9.

How green was Portuguese colonialism?

Agronomists and coffee in interwar Angola

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INTRODUCTION

The origins of environmentalism are much older than we thought and the context of its emergence is far more complex than originally suggested. These are the two main conclusions of Richard Grove's *Green Imperialism: Colonial Expansion, Tropical Island Edens, and the Origins of Environmentalism, 1600-1860* (Grove 1995). In this book, environmentalism appears not as a creation of the 20th century but firmly rooted in the 17th century. The argument of this English historian is simple: the experience of European imperialism, especially in island environments, was crucial in the development of conservationist notions and in the growing awareness of the limitability of local and global resources. This historiography of early environmentalism had important repercussions. Firstly, it forced us to gain distance from the environmental and political movements after World War II and to investigate other reactions to human-induced ecological changes put forward in earlier times.[1] Secondly, it compelled us to make a clear distinction between state and private sectors as far as imperial governance is concerned. As Grove insists, imperial states had a clear agenda as to why ruled territories should be environmentally sustainable, seeing this agenda as a guarantor of their longevity – in contrast with private capital and international trade-interests to which "global environmental well-being" was generally "an accounting irrelevance" (Grove 2002, 54).

The historiographical debate on modern forms of environmentalism and imperialism, calling into question and denaturalizing this opposition has been raging for the last decades.[2] The African continent was no exception. Scholars working on the 20th century identified long-term management and the regulation of natural resources as central themes in colonial administrations, and showed us how they frequently resulted in concrete environmentalist practices (Beinart 1984; Tilley 2011). They have also described how often environmentalism stimulated the appropriation of indigenous knowledge (see also Anderson and Grove 1987). This perspective contrasts with post-colonial literature that describes environmentalist ideas as rhetorical devices to impose

1 A good introduction to the history of environmentalism, taking into account several traditions and periods in time, is Sorlin and Warde (2009). For a reflection about post-WWII environmentalism with emphasis on the German case see Uekoetter (2011).

2 This is an extensive literature, some examples are Beinart (1984), Rajan (1998), Sachs (2003), Sachs (2007), Anker (2001), and Coen (2011).

agendas of domination over African populations. This literature offers us many demonstrations of how environmentalist arguments were used to classify African agricultural practices as primitive, obtuse, and environmentally unsustainable, and to create ecological concepts and theories that favoured European exploitation (see, for instance, Fairhead and Leach 1996; Fairhead and Leach 1995; Fairhead and Leach 2000).

This chapter explores the relationship between environmentalism and imperialism in the case of Portuguese Africa. It follows the agronomists of the Agriculture Department of Angola in charge of missions of agricultural survey during the 1920s. Its chief goal is to examine how environmentalist ideas and practices were appropriated and articulated by these imperial agents. In order to do this I propose to follow them in the missions to the coffee producing regions – a crop that has been the object of a monograph by the present author, and upon which this chapter is based (Gago 2018). I am especially interested in understanding how Angolan coffee, with its environmental, technological, and cultural specificities, challenged enlightened prejudices regarding native agriculture. To put it bluntly, I use coffee, a symbol of violence and exclusion in the history of Angola, to pose a rather unusual question: how green was Portuguese colonialism? The ultimate purpose of this chapter is to historicize and problematize the notion of environmental sustainability so often associated with the social welfare of world populations.

The interwar period (1918-1939) was a time of profound transformations in Africa, ushering in a new phase of European imperialism. With the end of the processes of military occupation and amidst the "internationalization of colonialism", Europeans were forced to implement policies aimed at "developing" colonial economies and "protecting" native populations and local environments.[3] In colonial departments (agriculture departments included) the recruitment of technical personnel rose dramatically.[4] This aspect, largely investigated in other contexts of colonial Africa, has been poorly documented for Portuguese Africa, particularly in what Angola is concerned. Technical and scientific expertise has been on the scholars' agenda, but not of those working

3 A major work about the internationalization of colonialism is Pedersen (2015); for a reflection about the Portuguese case see Jerónimo and Pinto (2013, 2014, 2015).

