‘heyday’ was the time when transportation costs were low and fuelwood was cheaper, and thus, supplying Lome with woodfuel, especially charcoal, was a ‘a lucrative trade or as a ‘good business’, remembered Da Govi.¹⁰⁷ In her narrative, the previous respondent, who has been active in charcoal marketing for more than 40 years, noted how ‘money’ (to be understood as the impact of finance) has made this sector of activity a more complex and competitive one. As the distance to the supply areas has been increasing and transportation costs have risen, only those with financial security have been able to remain active in the sector. ‘Going to the “bush”’, meaning travelling to the supply areas and bringing charcoal for sale in Lome, ‘has therefore become a challenging activity only bearable by traders with consequential financial power. Traders like me are out of competition, as my financial situation hampers me from running this activity’.¹⁰⁸ As a result, the interviewee unwillingly became a fuelwood wholesaler and retailer at the famous *Akasimé (Hanoukopé)* fuelwood market, which simultaneously implies a dependence vis-à-vis her former colleagues. Her dependence lies in the fact that, due to her financial incapacity to travel to the supply areas as she did in the past, she has become

¹⁰⁷ Da, Govi Hanoukopé, interviewed in Lome on 12 January 2017.

¹⁰⁸ Ibid.

more reliant upon other traders. Generally, most former CGs who have become market wholesalers and retailers have to negotiate their business relationships with their former colleagues who have become their suppliers.

The CGs who have remained active in marketing thanks to their financial capacities face other private challenges. Their narratives suggest that at the times when the supply zones were closer to the capital (in a radius of 50 to 100 km), there was a certain ease in combining entrepreneurial commitments with the status of being a married woman in charge of specific household tasks such as taking care of the children, cooking and ensuring a good relationship with the husband, as neglecting these tasks may have been a threat to conjugal life.¹⁰⁹ In other words, it was easier in those days to be both a ‘successful business woman’ and a ‘good housewife’.¹¹⁰ For example, Paul Non stated

When we went to buy fuelwood in Tabligbo, Tsévié, Notsé [respectively between 90, 40, and 98 km from Lomé], it was possible to go to the bush [charcoal production area], collect the charcoal or place the order with the producers and return the same day. In the worst case, we stayed in the villages for a few days, at most a week!¹¹¹

In the light of the previous quotation, the insignificance of the distance between the supplied city and the supply zones enabled the completion of a round trip in a day, which was essential to avoid potential conjugal conflicts related to a longer absence of the ‘housewife’. However, this gradually became problematic as the distance to the supply zones lengthened, with significant implications on the marital relationship, especially regarding the education of the children and coping with domestic tasks. These topics became subjects of discussions which, in the worst cases, resulted in conflict and divorce.¹¹² Explaining why she finally gave up travelling to the supply zones and specialised as wholesaler and retailer of charcoal, the same interviewee reveals that as the distance between the supply zones and the capital began to grow, being a CG

...evolved to being able to spend between two to six weeks – even more – in the ‘bush’, moving from village to village and facing all kinds of danger. This also included the risks of conflicts with dishonest producers and illnesses. More importantly, one planned to come back to Lomé and to the

¹⁰⁹ Ri, Ta, interviewed in Lomé on 10 March 2017.

¹¹⁰ Paul, Non, interviewed in Lomé on 18 February 2017.

¹¹¹ Ibid.

¹¹² Adidogomé, Gnonou, interviewed in Lomé on 20 March 2017.

family in a specific time frame. But some challenges on the ground hampered to fulfil the promise which, in turn, resulted in disputes with the partner. At the end, one had to decide whether to divorce or to find a convenient alternative. In my own case, I decided to continue this activity by trading, however, only at the market level.¹¹³

Unlike Paul Non, traders who, despite the long distance to the supply basins, have kept their status as CG have had to find a middle ground to balance their work activity and their conjugal life, as Ma Route testified.¹¹⁴ While interacting with her and referring to aspects of the conversation with Paul Non, Ma Route cited negotiations with her husband and hiring a young girl for domestic tasks during her absence as mechanisms she used to face the challenges imposed by her work.¹¹⁵ She concluded, ‘I am also lucky to have a husband who is not jealous, who loves me, who supports me and who trusts me’¹¹⁶

The last important change faced by the CGs has been the presence of new actors called ‘intermediary wholesalers’ who ostensibly shaped the (social) relationships between producers and the traditional CGs. According to Ri Ta, some years ago, most CGs had the possibility to go to the supply areas and purchase the quantity and the type of charcoal they wanted directly from the producers. Thus, the contact between the two actors was closer and even more familiar. However, this relationship had completely changed when ‘intermediary wholesalers’ appeared in the marketing chain. Their role in the supply chain consists of travelling further into the production areas and supplying most of the former GGs who, over time and for diverse reasons, decided to operate as market wholesalers and retailers. The appearance of these new actors has increased the competition among the traders, not only with regard to their customers but also their relationships with producers, as emphasised by Ri Ta.¹¹⁷

For some years now, many producers started to favour the intermediary actors who have gradually built their monopoly on the production, as they are financially better equipped than most of us. One of the consequences is that many producers refuse or are unable to sell to us, either because they appreciate the business with the ‘intermediary wholesalers’ more or because the intermediary actors, with their important financial power, have been able to organise the whole production: they buy the

¹¹³ Adidogomé, Gnonou, interviewed in Lome on 20 March 2017.

¹¹⁴ Ma, Route, interviewed in Lome on 15 April 2017

¹¹⁵ Ibid.

¹¹⁶ Ibid.

¹¹⁷ Ri, Ta, interviewed in Lome on 10 March 2017.

forest, pay the forest authorities, recruit men who cut down the trees and pay for the production of the charcoal.¹¹⁸

This disloyal competition is hardly bearable for many markets' wholesalers who feel unable to call for justice from the state level since the governmental institutions do not control the private marketing of charcoal. To overcome the influence of the intermediary wholesalers means that one has to maintain good relationships with the producers in remote supply zones. This is achieved by supplying the producers with gifts (e.g., salt, matches and clothes), which are expensive in remote areas. In some cases, CGs may pay the school fees of the producer's children as a way of pre-financing the production of charcoal. These are strategies some CGs have developed to be prioritised by the producers and escape the influence of intermediary wholesalers.¹¹⁹ This also suggests that the relationship between CGs and producers has gone beyond the simple buyer-seller relationship it was reported to be.¹²⁰

Conclusion to Chapter Four

Over the last four decades, the price of woodfuel, and of charcoal in particular, has significantly changed in markets in Lome. The driving forces behind these transformations included supply challenges for *Commerçants Généralistes* (CGs), the key private actors among the heterogenous group of individuals involved in woodfuel marketing in Lome. The increase in distance between the supply zones and the supplied city (Lome) and the different taxes CGs had to pay were the main issues behind the charcoal price progressions. In response, users have adopted diverse strategies that ranged from the mix of different types of charcoal up to certain fuelwood saving attitudes. The list of the strategies deployed by the users in this chapter is not exhaustive. There are certainly other web of social strategies (e.g. creation and maintenance of particular relationships between users, traders and producers of charcoal; some social adjustments within the family or as single user). Specific connections and tensions may also shape the aforementioned social strategies, making them interesting to capture through a historical

¹¹⁸ Ibid.

¹¹⁹ See Paul, Non, interviewed in Lome-Baduida on 18 February 2017.

¹²⁰ See Bertrand, Marchés loméens des produits forestiers et commercialisation des productions du projet AFRI, 3^{ème} partie.

lens. This was not possible in this study, given the scope of the current data collected. Furthermore, the statements of some CGs indicate that the increased distance between the supply zones and the markets in Lome has also had a crucial impact on the trade, the private lives of CGs and their social relationships with charcoal producers. The gradual remoteness of the supply zones over the years has increased the competition among CGs, in the sense that only those traders with financial means have managed to stay in the trade. The geographical remoteness of the supply zones also led to challenges for female CGs, as they had to abandon the trade to avoid potential conjugal conflicts with their husbands. Finally, the remoteness of the supply zones has resulted in the presence of new actors (i.e., intermediary wholesalers) who compete with the CGs in the supply areas. To cope with this competition, CGs have been forced to establish and maintain closer relationships with charcoal producers, in which CGs offer gifts and provide financial support to the producers to ensure confidence and preferential supply.

5 Colonial and Post-Independence Government Attitudes vis-à-vis the Fuelwood Energy Sub-Sector

Introduction

Neither the German nor the French administration who ruled Togo respectively as a colony (1884–1914) and a trust territory (from the end of the First World War to independence in 1960) intervened directly in the private fuelwood energy sub-sector. This was clearly due to the fact that private cooking domestic energy concerns were not a colonial priority, and the wood energy sub-sector was not seen as strategic as food. In this chapter, I show that most of the measures, initially taken by the German and then the French administrators, relevant to woodfuel aimed to manage the forest resources for the sake of the colonial economy.

The Togolese ruling authorities of the early post-independence era adopted a similar attitude towards forest resources, until the late 1970s and early 1980s when the so-called firewood problem was identified for developing countries. The governments of the concerned territories were then called to respond with a series of measures to address ‘deforestation’, depicted in a most linear way as an environmental consequence of the use of fuelwood in both rural and urban areas. In Togo, for instance, ‘development and cooperation’ partners surfed widely on the waves of the ‘fuelwood problem’ and facilitated the creation of a para-statal institution (ODEF) through which the state officially intervened in the production and marketing of woodfuel from the end of the 1970s onwards. This direct intervention of the state in the private domestic fuelwood energy affairs took effect via the AFRI project, which was designed and operated jointly by ODEF and *Agence Française de Développement* (French Development Agency) from 1982 to 1989. Supported by the government, the project’s central objective was to supply Lome with fuelwood. This direct intervention was, in fact, an important paradigm shift with regard to the colonial and post-independence state’s attitude vis-à-vis fuelwood as a private domestic energy source. The striking issue is the fact that this intervention occurred in a context where neo-liberalist Bretton Woods institutions were calling for only a marginal presence of the state in the market economy.

The first section of this chapter, therefore, provides a short historical comparison with the colonial and post-colonial state's interventions into another vital sector, namely food supply. I clarify why, in contrast to the fuelwood sub-sector, the food sector has been central for both colonial and post-colonial state intervention. The second section elaborates on how and for which specific purposes the colonial and post-colonial state in Togo managed forest resources, and it focuses on both continuities and changes. The last section of the chapter examines the conditions and the socio-economic and political contexts in which the state's intervention in fuelwood took effect in Togo by analysing the AFRI project.

5.1 A brief historical review of government intervention and regulation attempts: Food and fuelwood in comparison

The food sector is clearly one of the most vital domains where interventionist mechanisms and actions of ruling authorities can be observed, both before and after the independence of most African countries in 1960. During the colonial period, for instance, the necessity to have a minimal control on the food production, supply and marketing processes was an intrinsic component of the survival and the *raison d'être* of the colonial structures. The colonial economy depended partly on the production of agricultural exports, which were simultaneously needed to feed both colonial urban and rural areas to ensure the sustainable generation of cash crops. In British and French West African colonies, mechanisms of intervention in the food market '[...] included market surveillance, expansion of agricultural research, road development, extension of co-operatives, and the institution of marketing boards'.¹ After the colonial domination, however, governing authorities perceived their intervention in the food sector as obligatory. Seeking, ensuring and sustaining food price stability became government concerns.² Controlling the food demand and supply through price stability was an important part of the political agenda, as prominently argued by Jane Guyer, who reveals that

The [real concern and] question was how such stability could be maintained, both in the technical sense of bringing supply and demand into a viable and predictable interrelationship, and in the class

¹ Guyer, Jane I. "Introduction" *Feeding African Cities: Studies in Regional Social History*. Bloomington u.a: Indiana University Press, 1987, pp. 1–54.

² Jones, William O. *Marketing Staple Food Crops in Tropical Africa*. Cornell University Press, 1972, p. 1.

interest sense of achieving this within a framework of vested interests which also ensured political stability and preserved established economic ties to world markets.³

Cameroon, and Yaoundé in particular, experienced interventions, such as a severe control over food prices which had been implemented in September 1972, and to which suppliers responded drastically in the form of boycotts and a refusal to provide main urban areas with agricultural products.⁴

Deborah Bryceson identified the pivotal importance of food and food marketing in the Tanzanian political economy. Like Guyer, Bryceson has highlighted the fact that staple foodstuffs (e.g., maize) remain one of the most important wage commodities. Based on this, securing food has been one of the major strategic priorities of both the colonial and post-colonial authorities. Bryceson goes a step further to explain that one of the essential reasons that increases the strategic scope of food in the Tanzanian context relates to food shortages. Those shortages evolved as consequences of failing seasonal rains, low productivity of shifting cultivation and the non-mechanisation of agriculture. Interestingly, the food shortfalls coincided with economic crises, which in turn increased the government intervention in food marketing.⁵ As such, both colonial and post-colonial authorities intervened in various manners in the food sector through price controls and by-laws to regulate the influence of private traders.⁶ More importantly, '[t]he extent to which the ruling authorities intervened in marketing organizations largely depended whether food security was felt to be under threat'.⁷ In the particular case of Togo, colonial files document the colonial authorities' involvement in food issues through, for instance, the production and exportation of crops to fuel the colonial economy (see Figure 4).

³ Guyer, Jane I. "Introduction" *Feeding African Cities: Studies in Regional Social History*, p. 38

⁴ Guyer, Jane I. "Feeding Yaoundé" *Feeding African Cities: Studies in Regional Social History*, pp. 112–153.; See Bryceson, Deborah. *Liberalizing Tanzania's Food Trade: Public and Private Faces of Urban Marketing Policy, 1939–88*. J. Currey, 1993.

⁵ Bryceson, Deborah. *Liberalizing Tanzania's Food Trade: Public and Private Faces of Urban Marketing Policy, 1939–88*, p. 6.

⁶ See *ibid.*, 3 ff.

⁷ *Ibid.*, 59.

TABLEAU COMPARATIF DES EXPORTATIONS DES PRODUITS DU CÔTE D'IVOIRE DEPUIS 1922.

Désignation.	1922	1923	1924	1925	1926	1927	1928	1929	1930.
	Tonnes	Tonnes.	Tonnes	Tonnes	Tonnes	Tonnes	Tonnes	Tonnes	Tonnes
Coton égrené	678	766	997	1.601	2.230	1.861	1.536	2.045	1.809.180
Graines de coton	733	669	991	1.875	1.625	2.437	2.398	3.404	2.045.805
Cacao	3.505	3.334	6.432	4.806	5.825	6.324	6.517	5.430	5.186.056
Huile de palme	990	2.915	3.346	4.583	4.822	4.090	1.582	1.590	2.234.701
Amandes de palme	6.186	10.320	12.531	8.615	9.952	9.350	6.183	6.215	110.500.540
Coprah	740	1.122	718	1.008	879	1.615	909	1.278	1.245.489
Café	"	1	"	41	3	4	6	84	86.147
Kapok	"	"	"	"	"	25	79	116	174
Graines de kapok	"	"	"	"	"	30	56	125	23.522
Maïs en grains	1.053	1.770	1.923	1.445	3.698	1.686	2.632	4.141	375.254
Ignames	1	"	"	415	364	584	1.045	1.604	209.055
Pisants	11	"	"	"	4	11	54	216	122.046
Farine de manioc	322	512	196	430	763	1.261	1.198	1.339	678.433
Beurre de karité	"	"	"	"	"	2	"	25	157
Amandes de karité	"	"	"	"	"	8	25	205	3.462
Arachides	9	8	12	1	12	35	120	270	152.590
Haricots	14	8	8	38	79	174	200	401	67.990

Figure 4: Types and quantities of items exported from Togo from 1922 to 1930⁸

After the country's independence in 1960, one of the major state interventions in foodstuffs in Togo is known as '*La Révolution verte*' (the green revolution). This programme was launched by the government in March 1977 and aimed to modernise the agricultural sector and enable Togo's food self-sufficiency.⁹ Measures taken in this respect included the provision of hundreds of hectares of lands for agriculture and the stimulation of irrigated rice production in areas such as Oti Valley, as well as the provision of technical and financial assistance to farmers to increase their cultivated superficies and annual yields. Cornevin observed in this period that '*Les paysans sont exonérés depuis 1975 des engrais et des pesticides ce qui représente une charge annuelle de 1,2 milliards francs CFA*'.¹⁰ Some further measures of the government concerned policies towards a price uniformisation in the 1980s. Such policies focused specifically on price stabilisation and harmonisation while hampering the influence of speculators in the food supply realm.¹¹ In 1989, Alfred Schwartz, who assessed the scope of the

⁸ *Rapports à la Société des Nations Togo (1921, 1927/1935)* FR ANOM 2300 COL 39-42, p. 324.

