PROGRAMA INTERUNIVERSITÁRIO DE DOUTORAMENTO EM HISTÓRIA

Universidade de Lisboa, ISCTE-Instituto Universitário de Lisboa,
Universidade Católica Portuguesa e Universidade de Évora

ROBUSTA EMPIRE:
COFFEE, SCIENTISTS AND THE MAKING OF COLONIAL ANGOLA
(1898-1961)

MARI A D O MAR DE MELLO GAGO DA SILVA

Orientadores: Prof. Doutor Tiago Figueiredo Saraiva
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Tese especialmente elaborada para obtenção do grau de Doutor em História

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This dissertation explores the engagement of scientists with Robusta coffee and their role in the making of the late Portuguese empire. It analyses how this coffee species indigenous to Angola entered the agenda of botanists and agronomists, and was transformed into a global commodity sustaining much of the Portugal imperial endeavour. By detailing scientists’ knowledge making practices, this dissertation intends to contribute to a better understanding of the relation between science and colonial states in Africa, and to gain a firm grasp on the historical dynamics that shaped Angolan coffee as crop and commodity. The first part accompanies the emergence of the Department of Agriculture of Angola (1898-1939) and the second part follows the rise and consolidation of the Coffee Export Board (1936-1961). This investigation uses mainly, though not entirely, reports and correspondence produced by scientists.

Coffee cultivation has been presented in the historiography of colonial Angola as a paradigmatic case of retrograde imperial rule, and the coercion and violence of European controlled plantations relying on forced African labour as main reasons for the economic success of coffee. This dissertation uses the lens of scientists to offer an alternative picture pointing at the actual forests where the plant was cultivated, and where also Africans were growing their own coffee. Moreover, it unveils a hidden imperial strategy aimed at modernizing both European and African coffee production systems. The key to this neglected history is how scientists engaged with Angolan coffee: not as coffee in general, but as a specific type of coffee, Robusta coffee. This little taxonomic detail, for historians just a technicality, has important implications in terms of historical insight. This dissertation argues that the environmental and technopolitical histories of Angolan Robusta reveal the robustness of the imperial project aiming at transforming Angola in one of the world’s largest coffee producers.

Key words: Robusta coffee, science, Portuguese empire, Africa, environment, commodity, forced labour, native agriculture, Angola
Esta dissertação explora o envolvimento dos cientistas com o café Robusta e seu papel na construção do Império Colonial Português tardio. O texto analisa como é que esta espécie indígena de café entrou na agenda dos botânicos e agrónomos a trabalhar em Angola, e como foi transformada numa mercadoria global. Seguindo os cientistas e examinando as suas práticas de construção de conhecimento, esta dissertação pretende contribuir para uma melhor compreensão da relação entre ciência e império em África, e para a identificação de dinâmicas históricas que moldaram a trajectória imperial do café angolano. A primeira parte acompanha a emergência e consolidação dos Serviços de Agricultura de Angola (entre 1898 e 1939) e a segunda a concepção e evolução da Junta de Exportação do Café (entre 1936 e 1961). Em termos documentais, a presente investigação baseia-se fundamentalmente, embora não completamente, em relatórios e correspondência produzida por cientistas.

A produção de café tem sido apresentada na historiografia de Angola como um exemplo paradigmático de uma forma retrógrada de domínio colonial, e a coerção e violência dos seus regimes de trabalho forçado apontadas como a razão para o seu sucesso enquanto mercadoria imperial. Não tendo como objectivo negar ou apagar esta história de violência, esta dissertação segue outro caminho. Através do olhar dos cientistas, oferece-nos uma visão alternativa. Com eles somos levados às florestas onde o café era plantado, e onde não só europeus mas também africanos cultivavam esta planta, de acordo com uma trama histórica remota e intricada. Estes actores permitem também revelar uma estratégia imperial que tinha como objectivo modernizar os sistemas de produção existentes. A chave para desvendar esta história negligenciada é a forma como os cientistas abordavam o café angolano, não apenas como “café”, mas como café Robusta. Esta pequena nuance, para alguns historiadores uma mera particularidade taxonómica, tem implicações sérias em termos de análise histórica. Nesta dissertação defende-se que somente considerando as dimensões ambiental e tecno-política na história do Robusta em Angola podemos compreender, por assim dizer, a robustez do projecto imperial que visava transformar esta colónia num dos principais produtores mundiais de café.
O café foi uma das mais importantes mercadorias agrícolas do Império Colonial Português tardio. Todas as colónias produziram café, mas apenas Angola se tornou um actor-chave no mercado global. As primeiras remessas remontam a 1830. Em 1870, Angola exportava 11 mil toneladas de café, valores que outros estados coloniais em África apenas alcançariam quase meio século depois. Durante os anos que se seguiram, Angola ocupou frequentemente o lugar de liderança entre os estados produtores de café em África. Mas seria somente no rescaldo da Segunda Guerra Mundial que a economia desse território se tornaria numa “economia do café.” Entre 1946 e 1960 as exportações quadruplicaram e o café tornou-se mais relevante no produto interno bruto do que os diamantes. Em 1974 Angola tinha-se transformado no quarto produtor mundial de café. Seria a transferência gradual de capital para o petróleo desencadeada pela crise de 1973, e, acima de tudo, o fim do Império Português em 1975, que destronariam o café do centro da economia angolana.

O gênero Coffea abarca muitas espécies de café, mas apenas três se tornaram economicamente relevantes: Arabica (Coffea arabica), Robusta (Coffea canephora) e Liberica (Coffea liberica). Sempre que lemos sobre café as probabilidades de o nosso interlocutor se estar a referir a Coffea arabica são elevadas. O Arábica é de longe a espécie de café mais conhecida e aquela que teve uma história de trocas e comércio mais intensa. Originária das montanhas da África Oriental, concretamente da região da Abissínia (Etiópia), migrou com os árabes no século XIII (ou XIV) para o Iémen, onde, segundo os registos históricos, terá sido plantada pela primeira vez. No século XVII, depois de se tornar na grande bebida social do Império Otomano, acompanha a expansão do imperialismo europeu, colonizando diferentes continentes e transformando-se numa mercadoria global. A história contemporânea do Robusta é substancialmente diferente. Enquanto que o Arábica viajava, o Robusta permaneceu nas montanhas de Angola e do Congo Belga de onde é originário. O seu gosto amargo e os elevados níveis de cafeína mantiveram-no à margem do mercado global durante bastante tempo. Foi somente no final do século XIX, quando as plantações de Arábica em várias partes do mundo começaram a ser destruídas por uma epidemia de Hemileia vastatrix, que o Robusta se “internacionalizou”, ao servir de substituto do seu parente rico. Em causa estavam os elevados níveis de resistência a diversas doenças, incluindo ao fungo Hemileia: daí o seu nome comum, Robusta.

Esta dissertação propõe-se seguir o império do café que os portugueses construíram na colónia de Angola e que foi um império de café Robusta. Como
veremos, este “Império Robusta” tem as suas raízes no início do século XIX, num período muito anterior ao da internacionalização desta espécie. Aquilo a que me proponho é acompanhar a sua trajectória através do olhar dos cientistas. O ângulo é, portanto, estreito. Por exemplo, a questão do trabalho forçado, uma das principais dimensões históricas do café de Angola, está praticamente ausente na presente narrativa. É possível que este resultado tenha menos a ver com o facto de seguir cientistas, e mais com o tipo de cientistas que escolhi seguir: foquei-me nos peritos que estavam ao serviço da administração colonial, e não nos que eram contractados pelas grandes fazendas de café, ou seja, foquei-me nos que estavam mais distantes da realidade laboral. Mas se o ângulo é estreito, podemos dizer também com convicção que a sua direcção é pouco usual, apontando para aspectos do café – enquanto planta, cultura e mercadoria – recorrentemente ignorados na literatura, e que estão praticamente ausentes dos trabalhos canónicos dos historiadores do século XX.

Ao seguir os cientistas, apercebemo-nos, por exemplo, que em Angola o Robusta era cultivado usando um sistema agro-florestal inventado para tirar vantagem das condições ambientais da planta no seu estado selvagem. Quer isto dizer que era no meio da floresta e das montanhas, nos locais onde a planta crescia espontaneamente, que se estendiam as grandes plantações que alimentavam a economia angolana e o Império Português. Apercebemo-nos também que este sistema de cultivo não era muito diferente daquele usado pelos africanos nas suas lavras de café, a não ser, evidentemente, em termos de escala. Esta dimensão ambiental na história do café angolano é o tema que se procura desenvolver na primeira parte deste trabalho. A sua especificidade, sugere-se como hipótese, é essencial para compreender o paradoxo central da produção de café em Angola: fazendas de europeus fortemente dependentes da coerção de mão de obra africana, produzindo ao lado de lavras de café exploradas por produtores africanos, habitantes das florestas de onde o Robusta era originário. Esta dissertação pretende trazer para o debate sobre o colonialismo português o tema da produção indígena não-coerciva, que parece estar ausente da história colonial de outras “culturas de rendimento” (cash crops) de Angola, como o algodão ou açúcar, e que no caso do café terá representado entre metade e um quarto da produção total da colónia.

Por outro lado, acompanhar a construção do Império Robusta pela mão dos cientistas permite-nos também compreender como é que o Império Colonial Português foi capaz de responder ao aumento de procura deste tipo de café no
mercado global. A segunda parte da dissertação mostra como as políticas imperiais foram determinantes no processo de transformação do Robusta angolano numa “verdadeira” mercadoria” (isto é, num bem comercializado cuja identidade é independente do vendedor), aspecto igualmente ignorado por uma historiografia demasiado focada no trabalho ou nos mercados. Este processo consistiu em práticas de estandardização que implicaram a construção de fábricas de beneficiamento, a implementação de um sistema de classificação, e a criação de um standard angolano de café. Sobre esta dimensão tecnológica na história do Robusta angolano é possível retirar três conclusões: primeira, os cientistas, nomeadamente os agrónomos, tiveram um papel crucial na definição destas práticas de estandardização; segunda, o Brasil funcionou como principal centro de circulação de conhecimento, materiais e artefactos relacionados com estas práticas; terceira, estas práticas de estandardização e as políticas de exportação foram negociadas com os Estados Unidos, nomeadamente com associações de investidores ligados à indústria norte-americana da torrefacção. Esta dissertação discute este processo de negociação no quadro de uma “hegemonia co-produzida.”