4 In the interwar period technicians and scientists of the British Empire started to account for more than 40% of the total colonial administration (Hodge 2007, 10). For the particular case of agriculture departments, also regarding the British empire, see Tilley (2011).

on this period.[5] It is also worth noting that some of the most prominent historians of the Portuguese empire often associate the interwar period with a "long stagnation" – an idea originally stemming from the analysis of economic indicators but whose scope became much larger.[6] This chapter is an opportunity to problematize such assumptions by retrieving some missing links.

THE METROPOLITAN VOICE

In Portugal agronomists were trained at the High Institute of Agronomy (*Instituto Superior de Agronomia*), in Lisbon.[7] This was the only institution conferring the diploma of *engenheiro agrónomo* (here translated as agronomist), the *sine qua non* condition to occupy a leading position inside the colonial agriculture departments.[8] Colonial training entered the institute's curricula in 1906. Two courses were organized at the time: Economic Geography and Colonial Crops (*Geografia Económica e Culturas Coloniais*), lectured by José Joaquim de Almeida, and Colonial Technology and Husbandry (*Tecnologia e Zootecnia Coloniais*), given by Carlos de Mello Geraldes.[9] Also in 1918 the

5 For the mid-18th century see Santos (2010). For early 20th century see Roque (2003) and Bastos (2014). For the post-WWII period see Saraiva (2014) and Castelo (2016). A good exception, focusing on the role of experts during the interwar period, is Coghe (2015).

6 The expression "long stagnation" is from Telo (1994, 224). A similar analysis of the interwar period can be found in the work of Clarence-Smith and Gervase (1985) and Alexandre (2000, 12). In contrast, historians of Angola describe the mid-1920s as a "distinctive development phase" (Wheeler and Pélissier 2009, 193).

7 Founded in the mid-19th century, the High Institute of Agronomy gained the status of a college (and this name) in 1911. For the history of this institute see *Anais do Instituto Superior de Agronomia*, year 1, no. 1 (1920).

8 It is worth noting that in Portugal *agronomia* is a branch of engineering in a clear reference to the French example. "Agronomie", "agronomiste", and "ingeneur agronomic" are also terms in the French scientific tradition, while in the Anglo-Saxon tradition one generally talks about agricultural science and agricultural scientists. Despite the problems of translation, I follow here Christophe Bonneuil, who wrote extensively about these scientists in France and uses the English word "agronomist".

9 José Joaquim de Almeida worked as an agronomist in Angola – in Lunda (1901-1903) and in Luanda (1904-1906) – and in Mozambique (1911-1919). Carlos Mello Geraldes worked in Angola as an agronomist of the Benguela district (1903-1905), immediately after his graduation in 1902. There is mention of several "official reports" Geraldes may have produced during his missions in the Benguela district, see *Anais do Instituto Superior de Agronomia*, year 1, no. 1 (1920, 40).

Laboratory of Colonial Agriculture and Technology (*Laboratório de Tecnologia Agrícola e Colonial*), an institution directed by Geraldes, was created. Geraldes was also responsible for the supervision of dissertations on colonial studies, normally based on material of the Colonial Garden, of which he was also the director.

Prolific writer, almost always in French, close to the circle of the Lisbon Geography Society, Geraldes wrote extensively about the Portuguese colonies during the interwar period. His papers followed the format of his students' dissertations: an introduction to the economic importance of a certain agricultural commodity, followed by a laboratory analysis of certain characteristics (length, weight, humidity, etc.) of the grain, leaves, fruit or other parts of the plant. In some cases statistical treatment was applied and simple correlations were traced between features. But in the end he was above all a systematizer of data. When in 1920 an expert was needed to coordinate a scientific mission to S. Tomé, it was his colleague Manuel de Sousa da Câmara, director of the Laboratory of Plant Pathology (at the High Institute of Agronomy) who was sent, not him.