⁹ Schwartz, Alfred. "Révolution Verte Et Autosuffisance Alimentaire Au Togo". *Politique Africaine Politique Africaine*, no. 36, 1989, pp. 97-107.

¹⁰ Cornevin, R. *Le Togo: des origines à nos jours, avec 16 Cartes Et 53 Photographies*, p. 432.

¹¹ See *Ibid.*, p. 435.

implementation of this *green revolution* notes the increase in imported foodstuffs coupled with meat and cereal shortfalls to clarify that the programme missed its objectives.¹² Unlike the food sector, the urban private domestic energy sub-sector in Togo, and in Lome in particular, appears as a field where the intervention of the ruling authorities has been marginal. This holds true, as no data from the colonial files indicate any form of colonial mandate or post-independence¹³ state intervention in the supply and large-scale marketing¹⁴ of woodfuel in Togo. The German colonial state, for instance, did not intervene in fuelwood issues because wood as a cooking material energy source was not a relevant concern, as its collection was not associated with any significant ‘environmental degradation’, as noted by the German colonial forest manager Metzger.¹⁵ Even in urban areas like Lome, where the lack of forest cover dwindled the availability of firewood, the demand for woodfuel could be covered by the quantity of wood available in areas surrounding the capital. Existing written records for the period from 1884 to the early 1960s did not reveal any threat of this demand to the physical environment, though Togo was and is a poor country in terms of wood resources. As such, wood for fuel was not as strategic and politically sensitive as staple food. This, I would argue, substantially minimised the state’s intervention in the domestic fuelwood sub-sector until the 1970s. Until then, the state’s presence had been concerned with policies designed and implemented by both colonial and post-colonial rulers to manage forest resources.

5.2 Togolese colonial and post-independence authorities, forest resources and the fuelwood issue (1884 to 1960 and beyond)

The Germans, who ruled Togo from the second half of the nineteenth century until the outbreak of the First World War, lacked interest in Togolese forest resources. This was

¹² Schwartz, Alfred. ‘*Révolution Verte Et Autosuffisance Alimentaire Au Togo*’

¹³ Based on the data that I accessed, it was not until the 1970s that the post-independent state started to get involved in fuelwood issue as discussed in subsequent sections.

¹⁴ See chapter 1, methodology section.

¹⁵ Metzger, *Die Forstwirtschaft im Schutzgebiet Togo*, pp. 14-15. He pointed out that ‘indigenous’ mannerism of farming based on burning the land and using primitive tools (hatchet) as responsible for the poor state of forest vegetation in the colony. The author arguably depicted the colonised as the main responsible of forest degradation in the colony to justify colonial intervention.

due to the ‘poverty’ of the Togolese woodland, as testified by the following assertion on the economic value of wood resources of the then German colonies:

*‘Ausbeutungsfähig für den Export sind nur die Waldungen Kameruns, Deutsch-Ostafrikas und Neu-Guineas, während Südwestafrika und Togo infolge ihres geringen Waldbestandes von vornherein ausscheiden’.*¹⁶

Forest cover in the territory of Togo was estimated at 1.5%.¹⁷ For this reason, the early German governors in Togo did not prioritise forest issues, as the then forest assessor Metzger noted:

*Wichtiges galt es in den ersten beiden Jahrzehnten zu schaffen: Die verschiedenen Eingeborenenstämme mußten erst botmäßig gemacht werden, Ruhe und Ordnung mußten an Stelle der ewigen Fehden zwischen den einzelnen Stammesgebieten treten, die Eingeborenen mußten an die von dem europäischen Beamten zu betätigende Verwaltung und Gerichtsbarkeit gewöhnt werden, verschiedene über das ganze Land als Stützpunkte verteilte Verwaltungsstationen, von denen aus jetzt das Land in seinen acht Bezirken verwaltet wird, waren auszuwählen und anzulegen. Es galt, die Geographie des Landes in ihren Grundzügen festzulegen, Verkehrswege zu schaffen, die Steuerkräfte der Eingeborenen heranzuziehen, die Einfuhr und Ausfuhr, sowie den gesamten Innenhandel zu regeln und unter staatliche Kontrolle zu stellen und anderes mehr.*¹⁸

However, this disinterested attitude of the German administration vis-à-vis forest resources changed when Julius von Zech auf Neuhofen¹⁹ officially became representative governor of the colony in 1905. Unlike his predecessors, he emphasised the relevance of forest resources and advocated the necessity of funding to be allocated to this sector in budgets submitted to the *Reichskolonialamt* (German colonial office²⁰) in Berlin.²¹ Von Zech is seen as a pioneer among governors who called on the *Reichskolonialamt* for more consideration to forest resources in Togo.²²

¹⁶ See BArch R 1001/7664 s. 5. Niederschrift über die am 11. Mai 1909 im Reichs-Kolonialamt stattgefundene Beratung über die wirtschaftliche Erschließung der Waldungen in den deutschen Kolonien und die technische Verwertung kolonialer Hölzer, p. 5.

¹⁷ ANT, Affaires Economiques, dossier n°1, sous série 5 D (Agriculture, Elevage, Forêt et Chasse).

¹⁸ Metzger, *Die Forstwirtschaft im Schutzgebiet Togo*, p. 1.

¹⁹ Julius von Zech auf Neuhofen has been Governor of Togo from 1905 to 1910.

²⁰ My own translation.

²¹ See Seemann, *Julius Graf Zech: Ein Deutscher Kolonialbeamter in Togo*, p. 68.

²² See Metzger, *Die Forstwirtschaft im Schutzgebiet Togo*, pp. 3-5.; p. 131.; see Seemann, *Julius Graf Zech: Ein Deutscher Kolonialbeamter in Togo*, pp. 68–70.

What the authors who highlight von Zech's achievements of inscribing Togolese forest resources issues as a priority on the German colonial political agenda²³ do not mention is the fact his actions cannot be detached from the reforms led by Bernhard Jakob Ludwig Dernburg in colonial affairs from 1906 onwards. The concerned reforms called for a reconsideration of forest resources elevated to one of the central the pillars of Dernburg's new colonial programme drafted for all territories controlled by the German colonial empire.²⁴ With that in mind, it is not exaggerated to state that Dernburg's reforms provided the foundational institutional colonial framework without which von Zech's achievements would not have been possible. In this line, therefore, with Dernburg's reforms, von Zech addressed the 'poverty' of the Togolese forest estate, noted as the result of 'primitive' anthropic actions, which Metzger reported in his book *Die Forstwirtschaft im Schutzgebiet Togo*²⁵ (1911) as follows:

In erster Linie war der Mensch, der die heutige Waldarmut herbeiführte, er den Urwald mit Feuer und Axt vernichtete, Farmland zu gewinnen. Dieselbe Methode, die der Neger²⁶ wohl schon seit vielen Jahrhunderten bei der Vernichtung des Waldes anwendete, bringt er heute noch zur Anwendung mit Hilfe seiner heute außerordentlich Werkzeuge.²⁷

This condescending narrative, as its content reveals, was generated to merely blame the colonised people as the main agents of the degradation of Togo's forest cover.^{28 29} This accusation was certainly used to legitimise and guarantee von Zech's project to be accepted by the colonial administration in Berlin. In the logic of what precedes, a series

²³ See, among others: Johnson, Ablaba. *La politique forestière au Togo, 1950–1992*. Université de Lomé (Togo), (Maîtrise thesis), Gayibor Nicoué Lodjou. *Le togo sous domination coloniale (1884-1960)*. Université de Lomé. département d'histoire et d'archéologie. Presses De L'UL, 2013.

²⁴ See Utermark, Sören. *Schwarzer Untertan versus schwarzer Bruder: Bernhard Dernburgs Reformen in den Kolonien Deutsch-Ostafrika, Deutsch-Südwestafrika, Togo und Kamerun*. Universität Kassel, 2012, p. 124. (Published Dissertation), <https://www.deutsche-digitale-bibliothek.de/item/ttxjlivjejewu2fg2tjya6jyearsabdsa> Accessed 24 March 2020.

²⁵ Note that *Die Forstwirtschaft im Schutzgebiet Togo* (1911) is one of, if not, the first monographies that addressed forest issues in Togo; it evolved as reports of the author who served as forest assessor under von Zech. The reports were put together and the author submitted as a dissertation.

²⁶ The use of this word needs to be embedded in the context largely dominated by racist terms used by the colonisers to describe the colonised people. I leave this term in its original context despite being aware of its inappropriateness at this particular point in time.

²⁷ Metzger, *Die Forstwirtschaft im Schutzgebiet Togo*, p. 16.

²⁸ Ibid, 13.

²⁹ For a critique of these kinds of narratives that blame the colonised people for having degraded the forest, see Fairhead, James, and Melissa Leach. *Reframing Deforestation: Global Analyses and Local Realities; Studies in West Africa*.

of expeditions were sent to evaluate the state of the forest in the colony, and, more importantly, the areas that could be reforested. In 1906, the forest expert Oskar F. Metzger was appointed as forest manager by von Zech. In the same year, a planting reward (*Pflanzungsprämie*) was institutionalised by the colonial administration and put under the supervision of the missionary societies to stimulate tree planting in Togo.³⁰

In his endeavours to do ‘more’ for forest resources in Togo than other governors before him, von Zech released a decree on the regulation and protection of the forest (*Schutzwaldverordnung*) in 1907. This document clearly defined the conditions under which the wood resources could be used. It excludes the felling of trees by private individuals, and any exploitation of the forest estates was subjected to taxation.³¹ In the same year, von Zech’s administration launched a reforestation project that targeted two main areas: Hoho-Balöe in the central south and Mô-Kamaa in the northern part of the territory.³²

From 1907 until the beginning of the First World War, only 4,000 hectares of the originally planned 25,000 were reforested.³³ The reforestation project and all actions taken towards the forest resources followed the logic of resource development and control. The culmination of this logic was rooted in the coloniser’s attempts to open the forest resources to the colonial economic exploitation. Who can better confirm the previous assertion than Metzger? He stated that

*Die Erhaltung unserer Waldungen ist schon aus rein wirtschaftlichen Gründen gerechtfertigt, denn sie stellen durch ihren Holzbestand Werte dar, welche zum Teil jetzt, zum Teil in absehbarer Zeit, zum Teil allerdings erst in ferner Zukunft mit der weiteren Entwicklung des Verkehrsnetzes realisiert werden können.*³⁴

In pragmatic terms, the reforestation measures were intended to help reduce the dependence of the occupied Togolese territory upon imported European timber (see Figure 5).

³⁰ See Seemann, *Julius Graf Zech: Ein Deutscher Kolonialbeamter in Togo*, p. 69.

³¹ BArch R1001/4235, Bl.43.

³² See Metzger, *Die Forstwirtschaft im Schutzgebiet Togo*, p. 76.

³³ Ahadji, 1999, p. 5. Bited by Johnson Ablaba. *La politique forestière au Togo, 1950–1992*.

³⁴ Metzger, *Die Forstwirtschaft im Schutzgebiet Togo*, p. 26.

1906		1907		1908		1909	
Kilo	Wert in M.	Kilo	M.	Kilo	M.	Kilo	M.
1 211 817	175 495	827 880	145 688	900 440	146 869	662 636	97 400

Figure 5: Quantity of timber (*Bau und Nutzholz*) imported to the colony between 1906 and 1909³⁵

The reforestation project also facilitated wood export from Togo to Germany.³⁶ For this purpose, the Government of Togo signed a contract³⁷ with the *Telefunkengesellschaft* based in Berlin, as mentioned in a letter dated 31 October 1913.³⁸ As stated in the contract, reforested areas like Haho-Baloe were expected to supply the Berlin company with 3,000 cubic meters of firewood annually. In return, the government of Togo was expected to gain 20,000 Mark per year from the contract with a yearly budget for production costs estimated at 6,000 Mark.³⁹

After the First World War, 60% of the former German colony of Togo became a League of Nations trust territory under France's administration. This change in status of what was then called French Togo implied that any significant measures to be implemented had to be negotiated, justified and reported to the League of Nations. This proxy management of forest resources in Togo was not required in other French colonies like Dahomey for instance. When France occupied this territory at the end of the nineteenth century, it passed by-laws regarding forest resources. French colonial administration regulated and controlled the exploitation, use, transport, cutting and marketing of wood through diverse decrees and circulars between 1900 and 1927.⁴⁰ Similar regulations in the case of Togo required the approval of the League of Nations. Therefore, most measures taken by the French administration towards forest resources resulted from enquiries formulated by the League of Nations, such as the following, found in the archives dated 15 June 1926:

³⁵ Ibid., 34.

³⁶ Ibid., 35.

³⁷ A copy of the contract was not available in the archives in Berlin, but has been accessed at the Technisches Museum Berlin and enclosed in the thesis (see Appendix)

³⁸ BArch R1001/7694

³⁹ See Appendix Picture 1, Archival material provided by Technisches Museum Berlin.

⁴⁰ Juhé-Beaulaton, Dominique. '*Bois de chauffe et charbon de bois dans le Sud du Bénin : évolution de la production au cours du XXe siècle. Le bois source d'énergie : naguère et aujourd'hui*'.

‘Existe-t-il une législation forestière? Quelles-en sont les dispositions essentielles? Prévoit-elle, notamment, des mesures en vue de la conservation du massif forestier et du reboisement des surfaces défrichées ou incultes?’⁴¹ These questions had to be considered in the reports of the French administration, and the necessity of any particular measures regarding the management of the forest resources had to be explained and justified as illustrated in the following archival material:

Les rapports précédents ont déjà indiqué que le territoire n'était pas un pays de forêts. Il a été jadis largement déboisé, comme tous les lieux de passage et de migrations. Aussi le reboisement rest-t-il une des préoccupations de l'Administration locale. Le plus gros effort de l'année s'est porté sur le cercle de Sokodé, où un plan de reboisement a été établi et mis en application. Ce plan consiste 1°/ en la défense des peuplements existants par une bordure de plantes résistant aux feux de brousse et l'essai en est fait à la plantation administrative de Kasséna; 2°/ en reboisement artificiel, dans les zones dénudées, par se semis directs. On a ainsi reboisé une superficie de 10k2. Le semis direct paraît donner de bons résultats. Les essences choisies ont été surtout le kapokier, l'erythropheum guinéense, le chlorophora excelsa, le teck.⁴²

In accordance with the League of Nations, France passed decrees such as that of the 23 November 1920, which regulated the cutting of specific wood species and the consequent taxes to be paid. Interestingly, this document states that the cutting of wood on private property and the type used specifically for cooking, are exempt from tax.⁴³ However, when examining its content closely, it is clear that, rather than a novum, this first regulation during the French administration is more of a replication of the ‘Schutzwaldverordnung’ released by the Germans in 1907.