No que diz respeito à relação “ciência-império” as conclusões deste trabalho apontam também para uma revisitação historiográfica. A primeira sublinhando a importância de estudar as práticas de reconhecimento territorial, e em particular as de reconhecimento botânico e agrícola. Inspirada nas revisões historiográficas sobre a história natural contemporânea, esta investigação segue os passos dos cientistas durante a “Idade do Reconhecimento” (age of survey), identificando processos de produção de conhecimento baseados em relações de poder difusas e subtis, muito longe daquelas que resultam de projectos metropolitanos. Esta dissertação defende que para discutir a fundo a relação ciência-império, e sobretudo em contextos coloniais africanos, é necessário afastarmo-nos de projectos concebidos de-cima-para-baixo (diga-se, mais fáceis de investigar nos arquivos coloniais) e focar a nossa atenção naqueles que nascem no terreno, e que são políticos antes ainda de se tornarem uma ideia política. Este é o argumento desenvolvido na primeira parte desta dissertação a partir do caso da Carta Fitogeográfica de Angola. Há, contudo, reminiscências desse mesmo argumento quando partimos com os agrónomos nas suas missões de reconhecimento agrícola e “social” para os países sul-americanos nos anos 50 (segunda parte da dissertação). Identificando o “sul global” como espaço privilegiado para a circulação de práticas, ideias e materiais, esta metodologia alerta
uma vez mais para a necessidade de pensar a produção de conhecimento fora de um esquema analítico definido pelo binómio colónia/metrópole.

Uma segunda conclusão remete para a relação entre ambientalismo e colonialismo, tema amplamente discutido na historiografia internacional. Como sabemos, a ideia de que os impérios coloniais estavam apenas interessados na exploração imediata de recursos naturais, e que não olhavam às suas repercussões ambientais, é redutora. Enquanto estruturas organizadoras de múltiplos interesses e motivações, privados e estatais, interessava-lhes fazer uma gestão adequada dos recursos e do impacto da sua exploração, de forma a poder assim garantir a sua manutenção no tempo. Os cientistas que estavam no terreno respondiam muitas vezes a estes princípios de “gestão ambiental” ou “regulação ambiental.” Esta dissertação mostra isso mesmo. Sugere ainda que aqueles que estavam sujeitos às maiores críticas eram os europeus, e não os africanos. Claramente, este aspecto não está dissociado do tipo de planta e cultura que era o Robusta angolano. Como discutimos, estas plantações, que do ponto de vista laboral eram bastante retrógradas, funcionaram também como laboratório de abordagens agro-ecológicas à produção de mercadorias agrícolas. Neste sentido esta dissertação dialoga com a ideia de “imperialismo verde” mas de uma forma diferente do que tem sido habitual na historiografia sobre o Império Colonial Português, a qual tem sobretudo discutido as ideias ambientalistas e conservacionistas enquanto instrumentos de exclusão, usados para criticar as práticas de agricultura indígena. Não negando esta visão, esta dissertação propõe-se ir além dela. Como veremos, um dos pontos fracos deste argumento é o de assentar em distinções coloniais que nem sempre tinham correspondência no terreno em termos produtivos – por exemplo, a diferença entre lavra e pequena plantação europeia. E, no entanto, era isto que acontecia com a maior mercadoria de Angola – a qual, uma vez mais, parece desafiar visões a preto e branco do colonialismo português.

A terceira conclusão aponta a necessidade de trabalhar uma historiografia da ciência que estude com igual afínco as práticas científicas e a economia política dos estados. Este exercício foi conseguido na segunda parte desta dissertação com um estudo preliminar sobre a Junta de Exportação do Café. Como veremos, o projecto de “desenvolvimento” do Robusta angolano só pode ser compreendido no quadro de reformas do estado imperial que tiveram lugar no período entre guerras. Falamos da criação das juntas de exportação imperiais, estruturas estatais de intervenção económica que foram transversais aos estados produtores de café durante o século XX.
(coloniais ou não, Africanos ou Americanos), e que no caso do Império Português foram ideologicamente enquadradas na experiência corporativista do Estado Novo. Como esta dissertação demonstra, a Junta de Exportação do Café não era apenas responsável pelas exportações de uma mercadoria agrícola (o seu destino, preços e quotas para a metrópole), mas pela organização de um corpo técnico-científico responsável por “melhorar” e reformar os sistemas de produção existentes. Estes técnicos trabalhavam em duas frentes: por um lado, ajudando a consolidar o Império Robusta, que favorecia, acima de tudo, os grandes produtores e capitalistas angolanos; e por outro, imaginando formas alternativas de produção, baseadas em mão de obra “branca” e pequenas unidades de produção – o sonho de substituir o Império Robusta por um “Império Arábica”, e que nunca se concretizaria. É neste contexto bifronte que devemos discutir o lugar constitutivo da ciência na fase mais tardia do Império Colonial Português.

**Palavras-chave:** café Robusta, ciência, Império Português, ambiente, África, mercadoria, trabalho forçado, agricultura indígena, Angola
Esta parte quebra com as Normas para a Elaboração de Teses, ICS, 2015, nas quais se sugere que o candidato opte por uma língua apenas. Peço desculpa pelo acto subversivo mas esta parte vai ter mesmo que ser em português. Neste meu percurso da história da ciência para a “História,” começado com tanta liberdade e ousadia, e terminado com tanto realismo e consciência de tudo o que não sei, houve de facto muitas pessoas que me guiaram, ajudaram e deram esperança. Pessoas com quem aprendi, partilhei, discuti. A elas quero agradecer, mas na minha língua materna.

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ABBREVIATIONS

AEA – Anuário Estatístico de Angola
AHD – Arquivo Histórico-Diplomático
AHS – Arquivo de História Social
AHU – Arquivo Histórico Ultramarino
AMC – Arquivo Marcelo Caetano
ANTT – Arquivo Nacional da Torre do Tombo
BDSAC – Boletim da Direcção dos Serviços de Agricultura e Comércio
CADA – Companhia Agrícola de Angola
CCPG – Comissão Central Permanente de Geografia
CIFC – Centro de Investigação das Ferrugens do Cafeeiro
CJH – Correspondência de Júlio Henriques
DGE – Direcção Geral da Economia
CPMA – Companhia de Pesquisas Mineiras de Angola
EAN – Estação Agronómica Nacional
ERA – Estação Regional do Amboim,
ERC – Estação Regional Congo
ERG - Estação Regional da Ganda
FAO – Food and Agriculture Organization
FOA – Foreign Operations Administration
GANG – Governo-Geral de Angola
GM – Gabinete do Ministro
GNP – Gabinete dos Negócios Políticos
IB – Instituto Botânico
IC – Instituto Camões
IICT – Instituto de Investigação Científica e Tropical
IPAD – Instituto Português do Apoio ao Desenvolvimento
ISA – Instituto Superior de Agronomia
INEAC – Institut National pour l'Etude Agronomique du Congo Belge
JEC – Junta de Exportação do Café
JIU – Junta (das Missões Geográficas e) de Investigações do Ultramar
MU – Ministério do Ultramar
NCA – National Coffee Association
NCSU – North Carolina State University
OFAR – Office of Foreign Agricultural Relations
PIDE – Polícia Internacional e de Defesa do Estado
RRN – Repartição dos Recursos Naturais
SGL – Sociedade de Geografia de Lisboa
UC – Universidade de Coimbra
USDA – United States Department of Agriculture
TCA – Technical Cooperation Administration
WCS – World Coffee Survey
WCM – World Coffee Mission
WP – (Frederick) Wellman’s Papers
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XVIII
INTRODUCTION

Coffee was one of the most important agricultural commodities of the late Portuguese empire. Every Portuguese colony produced coffee but only one became a key player in the global market: Angola. The first exports date from 1830. In 1870 the Portuguese colony reached the thousands of 11 thousands tons of coffee exports, an order of magnitude that other colonial states would only reach almost a half a century after. During the following years, Angola enjoyed almost always a leading position among coffee-producing states in Africa. But it was only after World War II that it became a “coffee economy.” Between 1946 and 1960 exports quadrupled and coffee became more valuable than diamonds for its GDP. At the beginning of the colonial war coffee maintained a ruling position in exportations. In 1974 it was the fourth-largest producer of coffee in the world. The oil crisis in 1973, diverting capital from coffee to oil, but, above all, the end of the colonial Portuguese empire in 1975, were the main causes contributing to dethrone coffee from the core of Angolan economy.

This investigation uses Angolan coffee to discuss the relation between science and empire. It explores the engagement of scientists with this plant and their role in the making of colonial Angola; it analyses how Angolan coffee entered the agenda of botanists and agronomists, and how they contributed to transforming it into a global

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5 António Telo, Economia e Império no Portugal Contemporâneo (Lisboa: Edição Cosmos e António José Telo, 1994), 262.
commodity. By tracing scientists and detailing their knowledge making practices this dissertation intends also to gain a firm grasp on the historical dynamics – between local environments, repertoires of power and global markets – that shaped the imperial trajectory of Angolan coffee. My goal is to connect coffee as plant, crop and commodity, and likewise the social, economic and political histories written about it so far. The key to access this integrated understanding on Angolan coffee is to look at it as scientists did: not as just coffee, but as Coffea canephora, or Robusta coffee, the species planted in Angola and indigenous to the region. This little taxonomic detail, for general historians just a technicality, has huge implications in terms of historical insight. Needless to say, most historians of colonial Angola do not acknowledge this fact. Until very recently, two of the most prominent historians of Angola described the coffee planted on this colony as an exotic species.\(^8\) Taking for serious the importance of distinguishing Coffea canephora from other species stresses the relevance of history of science for more general history.

The genus Coffea includes many species but only three are economically relevant: Arabica (Coffea arabica), Robusta (Coffea canephora) and Liberica (Coffea liberica). Whenever one reads about coffee in general the odds are that the writer is referring to Coffea arabica. Arabica is by far the most popular of coffee species and the one with the most intense trade history. Originated in Eastern African mountains in Abyssinia (Ethiopia), it spread with the Arabs to Yemen in the 13\(^{th}\) century, where it was apparently planted for the first time. In the 17\(^{th}\) century, after becoming the socializing drink of the Ottoman Empire, Arabica accompanied the expansion of European imperialism, colonizing different continents and turning into a global commodity. The history of Robusta is very different. While Arabica travelled across the globe, Robusta remained in the mountainous rain forests of Angola and Belgian Congo, from where it originated. It was only in the late of the 19\(^{th}\) century, when Arabica plantations were threatened by an epidemic of Hemileia vastatrix that Robusta gained international notoriety. At issue were its high levels of resistance to plant diseases, including Hemileia; hence, Robusta, its species name.