Geraldes was also an assiduous participant of international conferences and meetings in which the European models of colonialism in Africa were being rethought and reframed.[10] He was often the expert representing Portugal and, invariably, his position was that of a colonial hardliner. At the 1929 session of the International Colonial Institute Geraldes was one of the voices among the Portuguese representatives that, together with "supporters of French planters", strongly opposed the Belgian botanist Émile De Wildeman when he defended the involvement of natives in export agriculture as "genuine producers" (Daviron 2010, 494).[11] One year later, at the III Congresso Colonial Nacional, hosted by the Lisbon Geography Society, he protested against the increasingly international trend, advocating the defence of native rights, "especially since the end of the Great War" (Geraldes 1934, 5). According to him, these voices were partly propaganda and partly the opinions of "very intelligent and enlightened persons who unfortunately

10 Information about his presence in international events can be found in Nunes (2013, 89-112).

11 This pro-native agriculture movement was supported by leading plant scientists, namely by the Belgians Émile de Wildeman and Camile Janssen, and the French Auguste Chevalier and Daniel Zolla. About the 1929 session of the International Colonial Institute (ICI) see Daviron (2010, 492-499), and about the Portuguese delegation at this session, including Geraldes' interventions, see Direito (2013, 67-74). More information about ICI and Portugal can be found in Jerónimo (2015, 235-270).

knew nothing about what it was to *almost* civilise a people, and colonise and develop agriculture and industries in Africa, and above all in Tropical Africa" (Geraldes 1934, 6).

In this communication at the Lisbon Geography Society (in 1930) Geraldes scrutinized the future legislation about native labour. He argued that labour legislation should be independent of the *regulamento ou estatuto geral do indígena*, because it should rely exclusively on local specificities – and by "local" he meant the specific requirements of "white agriculture". For him, only these enterprises could provide the industrial sector with enough production, and ultimately turn colonial agriculture into a lucrative activity (Geraldes 1934, 15). Against the "total freedom of work" (*liberdade de trabalho total*), he stood for what he called "restricted freedom of work" (*liberdade de trabalho condicionada*) and urged for the establishment of longer-term labour contracts, "at least 5 years, as practiced in the Dutch colonies on tobacco and other plantations" (Geraldes 1934, 15). He saw the possibility of implementing a regime of "total liberalization of work" as a "perilous utopia", whose results would prove counterproductive, as it would prove "the economic ruin of the colonies (…) harming the native people, both materially and morally, while thwarting their development." The reason for this ruin was the "backward state" of African civilization and the answer to it the "civilizing mission" of the Portuguese empire, capable of "transforming them from ignorant apprentices, which constitutes by large their present condition, into truly skilled workers" (Geraldes 1934, 19). Geraldes carefully stresses the differences between Africa and "the Orient", in which the different "level of civilization" of native people and the "population density" justify the different forms of colonialism (Geraldes 1934, 10).

At the *Congrès International de la Société Indigène* in Paris, in 1931, Geraldes expressed his opinions about the rights of Africans to use and own land. Describing them as causers of "progressive destruction of forests", due to their nomad agriculture and the practice of slash and burn, he ends by arguing that the so-called movement toward "native agriculture" should be confined to native reserves (Geraldes and Gouveia 1931, 8). This position is even starker in a communication presented at the *I Congresso de Agricultura Colonial*, held in Porto in 1934. Again invoking the nomad agriculture system and slash and burn as "the main culprit for the destruction of forests", he concluded that it was "pointless to legislate on indigenous property rights, intending to bind them thus to the land, since there is no established way of

granting and recognizing rights to properties, which vary widely on area and limits periodically, given that the system of agriculture in place so demands it" (Geraldes 1935, 10). Education was for him the only solution to "help" Africans to make the transition from nomad to "stable" agriculture. But – until they were "educated", they should have no rights to land.

Geraldes is key to understand the relationship between agronomy and Portuguese colonial thinking during the crucial years of the interwar period. Being several times in the position of representing Portugal abroad, he was able to creatively intermix science with politics. Two debates arising from the internationalization of colonialism required his special attention: one concerning the wages of African labour and the end of forced labour; and one about the advantages of promoting native agriculture. While in the first Geraldes defended forced labour policies using cultural arguments to explain the "backwardness" of African civilization, in the second he takes advantage of environmentalist ideas and concepts. Geraldes' position in relation to native agriculture was simple: for the sake of African landscape, and in order to assure its environmental sustainability, initiative should be taken away from Africans. The argument stitching together environmentalism and colonialism was deforestation. For Geraldes, there were only two possible paths envisioned for non-Europeans: to live in native reserves or to work on European plantations.