France encouraged reforestation through the institution of a ‘*journée de l'arbre*’ in 1931, which was celebrated on different days in different places within the territory.⁴⁴ Important reforms were conducted, notably the enactment in 1938 of a ‘*Code forestier*’ that regulated the forest sector as a whole, and conducted forest classifications like in Lama-

⁴¹ *Organisation des territoires conquis, mandat français au Togo et au Cameroun, convention entre la France et les États-Unis du 13 février 1923, commission des mandats (1915/1937)FR ANOM 2300 COL 21, 25, 29 Carton 25, p. 7*

⁴² *Rapport Annuel adressé par le Gouvernement Français au Conseil de la Société des Nations sur l'Administration sous mandat du Territoire du Togo pour l'année 1927 in Rapports à la Société des Nations Togo (1921, 1927/1935) FR ANOM 2300 COL 39-42 Carton 39, pp. 228-229.*

⁴³ *Rapports à la Société des Nations Togo (1921, 1927/1935) FR ANOM 2300 COL 39-42 Carton 39:*

-Rapport du 1er Juillet 1921 et le 30 Avril 1922: régime forestier dans le chapitre 1 id 4

1921 (p. 23)

⁴⁴ ANT-Lomé, Affaires Economiques, dossier n°1, sous série 5 D (Agriculture, Elevage, Forêt et Chasse).

Kara (1939, 765 ha)⁴⁵ with effective reforestations in areas such as Mango, Dapaong, Loko, Pana, Bogou, Lotogou, Bombouaka and Korbongou.⁴⁶ Like its predecessors, the reforestation policy⁴⁷ of the French administrative power pursued economic purposes, as expressed by A. Mercadier, chief administrator of the colonies in 1943, in the following terms:

*Il est temps tout d'abord de tirer profit du magnifique travail qui a été effectué des plantations. Il ne faut pas perdre de vue en effet qu'elles ont été faites non seulement en vue du reboisement, mais aussi pour fournir aux indigènes ... et aux pays en pays en général avec la possibilité d'une exportation des bois de construction et des bois d'œuvre.*⁴⁸

After independence in 1960, the Togolese post-independent rulers saw the same economic value in the exploitation of the country's forest resources, as they were to play an important role in the economy of the country. This explained the efforts of the respective governments of Sylvanus Olympio (1958–1963) and Nicolas Grunitzky (1963–1967) to reform the sector and enhance its contribution to the Togolese economy.⁴⁹ The track record of the forest sector, however, remained unsatisfactory, with the sector even losing its autonomy when, based on decision number 73/MER/EF on 9 August 1965, the appointments and assignment of its personnel were put under the responsibility of the *Ministre de l'économie rurale* (Minister of rural economy).⁵⁰

After the military coup of 1967, the army in power was clearly aware of the difficulties faced thus far by the forest sector. Significant government action in this regard evolved as the Togolese military ruler requested assistance from the UNDP in order to define a coherent forest policy through which forest resources could be better developed, managed and exploited.⁵¹ The UNDP approved this demand, which led to the creation of the para-statal institution ODEF with decree number 71–204 in November 1971. As a para-public institution with financial autonomy, ODEF's aims were clearly synthesised thus:

⁴⁵ ANT-Lomé, 2 APA, dossier n° 64, cercle de Lama Kara 1929-1978; Arrêté n° 411 du 30 juillet 1939

⁴⁶ ANT-Lomé, 2 APA, n° 39, cercle de Mango 1918–1966.

⁴⁷ For more details about the forest policies of both Germans and French in Togo, see E. Johnson.

⁴⁸ ANT-Lomé, 2 APA, Dossier n°119, cercle de Sokodé. Lettre n°2567 AE/EF du 2 Novembre 1943.

⁴⁹ See Johnson, *La politique forestière au Togo, 1950-1992*, pp. 46–51.

⁵⁰ Ibid.

⁵¹ ODEF-Togo. Official website. <http://odeftg.com/presentation/>, accessed on 21 June 2018.

- 1- *La gestion, l'équipement et la mise en valeur du domaine forestier national par:*
 - a) *Son extension*
 - b) *L'aménagement et le traitement de tous peuplements forestiers domaniaux préexistants sur le territoire national*
 - c) *des études d'introduction de nouvelles essences forestières*
- 2- *l'exploitation, la transformation et la commercialisation des produits et sous-produits forestiers*
- 3- *la promotion et la valorisation du matériau bois ainsi que celles de l'exploitation rationnelle de certaines forêts dont les potentialités l'exigent.*⁵²

Therefore, following its ambition to improve the effectiveness of the development and economic exploitation of forest resources, ODEF launched diverse reforestation projects in areas such as Blitta, Djandé, Lilikopé, Tétéou, Lome and Lama-Kara.⁵³ The institutionalisation of Tree Day in 1977, celebrated every 1 June, was part of the reforestation project. Although this celebration does appear to be a replication of the 'Pflanzungsprämie' or the 'Journée de l'arbre' that existed during the German occupation and the French mandate period, respectively.

In 1980, for instance, ODEF supervised the reforestation of 164 hectares, planted 244,200 new trees and ensured the maintenance former plantations covered 3,319 hectares.⁵⁴ The struggle of the government to foster an exploitation-oriented reforestation led to the adoption of a five-year programme ('*Plan Quinquennal 1976–1980 dans le domaine forestier*'). The programme covered the period from 1976–1980. It assigned ODEF to reforest of 8,500 hectares for a global cost estimated at 1.1347 billion Fcfa. The result, however, was catastrophic. As Barbaud reported, '*Les résultats effectifs sont assez loin de ce programme ambitieux, puisque les travaux de reboisements commandés à l'O.D.E.F n'ont atteint que 1.500 ha environ, pour un coût approximatif (subventions d'État) de 350.000.000 F environ*'.⁵⁵ Despite this negative performance, ODEF remained

⁵² Direction Générale de l'ODEF. *Projet Organisation de l'Office de Développement et d'Exploitation des Forêts, Introduction*. Document found in the Archives of ODEF, p. 1.

⁵³ See Johnson, *La politique forestière au Togo, 1950–1992*, p. 57

⁵⁴ See Annual Reports of ODEF: 1977, 1978, 1980.

⁵⁵ Barbaud, *les problèmes forestiers de la république togolaise. Mission d'évaluation des projets forestiers envisagés par le gouvernement togolais. Les problèmes forestiers de la république togolaise. Mission d'évaluation des projets forestiers envisagés par le Gouvernement Togolais*, p. 14.

the only institution through which a formal governmental exploitation of Togolese forest resources was operated.

This discussion about how and for what peculiar purposes forest resources were managed in Togo from the early twentieth century to the creation of ODEF in 1971 is relevant for two main reasons. First, it provides an illustration of the economic exploitation of resources that essentially characterised Western colonialism in Africa, as theoretically argued by historians such as Frederick Cooper, who questioned colonialism.⁵⁶ The aims behind the reforestation projects in Togo during German and French administrations testified to the radical views of scholars including Walter Rodney,⁵⁷ Mueni Wa Muiu and Guy Martin,⁵⁸ who claim that exploitation-based capital generation was the primary aim behind the development of natural resources in the territories under Western occupation. By the same token, environmental historians Richard H. Grove⁵⁹ and David Anderson⁶⁰ showed that when colonisers advocated for the conservation of resources, they first made colonised people the main agents of forest degradation in order to legitimise restoration of the forest cover and resources for the exclusive and ultimate sake of the colonial economy. The experiences of the German and then French administration exemplify the validity of this assertion. Second, the management of the forest resources through reforestation projects, for instance, as noted for the post-independent period era appears to draw on what was observed during the colonial period. This is to say that the economic exploitation of forest resources was also central to the different reforestation projects such as those conducted by ODEF after its creation. Entities like ODEF did not focus on forest resource conservation or protection but rather the sustainable production of wood resources and their subsequent economic exploitation. As such, there was continuity

⁵⁶ See Cooper, Frederick. *Colonialism in Question: Theory, Knowledge, History*. University of California Press, 2009.

⁵⁷ See Rodney, Walter. 'The Colonial Economy', *General History of Africa-VII Africa under Colonial Domination 1880-1935*, Edited by in Boahen, Adu A. United Nations Educational, Scientific and Cultural Organization, and Heinemann, Paris and London, 1985, pp. 332–350.

⁵⁸ Wa Muiu, Mueni, and Martin, Guy. "The African Colonial and Postcolonial States" *A New Paradigm of the African State*, Palgrave Macmillan US, pp. 49–62.

⁵⁹ See Grove, Richard H. *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600–1860*. Cambridge University Press, 1996, p. 6.

⁶⁰ See Anderson, David, and Richard H. Grove. "Introduction: The Scramble for Eden: Past, Present and Future in African Conservation" *Conservation in Africa: People, Policies and Practice*, edited by Anderson, David and Grove, Richard. Cambridge, GBR: Cambridge University Press, 1987, pp. 1–12.

between the colonial forest resources policies and those implemented by the ruling entities who took over after 1960. This continuity can be embedded in what has been already found by scholars such as Frederick Cooper,⁶¹ Mahmud Mamdani,⁶² the economic historian Gareth Austin⁶³ and Achille Mbembe,⁶⁴ who showcased the manner in which colonialism affected and continues to impact the social and the political structures of many decolonised countries.⁶⁵ This continuity, however, is far from the extractive colonial motivation of managing forest resources.

In the late 1970s and early 1980s, ODEF orientated its activities towards the production and the marketing of woodfuel energy. This new orientation marked a crucial shift in the post-independent state's attitudes regarding forest resources management and exploitation. The next section explores and analyses the background and the expanse of this paradigm shift, presented as a direct state intervention in the fuelwood sub-sector.

5.3 Changing paradigm: The creation of the *Office de Développement et d'Exploitation des Forêts* and the beginning of the Togolese post-independent State intervention in the woodfuel energy sub-sector (from 1979 onwards)

After years of reforestation in diverse areas, ODEF engaged in the fuelwood market as a producer and trader of charcoal and firewood. This, in fact, marked the beginning of the state's direct intervention in the fuelwood energy sub-sector. In its new role, ODEF commercialised 18,443 bags of charcoal (720 tons) and 910 cubic metres of firewood in 1979.⁶⁶ In 1980, charcoal and firewood consumption in Lome was estimated respectively at 20,000 tons and 51,000⁶⁷ cubic metres, of which 5% for the former and less than 3%

⁶¹ See Cooper, Frederick. *Africa since 1940. The Past of the Present*. Cambridge University Press, 2002.

⁶² See Mamdani, Mahmood. 'Beyond Settler and Native as Political Identities: Overcoming the Political Legacy of Colonialism'. *Comparative Studies in Society and History*, vol. 43, no. 4, 2001, pp. 651–664., doi:10.1017/S0010417501004285.

⁶³ See Austin, Gareth. 'African Economic Development and Colonial Legacies'. *International Development Policy Revue internationale de politique de développement*, 1, 2010, 11–32.

⁶⁴ Mbembe, Achille. *De la postcolonie, Essai sur l'imagination politique dans l'Afrique contemporaine*. Paris, 2000.

⁶⁵ Ibid.,

⁶⁶ See Barbaud, les problèmes forestiers de la république togolaise. Mission d'évaluation des projets forestiers envisagés par le gouvernement togolais, pp. 6-7.

⁶⁷ Ibid.

for the latter was provided by ODEF.⁶⁸ In the early 1980s, when private domestic energy users commenced a gradual shift from firewood to charcoal, charcoal consumption in Lome was estimated at 66,000 tons, representing 50% of the national demand.⁶⁹ The question now is what motivated the state to intervene directly in fuelwood production and marketing at this particular moment. By taking a closer look at this period, one realises that this intervention took effect at the exact moment when the so-called fuelwood crisis and its corollary ‘gap theory’ was identified for most developing countries. As it is useful to recall, Erick Eckholm was one the first to discuss in that period what he noted as the ‘other energy crisis’.⁷⁰ Unlike the ‘oil crisis’ which was affecting the economy and wealth of oil-importing countries around the globe,⁷¹ especially those located in the northern hemisphere, the ‘other crisis’ was identified for the ‘least developed’ countries where the lion’s share of the energy was met with fuelwood.⁷² The occurrence of the ‘other crisis’ or the ‘fuelwood crisis’ was thought by its advocates (i.e., World Bank, FAO and their experts such as Erick Eckholm) to be the consequence of the potential inadequacy between the demographically driven rising demand for wood for fuel and the supply possibilities in developing countries.⁷³ The proponents of the ‘fuelwood problem’ drew a linear link between increasing population and energy supply, highlighted the environmental impacts and concluded that charcoal was an essential cause of deforestation in most African countries.⁷⁴

To prevent the ‘crisis’ in countries like Togo, the advocates of the ‘fuelwood crisis’ ensured their technical and financial support to government forestry departments (e.g., ODEF) enabling them to take action. It was this period and the warranty of external technical and financial assistance that facilitated ODEF’s and the Togolese state’s

⁶⁸ Ibid., 15.

⁶⁹ Bailly. Rapport de Mission relative à une étude de la consommation de bois et des produits dérivés : charbon de bois, bois de chauffage, effectuée à la demande de la République Togolaise du 26 Août au 10 octobre 1982, p. 5.

⁷⁰ See Eckholm, *The Other Energy Crisis: Firewood*, p. 5.

⁷¹ Painter, D S. ‘Oil and Geopolitics: The Oil Crises of the 1970s and the Cold War’. *Historical Social Research*, vol. 39, no. 4, 2014, pp. 186–208., doi:<https://doi.org/10.12759/hsr.39.2014.4>. Accessed on 9 Sept. 2019.

⁷² See Leach, Gerald, and Robin Mearns. *Beyond the Woodfuel Crisis: People, Land and Trees in Africa*, p. 5.

⁷³ See Dang, Himraj. “Fuel Substitution in Sub-Saharan Africa”. *Environmental Management*, vol. 17, no. 3, 1993, pp. 283–288., doi:<https://doi.org/10.1007/BF02394671>, Accessed 12 March 2020.

⁷⁴ See Reddy, Amulya K N, and Goldemberg José. “Energy for the Developing World”. *Sci Am Scientific American*, vol. 263, no. 3, 1990, pp. 110–118., doi:<https://eric.ed.gov/?id=EJ415546>. Accessed 10 July 2019.

intervention in the fuelwood energy sub-sector. This situation, however, was not unique to Togo; para-statal institutions similar to ODEF evolved in the same context in other countries. For example, the Beninese *Société Nationale des Forêts* (SNAFOR) which became *Office National du Bois* (ONAB) in 1984 also benefited from the assistance of international institutions and conducted diverse reforestation projects aimed at facing the ‘fuelwood problem’ in important urban areas such as Cotonou and Porto-Novo. *Société Nationale des Forêts* and then ONAB produced and marketed charcoal and firewood from the mid-1970s onwards.⁷⁵

In addition to the context being favourable for potential external financial assistance, the Togolese state’s intervention through ODEF also benefited from an internal factor, namely the demographic growth recorded in important urban areas like Lomé between 1970 and 1980 (6% in 10 years) as noted in Chapter 2.⁷⁶ This is worth mentioning for various reasons. First, because population increase, especially in urban areas, is central to the ‘fuelwood crisis’ argument, given that the proponents of this narrative linearly correlate the increase in urban domestic energy demand with population growth. This also means that the less relevant the demographic growth is, the less likely the state is to legitimise financial and technical support from international development partners in order to ease its intervention in the fuelwood sub-sector. Given its growing population that would potentially increase its demand for fuelwood (charcoal in particular), the city of Lomé clearly presented the ideal profile as target urban area where state intervention using external assistance could be well justified. Beyond the previous observation, ODEF’s intervention can be construed as an unprecedented opportunity for the government to gain an important share in the fuelwood market that had been largely dominated by private actors. Thus, by intervening in the production and marketing of woodfuel, the state via ODEF sought to play a regulatory and monopolistic role, especially in the charcoal business in urban areas such as Lomé, where prices fluctuated greatly in the rainy season, reaching 2,000 Fcfa for a 40-kg bag.⁷⁷ To turn the charcoal

⁷⁵ See: Juhé-Beaulaton ‘*Bois de chauffe et charbon de bois dans le Sud du Bénin: évolution de la production au cours du XXe siècle. Le bois source d’énergie : naguère et aujourd’hui*’

⁷⁶ The city’s population increased sharply from 148,000 in 1970 to 242,000 in 1980, 6% which was the highest demographic growth over time; see more on the demographic transformations in Lomé in Chapter 2.