This dissertation proposes to reconstruct the Portuguese empire of coffee – the “Robusta Empire” –, which, as mentioned above, started in Angola many years before the “internationalization” of this species. As we will see, there were several attempts

\(^8\) Wheeler and Pélissier, História de Angola..., 107.
to plant Arabica in the course of history, but always without success. My approach is not disinterested. I propose to reconstruct the Robusta Empire through the prism of scientists. In this sense, the focus is deliberately narrow, and consequently one of the dimensions traditionally associated with coffee production in the historiography – the question of coercive work – doesn’t have much presence in the narrative. This fact has probably less to do with methodology of following scientists than with the type of scientists I chose to follow: the ones working for the colonial administration. Perhaps if I had chosen those with contracts with the owners of big fazendas the result would be different. But if the angle is narrow, one should also agree that it points to unusual directions, drawing our attention to aspects – of coffee as plant, crop and commodity – less studied. One of the goals of this dissertation is precisely to use scientists to illuminate dimensions of this colonial history that have been neglected in the literature, especially by the historians working on the 20th century.

Following scientists, we realise, for instance, that Robusta coffee in Angola was cultivated using a unique agro-forest system invented to take advantage of the environmental conditions of the plant when growing in the wild. In other words, it was in the middle of the forests and mountains, in the places where this species grew spontaneously, that the large plantations nurturing the Angolan economy and the Portuguese Empire were located. We also realise that this cultivation system was not very different from the one Africans used in their lavras, unless in terms of the scale, evidently. This environmental dimension in the history of Angolan Robusta is the theme of the first part of this dissertation. Its specificity, I suggest, is 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 cultivated. On the other hand, to analyse the Robusta Empire through the lens of scientists also allows us to understand how the Portuguese colonial regime was able to respond to the increasing demands for Robusta in the global market. As we will see, science played a key role in the process of transforming Angolan coffee into a “true commodity” ready to be used in the

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industries abroad – this *technopolitical* dimension in the history of Angolan coffee is also an aspect that has been also grossly neglected in the literature so far. The main argument of this dissertation is that these *environmental* and *technopolitical* dimensions are central to reconstruct, as it were, the *robustness* of the imperial project aiming at transforming Angola in one of the largest coffee producers in the world.

The methodology is to follow scientists, their practices, ideas and artefacts. My use of scientists is double: at the same time that I use them to access local conditions of production (cultural, environmental, technological), I also use them to connect different scales of the Portuguese empire (environmental, economical, political). Kapil Raj’s concept of “circulation” is particularly inspiring, of how to integrate narratives of local encounters and global circulation. The way I approach *Coffea canephora*’s environmental history, taking environmental data and descriptions of nature as scientific constructions, is typical of an historian of science.

The methodology is useful though it may also pose some problems when the environment is discussed in terms of agency. Some of the methodological questions raised have troubled many scholars, and will no doubt continue to do so.

This investigation also benefitted greatly from the methodological reflections about the concept of “empire” that accompanied the so-called “global turn” in the historiography. The work that has been done regarding the continuities and discontinuities (synchronic and diachronic) between different imperial experiences was crucial to distance us from static and monolithic representations of empires. The analysis of Frederick Cooper and Jane Burbank in their book *Empires in World*
History was particularly important. Some of their key concepts – imperial trajectory, repertoires of power and politics of difference – were extensively adopted in this dissertation.\footnote{Jane Burbank and Frederick Cooper, *Empires in World History. Power and the Politics of Difference* (Princeton and Oxford: Princeton University Press, 2010).} An important element of this reflection, of which we are in debt to historians of Asia, is the awareness of empires as complex political organizations with very different strategies to deal with different cultures and religions they encompassed; in some cases supressing cultural diversity, in others promoting it.\footnote{A paradigmatic case of an empire that explored these inter-cultural dynamics is the Mongol empire, see, for instance, Sanjay Subrahmanym, “Connected Histories: Notes towards a Reconfiguration of Early Modern Eurasia,” *Modern Asian Studies* 31, no. 03 (1997): 735–62; Frederick Cooper, *Colonialism in Question Theory, Knowledge, History* (Berkeley, Los Angeles, London: University of California Press, 2005).} This is an important wake-up call for colonial and post-colonial studies on Africa, which tend to describe European empires as totalizing political experiences.\footnote{For a collective effort of the historians of the Portuguese empire to respond to these historiographical debates see Ângela Barreto Xavier and Cristina Nogueira da Silva, eds., *O Governo dos Outros. Poder e Diferença no Império Português* (Lisboa: Imprensa de Ciências Sociais, 2016).} Finally, my treatment of primary sources profited greatly from Ann Laura Stoler’s remarks on the nature of colonial archives and their lack of transparency.\footnote{Ann Laura Stoler, *Along the Archival Grain: Epistemic Anxieties and Colonial Common Sense* (Princeton: Princeton University Press, 2009).} Throughout the entire narrative I am always reflexive that I am dealing with sources produced by the colonial archive.

One of the advantages of following scientists is the trans-imperial dynamics that emerges from such an exercise; they are an ongoing concern in this dissertation. Sanjay Subrahmanym’s “connected histories” (as opposed to “comparative histories”), and his efforts to write about geographically dispersed human societies, were particularly inspiring as methodology.\footnote{Subrahmanyam, “Connected Histories: Notes towards a Reconfiguration of Early Modern Eurasia.”} This investigation also traces some connected histories between the Portuguese and other empires (the Austrian and the British), and also with Brazil and the United States in the context of the post-WWII American hegemony. But any “global” pretentions – in Raj’s or Subrahmanym’s sense – would be ridiculous and have to be deflated. As we will see, the historical sources used in this investigation are almost entirely coming from Portuguese colonial archives, and the geographical and cultural breath is too centred on the Western world. Again, the contribution of this dissertation is not only in terms of breath, but of depth. While Subrahmanym uses his polymath erudition in foreign languages and disciplines as philology to probe and integrate scattered archives, I use the history of
science to connect different scales, dimensions and contexts of the process of imperial formation.

SCIENCE AND EMPIRE

In thinking about science and empire it is worth revisiting the challenges historians of science have faced in the last decades. It was only fifty years ago that George Basalla published his *The Spread of Western Science* (1967). The first criticism to this Eurocentric template of scientific circulation came in the following decades, in the aftermath of the end of European colonial empires. Roy MacLeod’s concept of a “moving metropolis”, forcing other local centres outside of the European metropoles to make their appearance, played a fundamental role. But only in the 90s would the underlining assumptions of Eurocentric views begin to be questioned. Seeing the construction of scientific knowledge as an accumulation of practices, the “cultural turn” decisively redirected the attention of historians of science to other places away from the European world. The scholarly production about the construction and circulation of scientific knowledge in this decade is extensive and varied, but one can identify two different approaches: one centred on the question of power, in the ways science was used as a tool of empire, or used the empire to their own purposes; and one centred on the cultural encounter between European and non-

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European peoples, and on the commensurability of their knowledge systems. This classification, though simplistic, helps us to understand a central tension dividing the historiography of science in imperial contexts. The most successful efforts of the first decade of the millennium made to decentralize and construct wider narratives were exactly those that were able to overcome this tension and connect these two historiographies. Some of these narratives concerned the Iberian empires, whose role in the accumulation of practices in the 15th and 16th centuries was for the first time successfully demonstrated in the academia.

The recent global turn in the historiography led scholars interested in writing “global histories of sciences” to rethink their methods, historiographical concerns and theoretical tools. This methodological debate focused on the ways to go beyond the categories of the colonizer and the colonized, beyond the debates about how science influence European imperialism and vice-versa, in order to identify the impact of other local dynamics in the construction and circulation of scientific knowledge. “European imperialism”, as Sujit Sivasundaram put it, “becomes a chapter in this story, accelerating the meetings of different traditions of science by circulating knowledge with greater speed and bringing great power and centralization to bear on it”, to contextualize this chapter within a broader account became the goal. There were important consequences. For instance, Bruno Latour’s theory on the construction and production of scientific knowledge became under harsh criticism, accused of remaining extremely Eurocentric. Worth noting that Latour finds his most powerful metaphor of science – as the product of “cycles of accumulation”, “centres of calculation” and a global network of “immutable mobiles” – in European imperial


history: the French map (the immutable mobile) of the Sakhalin island, which is drawn for the first time during Lapérouse’s expedition in the 18th century (in opposition to the map traced in the sand by the natives inhabiting the island), and that is then brought to the metropole (centre of calculation) and used to prepare another expedition to the same island, during which the map is again re-drawn and brought again to the metropole (cycle of accumulation), etc.27

In the fields of imperial, colonial and post-colonial studies there were various responses to the Latourian Eurocentrism. Examples are Kapil Raj’s concept of “circulation”, focusing on the transformations that objects, humans, practices and knowledge are subjected during the process of displacement, or Neil Safier’s “itineraries of knowledge transfer”, moving us away from the “immutable mobiles” and challenging us to study the commensurability of European and non-European knowledge based on objects of a much more fluid nature, as the ones he found in his study on Amazonia.28 For those historians of science working in imperial contexts it became imperative to respond to the globalization narratives and show that scientific knowledge was more than the accumulation of practices aimed at standardizing and stabilizing the natural world.29 Their goal was to demonstrate that these practices (and the artefacts they produced, which were then put in circulation) were co-produced, and locally and historically situated. How the two main themes of the history of science – local encounters and global circulation – interacted with one another became theirs and many other scholars’ central question.

Lissa Roberts, coming from a different background, makes a similar point. She also urges scholars to locally and historically situate the construction and circulation of knowledge. But to this historian of science and technology this goal is not incompatible with a vision of science as a practice of standards production. As she stresses circulation is also about “the paths of (knowledge) production and local consumption and use”, which have often “too easily been characterised as progress

27 Bruno Latour, *Science in Action: How to Follow Scientists and Engineers through Society* (Cambridge: Harvard University Press, 1987). One of the most critical voices coming from imperial history and against this view of the circulation of knowledge is Raj, *Relocating Modern Science: Circulation and the Construction of Knowledge in South Asia and Europe, 1650-1900*...