ENVIRONMENT, AFRICANS, AND ROBUSTA COFFEE

This was Geraldes' position, at least theoretically speaking. Reality was a bit more complicated than this. In the same year that he was criticizing De Wildeman's ideas about transforming Africans into genuine producers of export crops, he also published an article about coffee in the Portuguese colonies. In this article he wrote that in Angola such a promising commodity came from: 1) the "exploitation" of wild coffee "above all made by natives", and 2) "cultivated fields" (*plantation*, in French) of "spontaneous species" set up "by natives, companies (*sociétés*) and settlers."[12] No doubt that Geraldes

12 "Tout les café exporté par l'Angola, provident de l' exploitation des peuplements naturels de caféiers, surtout faite par les indigènes, et de plantations faites, avec les espèces spontanées, par les indigènes ainsi que par des sociétés et des colons" (Geraldes et al. 1930, 27).

was well informed about native coffee production in Angola when he wrote his article in 1930. In the rooms of the Lisbon Geography Society, where legislation about native labour and their access to lands was being discussed, it was probably best not to bring it to the forefront.

The spontaneous species mentioned by Geraldes is *Coffea canephora*, commonly known as Robusta coffee, the coffee species traditionally commercialized in Angola. The genus *Coffea* includes many species but only three are economically relevant: Arabica (*Coffea arabica*), Robusta (*Coffea canephora*), and Liberica (*Coffea liberica*). Arabica is by far the most popular of coffee species, the one with the most intense trade history and the most expensive one. The Portuguese tried to introduce Arabica in Angola, but these attempts proved almost always fruitless. In 1974, when Angola became the fourth coffee producer in the world, Arabica only counted for approximately 2% of the total production (see Ferrão 2009; Gaspar et al. 1998; Baptista et al. 2012). The empire of coffee that the Portuguese built around the colony of Angola was, since the beginning and until the very end, a "Robusta empire" (Gago 2018).

In my work I contend that the proccess of making coffee grow in Angola is crucial to understand the nature of this Portuguese empire of coffee. *Coffea canephora* is indigenous to the cloud forests of Northern Angola – tropical and mountainous forests permanently covered with fog during the dry season – and it was here that it was cultivated. It was therefore in the middle of the forests and mountains, in places where Robusta coffee grew spontaneously, that the large cultivated fields nurturing the Angolan economy and the Portuguese Empire were located. On the basis of this production was an agro-forest system invented to take advantage of the environmental conditions of the plant when growing in the wild. These environmental and technological dimensions of Angolan Robusta have been largely ignored in the literature. In my opinion they are crucial to understand a central paradox in the history of coffee production in Angola: European *fazendas* highly dependent on the coercion of African workforce, producing side by side coffee *lavras,* in the hands of African producers, also the inhabitants of the forests where Robusta was indigenous. The coffee case in Angola, and the elite of African entrepreneurs that emerged around it, brings into the debate about Portuguese colonialism the theme of non-coercive native production, a trait that seems absent from the imperial trajectories of other cash crops in this colony, such as cotton and sugar (Gago 2018).

It is worth noting that African production in the case of Angolan coffee was not small. In the interwar period, and according to official statistics, it represented roughly half of the colony's total production (Gago 2018, annex II). The competition between natives and Europeans for the lands most suitable for coffee cultivation was high. There is much evidence of this in the colonial archive, mainly complaints of African producers who saw their *lavras* being occupied by Europeans. Africans did resist this colonial pressure. Such resistance differed according to geography. In the interwar period the scenario was this: Cuanza-Sul, the newest district in the business, economically relevant only since 1920, was almost entirely in the hands of Europeans (native coffee production was insignificant and it was here that the largest coffee *fazendas* in the colony were located, like CADA); Cuanza-Norte, comprising the lands where coffee had been first cultivated in Angola (in the 1830s), remained divided between European and native producers (according to the colonial statistics, both groups contributed more or less the same to the district's final production); Congo, which occupied the third place in the ranking, was the district where African producers and their *lavras* ruled – during the interwar period there was an increase of European producers in this disctrict, but they remained insignificant when compared with native production (Gago 2018, 91).