⁷⁷ Bailly. *Rapport de Mission relative à une étude de la consommation de bois et des produits dérivés : charbon de bois, bois de chauffage, effectuée à la demande de la République Togolaise du 26 Août au 10 octobre 1982*, p. 7.

business to its advantage and at the expense of its private competitors, ODEF intended to produce and supply Lome with the same 40-kg bag at the price of 1,000 Fcfa⁷⁸ (i.e., half the price proposed by the CGs).

Nevertheless, knowing that a regulatory role of the government could result in a conflict with private charcoal traders, who in this period were controlling the lion's share of the fuelwood supply in Lome, the state adopted a 'mild' strategy. On the one hand, this consisted of not severely repressing the private traders, as this used to be the case in neighbouring countries like Burkina Faso. On the other hand, by dropping the price of the 40 kg bag of charcoal to 1,000 Fcfa, ODEF intended not only to attract end fuelwood users but also to impose itself as the private traders' main supplier. Moreover, ODEF allowed the private traders and retailers to buy its charcoal that could be resold at a convenient price on the regular fuelwood market.⁷⁹ This state intervention was happening in a context where, in line with the structural adjustment programmes, the neo-liberalist Bretton Woods system called on countries like Togo to decrease governmental presence in the economy.⁸⁰ This paradox being noted, the state's search for control and monopoly lied in the fact that, given the co-relationship between demographic growth and the increase in demand for domestic cooking fuel, the fuelwood sub-sector was perceived as one of central sub-sectors capable of revitalising the Togolese economy.⁸¹ Counting on the woodfuel sub-sector as an important source of income was extremely relevant to the government in this period due to the catastrophic state of the country's budgetary situation, which led the Togolese government to rethink its economic policy in the late 1970s.

The country's economic problems led to a stabilisation of the economy which resulted in the World Bank's structural adjustment programme in 1983.⁸² As reported by UNDP and the World Bank, the enhancement of the economic situation implied a radical re-

⁷⁸ Ibid.,

⁷⁹ Ibid.,16.

⁸⁰ See Lensink, *Structural Adjustment in Sub-Saharan Africa*, p. 2.

⁸¹ See Bailly, *Rapport de Mission relative à une étude de la consommation de bois et des produits dérivés : charbon de bois, bois de chauffage, effectuée à la demande de la République Togolaise du 26 Août au 10 octobre 1982*, p. 15.

⁸² See Rapport du programme commun PNUD/Banque Mondiale de l'évaluation du secteur de l'énergie. Togo : problèmes et options dans le secteur de l'énergie. 1985, p. 8.

orientation of the country's economic policy.⁸³ All sectors were to contribute to the country's economic recovery. In other words, the critical economic situation and the conditionalities of the structural adjustment programmes caused the government to reconsider all sectors and sub-sectors capable of providing the state with revenues. In this regard, the fuelwood sub-sector, especially the charcoal demand from urban areas, appeared to be promising, due to the ongoing 'fuelwood crisis' narrative which guaranteed external financial assistance to the state. The conditions for a legitimised, direct intervention of the state were fulfilled.

Going beyond economic interest, the government intervention should be viewed from the standpoint of not only seeking a monopoly of the sub-sector but also controlling the actors (i.e., users, traders and potentially producers in the capital and beyond) who depended upon woodfuel as their main domestic burning source, as well as a vital source of income generation. This follows the logic of 'whoever controls the provision of domestic energy for cooking energy controls the people who depend on that energy'. Woodfuel, namely charcoal, through the manner it has been produced in Togo to supply the demand in Lome, has not created the conditions for mass democratic claims, as Timothy Mitchell argued was the case for coal in Western countries until the arrival of oil in the mid-twentieth century.⁸⁴ Nevertheless, the Togolese state's control of the charcoal market would signify controlling an important aspect of the social and economic life of millions of people who rely on this fuel in Lome and beyond in their daily life. This control can also be taken as a political 'fuelwood weapon' that the state can potentially manipulate in particular instances and settings, including political purposes as noted for food in the colonial period.⁸⁵

Pursuing its aim of controlling the fuelwood sub-sector, as well as the people who wanted to take the control from the CGs, ODEF initiated a special reforestation project (i.e., AFRI) with a specific goal: to supply the city of Lome with firewood and charcoal. The next section critically investigates the genesis of AFRI, which is, thus far, the sole project to which such an objective has been set.

⁸³ Ibid, p.8.

⁸⁴ Mitchell, Timothy. "Carbon Democracy". *Econ. Soc. Economy and Society*, vol. 38, no. 3, 2009, pp. 399–432.

⁸⁵ See section 6.2.

5.4 A critical investigation of the AFRI project genesis (1982–1988)

My analysis in this section illustrates and evaluates the AFRI project's major aims and its scope of implementation. The origins of the project go back to a correspondence from the Togolese *Ministère de l'Industrie et des Sociétés d'État* (Togolese Ministry of Industry and State's companies)⁸⁶ to the French ambassador. In a letter dated 4 June 1980, the Togolese government drew the attention of the French representation to the importance of two projects for the Togolese economy in the context of the socio-economic crisis and requested financial support to conduct them. One of the projects involved the reforestation of 2,000 hectares in the coastal area close to Lome. The objective was to supply Lome with timber and, more importantly, charcoal, arguing that due to the demographic growth, the capital was going to face a severe fuelwood shortage in the near future.⁸⁷ By undertaking such a project using a narrative fully embedded in the 'fuelwood crisis' discourse, the Togolese government joined by other neighbouring countries where similar projects following comparable aims evolved and were implemented, as Tienko Jean Akossongo noted in the case of Burkina Faso. According to the forest *ingenieur* Akossongo, the first project in the country's history to focus on the supply of Ouagadougou with fuelwood began in 1986 and was named '*Aménagement et Exploitation des Forêts Naturelles pour le Ravitaillement de la Ville de Ouagadougou en bois de feu*'. The project was recorded under the code '*Projet PNUD/FAO/BKF/85/011*'. As will be shown for AFRI later on, the implementation of '*Aménagement et Exploitation des Forêts Naturelles pour le Ravitaillement de la Ville de Ouagadougou en bois de feu*' benefited from the technical and financial assistance of the FAO and UNDP.⁸⁸ This project marked the beginning of the Burkinabe government intervention in the fuelwood sub-sector using the country's forest resources. In the same vein, the *Plantation Bois de Feu* (PBF) project conducted by ONAB from 1985 to 1997 was also rooted in the attempt of the then Popular Benin Republic to face the fuelwood shortage in demographically important urban areas such as Cotonou, and other main consumers of a significant part of

⁸⁶ My own translation.

⁸⁷ Barbaud, les problèmes forestiers de la république togolaise. Mission d'évaluation des projets forestiers envisagés par le gouvernement togolais, p. 1.

⁸⁸ Akossongo, Tienko Jean. *Rapport national sur la gestion durable des forêts au Burkina Faso. Ministère de l'Environnement et du cadre de vie*. Novembre 2004, 2004, p. 2.

Benin's domestic energy demand.⁸⁹ As such, the 'fuelwood problem' as debated on the international level in the 1980s provided the favourable framework that enabled the occurrence of fuelwood related projects in some developing countries, as illustrated by AFRI in Togo, PBF in the People's Republic of Benin, and in Burkina Faso with the project 'PNUD/FAO/BKF/85/011'.

What is interesting to note in the case of AFRI is the kind of argument the government used to legitimise the relevance of the project, and how the 'invention of a woodfuel shortage for Lome' expanded the operationalisation field of the 'fuelwood crisis'.

In fact, the AFRI project, as mentioned at the beginning of this section, evolved based on the government's argument that Lome was going to experience an unprecedented fuelwood crisis, against which prevention and adequate measures had to be taken. In this regard, the Togolese request for action via such a project of reforestation appeared to be an illustration of the debatable 'woodfuel crisis' that G. Leach and R. Mearns prominently discussed, which influenced most environmental policies in Africa from the 1980s onwards.⁹⁰ As discussed, the advocates of the 'woodfuel crisis' overestimated environmental concerns in developing countries.⁹¹ The authors of these narratives, the government in the case of this study, correlated the evident population growth of Lome in the 1980s with the demand and raised concerns about the probability of a shortage, which in turn would culminate in a 'fuelwood crisis' for Lome.

What is interesting in the Togolese case with respect to the 'fuelwood crisis' debate is the fact that it was the government that announced the inevitability of the 'fuelwood crisis' to justify intervention, monopoly and control, as well as to call for external financial assistance. In normal cases, according to Leach and Mearns,⁹² the narrative of the 'fuelwood crisis' is a 'top-down approach' of international experts towards environmental concerns in developing countries. This approach mostly follows this simplistic line: an international institution (i.e., FAO and/or the World Bank) conducts research on environment-related issues in African countries, for instance. The external institutions

⁸⁹ See Juhé-Beaulaton, *'Bois de chauffe et charbon de bois dans le Sud du Bénin: évolution de la production au cours du XXe siècle. Le bois source d'énergie : naguère et aujourd'hui'.*

⁹⁰ Leach, Gerald, and Robin Mearns. *Beyond the Woodfuel Crisis: People, Land and Trees in Africa*, pp. 5–6.

⁹¹ Leach and Mearns. *The Lie of the Land: Challenging Received Wisdom on the African Environment*, pp. 1–2.

⁹² *Ibid.*, 2.

then address the scale of environmental problems in the countries ‘[...] by comparing current woodfuel consumption with current stocks and annual growth of trees’.⁹³ In most cases, the comparison shows a shortage, a ‘supply gap’, which is then put into future projections in a linear correlation with urban population growth. The faster the population increases, the greater its demand for fuelwood will become and the deeper the ‘gap’ will be. Thus, there is or will be a ‘problem’; a woodfuel one. ‘As “the woodfuel” is or will be so severe, [...] trees must be planted on a scale far in excess of the capacity of rural people themselves to respond. Government forestry departments, with financial and technical support from aid agencies and non-governmental organisations, must intervene’.⁹⁴ The Togolese case expanded the known *modus operandi* of the ‘fuelwood crisis’ narrative, in the sense that the narrative of the crisis evolved from the Togolese authorities and not directly from external institutions, as was normally the case. The reason why this is true lies in the following observation.

In fact, and clearly at the demand of the Togolese government, a mission was created to identify the environmental problems the country was facing regarding forest resources.⁹⁵ This mission was conducted by the French *Centre Technique Forestier Tropical* (1949–1992) in November 1979 with the financial support of the French aid agency *Fonds d’Aide et de Coopération de la République Française*. The report addressed, on one hand, specific measures the Togolese government could take to face environmental challenges. On the other hand, the French aid agency highlighted its technical and financial support for environment-related projects.⁹⁶ Nevertheless, nowhere did the mission address a subsequent crisis related to the country’s wood supply. However, by declaring its willingness to financially assist any projects on the matter, the French institution provided the framework. Therefore, the reforestation project that led to the invention of the ‘fuelwood crisis’ clearly seems to be a reaction of the Togolese government in their attempt to seize the opportunity offered by the French aid agency.

⁹³ Ibid., 2

⁹⁴ Ibid., 2.

⁹⁵ See Barbaud, les problèmes forestiers de la république togolaise. Mission d’évaluation des projets forestiers envisagés par le gouvernement togolais, p. 1.

⁹⁶ Ibid.

Furthermore, the Togolese authorities addressed the French *Ministère de la Coopération* and solicited a second mission for an empirical review of the proposed projects and to prepare the documents for their funding. The French government accepted the relevance of this mission and replied with regard to the suggested projects, as reported by Pierre Barbaud in charge of the mission, as follows: ‘*Le Ministère français de la coopération, de son côté, privilégie, dans l’objectif assigné à la mission, le projet de reboisement aux environs de Lomé, et passe en fait en fait sous silence le [second] projet relatif au teck*’.⁹⁷

The French government explained this choice arguing, as Barbaud reported, that

*Cette position restrictive est justifiée par le fait qu’un éventuel financement; à l’aide d’un prêt de la Caisse Centrale de Coopération Economique, est beaucoup plus rationnel à l’égard d’un objectif économique-social de court et moyen termes (reboisement destiné à satisfaire des besoins urgents), qu’à l’égard d’un objectif de sylviculture que les Services Forestiers nationaux devraient théoriquement être en mesure de réaliser eux-mêmes avec un autofinancement partiel ou total résultant de la commercialisation d’éclaircie des teckeraies.*⁹⁸

It was, therefore, the economic rentability, a guarantee of reimbursement with interest, that justified the choice of the project, which aimed at supplying Lome with fuelwood. The situation at the local level with regard to the wood supply was also an important justification, as mentioned by C. Barbier et al., who note that ‘*La progression des prix de vente des produits ligneux à Lomé au cours de ces mêmes années*⁹⁹[...] *était d’ailleurs la meilleure preuve de la nécessité, de l’urgence et de la rentabilité de tels projets*’.¹⁰⁰ The attainment of this economic goal passed through a recognition of the argument of the ‘fuelwood crisis’ for Lome as raised by the Togolese government to claim the urgency and necessity of a project on this matter. For this purpose, data had to be generated. In a mission conducted by Pierre Barbaud in 1980, he acknowledged that at that particular point in time, there was no shortage regarding the fuelwood supply in Lome. However, in his attempt to produce data to justify the relevance of the Togolese governmental intervention with the support of the French foreign aid, Barbaud highlighted the demographic dynamic, the microclimatic conditions of the coastal area unfavourable for

⁹⁷ Ibid, 2.

⁹⁸ Ibid.

⁹⁹ In the early 1980s.

¹⁰⁰ Barbier, Claude et al. ‘*Les plantations du projet AFRI. Aménagement forestier et reboisement industriel dans le Sud-Togo*’

consistent vegetation, the depletion of former supply areas of the capital and the incapacity of sources such as gas, electricity and petroleum to replace firewood and charcoal, and he came to the following conclusion:

*L'ensemble de ces considérations sur les besoins de Lomé en charbon de bois, la façon dont ces besoins sont satisfaits et l'évolution constatée depuis une décennie, amènent à la conclusion que cette ville, et avec elle toute la région côtière, sont menacées à très court terme d'une grave et durable pénurie pour un produit de base utilisée par toutes les couches de la population et dont la raréfaction poserait, par conséquent, un problème et social très sérieux.*¹⁰¹

Based on this report, the sole solution to avoid the projected 'fuelwood crisis' for Lome remained the artificial reforestation using fast-growing species that could generate charcoal of an acceptable quality for the Togolese capital. These conclusions did, however, reinforce the narratives of the 'crisis' announced by the Togolese government and facilitate the funding of the reforestation project by France.

Archival documents show, however, that the data generated to support the 'fuelwood crisis' in Lome and to justify intervention misrepresented the facts. In other words, Barbaud's report about the threat of a wood crisis in the case of Lome was based on untrustworthy data. It was, to paraphrase Mearns and Leach, a '[...] lie to the land [...]'.¹⁰² The first fact to support this stems from one of the pioneering studies conducted jointly by the FAO and the UNDP 10 years prior to Barbaud's report, which evaluated the wood resources in Togo and came to the conclusion that '[...] l'approvisionnement de Lomé en bois de feu, charbon de bois et bois de service était satisfaisant et avait toutes les chances de le rester'.¹⁰³ The second fact is that, since the 1980s and despite its demographic growth, Lome has yet to experience the 'fuelwood crisis' announced by the government. This is not the result of governmental reforestation projects targeting the woodfuel supply of the capital, but rather because the existing wood resources have thus far covered the demand from the capital. It is in total disregard of the above observations that the AFRI project was accepted by the French development partners.

¹⁰¹ Barbaud, *les problèmes forestiers de la république togolaise. Mission d'évaluation des projets forestiers envisagés par le gouvernement togolais*, p. 8.

¹⁰² Leach and Mearns. *The Lie of the Land: Challenging Received Wisdom on the African Environment*, p. 2.