29 The pressure to put the “history of globalization” and “global history” together was high. See, for instance, Bentley, “Globalizing History and Historicizing Globalization...”
resulting from the diffusion of western science and technology.” 30 “[…] we need to take this realisation one step farther and recognise that these multi-tracked paths of circulation were truly global in nature. Appropriation was not a phenomenon limited to colonies and ‘developing countries’. It encompassed the entire globe, enveloping all regions and all aspects of history within its purview.” 31 This dissertation shares the same concern. By detailing scientists’ knowledge-making practices, it wants to locally and historically situate Angolan Robusta, bringing to light the role of the environment and of extant African dynamics, but at the same time it also follows its trajectory in the global market as a stable commodity ready to meet the interests of coffee industry. It was thus in this fragile equilibrium between attention to local conditions of production and to global circulation that this dissertation made its way. In particular, I follow those historians of science and technology, who, based on cash crops such as tobacco, cotton or oranges, discussed the importance of biological varieties to understanding more global dynamics. 32

The project of “restoration of global history” cannot be dissociated from the recent efforts to rethinking the place of the environment in historical analysis. 33 Both projects have been intricately linked for obvious reasons. The interest on the global had questioned historiographical fragmentation and disciplinary division, bringing closer general historians and other historians, and even scientists, interested in describing the relationship between human beings, their habitat and the planet; 34 on the other hand, the recent political concerns with the environment at a planetary scale, climate change at the top of that list, have instigated historians to redirect their attention to the environment, which is, as Subrahmanyam put it, “the global intellectual issue par excellence”. 35 Since then several studies have been published

32 Particularly inspiring in this investigation was Barbara Hahn, Making Tobacco Bright: Creating an American Commodity, 1617–1937 (Baltimore, Md: Johns Hopkins University Press, 2011). Though not coming from the history of science and technology the work of Sven Beckert was also key to the way some aspects were articulated, Sven Beckert, Empire of Cotton: A New History of Global Capitalism (London: Pinguin Books, 2015). For a more theoretical discussion about the importance of following crops and commodities to understand more global dynamics see Tiago Saraiva, “Oranges as Model Organisms for Historians,” Agricultural History 88, no. 3 (2104): 410–16.
33 For a genealogy of global history is O’Brien, “Historiographical Traditions and Modern Imperatives for the Restoration of Global History.”
made under the umbrella of “environment and empire”. The way the environment is incorporated in historical analysis is yet far from being overcome.

This investigation follows the legacy of Jill Dias, who in 1981 published a major work on environmental history of Angola, where she discusses the relation between famine and disease in this colony and the history of Portuguese colonialism. Much has changed in social sciences and humanities since the publication of her essay. Environmental historians are now in a much stronger position to even reclaim the so-called “agency of nature.” The idea, far from being consensual, has divided the academia. Opponents have argued that, though nature resist and shape human actions it has “neither the intentionality nor the choice that humans do” and therefore it can be seen as a “dynamic structure” but not as an “agent.” In turn, environmental historians argued that the notion of “human agency”, “the ability of people to act intentionally and shape their worlds,” is an old one and that human beings can no longer be seen as the only motors of history. For Linda Nash, who has recently analysed this debate, the solution is to think of agency in different terms. She urges environmental historians to look for answers in the work of Bruno Latour, who proposed the concept of “actor-network” to emphasize precisely that agency is dispersed among humans and no-humans, or Tim Ingold, who argued that social analysis should not conceptualize agency in terms of the individual against the external world, but from the point of view of the “organism-in-its-environment”. The present analysis relies on these new conceptions of agency. To take Coffea canephora’s environmental dimension into consideration without falling in any kind of environmental determinism is an essential methodological concern in this work.

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36 A good introduction to this literature is William Beinart and Lotte Hughes, Environment and Empire (Oxford: Oxford University Press, 2007).
Finally, together with Richard Grove, I take the environment seriously by critically analysing the sciences that conceptualized it in the past. Likewise, this work discusses plant agency – based on data concerning Robusta’s biology, ecology and evolutionary history – but at the same time it assumes that the data regarding those issues and upon which our analysis is grounded was also socially and culturally situated. This is why the history of environmentalism has such a prominent place in the present work. To approach the environment in this way also implies that to analyse how scientists saw it, their opinions, believes, traditions, etc. Important revelations are made concerning coffee and an environmentalist agenda, adding one more case to the already extensive literature about “green imperialism.”

PLANTS AND EUROPEAN IMPERIALISM

Plants were central actors in the process of European imperialism. The transfer of plants from one part of the globe to the other accompanies the formation of European overseas empires. In his *Ecological Imperialism* Alfred Crosby explored the asymmetries of such process describing the many cases in which Euroasian plants were strongest and more effective in agricultural terms than the ones originating in the American and Australasian continents. Michael A. Osborne argued, in turn, that acclimatization was the paradigmatic colonial science of the modern period, “with applications as diverse as agriculture, settlement schemes, field sports, and human health.” These authors, together with Brockway and Drayton, have produced the most powerful narratives connecting plants, European imperialism and the beginning

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of the modern world. And yet it’s not surprising to note that they have remained highly Eurocentric. One major criticism has been the emphasis they give to metropolitan institutions such as the Kew Gardens and on the role they played in the global distribution of seeds, plants and agricultural experts. New insights in the global transfer of plants has brought into light networks that were independent from these metropolitan institutions, urging us to consider a broader range of human agency. Scholars have also drawn our attention to the agricultural practices and labour regimes that “moving crops” transported with them from one part of the globe to the other. The African continent has gained from those perspectives, as demonstrated by the work of Judith Carney about the role that slaves played in the introduction of an African species of rice in the Americas. This dissertation follows closely these recent insights.

Biogeography has been also another important theme among those interested in thinking about the relation between plants and empires. Scholars have examined the work of plant geographers in the process of identifying and mapping living organisms in exotic landscapes, describing their areas of expertise as powerful tools of empire. Recently, new approaches to biogeography have forced us to recognise that these tools of empire were also operating at an epistemological level, changing the way the natural world was perceived and comprehended. From these works, we conclude that, not only maps made plants more legible, in the sense of James Scott, but they also changed the way these plants were interpret and integrated at a global


48 “Moving Crops” is a research project/working group at the Max Planck for the History of Science, exploring “the intersection of history of science, history of commodities, and history of food to experiment with space and time scales in historical writing”, organized by Francesca Bray, Dagmar Schäfer, John-Bosco Lourdasamy, Tiago Saraiva and Barbara Hahn.


level. This debate was particularly based on the 19th century. The voyages of the German botanist Alexander von Humboldt to Latin America were under particular scrutiny and provided the material for an interesting discussion about the Romantic ideals of nature and the making of imperial maps. At the centre of this change in perception was an emergent tradition in natural history later named as ecology.

The reflection about plants and empires in the 20th century differs significantly. The focus is now on the efforts of plant and agricultural scientists to improve plant material at a local, regional and global scale. The practices of plant prospecting and mapping seem to wane in comparison with the attention given to those of plant breeding and of the new science of genetics. This tendency towards the practices aimed to “discipline heredity” is not confined to the historiography of science in imperial contexts and is closely related with the vision of science as a practice of standards production. It is well known the increasing literature in the history of life sciences concerned with genetics and (animal and plant) breeding, and the role they had in the construction of standardizing life forms, such as model organisms. Along the lines of a “cultural history of heredity”, connections between the histories of model organisms and industrialized organisms have been

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54 Probably the best introduction to this literature is chapter 6 of Staffan Müller-Wille and Hans-Jörg Rheinberger, A Cultural History of Heredity (Chicago: The University of Chicago Press, 2012).

55 Having been initially based on case studies from the history of physics and engineering, this vision has recently made its way in the history of life sciences. One major work is Norton Wise, “Precision: Agent of Unity and Product of Agreement. Part II – The Age of Steam and Telegraphy” in Norton Wise (ed.), The Values of Precision (New Jersey: Princeton University Press, 1995), pp. 92-100

demonstrated. This is particularly true for plants. As Tiago Saraiva put it, “it suffices to point out that two basic concepts of the new science of genetics at the beginning of the twentieth century, the “pure line” and the “clone,” were direct products of practical breeders’ practices.” The paradigm of “pure lines”, concretely, and the conditions of “stability and purity” that it provided to an industrial culture and of mass production, was under special examination.

This dissertation departs from this historiography. It was in the context of a “cultural history of heredity” that emphasis was put on plant agency in order to discuss political, economical, social issues. This work attempts to do the same, but following a different path – the one of natural history. It shows that genetics was not necessarily, always and everywhere, involved in the mass production of plant products. In fact, there is no breeding in this story, least of all, pure lines. Angolan coffee became a global commodity based on extremely heterogenic plant material. In other words, Angola produced stability without purity (see discussion in chapter 6). Standardization of coffee beans was the key step enabling Angolan coffee to enter the American industrial lobby, but this standardization only took place after harvest. Scientists provided the information and expertise for the creation of an Angolan coffee standard, and helped the colonial administration with knowhow to implement the quality standards (chapter 5). Yet, in the cultivation fields of Robusta, plant geography and agro-ecology reigned. These were the traditions scientists would rely upon when they wanted to help improve an agricultural system that had been invented to take advantage of the natural habitat of this plant – the reason why they would advise farmers “to follow the clues from nature’s orientation” (chapter 3). This dissertation joins the efforts of those who followed the practices of plant geography, mapping and ecology in colonial Africa during the 20th century.

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59 Bonneuil, “Pure Lines as Industrial Simulacra…”: 229.
60 Staffan Müller-Wille and Hans-Jörg Rheinberger, Heredity Produced: At the Crossroads of Biology, Politics, and Culture, 1500-1870 (Cambridge, MA: The MIT Press, 2007); Müller-Wille and Rheinberger, A Cultural History of Heredity...
61 William Beinart, who has explore the relation between colonialism and environmentalism, and Helen Tilley, who has discussed the role agro-ecology to understand African environments, were probably the most important names in the context of colonial Africa, Beinart, The Rise of Conservation in South
This investigation is also greatly in debt to a debate in the history of life science concerning the historiographical status of natural history. For long the mainstream narrative in the history of modern life sciences – constructed on the assumption that the end of the 19th century was marked by a decline of natural history and the rise of experimentalism – has prevented historians us from looking to 20th century’s scientific activities such as missions, expeditions, trips and travels with the same degree of analytical sophistication as we approach “experimental” sciences. However, this has changed in recent years. Mainstream projects, such as the ones dealing with bio-databases or climate change, have forced historians of the 20th century to look to the practices of natural history – collecting, listing, classifying, naming, describing and mapping – with different eyes. Indeed, from this perspective, natural history in the 20th century is not a field in decline, but gathering momentum.