CONCESSIONS, DEFORESTATION, AND NATIVE AGRICULTURE

The consolidation of agriculture departments in Africa occurred after the end of the processes of military occupation, roughly around 1920. The case of the Agriculture Department of Angola (*Serviços de Agricultura de Angola*) is strongly connected to the government of the high commissioner Norton de Matos.[13] In 1922 new legislation conferring more autonomy to the Agriculture Department was published,[14] and in 1923 the publication of this

13 I could not identify the exact date of the creation of the Agriculture Department of Angola. The oldest reference I found to the "Serviços de Agricultura" was in *Boletim de Agricultura, Pecuária e Fomento* (1908), Gago (2018, 49). This colonial department changed name several times: Serviços de Agricultura, Inspecção de Agricultura, Secretaria Provincial de Agricultura, Repartição Superior de Agricultura, Direcção dos Serviços de Agricultura, Serviços de Agricultura e Comércio, Serviços de Agricultura e Comercio, Colonização e Florestas, etc.

14 Decree 110, 14.03.1922 created by Secretaria de Agricultura, Agrimensura e Terras.

department's journal was retaken under the name of *Boletim da Secretaria de Agricultura*.[15] More importantly, it was then that a systematic survey of the Angolan territory began (Gago 2018, chapter three). During the early 1920s several technicians were sent on agricultural and botanical survey missions to different regions of Angola. Like earlier missions, interwar survey missions were also small initiatives often conducted by one scientist. The main difference was that they were now more regular and centralized around the Agriculture Department. In the end, the expert to whom the mission had been entrusted – normally an employee of the Agriculture Department, but it could be also a "professor" from the Portuguese homeland – produced a report that was published in the department's journal.

By examining these reports, it becomes obvious that one of the main targets of criticism of these agricultural experts was the Portuguese policy of concessions. In 1923, José de Almeida, agronomist and professor of the High Institute of Agronomy, entrusted with one of these agricultural survey missions, harshly criticized the colonial administration for the "last delirium of concessions", which occurred at the end of the 1920s. According to Almeida, the policies of concessions had been particularly problematic in the case of crops such as palm trees or coffee, which traditionally depended on the initiative of Africans. In his report he describes that under the patriotic guise "of fomenting agriculture and protecting local workforce", the colonial administration "had gone about Angola sticking claiming stakes around the natives' coffee bushes and palm trees", denying them access to these lands in the name of concessions that were not productive (Almeida 1923, 23-46). The solution he foresaw was the demarcation of native reserves (*reservas indígenas)*, which at the time, he explained, were still not being rationally implemented, the sole exception being the "renowned oil palm trees of Libolo" (Cuanza-Sul) that had already gained from this "altruistic ambition" (Almeida 1923, 43).

Also in Uíge (Congo), concessions were very criticized. The agronomist Laurentino Pereira Coelho, the head of the Cazengo Experiment Station, who was sent to the region in 1926 to study a blight that was affecting coffee beans,

15 This journal changed names several times: *Boletim de Agricultura, Pecuária e Fomento* (1908--1919), *Boletim da Secretaria de Agricultura* (1923-1926), *Boletim da Direcção dos Serviços de Agricultura* (1928), *Boletim da Direcção dos Serviços da Agricultura e Comercio* (1928-1933), *Boletim dos Serviços de Agricultura e Comercio, Colonização e Florestas* (1934-1937). From 1937 until 1948, the agricultural department suspended its publishing activity, and in 1948 was replaced by *Agronomia Angolana* (1948--1972).

did not spare the *Sociedade Agrícola do Uíge*: "It is regrettable that a Society holding roughly 20,000 hectares of land, and with an existence of six years, can't be credited for any service, for any sign of exertion and willingness to work" (Coelho 1929, 7). According to him, the present holder "had arranged for a six hectares coffee plantation", but only "to put on a show of activity". Finally, the same point is made in Cabinda. The forester Raul da Silva Guardado, appointed head of the Forestry Section of the Agriculture Department in 1923, was convinced that the main problem of the Maiombe was that the empire had given away to the Cabinda Company 136,000 hectares – the cultivated area of this gigantic estate was "almost totally devoted to cocoa and coffee" (Guardado 1925b, 50). According to him, this company suffered from "a lot of problems", namely the lack of proper scientific guidance, lack of workforce and capital (Guardado 1925b, 49). The major threat of such unskilled administration was that timber exploitation would result in high levels of deforestation. These were warning signs and even more so because "the authors of it show no sign of concern with the prospect of some products becoming extinct, like some of the best timbers, already scarce" (Guardado 1925b, 69).