¹⁰³ Rapport FAO/PNUD cited by Barbaud, *les problèmes forestiers de la république togolaise. Mission d'évaluation des projets forestiers envisagés par le gouvernement togolais*, p. 9.

5.5 The implementation and results of the AFRI project: On the traces of the state's search for monopoly over the fuelwood energy supply in Lome

The choice of the site where the AFRI project would be implemented had to fulfil specific criteria. For economic-technical reasons, the site needed to be closer to Lome. This would help minimise transportation costs, among other benefits.¹⁰⁴ High transportation costs could negatively impact the price and affect one of the major aims of the project, notably proposing a cheaper charcoal at a lower price than the one proposed by private traders, as stated in the previous section. In addition, the site should be easily accessible for long trucks, while also being closer to main transport axes such as railways and national roads.¹⁰⁵ Equally important, the site should be able to contain 4,000 ha of reforested plants in a 'concentrated' surface area.

In addition to these technical considerations, AFRI needed to embody a social dimension. This meant that its implementation should not be source of conflict between the state and the farmers living close to or on the site. The project should employ the farmers without competing with their traditional sources of income (e.g., agriculture). Therefore, AFRI had to be integrated in the area as an additional job opportunity to bolster the rural economy. In the same vein, the project's implementation and the choice of the site should be highly sensitive to land tenure issue by avoiding any conflict in this regard with the locals. On this matter, Barbaud explained and warned that :

*[...] la Direction de la Législation agro-foncière, chargée de l'application de l'Ordonnance n° 12 du 6 Février 1974 fixant le régime foncier et domanial, considère que dans toute la région maritime la densité de la population rend pratiquement impossible la soustraction aux besoins de cette population de quelques milliers d'ha de terres cultivables d'un seul tenant. Même pour une cause d'utilité publique, une expropriation attaquant dans cette zone les droits usagers reconnus depuis longtemps serait une source de litiges très graves et engendrerait, à l'égard du projet une hostilité insoutenable.*¹⁰⁶

This warning, in theory, illustrates how sensitively and cautiously the government should operate socially to facilitate the implementation of the project and, by the same token, increase its chance of being locally accepted. It is unclear whether this theoretical warning

¹⁰⁴ Barbaud, les problèmes forestiers de la république togolaise. Mission d'évaluation des projets forestiers envisagés par le Gouvernement Togolais, p. 33.

¹⁰⁵ Ibid.

¹⁰⁶ Ibid, 33.

was put into practice during the project's implementation. My current data do not help provide a clear-cut answer in this regard. As such, further enquiries focusing on the views of the local actors (i.e., farmers) in the area would potentially help evaluate the effectiveness of the aforementioned social dimensions.

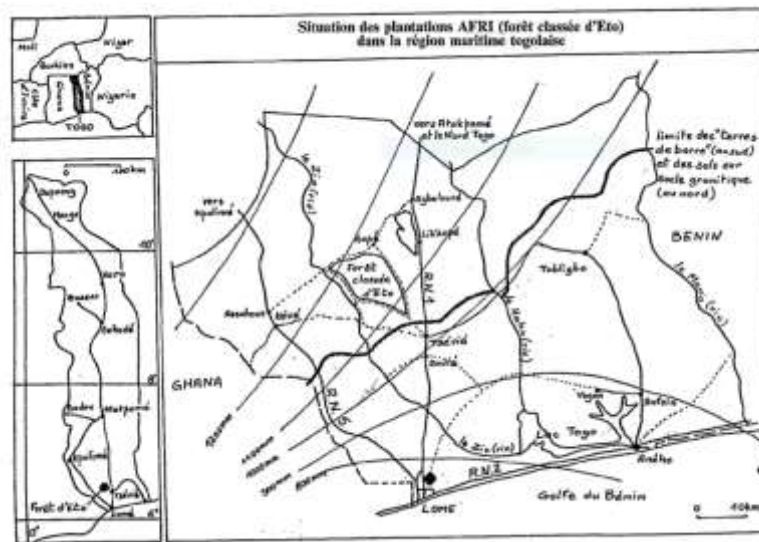
Having noted this, the wealth of official records I could access tended to focus only on the environmental benefits of the project. It is often argued in the records that the project helped reduce the pressure on natural regeneration of trees and protect the wild fauna. More importantly, it is reported that AFRI has inspired many private individuals to engage in sustainable woodfuel (charcoal and firewood) production.¹⁰⁷ In 2001, an official report submitted to FAO, the African Development Bank, the European Union Commission and the Togolese government recalled the AFRI project as one of the most effective contributions of the state in sustainably meeting the fuelwood supply challenges of Lomé.¹⁰⁸ The extent to which the previous assertions from the reports are true can only be explored if one confronts them with testimonies of actors who experienced the implementation of the AFRI reforestation project.

Based on the aforementioned technical and social considerations, the government and experts made the decision to implement the project in gazetted forests. These forests had been declared as state properties following the forest classification conducted during the French administration in 1950. Though the concerned forests, over the years, served for agricultural purposes and woodfuel supply sources for resident communities, they legally remained state properties that the government could dispose of at any time without particular procedures, as observed by Barbaud.¹⁰⁹ Among the gazetted forests, only that of Eto was thought to be appropriate for the AFRI project, as it fulfilled all the required criteria.

¹⁰⁷ See Barbier, Claude et al. *“Les plantations du projet AFRI. Aménagement forestier et reboisement industriel dans le Sud-Togo”*

¹⁰⁸ SESSI, Koffi. *Collecte et analyse de données pour l'aménagement durable des forêts-joindre les efforts nationaux et internationaux. Programme de partenariat CE-FAO (1998-2002) Ligne budgétaire forêt tropicale B7-6201/97-15/VIII/FOR Projet GCP/INT/679/EC. Rapport d'étude sur les données du bois-énergie au Togo*, p. 11.

¹⁰⁹ Barbaud, les problèmes forestiers de la république togolaise. Mission d'évaluation des projets forestiers envisagés par le gouvernement togolais, 33.



Map 6: The Eto gazetted forest¹¹⁰

With a total surface area of approximately 10,000 ha, Eto became a reserved forest in reference to the classification's decree ('*Arrêté de Classement*') number 728/EF on 24 September 1952. It fitted geographically with the requirements (i.e., it is 50 km from Lomé).¹¹¹ Due to its geographical location, the site benefited from favourable climatic conditions, notably an average and sufficient rainfall relevant to the planned reforestations (see Figure 6).

	J	F	M	A	M	J	J	A	S	O	N	D	Total-Moyenne
Plyviométrie	2,3	40,4	105,5	156,9	139,4	145,4	164,6	65,4	154,9	115,3	30,8	19,0	1 139,9 mm
Nombre de jours de pluie	0,3	1,5	6,1	5,8	7,1	8,0	7,1	3,2	7,0	7,3	2,0	1,1	56,5
Température moyenne	27,5	28,8	28,7	28,5	27,8	26,6	26,0	26,0	26,3	26,7	27,2	26,3	27,2 °C
Humidité relative moyenne	69	68	73	75	76	79	80	80	79	78	75	69	75 %
E.T.P.	110	120	136	126	122	97	87	89	88	93	97	91	1 256 mm
Insolation	135	143	156	173	185	141	123	103	122	150	196	133	1 762 heures

Figure 6: Climatic features of Eto gazetted forest¹¹²

¹¹⁰ See Barbier et al. '*Les plantations du projet AFRI. Aménagement forestier et reboisement industriel dans le Sud-Togo*'

¹¹¹ Ibid.

¹¹² Ibid.

On the financial level, the implementation of the project was estimated at approximately 2.446 billion Fcfa.¹¹³ This amount should have been made available as a credit allocated by the *Caisse Centrale de Cooperation Économique* (a financial institution of the French Development Agency), the French Development Agency, and the Togolese government.¹¹⁴ The exact share of this amount made available by each of the three entities remained unclear in the sources. Moreover, the project's concrete implementation comprised two distinct phases. The first phase lasted from 1981 to 1988, during which approximately 4,000 ha of *Eucalyptus tereticornis* and *Eucalyptus torrelliana* were planted. Eucalyptus was chosen because it grows fast.¹¹⁵ The choice of this species lies in the assumption that that presents eucalyptus as a 'tree that needs minimal supervision, and provides greater yields of commercially useful biomass per unit land area and per unit time than most other trees'.¹¹⁶ However, the advantages of the eucalyptus should not obscure the argument of its opponents, who claim that it deprives the soil from moisture.¹¹⁷

The second phase from 1988 to 1989 consisted of harvesting and commercialising the AFRI plantations. To prepare the marketing and the introduction of the AFRI-wood products, the *Fonds d'Aide et de Cooperation de la République Française* funded an extensive study conducted by the Centre Technique Forestier Tropical in 1987.¹¹⁸ This study (*Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI* by Alain Bertrand), presented in five volumes, provided all the details that might be needed to understand the woodfuel market and analyse key marketing aspects.

¹¹³ See ODEF-Togo. Official website <http://odeftg.com/projects-2/projets-mis-en-oeuvre-par-lodef/>

¹¹⁴ See Barbier et al. "Les plantations du projet AFRI. Aménagement forestier et reboisement industriel dans le Sud-Togo"

¹¹⁵ See Ibid. ; Barbier, Claude and Gbadoé, Edjdomelé. "Fertilité des sols et production des Eucalyptus dans le sud du Togo" Bois et forêts des tropiques, 2001, N° 267 (1), 21-31, http://bft.cirad.fr/cd/BFT_267_21-31.pdf, Accessed 26 March 2019 .

¹¹⁶ Abbasi, S. A. and Vinithan, S. "Ecological impacts of eucalypts -myths and realities". *Indian Forester*, 123 (8), 710-739, https://www.researchgate.net/publication/287919561_Ecological_impacts_of_eucalypts_-_myths_and_realities, Accessed on 17 March 2020.

¹¹⁷ For extensive insight into the debate between the pro and the contra eucalyptus among the Social Forest scholars, see Ibid.; and also Bayle, G. K. 'Ecological and Social Impacts of Eucalyptus Tree Plantation on the Environment'. *J. biodivers. conserv. bioresour. manag.* 5(1), 2019, 93-104, DOI: <https://doi.org/10.3329/jbcbm.v5i1.42189>, Accessed 26 March 2020.

¹¹⁸ See Bertrand, *Marchés loméens des produits forestiers et commercialisation des productions du projet AFRI*. 1^{ère} Partie, Rapport de Synthèse, p. 0.

From the 4,000 ha of reforested trees, 850 ha had been harvested in 1988. The total costs of this first harvest are detailed in Figure 7.

Hors assistance technique Amortissement compris Prix base 1988	CHARBON FC.F.A./sac de 33 kg	RONDINS FC.F.A./stère
Mobilisation du bois	136	349
Rémunération des charbonniers	225	
Encadrement de chantier	10	15
Emballages (sacs)	100	
Amortissement des fours	125	
Réparation des fours	25	
Chargement	10	60
Sylviculture	120	361
Entretien des pistes	15	46
Lutte contre les feux	30	90
Frais généraux	266	801
Coût de revient à la production sur camion départ chantier	1 062	1 722
Coût de transport sur Lomé	200	1 400
Coût de revient sur camion à Lomé	1 262	3 122

Figure 7: Insights into the production costs of 850 ha of AFRI plantations.¹¹⁹

With 850 ha, as presented in the table above, the AFRI project supplied Lomé with only 6% of its charcoal and 40% of its firewood, the equivalent of 81,5000 cubic metres or 28,350 tons, in 1988.¹²⁰ This result was well below the expectations and the projections for the fuelwood supply of Lomé as pursued with the AFRI plantations. The reason for making the previous observation lies in the fact that the study conducted in 1987 by Bertrand estimated the firewood demand in Lomé at 50,000 tons per annum, and the AFRI plantations were expected to provide 40,000 tons per year, roughly 80% of the existing market, for next 20 years.¹²¹ This, in essence, would have led to a total monopoly of the government over the firewood supply. In the same line, charcoal, during the conceptualisation phase, was presented as the main product upon which the financial rentability of the whole project should depend. This was rooted in the increase in charcoal's price, most notably between 1977 and 1982, a situation the government

¹¹⁹ See Barbier et al. 'Les plantations du projet AFRI. Aménagement forestier et reboisement industriel dans le Sud-Togo'.

¹²⁰ See Ibid.,

¹²¹ See Bertrand, *Marchés loméens des produits forestiers et commercialisation des productions du projet AFRI*. 1^{ère} Partie, Rapport de Synthèse

intended to profit from. The figure 8 included below informs on the progression of charcoal's price from the end of the 1970s and 1980s.

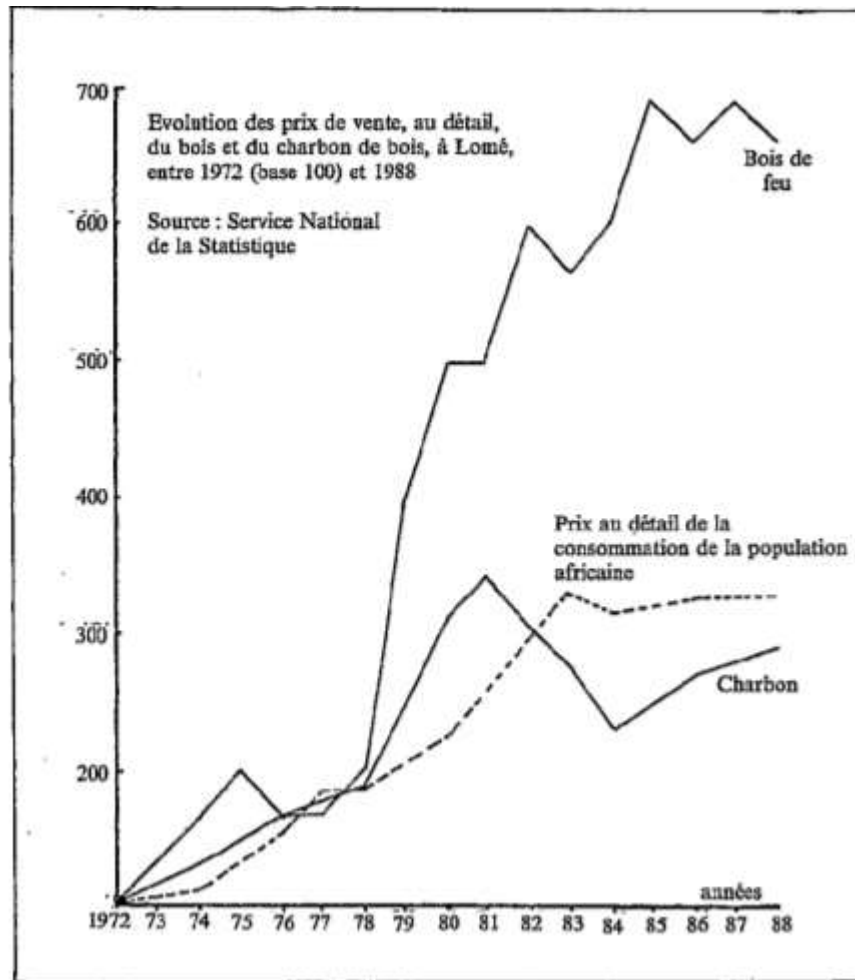


Figure 8: Firewood and charcoal prices in Lomé between 1972 and 1988¹²²

However, from 1981 until the exploitation, the charcoal price decreased unexpectedly, and AFRI charcoal came to be more expensive than what was proposed on the market in Lomé by the CGs. Given the production and marketing costs based on the elements presented in Figure 13, AFRI's charcoal was sold at 43 Fcfa per kg versus 19 Fcfa as proposed by CGs on the private market. Moreover, the quality of charcoal produced from AFRI plantations was less attractive for many users based on its poor quality; it burned

¹²² See Barbier et al. "Les plantations du projet AFRI. Aménagement forestier et reboisement industriel dans le Sud-Togo"

faster when compared to the one commercialised by private traders.¹²³ All these considerations led C. Barbier to conclude that

'[...] aucune amélioration technique ne permet une réduction notable du coût de production; d'ailleurs, le poids qu'aurait le Projet, dans le cas d'une transformation intégrale de sa production en charbon de bois (6% du marché Lomeen), ne lui permet pas d'influer sur le fonctionnement de la filière traditionnelle'.¹²⁴

This negative performance was not only fatal, but also hindered any attempt to continue the project. Consequently, AFRI was abandoned in 1989.