There are several voices in this revisionist effort. Robert Kohler’s discussion about the nature of the practices in field-sciences at the end of the 19th century and early 20th century was a landmark contribution.62 Jeremy Vetter and others followed suite, tracking scientists in modern times, namely those involved in field sciences broadly concerned with the environment (e.g. climatology, oceanography, agricultural science or ecology).63 Also the input came from scholars interested in understanding the data-driven research nowadays, particularly the phenomenon of bio-databases and its proliferation in present societies.64 Finally, the historiography of science of the early modern period, responsible for tracing important historical continuities between the 20th and previous centuries and offer the most in-depth descriptions of the

practices of natural history.\textsuperscript{65}

\section*{COFFEE IN COMMODITY STUDIES}

Economic historians and scholars from commodity studies have extensively examined the process of commodification. A true commodity is often understood as a “traded good whose identity is established independently of the seller and that is subject to substitution, including substitution between national origins, on the basis of adjustments in price.”\textsuperscript{66} In dialogue with this literature this dissertation wants to understand when it was that Angolan coffee became a “true commodity” though, as will be stressed, coffee does not fit into this standard definition of commodity. We will base our discussion on literature with reference to Arabica coffee, which is the only species that has been analysed so far. These accounts are still of great importance for the present work: historiographically, since in this case many of the problems and attempts to overcome these problems are similar to the ones we face with Robusta; but also historically, given the degree of interdependency between these two commodities.

Arabica coffee is considered a pioneer in global commodity institutionalization.\textsuperscript{67} In Europe, the first coffee futures markets were created in Le Havre (France) in 1881 – followed by Hamburg and London in 1888 – and in the US in 1882, with the creation of the New York Coffee Exchange. Created almost forty years after the Chicago Board of Trade (1848), the American coffee exchange had a hegemonic position in relation to its European counterparts, not only because it was


\textsuperscript{67}Steven Topik, “The Integration of the World Coffee Market,” in \textit{The Global Coffee Economy in Africa, Asia, and Latin America, 1500-1989}, ed. William Gervase Clarence-Smith and Steven Topik (Cambridge, UK: Cambridge University Press, 2003), 39. It should be noted that before the emergence of futures markets, coffee was traded in auction markets. In the 18\textsuperscript{th} century, the most important auction market was located in Netherlands (Amsterdam), later others appeared in France (Bordeaux and Le Havre) and Britain (London). Coffee at the time was traded according to three basic market categories: Mochas (from Yemen), Bourbons (from Reunion) and Java (from Dutch East Indies), Benoit Daviron and Stefano Ponte, \textit{The Coffee Paradox. Global Markets, Commodity Trade and the Elusive Promise of Development} (London and NY: Zed Books, 2005), 69-70.
located in the largest coffee market, but because the activity in European futures markets was disrupted during the two world wars and in the interwar period, only becoming active again in the 1950s. The first initiatives of the New York Coffee Exchange – the introduction of nine grades (according to the number of defects) and the implementation of rules such as preventing coffee with a grade lower than nº 8 to enter the United States – had immediate repercussions in Brazil, the primary supplier of the United States. At the turn to the 20th century Brazilian *comissários* (the ones responsible for the classification process) used a classification “defined in close relation with the New York Exchange grade”, acting therefore “as a quality translator between domestic coffee sector and the world market”.

In spite of these forces to homogenize coffee and joined conventions by two main players of the global market, the coffee commodification process was a complex one, and one that remained largely unfinished – at least when compared with other agricultural commodities. There were the so-called “cup characteristics” (aroma, taste, texture, etc.), which made life not easier for the market operators in the process of quality evaluation, but there were also the number of commercial cultivars and market categories, which tended to grow rather than diminish. As Steven Topik explains, both production and consumption of this semi-tropical luxury good were characterized more by dispersal than convergence. The input came from consumption, which stimulated variation rather than homogenization. The process of standardization, like in other tropical products, used international standards as “a reference for the drafting of national standards”, but it was largely made at a national level – the reason why the reference to the “national origin” remained “an essential

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69 Daviron and Ponte, *The Coffee Paradox. Global Markets, Commodity Trade and the Elusive Promise of Development...*, 72. The commercial classification of Santos – how it was called the Brazilian coffee shipped in Santos – included now eight grades defined in relation to the number of impurities, which were then sub-classified according to size, colour and aroma. Daviron and Ponte describe the process in detail, “Each bag coming from a fazenda was classified according to type by the *commissario*. The classification was based on six commercial types: *fino, superior, bom, regular, ordinario,* and *escolha*. Then the coffee coming from different fazendas was gathered and mixed by the *commissario* to prepare lots homogenous and big enough for the exporters. To prepare these lots, the *commissario* used another classification defined in close relation with the New York Exchange grade. Therefore the *commissario* was acting as a quality translator between domestic coffee sector and the world market”, Daviron and Ponte, *The Coffee Paradox. Global Markets, Commodity Trade and the Elusive Promise of Development...*, 71-72.
71 Topik, “The Integration of the World Coffee Market...”: 23.
component of the qualification system for tropical products.” In the case of coffee, the dispersive forces pushing producing states to create new market categories had a decisive momentum in the 1930s. Colombia is often mentioned as an example of this, implementing policies that aimed to challenge the hegemonic position of Brazilian coffee (Santos) in the market, which resulted in the implementation of differentiation policies that aimed to get better prices for its high quality coffee. This goal was achieved by implementing a national grading system and by centralizing coffee exports in one institution called Fedecafé – a structure that had similar powers to the Portuguese marketing board that I investigate in the second part of this dissertation.

Scholars of commodity studies also explored the relations between the trajectories of coffee as commodity and as crop. Following the footsteps of William Cronon in his *Nature’s Metropolis*, who based his analysis on the history of the Chicago Board of Trade, they’ve argued that the creation of standards also empowered small-scale enterprises to enter the commodity market, giving them the possibility of mixing crops coming from different farms without losing their identity as a commodity. This discussion is important because it offers the opportunity of connecting the dynamics of the global market with labour and the development of agricultural landscape in producing countries. Among those working on coffee and other tropical products there is the also the general perception that standardization of these commodities led to a shift from large to small units of production, which eventually led to the decline of the plantation model. For Benoit Daviron and Stefan Ponte, the Ghanaian smallholder displacing the São Tomé *roça*, the African rubber producers displacing the European rubber estates, and the Colombian coffee peasants provoking a crisis of the Brazilian *fazendeiros* are not independent events, but the result of the same historical process. Was it so?

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75 This theme has united scholars from the “new history of capitalism” (e.g. Beckert, *Empire of Cotton: A New History of Global Capitalism.*) and the history of science and technology (e.g. Hahn, *Making Tobacco Bright: Creating an American Commodity, 1617-1937*; Saraiva, *Fascist Pigs. Technoscientific Organisms and the History of Fascism.*)
76 See, for instance, Daviron, “Small Farm Production and the Standardization of Tropical Products”...
Several characteristics made this crop suitable for smallholding production. The relatively low-tech of coffee processing operations, which transformed coffee cherries into green coffee (the “stage” at which it was sold as a commodity in the market), and the small amount of capital needed to start a coffee production unit, at least when compared with other tropical crops such as sugar or sisal, were two important ones. Both fostered vertical disintegration of the commodity chain, separating peasants (coffee growers) from beneficiadores (those responsible for coffee processing operations) and contributing therefore to the “peasantization” of coffee cultivation. Moreover, as mentioned before, coffee did not see its biological diversity impoverished by the demands of the market as other agricultural commodities (such as cotton, did) since coffee consumption put a premium on variation rather homogenization. Also the volatility of coffee markets played its role, since large estates, being generally almost exclusively devoted to coffee, had less chances to survive to price crises than small farms with a more diversified production.

Latin America was at the centre of this discussion “from large to small.” According to this scholarship, two parallel movements aimed at ending slave coffee production systems began in this continent around 1840: one in Brazil, when fazendeiros started to take migrants (colonos) as their sharecroppers, a process that would culminate with the invention of the “colono system” at the end of the 1880s; and the other in Costa Rica, when “independent” smallholders started to cultivate coffee on a large scale – an example followed by Colombia after 1912. Colonial Africa was also under examination and the same general trend from large to small

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80 Topik, “The Integration of the World Coffee Market…”: 23.
82 Daviron and Ponte, The Coffee Paradox. Global Markets, Commodity Trade and the Elusive Promise of Development…, 64-68. The “colono system” has been described as a typical example of an intermediate form of organization between large and small production systems given that many of the colono families that worked in the fazendas became independent farmers in the interwar period and owners of their own piece of land. Daviron and Ponte, The Coffee Paradox. Global Markets, Commodity Trade and the Elusive Promise of Development…, 68.
farms was identified. The main difference is that in the African cases the existence of transitional forms of coercive labour was more accurately discussed. As we know, two forms of coercive labour emerged during the transition process from slave to independent production: forced labour in large plantations (replacing slaves by coerced workers) and “mandatory cultivation” by smallholders (inspired in the “cultivation system” used by the Dutch in Java). In Angola, for instance, the Portuguese empire coffee opted for the first model in the case of coffee, and for the second (culturas obrigatórias) in the cotton case.

The World Coffee Survey (WCS), an initiative of the Food and Agriculture Organization (FAO) that took place in the late 1950s, confirms this view. During this decade coffee smallholding was the rule in the colonial African states. Among them were: Ethiopia, where Arabica plantations were traditionally set in the bulk of the coffee forests from where this species was originated, 90% to 95% of the plantations were in the hands of Africans; Ivory Coast, where coffee was almost totally (95%) produced by African smallholders, the same happening in French Cameroons, where Africans “controlled about 80% of the total coffee area” (in 1959); the French Congo (Congo-Brazzaville; or Republic of Congo in 1960), where they were responsible for 85% of the production; Uganda, where Robusta production (90%) was also in the hands of African smallholders (around 85%), the same happening with the 10% of Arabica coffee; and Tanganyika, a Robusta and Arabica

83 The only exception to this transition, where coffee continued to be mainly produced by Europeans and in large-scale production systems, was Kenya, Daviron and Ponte, The Coffee Paradox: Global Markets, Commodity Trade and the Elusive Promise of Development..., 68. No mention of Angola is made. Surprisingly enough, the collective volume about coffee organized by Gervase Clarence-Smith and Steven Topik is also not helpful. Angola is mentioned as “Africa’s largest exporter of coffee, mainly produced on estates owned by Portuguese settlers”, but that is it, Steven Topik and William Gervase Clarence-Smith, “Conclusion. New Propositions and a Research Agenda,” in The Global Coffee Economy in Africa, Asia, and Latin America, 1500-1989, ed. William Gervase Clarence-Smith and Steven Topik (Cambridge, UK: Cambridge University Press, 2003), 404. Daviron and Ponte, The Coffee Paradox: Global Markets, Commodity Trade and the Elusive Promise of Development..., 60-68.
84 The WCS was an initiative of the Plant Production and Protection Division of FAO, in Rome. It was commissioned to C. A. Krug, who, as we will see later, was the leader of the Division of Genetics of the Campinas Agronomic Institute in São Paulo, Brazil. The first draft of this survey was published (with “restricted” access) to serve as “an advance background paper for the First FAO Technical Coffee Meeting, to be held in 1960, C. A. Krug, “World Coffee Survey. A Draft of a Future FAO Agricultural Study (Restricted)” (Rome, 1959). The final version was published in 1968, C. A. Krug and R. A. De Poerck, World Coffee Survey (Rome: Food and Agriculture Organization of the United Nations, 1968).
producer state (50-50), where coffee production was almost totally in the hands of African smallholdings.\textsuperscript{86}

According to this survey, only three colonial states were an exception to the general trend. The Belgian Congo, mainly a Robusta producer, with almost the totality of production in the hands of Europeans; Kenya, an Arabica producer, which had 80\% of the total coffee area exploited by large plantations; and Angola. In Angola only 25\% came from African smallholders, against 75\% produced in large and very large fazendas – CADA (Companhia Angolana de Agricultura) according to the same source, was “the biggest” fazenda in the world.\textsuperscript{87} How had these colonial states able to keep their competitiveness based on production systems that, according to several scholars, did not benefit coffee as a commodity? This dissertation wants to go beyond the orthodox answer to this question, which tends to point exclusively at forced labour. The goal was not to give a straight answer, but to explore different factors – environmental, cultural, technological, political and economical –, which apparently shaped the commodification process of Angolan Robusta.