Deforestation was also a common environmental concern of those sent to coffee-producing regions. Far from being a problem created only by natives, as according to Geraldes' general interpretation of the phenomenon, this was observed mainly in European coffee *fazendas*. This was what Gomes e Sousa (also a forest scientist) concluded during his mission to Cuanza-Sul: "the main loci of the diseases are to be found precisely in those areas where the felling of trees is more intense, which demonstrates the harmful influence of lack of shelter for plants requiring, in their natural habitats, high degrees of humidity and shadows" (Gomes e Souza 1925, 20). The problem was that, according to him, too many trees were felled in order to set up a coffee plantation, and authorities ought to thus "adopt urgent measures against abusive forest clearing, particularly in the Amboim forest region, and to conduct an intense reforestation with indigenous and exotic species under the guidance of the Forest Department" (Gomes e Souza 1925, 32). Later, the head of the Agriculture Department, Bento Alves, would make the same association between deforestation and coffee plantations in Angola (Alves 1932).

Regardless of the alarm that deforestation may have caused amongst our experts, it should be said that this problem was only relatively significant in the case of Angolan coffee. In this colony, coffee cultivation did not imply the "total destruction" of the forests, in contrast with what happened, for instance,

in Brazil. As mentioned above, Robusta coffee was planted in the middle of its natural habitat using an agricultural system that implied only the "partial destruction" of the forest – that is, the cut of the lower and medium level of plants (including old and wild coffee bushes) and the saving of higher trees, so that new coffee seeds or seedlings could be planted under the same conditions (of shadow, humidity, soil, etc.) of wild coffee plants. Since the beginning of the 19th century, when the first coffee cultivation experiences took place, it was known among coffee growers that Robusta did not survive the practices of total deforestation – because it needed shadow to grow (Gago 2018, chapter two). The expertise (scientific and agricultural) of Angola was well aware of the local environmental constraints regarding these practices. Curiously, this did not prevent high-profile international experts from commenting on the Angolan case, arguing that total deforestation was the most economic method for planters and the healthiest for cultivated plants (Lopes 1930, 23-24).

Finally, native agriculture was also under their scrutiny. We often see native agricultural practices being criticized by these experts, and in some cases identified as the main causes for deforestation. In his visit to Amboim Company (one of the most important in the coffee business in Cuanza-Sul) Guardado describes with sorrow the "clearings" opened by the Africans in the middle of the forests to make their *arimos* of maize. As he explains, the company complained many times of these practices "and justifiably I think", but "until now its reclamations had not been attended". Guardado describes "the native" as "still living in a primitive state" and being "a nomad and an enemy of the forest" – very close therefore to Geraldes' ideas. "The first concern of the black man is to destroy the bushes which he sets on fire – there he tills the land for a few years; he then leaves to inhabit other places of the forest where he proceeds to do the same" (Guardado 1925a, 138).

Yet, his opinion gets less clear later in the report, when he describes the visits he made to the properties of Amboim Company (Boa Entrada, Progredior, Africana, Amizade, and Boa Ideia) and to several other "coffee *fazendas*" belonging to "Pratas, Couto, Marques Seixas, Monteiro Nascimento, Faz Tudo, and Sardinha", wherein "the latter two are natives" (Guardado 1925a, 139). According to him, these coffee growers had been responsible for "great clearings of the woods", which was pointed out as counter-productive for coffee cultivation. In this case, both Europeans and Africans committed the same mistakes.