5.6 Understanding the failure or *Rendez-Vous-Manqué* of the state's search for monopoly

In this section, I explore the specific issues that were central to AFRI's failure. Dominique Juhé-Beaulaton, in her assessment, concluded that the PBF project implemented in Benin failed probably because *'[...] les acteurs de ce projet aient manqué de concertation avec les principaux intéressés, de réflexion sur la gestion du patrimoine forestier développé. Sans parler du manque de dynamisme des agents eux-mêmes'.¹²⁵* The *Office National du Bois* via PBF failed to meet their aims, as their share in the supply of important urban areas such as Cotonou with fuelwood appeared to have been well below the pursued objectives.¹²⁶ Some of the features of the failure raised by Juhé-Beaulaton, especially the ones related to the conception and the implementation of PBF project in Benin,¹²⁷ were tantamount to those identified for AFRI, as is detailed below.

In fact, one of the main elements of the negative record of the AFRI project had been the incapacity and the misinterpretation of the government and the development partners with regard to the increase in charcoal prices from the 1970s onwards, upon which the

¹²³ See *ibid.*,

¹²⁴ Barbier et al. '*Les plantations du projet AFRI. Aménagement forestier et reboisement industriel dans le Sud-Togo*'.

¹²⁵ Juhé-Beaulaton, '*Bois de chauffe et charbon de bois dans le Sud du Bénin : évolution de la production au cours du XXe siècle. Le bois source d'énergie : naguère et aujourd'hui*'.

¹²⁶ See *ibid.*

¹²⁷ See *ibid.*

rentability of the project hinged. They simply observed the price increase on the market and came to the conclusion that it was going to continue linearly and thus based the rentability of the AFRI project upon this myopic consideration. Blinded by the goal of monopolising the fuelwood sector, the government and its development partners failed to carefully and deeply understand and analyse the market's dynamic before conceptualising and implementing the project. The meticulous study conducted in 1987 by Bertrand provided the most important data about the fuelwood production, including how it was commercialised at markets in Lome, the supply structures, the price fixing and the users' preference with regard to the charcoal quality. It emerged from this study that the 'best' quality charcoal is based on its weight and associated with qualifiers such as '*brûle lentement*'; '*dure au feu*' and put together in simple terms: '*le charbon lourd en brûlant lentement ne s'épuise pas vite et, par conséquent, est plus économique que le charbon léger*'.¹²⁸ However, the charcoal produced by the AFRI project using eucalyptus belonged to the lower quality since it was lightweight and burned more quickly, and thus, it could not meet the criteria of the users. *Eucalyptus* did not appear on the list of tree species largely preferred by users, as Bertrand empirically found (see Table 5).

Name of the wood species in Ewe	Latin appellation
Heheti	<i>Anogeissus</i>
Etoti	<i>Pterocarpus erinaceus</i>
Ayokumiti	<i>Butyrosperum parkii</i>
Eyoti	<i>Lophira alata</i>
Teck	<i>Tectona grandis</i>
Kiniti	<i>Azadirachta indica</i>
Exeti	<i>Fagara macrophylla</i>
Atitoeti	<i>Dialium</i>
Mangoti	<i>Manguifera indica</i>
Etsati	<i>Erythrophleum</i>
Ewoti	<i>Parkia biglobosa</i>

Table 5: List of wood species giving high quality of charcoal ¹²⁹

¹²⁸ This list has been provided by Bertrand, *Marchés loméens des produits forestiers et commercialisation des productions du projet AFRI*. 3^{ème} Partie, p. 25 in 1988.

¹²⁹ Bertrand, *Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI*. 3^{ème} Partie, p. 134.

This experience brought Bertrand to helplessly but reasonably report that charcoal production was a risky enterprise subjected to negative profitability.¹³⁰ Had this study been conducted before the conceptualisation of the AFRI project, the government and funding partners would have noticed the real determinants of the fuelwood situation on the ground. Bertrand's study undoubtedly shed light on the diverse aspects of the fuelwood supply in Lome but could not economically support the project simply because it was conducted after AFRI's conception. Equally importantly to note is the fact that Bertrand's study ironically deconstructed the data generated both by the Togolese government and the French experts, especially Pierre Barbaud, to respectively claim the threat of a 'fuelwood crisis' for Lome and justify the implementation of a 'salutary project' as a measure of prevention. These data were generated not because the authors were concerned with the environmental change with respect to the access to energy in Lome. Had that been the case, the two involved bodies would have taken time for deeper socio-technical analysis and field considerations, through which basic mistakes like the one depicted above could have been avoided. Instead, the data were mistakenly produced to create and serve the economic interests of the two entities seeking to conquer and monopolise the fuelwood production and marketing in Lome. This corroborates the observation calling for critical methods of gathering data used to discuss environment-related issues, especially in developing countries.¹³¹

Another significant element was the fact that the government, by integrating the fuelwood market and aiming to control it, underestimated the significance and the reaction of private traders, especially the CGs, who supply Lome with charcoal. The sub-sector was and is controlled by private traders, as discussed in Chapter 4. Knowing that an aggressive control of the sub-sector through coercive measures vis-à-vis the existing supply structures could, like in Burkina Faso, result in drastic reactions of the wholesalers or even lead to socio-political problems,¹³² ODEF started its operation in an open and mild manner. This made its products (i.e., charcoal and firewood) available both to consumers

¹³⁰ See *ibid*, 107.

¹³¹ Leach and Mearns. *The Lie of the Land: Challenging Received Wisdom on the African Environment*, pp. 1–5.

¹³² See Bertrand, *Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI*. 1^{ère} Partie, Rapport de Synthèse, p. 11.

and wholesalers, as mentioned above.¹³³ Nevertheless, from 1977 on, the distance between the supply areas and the supplied city Lome was a challenge for most private traders, as described by Alioun Thiam:

*En effet c'est entre 1977 et 1981 que l'approvisionnement de Lomé en charbon de bois en était aux derniers vestiges des forêts des environs de la ville. L'approvisionnement de la ville entraînait de plus en plus dans ses sillages les forêts de plus en plus éloignées. Les circuits commerciaux de charbon de bois rendu Lomé passaient du stade de circuits commerciaux de moyenne portée (distance) à celui de circuits commerciaux de longue portée; du stade de méso-marché à celui de macro-marché.*¹³⁴

In more concrete and empirical terms, due to the inscreasing scarcity of particular wood species¹³⁵ in supply areas such as Tsévié, Vogan and Notsé (between 50 and 100 km from Lome), most private traders started making long journeys into the country's interior (e.g., Blitta, Sotouboua and Bassar, 100–500 km from Lome). The increase in distance logically had severe implications on the transportation costs which affected the fuelwood price in Lome. This resulted in the increase of fuelwood prices from 1977 onwards, as shown above in Table 2. It was in this particular context that ODEF started its operation as a public producer and trader of firewood and charcoal.

The arrival of ODEF on the market in 1979 led to a relative decrease in fuelwood prices. This was explained by the fact that, in an attempt to facilitate a rapid sale of its products and in line with its aim of conquering and controlling fuelwood production and marketing, ODEF made its charcoal, for instance, cheaper than what was locally proposed in the markets.¹³⁶ The *Office de Développement et d'Exploitation des Forêts* could afford this, I would argue, for three specific reasons. Firstly, the wood that ODEF used to produce charcoal stemmed from its plantations. Secondly, based on the fact that it exploited its plantations, which were located close to Lome, it could readily bear the transportation

¹³³ Bailly, Rapport de Mission relative à une étude de la consommation de bois et des produits dérivés : charbon de bois, bois de chauffage, effectuée à la demande de la République Togolaise du 26 Août au 10 octobre 1982, p. 7.

¹³⁴ See Thiam, Etude de marchés des produits ligneux au Togo, p. 161. République du Togo. Direction Générale de l'Énergie. Rapport Général Provisoire. Enquête consommation des énergies domestiques au Togo, p. 25.

¹³⁵ Wood species that, according to fuelwood users, are noted to provide a high quality of charcoal, see Figure 47 above.

¹³⁶ See Barbaud, Les problèmes forestiers de la république togolaise. Mission d'évaluation des projets forestiers envisagés par le Gouvernement Togolais.

costs. Third and most relevant, ODEF, as a para-public institution, was financially supported by external funders via the government to conduct its activities.

On one hand, this intervention was beneficial to the users because they could afford charcoal at the relatively lower market price. For the private traders, on the other hand, it brought forth a sort of disloyal competition with ODEF. To address the ‘dumping effect’ produced by the governmental intervention, the private traders replied drastically through what Thiam called a ‘*reactions ‘de bon sens’*,¹³⁷ as they abandoned the supply areas located in the country’s interior. They then returned to the former supply areas surrounding the capital and exploited the rest of trees available in those areas. This helped the private trades to minimise transportation costs and led to a decrease in charcoal prices between 1980 and 1985,¹³⁸ as their offer certainly exceeded the demand in the capital. This unexpected reaction was a paramount element with a fatal impact on the sustainability of AFRI project. In addition to the production costs that doubled from the conception phase in 1982 to the first exploitation in 1988, the private traders’ drastic reaction brought the charcoal prices into an unsupportable competition for ODEF. While the low-quality charcoal produced by the AFRI project was sold for 43 Fcfa per kg, their private contenders proposed the same quantity of the same product with a much better quality for 19 Fcfa per kg.¹³⁹ Knowing, as mentioned above, that charcoal has been defined as the product upon which the profitability of the AFRI project should depend, the previous figures clearly showed the contrary. There was, therefore, no way to reverse the trend, as C. Barbier et al. objectively observed:

On y remarque surtout que, même dans la meilleure hypothèse [...], les prix du marché ne permettent que le ‘petit équilibre financier’, celui du compte d’exploitation (remboursement des seuls frais de fonctionnement de la structure à l’exclusion de l’investissement de plantation financé par un prêt), sans possibilité de remboursement de l’investissement principal.¹⁴⁰

¹³⁷ Thiam, *Etude de marchés des produits ligneux au Togo*, p. 161. République du Togo. Direction Générale de l’Énergie. Rapport Général Provisoire. *Enquête consommation des énergies domestiques au Togo*, p. 26.

¹³⁸ See Ibid.

¹³⁹ See Barbier et al. ‘*Les plantations du projet AFRI. Aménagement forestier et reboisement industriel dans le Sud-Togo*’

¹⁴⁰ Ibid.

In light of this, as the rentability of AFRI, along with the reimbursement of the allocated credits, were out of the question. The only alternative was the abandonment of the whole project. This led to a complete withdrawal of ODEF from charcoal production and marketing in 1989. Since then, ODEF has conducted further reforestation projects with the financial assistance of the World Bank and the International Tropical Timber Organisation to respond to the national and international demand for timber. Its insignificant presence in the Lome wood market is reduced to the marketing of surplus wood after ODEF harvests its plantations for timber. The headquarters in Agbalepedogan (Lome) serve currently as point of wholesale of ODEF's firewood (see Picture 16).



Picture 16: Firewood stored for sale at ODEF headquarters in Lome¹⁴¹

ODEF currently operates in gazetted forests in different regions in the country. The concerned fields of operation encompass areas, such as Haho-Baloe,¹⁴² where the German colonial authorities conducted their reforestation projects. The only official information that makes mention of the AFRI project is a set of sentences on ODEF's website: '*4,000 ha de plantation d'Eucalyptus sont réalisés. Les bois de feu et de service sont disponibles sur le marché de Lomé. Les plantations de teck sont réhabilitées. Les infrastructures sont construites (logement)*'.¹⁴³ The highlight of the '4,000 ha' of the reforested areas is one of ODEF's most important 'achievements' largely praised by the institution – as documented on the website, in its official documents and in most official and unofficial reports.¹⁴⁴

¹⁴¹ I obtained the permission of ODEF to take both photographs during my fieldwork in 2017 in Lomé.

¹⁴² ODEF-Togo. Official website, <http://odeftg.com/projects-2/projets-mis-en-oeuvre-par-lodef/>

¹⁴³ ODEF-Togo. Official website <http://odeftg.com/projects-2/projets-mis-en-oeuvre-par-lodef/>

¹⁴⁴ This praise can be read in Barandao et al. Etude sur l'utilisation d'énergie domestique et artisanales au Togo et propositions de programmes d'économie d'énergie d'origine ligneuse and ODEF-Togo. Official website, <http://odeftg.com/projects-2/projets-mis-en-oeuvre-par-lodef/>. Accessed 19 Nov. 2020.

Conclusion to Chapter Five

Since the late eighteenth century, colonial and early post-colonial governing structures have sought ways to maintain a certain control over the staple food sector. Food was among other areas upon which social and political stability depended. Reducing the influence of private traders, controlling the price, and/or getting involved in the supply were means through which colonial and early post-colonial state apparatuses appeared in the highly strategic food sector. Compared to food, however, the domestic woodfuel sub-sector appeared less relevant to state authorities. In the case of Togo, the German and French governing powers made some efforts to manage forest resources and create institutions for this, but their aim was mainly to facilitate the economic exploitation of the colony. Reforestation measures after independence mostly pursued the same aims as in the colonial and mandate periods. Although important urban areas such as Lome grew steadily, and their domestic energy demand increased, the fuelwood sub-sector remained socially, politically and economically less relevant for the government.

This situation, however, systematically changed when the debate on the ‘fuelwood crisis’ or ‘fuelwood problem’ in developing countries arose at the international level in the late 1970s and early 1980s. From then on, government intervention in the fuelwood energy sub-sector started to be effective. In Togo and many other African developing countries, this period coincided with an economic malaise that increased the state interest in reconsidering all sectors capable of providing the country with revenues. Benefiting from international financial and technical support, para-statal institutions such as ODEF embarked on new reforestation programmes, in which woodfuel production and supply for the urban market were partly integrated. In the same spirit, and targeting the important fuelwood demand in Lome, the Togolese government proclaimed a future fuelwood and charcoal shortage in Lome to justify and request international technical and financial support. This resulted in the AFRI project (1982–1989), known as a reforestation programme aimed at supplying Lome with (most notably) charcoal. This chapter critically investigated, for the first time, the socio-economic and political contexts in which this project evolved by highlighting its scope of implementation and the set of factors that explain its failure. The intensive historical analysis of the project has revealed, clarified and contextualised aspects that have thus far been silenced with regard to government intervention in general and the AFRI project in particular.

6 General Conclusion

Despite the centuries-old centrality of fuelwood as a domestic energy source for millions of users in Togo and for dwellers of what became Lome in particular, it was not until the 1970s that woodfuel (charcoal and firewood) gradually became a concern for both the Togolese ruling authorities and international cooperation partners. Fuelwood moved from an exclusively private domestic issue to a serious affair for government and international institutions – and not by serendipity. It happened as a consequence of the invention of the ‘fuelwood crisis’ narrative that gained momentum in the mid-1970s. The proponents (i.e., World Bank and UNDP experts) of this controversial discourse argued in that period that the large part of non-Western countries that traditionally depended overwhelmingly on wood as cooking fuel were going to face a severe fuelwood crisis. To prevent this crisis from happening or to mitigate its assumed dramatic socio-environmental effects, the advocates of the fuelwood crisis discourse secured technical and financial assistance to governments in the concerned areas. This support was meant to spur states and forestry departments to conduct targeted reforestation programmes to appropriately cover the growing demand of fuelwood.

The emergence of the fuelwood crisis narrative and its corresponding logic of linear prevention programmes was echoed in the then Togolese government’s attitude vis-à-vis fuelwood energy in different ways. On the one hand, it propelled, for the first time, a concern for domestic fuelwood energy in the list of priorities on the then political agenda. This, in fact, marked a turning point, for it substantially put an end to the lack of interest in handling the issue of private domestic fuelwood energy among both the German and French administrations that ruled Togo from the second half of the nineteenth century to the end of the 1950s, as well as among the local Togolese political actors who took over after independence.