LABOUR VERSUS ENVIRONMENT?

Le Cafe pour la Hollande c’est le Sang d’ Angola. This title of a report of the Comité de L’ Angola néerlandais about the coffee produced in this colony captures well how the pressure to decolonize Portugal was submitted in the last years of the empire.\textsuperscript{88} But in this case this was not merely an episode of international pressure or counterpropaganda. The story of coffee in Angola is a story of violence. Scholars have produced several descriptions of the practices of forced labour, corporal abuses and coercive recruitment that the owners of coffee fazendas and large capitalistic enterprises enforced in order to meet their yearly goals.\textsuperscript{89} They show us that the

\textsuperscript{86} Krug, “World Coffee Survey. A Draft of a Future FAO Agricultural Study…”

\textsuperscript{87} Krug, “World Coffee Survey. A Draft of a Future FAO Agricultural Study…”: 64.

\textsuperscript{88} “Le Cafe pour la Hollande c’est le Sang d’ Angola”, Report of the Comité de L’ Angola néerlandais, 1972, AHS, Espólio de Pinto Quartin.

Portuguese colonial state was an active partner of European coffee producers, relying on different actors, laws and strategies to maintain these practices throughout time.\textsuperscript{90} This was true not only for the practices of forced labour, but also for the European illegal appropriation of lands suitable for coffee cultivation. With these scholars we also learned (though not entirely understanding why) that the majority of the Africans forcibly recruited to work in the coffee fazendas in the North came from the Southern regions of the colony, a pattern that started in the second half of the 19\textsuperscript{th} century, and went on throughout the 20\textsuperscript{th} century.\textsuperscript{91}

Scholarly efforts to understand why Angola became a coffee economy usually rely implicitly on two sets of assumptions. The first concerns this past of colonial coercion. Forced labour regimes provided the owners of coffee fazendas with the cheap workforce that allowed them to thrive. From this perspective this cash crop benefitted from a retrograde form of imperial rule and the Portuguese empire’s resistance to “modernization”. The second concerns the transformations in the coffee global market after World War II: Angolan coffee benefited from a positive external conjuncture. As we know, for a long time the bitter taste and high percentage of caffeine in Robusta coffee beans had prevented them from competing with Arabica coffee. But this would change in the post-war period with the trend of instant soluble coffee.\textsuperscript{92} A window of opportunity was therefore opened for this second quality coffee. The increase in demands was also further stimulated by the growing interests of the roasting industry in using Robusta for the production of packed blend coffee. In 1929, the Department of Agriculture of the United States authorized the importation of Robusta.\textsuperscript{93} Things would run fast for the Portuguese colony from then onwards.\textsuperscript{94}

\textsuperscript{92} Topik, “The Integration of the World Coffee Market...”: 47; On Angola see, for example, Irene S. Van Dongen, “Coffee Trade, Coffee Regions, and Coffee Ports in Angola,” Economic Geography 37, no. 4 (1961): 320.
\textsuperscript{93} Steven Topik, “The integration of the world coffee market...”: 47.
\textsuperscript{94} Scholars mentioned the implementation of development policies were implemented to deal with this international context, but only generic terms, see, for instance, António José Telo, Economia e Império no Portugal Contemporâneo (Lisboa: Edições Cosmos, 1994), 235.
In the 50s it was already the first African coffee provider of the United States. But, is the repressive repertoire of power and the market opportunity sufficient to explain the rise of the Robusta Empire? This dissertation wants to go beyond this set of assumptions and explore other reasons why Angola became one of the largest coffee producers in the world.

The neo-Marxist “labour intensive” literature had another historiographical consequence. Coffee and their labour regimes, world market positions and international negotiations have occupied the agenda of historians of 20th century colonial Angola. Moreover, whenever coffee is concerned, historians centred their attention almost exclusively on the case of coffee fazendas. The African part of the story has been almost totally neglected. Only as a footnote or short remark did scholars working on 20th century Angola mention the resistance of coffee peasants to the colonial pressure and the rise of an African elite linked to the coffee business.

Three fields helped us to overcome these deficiencies in the literature: agronomic studies, geographic studies and colonial anthropology. But were the historians working on the 19th century, such as Jill Dias, Aida Freudenthal and David Birmingham, who were decisive in revealing certain African aspects (social, political, cultural and environmental) of this cash crop economy. This dissertation follows closely the methodological insights of these scholars who privileged the relevance of local material conditions, offering a distinctive Braudelian contribution to the discussion. Not gainsaying the violent history of Angolan coffee, it lead us to the

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96 Two obvious examples are William Gervase Clarence-Smith, The Third Portuguese Empire, 1825-1975: A Study in Economic Imperialism (Manchester: Manchester University Press, 1985); Bender, Angola under the Portuguese: The Myth and the Reality.
98 Of great importance for this dissertation were the works of the agronomists Fernando Oliveira Baptista and José Mendes Ferrão, the geographer Mariano Feio and the anthropologist José Redinha; Baptista et al., O Café de Angola; Ferrão…, O Café: A Bebida Negra dos Sonhos Claros…; Mariano Feio, As Causas do Fracasso da Colonização de Angola (Lisboa: Instituto de Investigação Científica Tropical, 1998); José Redinha, Introdução ao Estudo das Sociedades e Economias Tradicionais de Angola (Luanda: Universidade de Luanda, 1972); José Redinha, Étnias e Culturas de Angola (Luanda: Instituto de Investigação Científica de Angola, 1975).
actual colonial spaces where African people cultivated their own coffee, tied to longer historical dynamics.

One goal of this dissertation is to bring 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 Angola (such as cotton or sugar), and that in the coffee case represented roughly one quarter of the colony’s total production. It parts ways hence with a historiography that tend to offer a too one-dimensional view of the repertoire of power of the late Portuguese empire, by focusing on cases where agricultural production was only possible due to slavery or forced labour. Even the most recent historical approaches bear witnesses to this tendency. Examples are, for instance, Miguel Jerónimo and Marta Macedo’s emphasis on slave cocoa in São Tomé, Jeremy Ball’s work on the history of sugar fazendas in Angola, or Marie Anne Pitcher’ and Tiago Saraiva’s contributions to the oppressive history of cotton in Angola and Mozambique. The same could be said about Diogo Ramada Curto’s latest work on colonial practices in Angola, probably one of the most interesting reflections about the theme published in recent times.

Whenever in the course of this investigation, I would mention the case of African coffee production, the stock retort was invariably that perhaps the same imperial strategy had been pursued as in the case of cotton. But the analogy is far from being accurate. The case of African cotton production is tied to one of the most radical native policies of the Portuguese empire, the “mandatory system” (culturas obrigatórias). Approved in 28 September 1926 for Angola and Mozambique, and implemented by the New State in the mid 1930s, this system of mandatory crops

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consisted on the demarcation of “zones of influence” (zonas de influência) that were distributed to concessionaries (in Angola, Cotonang), whose holders purchased exclusivity over native production (at prices fixed by the Government). The concession holders were entitled to force natives to plant cotton giving place to abuses well documented in the colonial archive. As Anne Pitcher explains, the reason for these politics of difference was that no one wanted to produce cotton, neither the Africans, nor the private sector: the risks of production were too high.

The opposite situation can be identified in the case of coffee: everyone wanted to plant it. The records in the colonial archive about the fights between Europeans and Africans for the lands suitable for coffee cultivation show this very clearly. This cannot be dissociated from the ability of Africans to cultivate coffee, which in this dissertation is discussed though the lens of John Gossweiler (the main actor of Part One), who considered them, in some cases, outstanding horticultors. My hypothesis is that in the case of coffee two repertoires of power co-existed, one centred on forced labour, and one centred on land, the latter being of more liberal inspiration and co-responsible for the rise of an elite of African coffee farmers. Further research should be conducted to ascertain who exactly the “Africans” devoted to this cash crop were. The reports of the scientists I follow suggest that this group was far from being homogenous.

The tension “labour versus environment” – environment understood here in its broadest sense, encompassing thus the plant and its technological features – is echoed

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104 In Angola, concretely, this system provoked mass escapes of Africans in the district of Malange, where these zones were demarcated, Castelo, Passagens para África: O Povoamento de Angola e Moçambique com Naturais da Metrópole..., 312-313.


106 The same could not be said about cotton: “This crop (cotton) could have a brilliant future were there more instructors qualified to teach the locals the most suited cultural method for each sector; presently, the black man dos not plant more cotton because he is not taught to do so, and doesn’t know how”, John Gossweiler, “Reconhecimento Agronómico no Distrito de Malange,” Boletim da Direcção dos Serviços de Agricultura e Comércio, no. 16–19 (1932): 14.

107 Cf. Curto, Cruz, and Furtado, Políticas Coloniais em Tempo de Revolta..., 262-278.
in a number of other studies and geographies. Very recently, the field of the “new history of capitalism” has reopened this old polemics by suggesting strong causal relation between the production of raw cotton by America slaves and the rise of industrial capitalism. For Walter Johnson, Edward Baptist and Sven Beckert the industrial revolution should not be seen as a merely a product of mechanical innovations, but one that was grounded on coercion labor and the expropriation of indigenous lands.\textsuperscript{109} This position has been the object of harsh criticisms by the economic historians Alan L. Olmstead and Paul W. Rhode, for whom “to agree that slavery was important and evil does not mean that it was economically essential for the Industrial Revolution, for American prosperity, or even for the production of cotton in the United States.”\textsuperscript{110} According to them, the new history of capitalism showed little understanding of the “fundamental technological and production realities of the plantation cotton economy”, and failed to recognize “the significance of biological innovations in reshaping the American cotton slave economy.”\textsuperscript{111} This dissertation shares the same concerns. The goal is to offer new possibilities of thinking, discussing plant agency and the role of science and technology, by gaining distance from an unproblematic narrative about coffee and labour.