> In all the conceded lots there are spots where tree felling was excessive, especially at Roça da Saudade, located in Morro do Pemba, and belonging to Monteiro Nascimento, where he conducted extreme tree cutting at certain spots, which have damaged the coffee culture, which appears etiolated and without future. Both this concessionaire and the native Sardinha must be forced to replant at once the trees they razed to the ground (…). If they fail to do so, it is our understanding that their concessions should be withdrawn" (Guardado 1925a, 139).

Laurentino Pereira Coelho' report on his mission to Congo in 1926 follows the same line. During the mission the agronomist visited two concessions (the *Sociedade Agrícola do Uíge* and the German *Sociedade Agrícola do Lucunga*), two Portuguese *fazendas* and two *lavras* of African chiefs. According to him, the cultivated fields in the best shape were two: one Portuguese and one indigenous (Coelho 1929). The question is then: who were those Africans whose agricultural practices were being praised? The colonial dichotomy "Europeans versus natives" makes these reports terrible guides. But one conclusion we can make: from their point of view – that is, seeing productivity and environmental sustainability as two faces of the same coin – our experts could not make a clear distinction between natives and Europeans. The language was there, classifying the whole African collective as "natives", but the message was different, revealing the heterogeneity of the group. The same could be said about the European side of the story.

CONCLUSIONS

The voices of those using an environmentalist-driven agenda to criticize African knowledge and agricultural practices are well documented in the colonial archive (Fairhead and Leach 1996). In the case of Angola this biased environmental agenda is represented in the scientific persona of Geraldes. Assiduous attendant of international conferences, where the European models of colonialism in Africa were being discussed and negotiated, he often invokes the African nomad agriculture system and their practices of slash and burn as "the main culprit for the destruction of forests" (Geraldes 1935, 10). This environmentalist argument sought to hamper an international movement in favour of the involvement of natives in export agriculture and their role as genuine producers.

On the other hand, we also saw that many of Geraldes' political ideas about the development of Portuguese colonies were based on abstractions and formulaic notions about Africans and Africa. What this chapter demonstrates is that the way Portuguese agronomists engaged with environmentalism was not as instrumental and univocal as some might think. Following them in the Agriculture Department of Angola, in the context of the missions of agricultural survey, another view emerges, one that places these experts as agents of a "green imperialism" (in Grove's sense) until now neglected in the literature. We see them using environmental arguments to condemn European *fazendas* whose environmental sustainability was considered to be at risk. These arguments concerned the degree of deforestation and the politics of concessions – the latter severely criticized for giving too much land to those who could neither exploit it nor protect it in environmental terms.

This chapter zeroes in on the case of coffee – specifically, Robusta coffee. It was by examining the local and material conditions of this coffee species that this fine-grained analysis of the Portuguese agronomists was possible. By investigating their engagement with Robusta coffee we were able to gain distance from flat conceptions of the colonial world and to call into question dichotomies such as "European *versus* native", "white agriculture *versus* native agriculture", and "*fazendas versus lavras*".[16] One important feature emerging from this investigation is that Europeans and Africans used the same agro-forest system to cultivate coffee, meaning that *fazendas* and *lavras* (in merely technical terms, and not in terms of scale, evidently) were not that different, contrary to what happened with other colonial cash crops. The experts of the Agriculture Department of Angola saw in Africans promising coffee producers and in some cases even exemplary ones.

The histories of environmentalism and colonialism are tied together. The idea that late European empires were concerned only with the exploitation of natural resources is no longer tenable; nor that they criticize only natives and their traditional practices. Environmentalist practices, such as forest protection or soil and water conservation, some of them inspired in local practices and traditions, were needed to guarantee the future exploitation of the resources, and for that reason they were implemented. In the present

16 We have here a clear example of how the history of science and technology opens the way for some of the most important criticisms coming from colonial and postcolonial literature, for instance, BhaBha (1984), Stoler and Cooper (1997), and Stoler (2009).

case we see them giving form to a conservationist agenda, as our scientists, pursue the goal of making coffee *fazendas* and *lavras* more productive and environmentally sustainable. As William Beinart, reminds us: "environmental regulation was not seen to undermine colonial development, but to facilitate it" (Beinart 2016, 273). There was nothing incompatible about these two purposes – quite the contrary.

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