On the other hand, the identification, or rather the invention, of the fuelwood crisis narrative had a significant impact on the relationships between the Togolese state and its development partners, as both could agree on a set of policies as a remedy to the crisis, such as targeted reforestation projects towards the supply of important fuelwood consumption hotspots like Lome. On a third and important level, the priority gained by the domestic fuelwood energy sub-sector in the national and international political agenda

in that period equally fuelled the necessity to better understand the dynamics of wood as fuel in countries like Togo. This consequently resulted in studies (i.e., reports by foreign and local experts) that aimed to inform about the state of fuelwood in Togo and Lome in particular. Over the course of the years, the expatriate and national experts' literature was gradually joined by Togolese scientists who took an academic, notably natural scientific approach, towards the topic. The insights emerging from both bodies of literature suggest a picture in which the production, marketing and use of woodfuel over the years has been largely associated with socio-economic, health and environmental problems (i.e., problems that needed to be solved). In other words, the current bulk of knowledge about fuelwood energy in Togo and Lome is intrinsically rooted in the normative and top-down approach that both experts and natural scientists have taken with regard to this subject since the 1970s.

Historians, in contrast, did not pay any scholarly interest to fuelwood energy issue despite the traditional centrality of wood as the main domestic energy source for both rural and urban areas of Togo. To the best of my current knowledge, no historian has ever engaged scholarly with this topic, not only in the particular context of Togo and Lome but also at the West African regional level. If 'human history can be told in terms of the history of energy', as the geographer Cutler J. Cleveland notes in the *Concise Encyclopedia of History of Energy*,¹ and the fuelwood energy is anchored in Lome and Togo as the core energy domestic energy source, then there is a strong stake for historians to bring their views into the debate on fuelwood in Togo. The study presented here therefore takes its rationale from this observation and sets out to historically assess changes and developments pertaining to the use, marketing and supply of Lome with fuelwood from the late nineteenth century until 2017, the timeframe in which I conducted my final field research.

To do so, the study has raised **four main questions**:

(1) How has the use of wood as the main private source of domestic fuel for cooking evolved in Lome from the colonial period (1907) to the present (2017)?

¹ Cleveland, *Concise Encyclopedia of History of Energy*, 2009, p. vii.

(2) In what ways has the constant growth of population in Lome shaped both the urban demand for firewood and charcoal in the city, and the environment and gender dynamics in the supply areas?

(3) How has the private marketing of woodfuel towards and within Lome been organised over the last four decades?

(4) How have the ruling authorities managed forest resources before and after 1960 in Togo? How and in what context did the post-colonial Togolese state change its attitude vis-à-vis wood as fuel through its interventions in the production and supply of fuelwood energy in the 1970s?²

To answer the first main research question, on how the use of wood as the main private source of domestic fuel for cooking has evolved in Lome from the colonial period (1907) to the present (2017), a triangulation of written, visual and oral sources has been used. Significant changes have been identified, as dwellers of the city of Lome gradually moved from the usage of coconut shells as woodfuel to a total dependence first on firewood and then on charcoal, from the late nineteenth century to 2017. The core forces that drove these nonlinear shifts in the private domestic energy landscape in Lome were of a socio-technical nature, meaning that they emerged gradually from interwoven transformations related to the environment, the demography and the changing social relations between various actors on the micro level in Lome. The climax of these changes is the current predominance of charcoal as the major private domestic fuel in the Togolese capital.

However, this study also shows how the failure of the butanisation policy or LPGisation programme as it called in this study, a plan through which the Togolese state attempted to substitute fuelwood with liquefied petroleum gas as an important piece of the puzzle that fostered the domestic energy user's transition to charcoal and thus contributed to its current supremacy in the Lomean domestic cooking energy landscape. Moreover, the use of written sources alone would not have sufficed to grasp the notable transformations in the private domestic energy landscape in Lome, as there is a significant scarcity of

² To clarify: the broad content of the conclusion does not repeat the dissertation's chapters. It rather presents the final results in reference to the four research questions which have been examined chronologically from Chapters 2 to 5. In other words, when I raise the findings of the first research question, I refer to Chapter 2. When I speak of the findings of the second research question, I hint at Chapter 3. The third question is indicative to Chapter 4 and the last research question refers to Chapter 5. Methodological challenges are discussed in the Chapter 1 of the dissertation.

primary sources on fuelwood especially for the period from the late nineteenth century until the emergence of the so-called fuelwood crisis in the 1970s. I have tried to overcome this gap in written data by searching for all references to fuelwood from the colonial archival materials and correlating the bits of information found in those files with oral historical testimonies by fuelwood users, as well as with the wealth of data that have been generated on the subject from the 1970s onwards. This, in fact, helped to examine the changes that fuelwood use in Lome underwent in the course of the last decades. On the other hand, it shows how methodological challenges such as the lack of availability of primary data can be overcome.

This study answers the second research question by clarifying the complex ties that existed between the demographic growth of Lome over the last four decades and how it influenced the demand for firewood and charcoal and the technologies of charcoal production. It helps reveal how all these elements significantly shaped both human nature and gender relations. By relating the census figures of Lome from the 1970s onwards with the demand of fuelwood in the same city, I have argued that though the population of Lome has significantly increased over the last four decades, this demographic growth fuelled a major concentrated demand for charcoal rather than a demand per capita. By addressing the links between the demographic growth and the fuelwood demand from the 1970s onwards, I focused on charcoal rather than firewood, given the fact that the shift from firewood to charcoal commenced gradually in the 1980s, creating an interrelated connection between this finding and the result concerning the transformations in fuelwood use within Lome as indicated above.

Following the growth of the population at a time when users started to shift from firewood to charcoal, the private traders who ensured the supply of Lome with the latter were gradually forced to abandon the supply zones located closer to the capital and move to those situated farther from Lome. Whereas the distance between the main fuelwood supply zones of Lome oscillated between 25 and 100 km in the 1980s, the distance significantly increased over the years, currently reaching 500 km. This led to the gradual shifts from areas that had supplied Lome with charcoal to new supply zones that emerged in the course of the years. The emergence of the former and current supply zones (distinguished respectively as FSZ and CSZ) proposed in this study is, therefore, the direct consequence of the progression of the concentrated demand created by the growth of the

population in Lome and the transitions in the use of fuelwood (especially the gradual switch from firewood to charcoal) that occurred in the Togolese capital. This observation clearly suggests the interdependence between the issue of the demographic growth, the concentrated demand of charcoal, the changes in the fuelwood usage illustrated through the gradual switch from firewood to charcoal from the 1980s onwards and finally the shifts noted for the supply zones as a consequence of the first three elements.

Likewise, women and men who were engaged in charcoal production changed from small-scale charcoal production techniques to others such as the earthmound kiln, which allowed them to produce on a larger scale in order to meet the increasing urban demand, notably from important fuelwood consumption areas like Lome. As such, this finding challenges the currently accepted knowledge in the fuelwood debate in Togo that portrays charcoal production as a solely woman-dominated activity.³ The historical approach has mattered in this regard, as it helps to record how men gradually joined women in charcoal production. These insights hence permit the realisation that the rise in demand of fuelwood from cities like Lome was one of the main catalysts of men entering charcoal production and also highlights the socio-economic challenges posed by the droughts of the 1980s as another core factor in this development. An increasing number of male farmers embraced charcoal production following the severe droughts of the 1980s in order to minimise their loss of revenue.

This study also makes an important contribution to the current debate on the consequences of charcoal production on the physical environment. By listening to charcoal producers in the former supply zones, most of whom were located in the southern part of Togo and near Lome, and the current producers located in central and northern part of the country; by visiting production sites; and by reading the expert literature and the scholarly works on fuelwood in Togo against the grain, I came to understand that the term ‘deforestation’ used in the majority of works to depict the environmental change pertaining to charcoal production is inappropriate. This study has shown that both the change in the use of

³ Bertrand, *Marchés Loméens des produits forestiers et commercialisation des productions du projet AFRI*. IIIème partie, pp. 100-101; Thiam, *Etude de marchés des produits ligneux au Togo*, 60); (République du Togo. Direction Générale de l’Énergie. Rapport général provisoire. Enquête consommation des énergies domestiques au Togo, p. 11 ; Dossou, *Production et Consommation du Bois-Energie Au Togo*. Ministère de l’Environnement et des Ressources Forestières, Direction des Eaux et Forêts, GIZ: Programme de Développement Rurale y compris l’Agriculture ProDRA-Volet III., p. 10.

fuelwood in Lome, as well the demographic growth of the city, had a significant impact on the demand for charcoal. Both determinants have influenced technological as well as social changes in charcoal production. All these issues have contributed to the extinction of particular tree species (e.g., *Anogeisus leiocarpus*) in the supply zones, rather than a general ‘deforestation’ of entire forest areas, as current literature tends to suggest. It was the lack of the above tree species that, over the years, compelled private charcoal traders to switch from former supply zones where the paucity emerged to current supply zones where the preferred species could still be found. This move by the traders was dictated by the users’ preference for a ‘good quality of charcoal’, namely one that lasts longer, associated with tree species such as *Azelia africana*, *Burkea africana*, *Canthium schimperianum* and *Prosopis Africana*.

This explanation interconnects my findings on the changes in the use of fuelwood (discussed in Chapter 2) and my second research question. The same explanation also shows the limited value of the term ‘deforestation’ that has thus far been used to capture the consequences of charcoal production on the physical environment.⁴ This result, obtained from the critical combination of both first-hand empirical data and written primary and secondary sources, not only adds value to current knowledge about specific aspects of the relationship between charcoal production and environmental change, but also provides empirical support for James Fairhead and Melissa Leach’s criticism of Goucher’s⁵ argument that charcoal making for iron smelting was the main cause of deforestation in Northern Togo.⁶ Fairhead and Leach suggest cautiously that iron smelting would trigger the depletion of some specific wood species rather than causing the total eradication of woodland.⁷ As such, and given that the authors could not support their critique with detailed evidence, the findings of this study may contribute to a bridging of

⁴ OURO-DJERI, ‘Les bassins de production et de consommation du bois-énergie de la région de Sokodé au Togo’, 2012, pp. 10–11.

⁵ See Goucher, *The Iron Industry of Bassar, Togo: An Interdisciplinary Investigation of African Technological History* [1984]

⁶ Fairhead, James, and Melissa Leach. *Reframing Deforestation: Global Analyses and Local Realities; Studies in West Africa*, p. 129.

⁷ Ibid.

this lack of evidence. The best quality of charcoal from the list of wood species that users prefer for cooking is the same that blacksmiths favour for their activity.

In addition to the above findings, I have addressed the third research question by demonstrating that firewood and charcoal prices significantly changed from the 1970s onwards, according to the wealth of data that have been generated on the subject since the 1970s. At this level, I have highlighted the challenges that the steady increase in fuelwood prices posed for the private suppliers (especially the *Commerçants Généralistes*⁸ [CGs]), the key private actors identified within the heterogeneous group of individuals involved in charcoal marketing, as well as the users of firewood and charcoal in Lomé. I have examined, for instance, the extent to which the progression of charcoal prices was related to the increase in distance between the supply zones and the place of consumption (Lomé), on the one hand, and to the increase of taxes on this item for the CGs, on the other. In the same context, the study also shows how resiliently the users responded to these price challenges through a variety of strategies, such as a mix of different types of charcoal and the application of fuelwood saving strategies over the course of the last four decades.

In regard to the *Commerçants Généralistes*, it has been highly interesting to note the crucial impact of the increase of distance between the supply zones and the markets in Lomé, not only on their trade (by shaping the competition among the CGs themselves), but also on their private marital situation. In this particular respect, it has been important to discover how the CGs have come to develop a set of strategies in order to maintain their business. To address the competition with their fellows, some CGs increasingly resorted to the negotiation of their social relationships with charcoal producers by establishing and maintaining close and even familiar relationships with the latter. In these relationships, CGs offer presents and provide financial support to the producers to ensure confidence and priority. The relationships between the CGs and their suppliers, therefore, shifted from a simple economic 'trader-suppliers' interaction as noted by Alain Bertrand in the 1980s,⁹ at a time when the supply zones began to shift, to more complex

⁸ Private Fuelwood traders who travel to supply zones to buy charcoal that they then commercialise in small as well as large quantities on markets in Lomé. They are both retailers and wholesalers.

⁹ See Bertrand, *Marchés loméens des produits forestiers et commercialisation des productions du projet AFRI*, 3^{ème} partie.

relationships transcending mere economic variables now that the main supply zones are remote.

The fourth research question has been discussed by demonstrating the non-strategic nature of fuelwood supply for authorities in Togo before and after political independence in 1960. This, in fact, explains the lack of interest of governments in both periods in controlling and regulating the fuelwood production and consumption. Until the 1970s, this study has found, the production and marketing of woodfuel were private affairs. This lack of interest from the authorities had methodological implications, given that it was one of the central causes of the paucity of data on fuelwood noted for the period from the early nineteenth century until the second half of the twentieth century. Colonial and post-colonial authorities did not manage to engage their bureaucracies in the generation of data on fuelwood, simply because they lacked the economic and strategic motivations to do so. In that period, the fuelwood sub-sector was so insignificant for them that it was not worth bureaucratic attention. The concerned authorities did, however, put immense efforts into recording data on forest resources in general, given the economic relevance of exploiting wood for infrastructure within the territory and for exporting it, as documented, for instance, in the contract signed between the German colonial administration in Togo and the *Telefunkengesellschaft*.¹⁰ The private production, marketing and use of wood as fuel in that period did not enjoy the same privilege, which in turn explains the lack of data on this subject as noted above. As such, this result can be seen as a contribution to the debate on the biases and gaps in colonial and post-colonial archives that have been noted by scholars such as Achille Mbembe,¹¹ and Ann Stoler,¹² among others.

In the same context, this study also shows the significant change in post-independence ruling authorities' attitude when, with the emergence the 'fuelwood crisis' debate in the 1970s, the fuelwood energy sub-sector gained gradually political, economic and strategic relevance for the state and its development partners (e.g., World Bank, UNDP and

¹⁰ BArch R1001/7694, pp. 52-54

¹¹ Mbembe, Achille. "The Power of the Archive and its Limits". *Refiguring the Archive*, by Hamilton, Carolyn et al, pp. 19-26.

¹² Stoler, Ann Laura. *Along the Archival Grain: Epistemic Anxieties and Colonial Common Sense*. p. 28.

France). The ODEF para-statal institution was created in the 1970s to manage and enable an efficient exploitation of forest resources. It was through this institution that the then Togolese government sought, for the first time, a monopoly on the supply and marketing of woodfuel (especially charcoal) for Lome through the AFRI project from 1982 to 1989. The government and the experts chose gazetted forests to implement this project. Declared as state properties in the aftermath of forest classification conducted during the French administration in 1950, gazetted forests qualified as appropriate areas for AFRI project. They were legally state properties that the government could use for this kind of project, as reported by Barbaud.¹³ Eto forests were among those areas that fulfilled all the required criteria. Their geographical proximity to Lome (only 50 km separate the two areas) should have minimised the transportation costs and maximised the economic rentability of the project. On the other hand, the area's higher rainfall should have facilitated the rapid growth of the trees that would, in turn, be transformed into charcoal and commercialised by the project.

It was then reported by Pierre Barbaud, an expatriate expert committed by the French government at the request of the Togolese state, in 1980 that AFRI project should consider how it could engage the people living in the Eto area to facilitate the project's implementation and, equally, increase its chance of being accepted locally. It is unclear whether this provision was put into practice during the project's implementation, given that my current oral and written data collected in the field do not provide any insight in this respect. As such, further enquiries focusing on the views of local actors (i.e., farmers) in the area concerned would potentially help to evaluate the effectiveness of the social dimensions the project was supposed to consider.