**STRUCTURE OF THE DISSERTATION**

Part One of the dissertation accompanies the missions of agricultural survey and the emergence of the Department of Agriculture of Angola during the first half of the 20\textsuperscript{th} century, and introduces Angolan coffee as plant and as crop. Here I rely mainly on the scientific reports written by the experts of the Agriculture Department


in the journal of this institution and on the correspondence of Júlio Henriques deposited with the University of Coimbra.

Chapter One is entirely devoted to John Gossweiler. Called to be the head of the first experiment station in Angola in 1898 he would live in this colony for almost the entire first half of the 20th century. During this time he was almost always working for the Portuguese empire and yet he is practically unknown to historians of colonial Angola. Following the construction of a vegetation map, its itinerary of survey and practices of classification in plant geography, this chapter discusses the relation between knowledge and power during the process of imperial building in Angola, identifying formal and informal trans-imperial connections between the Portuguese, the British and the Austrian empires. Chapter Two zooms into Gossweiler’s mission to Congo in 1918, the most important district of native coffee production. I describe his encounter with the main ethnic group in the region of Congo (the Bakongo) at the dawn of a new regime of occupation. By exploring Gossweiler’s role as a “go-between” I dig into the history of coffee cultivation in Angola and capture the tension and the paradoxes that dichotomies such “nature-culture” and “wild-cultivated” created for those who wanted to describe coffee cultivation systems in this colony. Chapter Three follows, not only Gossweiler, but also the agronomists of the Agriculture Department, who were in charge of many survey missions to coffee producing regions during the interwar period. By focusing on coffee I will place Portuguese agronomists’ practices in the context of the current discussion on “green imperialism”. Moreover, the chapter demonstrates how the agro-forest system invented to cultivate this indigenous species in its natural habitat inspired scientists to seek answers for their problems in plant geography and the emergent field of agro-ecology, and challenged them to rethink the differences between African and European cultivators less as a stark opposition and more in terms of a continuum.

Part Two follows the emergence, consolidation and end (in 1961) of the institution (Coffee Exports Board) where most scientific work about Angolan coffee after World War II was produced. This part of the dissertation is based on reports written by the experts of Coffee Exports Board, mainly those published in the journal of this institution (Revista do Café Português), and on research conducted in four main Portuguese state archives: Arquivo Histórico Ultramarino (AHU), Instituto de Apoio ao Desenvolvimento (IPAD-AHU), Arquivo Nacional Torre do Tombo (ANTT) and Arquivo Histórico-Diplomático (AHD).
Chapter Four analyses the origins of the Board and its stated intentions, the evolution of these programmatic claims in time, and the circulation of the funds administered by the Board in the later years of its existence. My intention here is to understand the historical dynamics defined by the movements of economic protectionism popular among European colonial potencies after the Great Depression, the corporatist experiences in fascist European political regimes, and a wider history of State economic intervention in the coffee global market. Chapter Five examines how state science was able to transform Robusta into an imperial commodity able to feed American coffee roasting industry. Following the experts of the Board, I show how the empire invested at the final phases of the commodity production systems, introducing instruments that facilitated the standardization of coffee beans and a classificatory system in accordance to international standards. Here I will argue that Angolan coffee was the object of a very concrete development plan and that the quality standards used in this plan were “co-produced” with the Americans. Finally, Chapter Six analyses the efforts of the experts of the Board to create alternative modes of producing coffee in Angola, based on modern labour regimes. I will argued that to unveil this reformist agenda within the Portuguese empire we have to redirect our attention from men to plants, from labour to nature. Only by looking at the development plans that were being designed in the experimental stations of the Board, and the circulation of knowledge emanating from these State projects, will we be able to detect less obvious imperial strategies.

The Epilogue is on the history of the Coffee Rust Research Centre, an American funded research centre located in Lisbon which, ironically, or perhaps not, was at the origin of this investigation. Here I discuss its creation in the context of global Cold War and decolonization. This research is based on correspondence of the Coffee Rust Research Centre (consulted in the “archive” of this institution), and on documentation found in Frederick Wellman’s Papers, which are deposited with the North Carolina State University.
PARTE I
I.

THE AGE OF SURVEY (1898-1939)

This story starts when coffee was already a familiar plant to farmers in Angola but remained still a baffling puzzle to scientists. They knew the plant grew spontaneously in the mountainous forests of North Angola where it was cultivated by Europeans and natives – but little more. No one knew exactly what this species was, and many doubts arose concerning its origin. Also, its environmental associations with other plants as well as the agricultural practices invented to manipulate it were largely ignored. This chapter is not about coffee, nor about the process of turning it into an object of scientific inquiry; it’s about the trajectory of those scientists who studied it. The goal is to discuss the place of scientists within the imperial state and the traditions of knowledge from where they ensued. It starts in the mid-19th century, following the trans-imperial circulation of practices of plant geography, ending in 1939 with the publication of Carta Fitogeográfica de Angola.1

Our map is no novelty for the historians of Angola, who have often used it to support their naturalist narratives on the colonial space (see Figure 1, Annex I).2 Yet, no historian has ever reflected on the problematic nature of the map as an historical source. Where did this map and the knowledge it embodied come from? Who ordered it and for what purpose? Which colonial structures were involved? The existence of the map contradicts the idea that the interwar period was a period “long stagnation” in the history of the Portuguese colonial empire – an idea originally stemming from the analysis of economic indicators but whose scope is much larger.3 On the other hand,

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1 John Gossweiler and Francisco de Ascensão Mendonça, Carta Fitogeográfica de Angola: Memória Descritiva dos Principais Tipos de Vegetação da Colónia Determinados pelos seus Aspectos Fisiográficos e Caracteres Ecológicos segundo a Nomenclatura de Rübel (Luanda: Governo Geral de Angola, 1939).
3 The expression “long stagnation” is from António José Telo, Economia e Império no Portugal Contemporâneo (Lisboa: Edições Cosmos, 1994), 224. See also William Gervase Clarence-Smith, The Third Portuguese Empire, 1825-1975. A Study in Economic Imperialism (Manchester: Manchester University Press, 1985). A similar analysis of the interwar period is made in the work of Valentim Alexandre, see, for instance “O Império Africano (Séculos XIX-XX). As Linhas Gerais,” in O Império Africano - Séculos XIX e XX, ed. Valentim Alexandre (Lisbon: Edições Colibri, 2000), 12. In contrast,
it does fit the chronology of recent contributions about science in Africa that have argued that the so-called “imperialism of science and technology” in the continent started with the end of the process of effective occupation after 1920. \(^4\) It is fair to say that this historiography had little impact in the history of the Portuguese colonial empire. Dwelling on a wide array of topics from the mid-18\(^{th}\) century until the period of decolonization, several works have been published exploring the ways in which power and knowledge interacted in Angola. \(^5\) But the first four decades of the 20\(^{th}\) century, and particularly the interwar period, have remained practically in the shadow. The expression “gap in the literature” could not be more apposite here. This chapter is also an opportunity to retrieve some missing links.

Two botanists signed this map, but only one was responsible for the fieldwork. This man was John Gossweiler, a Swiss botanist who worked for the Portuguese empire for almost four decades, mostly as an employee of the Agriculture Department of Angola. \(^6\) The first part of this dissertation is devoted to him since he is practically unknown to the historians of colonial Angola. This chapter describes his background, the context in which he started work in Angola and the emergence of the Agriculture Department (Serviços de Agricultura). We realise that though being called to be the head of an experiment station, he would end up passing the most part of his life involved in missions of botanical and agricultural survey. Our ultimate goal is to

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\(^6\) The second man, mentioned in *Carta* as a “collaborator”, was Francisco de Ascensão Mendonça (1889-1982), a Portuguese botanist of the University of Coimbra.
discuss the relation between knowledge and power in colonial Africa. We argue that Gossweiler’s map offers us an outstanding opportunity to explore less obvious modes of producing knowledge in this continent. And yet, as it often happens, we start our story years before our main actor was born. Our entry gate is Frederick Welwitsch, an Austrian botanist who was entrusted by the Portuguese empire to make a botanical expedition to Angola in the mid-19th century. Gossweiler considered him the “the main investigator of Angola’s flora.”

1.1 ROMANTIC ANGOLA

The re-centring of Portugal’s imperial project on the African continent in the nineteenth century was a direct consequence of the dissolution of the Luso-Brazilian Empire in the 1820s. As examined in detail by Valentim Alexandre, Portuguese liberal political elites of the period became increasingly focused on Angola and Mozambique and the ways these African territories could compensate for the traumatic loss of Brazil. For three centuries Angola’s main contribution to the empire had been the supply of slave labour to plantations (mainly sugar and coffee) and mines in Brazil. Portuguese settlement was confined to the areas near the coast. The colony of “Angola” corresponded actually to two colonial cores near the coast – the so-called “kingdoms” of Angola and Benguela, with their respective capitals in Luanda and Benguela (see Figure 2, Annex I). Around 250,000 to 300,000 individuals lived in this colony in 1825, a population that comprised Europeans (mainly, traders and militaries) and mestiços (around 3,000), but above all Africans.

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ROBUSTA EMPIRE

(“a esmagadora maioria”), classified in the colonial archive as “preto” or “livre”. Moreover, the sway of the Portuguese state was “residual” since the slave trade was almost entirely in the hands of slave traders, many of them established in Brazilian ports. Could Africa be the “new Brazil” and sustain the status of Portugal as European imperial nation?

The first concrete measures to expand Portuguese colonial rule in Angola were undertaken in the mid 1830s. The imperial project of this early expansion period was impregnated by liberal and “modern” ideas. Marquis Sá da Bandeira, its leader, proposed an ambitious military operation as the first step to implement a new model of development, one that could put an end to slave trade and replace it with the typical post slavery era combination of taxation of African populations and the promotion of agriculture. Though the project of military expansion in Angola failed, a space to discuss the transformation of Angola’s colonial society had been opened. The regenerationist coup d’état of 1851, “a coup to end all coups”, which inaugurated a political regime that would endure until the last decade of the nineteenth century, was a unique occasion to bring back the empire to the public agenda. Historians of Portuguese nineteenth century imperialism have pointed how Sá da Bandeira reopened the discussion of his imperial project once regenerationists came to power. Less noticed has been the importance of botany for the whole endeavour. Sá da Bandeira planned a botanical expedition to Angola under his own supervision. The botanist appointed for the job was Frederick Welwitsch, an Austrian botanist who had moved to Portugal in 1839.