Yet, this historical intervention of the state in the fuelwood energy sub-sector must be embedded in the international political and socio-economic contexts of the time. On the one hand, the global emergence of the 'fuelwood crisis' narrative created the ideal framework for the state to legitimise its intervention in the fuelwood energy sub-sector, given that it could rely on the technical and financial assistance of international partners (e.g., France) who advocated the 'fuelwood crisis' discourse. At the socio-economic

¹³ Barbaud, *Les problèmes forestiers de la république togolaise. Mission d'évaluation des projets forestiers envisagés par le gouvernement togolais*, p. 33.

level, on the other hand, it was a fact that Togo, like many other African countries in that period, was facing serious economic difficulties that led to the adjustment of the country's economy by the Bretton Woods institutions, namely the International Monetary Fund and the World Bank. In this unprecedented situation, it is clear that the government called upon all sectors, including the thus far marginalised fuelwood energy sub-sector, to help the country's economy recover. Given both contexts, it is also plausible that the government claimed that a potential crisis was menacing the most important fuelwood consuming area, Lome, and called on France to help implement the AFRI project. In the same way, the government attempted to control the fuelwood energy sub-sector, a sector that had hitherto been entirely run by private actors.

The grand failure of the AFRI project that led the Togolese state to withdraw from the fuelwood energy sub-sector altogether from the 1980s onwards, as demonstrated in this study, reflects the inconsistencies of the 'fuelwood crisis' narrative, not only for Togo but also for other countries such as Benin and Burkina Faso, where similar projects were implemented. This failure of the state to monopolise the fuelwood sub-sector with the clear support of its international partners and donors can also be seen as an illustration of the disadvantage of the top-down approach of internal and external institutions that has inherently characterised development policies over the last 50 years in most non-Western countries, especially those in sub-Saharan Africa. Therefore, the historical insights provided by this study in this regard are an important argument questioning development projects oriented towards normative solutions that are still in vogue in the economic and political relationships between Western and non-Western countries in a broader sense.

Moreover, the 'fuelwood crisis' narrative and the Togolese state's attempt to take control of the production and the supply of Lome with fuelwood via the AFRI project had some somewhat positive implications with regard to research by enabling the generation of a wealth of data on fuelwood energy from the 1970s onwards. Unlike the unfortunate data gap for the period prior to the 1970s, the emergence of the 'fuelwood crisis' discourse and the economic interests that propelled the state's intervention in the fuelwood energy sub-sector marked a significant shift in data generation on fuelwood concerns, not only for Lome but also for the country as a whole. These data are not in the national archives but rather scattered across the premises of governmental and non-governmental

institutions. The concerned data and the Togolese type of ‘shadow archive’¹⁴ that gradually emerged as a consequence allow genuine historical insights into the fuelwood energy situation over the last four decades in the Togolese context. Read against the grain and confronted with oral testimonies, these archives, though dispersed across various institutions in Togo and beyond, have shown their potential in illuminating aspects that are either not covered or overemphasised in official accounts.

Beyond the four main research questions, at an early stage, this study also sought to answer the question of how the environment featured in the collective consciousness of manufacturers, distributors and users of wood in Lome and its supplying areas. The scope of the data that have been collected and evaluated do not allow deep insights into these aspects, but they provide opportunities for subsequent research. With regard to the environment, for example, some interviewees recognised the connection between fuelwood consumption and the physical environment without drawing consequences from it.¹⁵ This is illustrated by the interviewee Ma Route, who acknowledged some impact of fuelwood usage on the environment but did not go beyond this sole observation.¹⁶ When it came to the question of the prospects regarding her use of fuelwood, the same interviewee stated that she was aware that the price of charcoal would constantly rise. She added that her shift from charcoal to a non-wood-based fuel would depend on her future economic situation.¹⁷ Whereas some respondents could provide short answers to both concerns, others, such as Maman Louis,¹⁸ were either silent or referred to the established narrative that portrays the use of charcoal as the primary cause of ‘deforestation’ and the scarcity of rainfall, without adding any further clarification.¹⁹

¹⁴ See Allman, Jean. “*Phantoms of the Archive: Kwame Nkrumah, a Nazi Pilot Named Hanna, and the Contingencies of Postcolonial History-Writing*” The author uses this concept to address the limits of the so-called national archives in providing sources that are required for the writing of colonial and post-colonial African history. Historians are, therefore, called to search for those sources by excavating depositories beyond the traditional ‘national archives’ on the national and transnational scale. In the case of this research, the ‘shadow archives’ are composed of the depositories of NGOs, Togolese ministries, para-statal entities, and the electronic data basis of *Institut de Recherche pour le Développement* (A research institution of the French government)

¹⁵ Maman, Ado, interviewed in Lome on 19 February 2017.

¹⁶ Ma, Route, interviewed in Lome on. 15 April 2017.

¹⁷ Maman, Ado, interviewed in Lome on 19 February 2017.

¹⁸ Maman, Louise, interviewed in Lome on 22 January 2017.

¹⁹ Ma, Route, interviewed in Lome on 15 April 2017.

These answers may contain starting points for collecting information in future research that I would be interested in conducting.

Another initial objective that could not be met by the present study was to use the historical findings for insights into the future of fuelwood in Lome and beyond. This, in fact, has to do with the current debate about the relationship between history and future. The German philosophers Odo Marquardt and Hermann Lübke who published '*Zukunft braucht Herkunft*' argue that historical findings, developments and experiences can be useful in formulating expectations and plans for the future.²⁰ Yet, the use of historical findings to address the future in a way that fits a historical argument remains a theoretical challenge to be solved by historians. In the same vein, historians who want to engage the future cannot elude the question as to which perspective the 'future' in history should address. Should it be from the viewpoint of the contemporaries in their reminiscence of the past and their reflections on the future? Or should it instead be from the viewpoint of the past contemporaries in their then reflections about a 'future' which is now present? How can the historian position him or herself regarding those views to generate accurate and objective historical accounts? These methodological and content-related constraints have significantly challenged this research and led to the withdrawal of this aspect from the initial research objectives. Nevertheless, it opens up perspectives for future inquiry that could take the previous series of questions into consideration.

Beyond the above challenges, the findings generated by this research illustrate the complex historical trajectories pertaining to the fuelwood situation in Lome and to the areas that have supplied the city with firewood and charcoal for decades. Both private and public national and international actors and institutions have contributed in different ways to shaping the fuelwood energy sub-sector in different changing socio-economic and political contexts. Equally, the historicisation of the social, economic, national and international political, technological and environmental significance of fuelwood using the narratives of actors at different levels has provided both explanations of and critical insights into how private individuals, the Togolese ruling authorities and their international partner institutions have dealt with the fuelwood concern in different eras

²⁰ Jordan, Stefan. *Theorien und Methoden Der Geschichtswissenschaft*. Paderborn: Ferdinand Schöningh, 2. Ed., Paderborn, 2013, p. 31.

and contexts. The results of this historical investigation have revealed the challenges, opportunities and tensions that emerged among the aforementioned various actors, especially in the attitudes they adopted in regard to the fuelwood concern. Understanding the historical dimensions of wood as fuel for private domestic cooking, as proposed in this study, also requires understanding the historical significance of the intra- and inter-relationships between the private and public national and international political actors in Togo and Lome from the early twentieth century to the present. Thus, writing the history of fuelwood as such signifies learning about the broader history of Togo in general and Lome in particular. Other historical studies focusing on other Togolese cities, such as Sokodé,²¹ could potentially generate insights which can be used to contrast what has been found in this study on Lome and its past and current fuelwood supply areas.

Akin to other West African capitals, the relevance of firewood and charcoal as the main sources of private domestic energy consumption is a centuries-old phenomenon.²² In the same vein, fuelwood substitution policies (such as the Togolese butanisation programmes from the 1980s onwards) have been implemented in countries including Cape Verde, Burkina Faso, Senegal, Mauritania and Mali.²³ Fuelwood prices have risen since the 1980s in cities like Niamey and Bamako.²⁴ Users, producers, traders and state institutions have clearly taken different measures and strategies to meet the challenges raised by fuelwood consumption over the previous decades. Given the lack of a broad West African historiography on the fuelwood concern, the findings generated on this topic in this case study may pave the way for subsequent historical investigations addressing the fuelwood issue in other West African capitals. Beyond enriching the historiography of West Africa, the focus on other West African cities in this respect would also help unveil connections and allow the contextualisation, validity and weaknesses of my findings and arguments

²¹ The second economically, politically and demographically important city of Togo. The city is located in the northern part of Togo and also depends on fuelwood for its domestic cooking energy needs.

²² See, for instance, section 1.2, footnote 4.

²³ Girod et al.; *L'énergie en Afrique. La situation énergétique de 34 pays de l'Afrique subsaharienne et du Nord*, 61 ; 99 ; 257 ; 294 ; 357

²⁴ Girod et al.; *L'énergie en Afrique. La situation énergétique de 34 pays de l'Afrique subsaharienne et du Nord*, 325 ; 257.

to be judged. May both these calls reach out to the broader historical scholarship, especially the one interested in West African history.

As a final note to the wider scholarship and beyond, by critically assessing the ‘fuelwood crisis’ discourse in connection to the state’s intervention in fuelwood sub-sector, this study demonstrates that overemphasised catastrophist prospects for non-Western countries, especially those in sub-Saharan Africa, tend to misrepresent the significance of a ‘crisis’, rather than accurately inform about its real nature and exact scope. When one connects the Togolese example with what has been negatively predicted for African countries in regard to the current Covid-19 crisis, they may agree with Achille Mbembe’s argument that ‘*Chaque fois qu’il est question de l’Afrique, c’est la catastrophe*’.²⁵

²⁵ Mbembe, Achille. Interviewed by Frenk, Carine ‘<https://www.rfi.fr/fr/podcasts/20200422-coronavirus-chaque-fois-il-est-question-d-afrique-c-est-la-catastrophe>’. Accessed on 29 August 2020.

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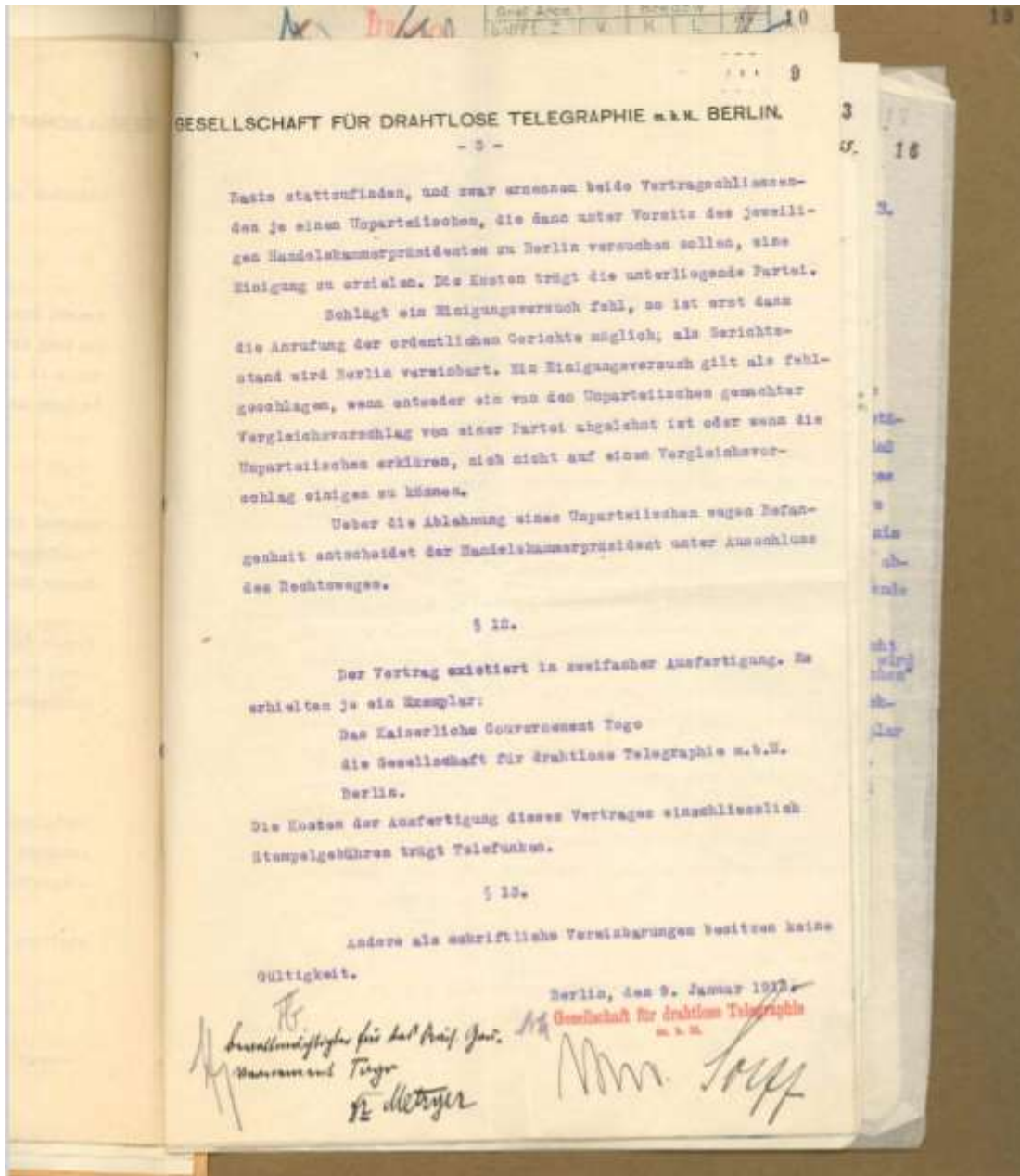
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Appendices

Picture 1: Copy of the contract between the then Imperial government of Togo and theTelefunken Gesellschaft based in Berlin.



Herrn Sedelli meint, es dürften bei der Berechnung der Frachtkosten nur die wirklichen Betriebskosten, nicht auch die Kosten für Verzinsung und Amortisation des Anlagekapitals an Grundr. gelegt werden; er ist damit einverstanden, dass die Frachtkosten zu dem normalen Tarif berechnet werden, d. h. es würde bei einem Frachttarif von 8.00 \$ für 1 Tonne und einem Holzpreis von 7.10 \$ pro qm. Die Tonne Brennholz loco Igbonu in ganzen auf 15.40 \$ zu stehen kommen, falls die Brennholzlieferung von Suatje aus erfolgt.

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18

Verwaltungsratsmitglied Künzler erklärt daraufhin, dass die Fracht nach Wagenklasse IV berechnet werden würde unbeschadet des Brennholztariffs, der durch Vertrag festliegt.

aus Wagen
...
V.

Herrn von Sedelli erklärt sich damit einverstanden, falls nicht zu. Vergünstigungen zwischen der Hauptverwaltung in Berlin und dem Reichskolonialamt einerseits und Telefunken andererseits ausgehandelt werden.

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Das wäre die dazwischenliegende Spannung (Wagenklasse IV) welche die Brennholzlieferung noch verträgt.

Er erklärt sich ferner damit einverstanden, dass jetzt mit der Brennholzgewinnung begonnen wird.

Der Brennholzeinschlag sollte zunächst für eine Zeit von 2 Monaten erfolgen, d. h. es seien in ganzen 1 200 qm zu liefern.

Die erste Holzlieferung sollte in etwa 2 1/2 Monaten erfolgen, eine bei Beginn des Betriebes schon abgelagertes Holz vorrätig zu haben.

- ges. Dr. Metzger
- „ J. S. G. U.
- „ J. Sedelli
- „ Schuppert
- „ Koenig.

König

Statutory declaration

I hereby affirm that I have produced the thesis at hand without any inadmissible help from a third party or the use of resources other than those cited; ideas incorporated directly or indirectly from other sources are clearly marked as such. In addition, I affirm that I have neither used the services of commercial consultants or intermediaries in the past nor will I use such services in the future. The thesis in the same or similar form has hitherto not been presented to another examining authority in Germany or abroad, nor has it been published.

Hanza Diman