Born in Maria Saal, in the Duchy of Carinthia, in the Austrian Empire, Welwitsch devoted his early life to the flora of Lower Austria (see Figure 3, Annex I). He joined the Faculty of Medicine of the University of Vienna, but was at the Botanic Garden of Belvedere and at the Hof Naturaliencabinete (todays’ Naturhistorisches Museum) that he received his botanic training. At the age of 33 a passionate love story with a married woman forced him to leave Austria and to accept a six-months

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10 Dias, “Angola”…. 348.
11 Alexandre, *Velho Brasil, Novas Áfricas: Portugal e o Império (1808-1975)*…, 232-233. The exception to this pattern of rule in the Portuguese empire is Cabo Verde.
stipend from Unio Itineraria of the Kingdom of Württemberg to explore the Archipelago of Azores, Cape Verde Islands and Canary Islands.\textsuperscript{14} This German association funded scientific expeditions under the condition that the collected material was afterwards shared with subscribers or sold on the market for naturalia. Such enterprises of global outreach were central for Humboldtian romantic science that ultimately aimed at tracing general connections between phenomena occurring in different parts of the world and by doing this to understand “nature as the great whole”.\textsuperscript{15} In this romantic context, tropical islands were considered privileged objects of study.\textsuperscript{16} Yet, after arriving in Portugal in 1839, he never departed to the Atlantic islands.\textsuperscript{17} Instead, he installed himself in Lisbon and did not leave Portugal until he departed to Angola, in 1853.

Such long stay in the country was due to the direct support of King Fernando II, one of the main promoters of German romantic culture in Portugal. In a letter to William J. Hooker, no less than the Kew Gardens director and thus one of the most influential men in the botany of the time, Welwitsch explicitly refers to King D. Fernando II as someone that “nourishes with enthusiasm Natural Sciences” and that had assured him “his high patronage and protection, were I to be disrupted in my scientific work by political events”.\textsuperscript{18} D. Fernando II, King of Portugal \textit{jure uxoris} as consort of D. Maria II, was a Vienna born Prince of the House of Saxe-Coburg-Gotha, who had, in fact, a passion for botany, horticulture and gardening. Indeed, he was an accomplished practitioner himself, having developed his own “gardening

\textsuperscript{14} Dolezal, Friedrich Welwitsch. Vida e Obra..., 38.
\textsuperscript{16} According to Richard Grove, the “pioneers of modern environmentalism” were the romantic scientists of the island of Mauritius, \textit{Green Imperialism: Colonial Expansion, Tropical Island Edens, and the Origins of Environmentalism, 1600-1860} (Cambridge; New York: Cambridge University Press, 1995), 9.
\textsuperscript{17} The reasons why he did not travel to the Atlantic islands are unknown though it may possibly related with the economic collapse of the Unio Itineraria in 1842. Welwitsch would only visit the islands in his way to Angola.
\textsuperscript{18} Welwitsch cited in Dolezal, Friedrich Welwitsch. Vida e Obra..., 42. D. Fernando II, King of Portugal \textit{jure uxoris} as consort of D. Maria II, was a Vienna born Prince of the House of Saxe-Coburg-Gotha with a passion for botany, horticulture and gardening. He has been identified as a central actor in the romantic movement of Portuguese gardening and a practitioner himself, having developing his own ‘gardening experiments’ in \textit{Tapada das Necessidades} and \textit{Palácio da Pena}, some concerning the introduction of exotic plants in Portuguese gardens, see Cristina Castel-Branco, ed., \textit{Necessidades. Jardins e Cercas} (Lisboa: Livros Horizonte, 2001); Mélanie E. F. Rosa, “As Árvores Ornamentais Introduzidas nos Jardins de Lisboa: Uma Perspectiva Histórica (séc. XVIII-XIX)”, (Master diss., Instituto Superior de Agronomia, 2013).
experiments” in Tapada das Necessidades and Palácio da Pena. These concerned namely the introduction in the country of exotic plants contributing to the reform of Portuguese gardens according to romantic sensibility. This circumstance may explain Welwitsch’s rapid ascension in the Portuguese society. Though he arrived to this country in a period of political instability (1830s decade), he did find strong allies very fast and became acquainted with scientists, politicians and nobles living in the capital. In the year he arrived, he was introduced to the Sciences Academy of Lisbon and in the following year he was appointed by the Prime Minister (Duke of Palmela) director of the Botanic Garden of Ajuda.

The major output of Welwitsch’s expedition to Angola was *The catalogue of the African Plants by Dr. Frederick Welwitsch in 1853-61*. The publication was involved in a tissue of political interests that eventually placed the Portuguese and the British governments in two opposite sides concerning the control over the naturalist collections, as has already been noticed by several scholars. Less discussed is a...
small article that Welwitsch wrote in Luanda in 1858 entitled *Phyto-geographical Notes on the Flora of the Province of Angola in Equinocial Africa.*\(^{24}\) This article is nothing less than the first attempt to map Angolan plants. Welwitsch had first shown his interest for questions of plant geography in his first works on Lower Austria, influenced by two fundamental books: *The Essai Élémaentaire de Geographie Bbotanique* by the Swiss Augustin-Pyramus de Candolle; and *Über Pflanzenengeographie* by Joakin Frederick Schouw, a Danish botanist.\(^{25}\) *Phyto-geographical Notes* is the demonstration that this early inclination had matured over the years. The “map” (entitled “mappa fitogeográfico da flora angolense”) had the format of a “tableau” and was divided Angola into three “vegetation regions” (*regiões de vegetação*).

The key word to understand the map is “vegetation”. This word emerges in the history of plant sciences in a clear opposition to the idea of “flora”. While floristics was mainly concerned with the set of plant species that grow in a certain region (flora), the study of vegetation targeted the “collective phenomenon produced by many species together”:\(^{26}\) In simple words, flora is primarily interested in (plant) species, while vegetation is more concerned with the associations that these species establish between (and within) them. Terms like steppe, moor or taiga, they all refer to types of vegetation. Scholarship seems unanimous to identify the German naturalist Alexander von Humboldt as the one who successfully introduced the study of the

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“socially organized plant life”. Not that 18th century naturalists were not aware of vegetation, but it was only in the early 19th century, and around the circle of Humboldt, that vegetation became a “distinctive and autonomous form of scientific inquiry”.

This epistemic turn in botany and natural history also resulted in a different approach to plant geography. For those working in the framework of an Humboldtian approach to nature, the study of the distribution of individual plant species was not enough, one had instead to look at the “collective phenomena of vegetation”. For Humboldt plant geography meant to trace the “connections and relations by which all plants are bound together among themselves” and to designate “in what lands they are found, in what atmospheric conditions they live”. As Humboldt and his followers pursued this goal, different vegetation units – such as “association”, “formation” or “region” – were introduced over time, each one privileging a certain spatial scale.

According to Malcolm Nicolson, the “regions” were the “real natural wholes” in Humboldt’s architecture of nature. According to this historian of science, “the regions were real because they were not simply vegetational units, but natural divisions of the earth’s surface, as they were simultaneously “units of climate, of animal distribution, and of human activity.” It was according to these “regions” that Welwitsch classified the vegetation of Angola. They were three: 1) the 1st region or coastal region (região litoral), covering the vegetation from the submarine territory until the margins of the rivers, including that adapted to sandy soils and growing in arid hills; 2) the 2nd region or mountainous region (região montanhosa), where the

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29 According to Malcolm Nicolson there are, in fact, two “traditions of inquiry in plant geography”: the “floristic” plant geography, which could be traced back to Carl Linnaeus’s work on species distribution and had a representative in the work of Alphonse de Candolle; and the other, “morphological” plant geography that had originated with the botanical work of Alexander Humboldt, Nicolson, “Humboldtian Plant Geography after Humboldt: The Link to Ecology”...
32 To know more about the history of those concepts see Simone Fattorini, “A History of Chorological Categories,” History and Philosophy of the Life Sciences 38, no. 3 (2016): 12.
33 Nicolson, “Alexander von Humboldt, Humboldtian Science and the Origins”..., 181
tropical forests were located; and 3) the 3rd region or the plateau region (região alto-plana), known for its great variety of vegetation.\textsuperscript{34}

Most of Welwitsch’ expedition was passed in this 2nd region, the region of the “majestic virgin forests”, where plants of economic value, such as coffee or the palm tree, grew spontaneously. It was from palm tree (Elaeis guineensis) that palm oil was extracted, being then used into a multitude of contexts, from soaps to cosmetics, biofuels, margarines or pharmaceutics. The local “coffee forests” were, on the other hand, the ”better explored” areas of the whole expedition.\textsuperscript{35} It would be specifically in these forests, some 200 km to the interior of Angola’s old colonial core (in Cuanza Norte), that he established his workstation for two years. For someone like Welwitsch, interested in the study of vegetation, there was no doubt that the wild and cultivated forms of coffee plants he observed growing in these forests belonged to “a species indigenous to almost all the virgin forests of the 2ª region, mainly to the high forests of Golungo Alto, Dembos, Cazengo and Hungo”.

Welwitsch’s attempt to map Angolan vegetation was particularly innovative for the African context. Plant geographers of the so-called “golden age” of distribution maps (Humboldt, Darwin, Wallace, etc.) had their attention on other continents and particularly in the Americas. African vegetation had to wait for the “second-generation” of plant geographers and for the resolutions of the Conference of Berlin and the European Scramble for Africa.\textsuperscript{36} Most vegetation maps of Africa were published in the last decade of the 19\textsuperscript{th} century and beginning of the 20\textsuperscript{th} century. Some examples are the vegetation maps of Tenerife by Hans Meyer (in 1896 and 1898-1899) and of upper Nile countries by Emmanuel de Martonne (in 1896), and, more important, the Vegetationskarten that A. Engle produced for the German colonies, which continued to be considered “particularly notable” even several years later.\textsuperscript{37} Some decades later, in 1923, H. L. Shantz published the Vegetation Map of Africa; that same year, the American Geographical Society took the initiative of

\textsuperscript{34} Welwitsch, \textit{Apontamentos Fito-Geográficos sobre a Flora da Província de Angola…}, 108-112.
\textsuperscript{35} Gossweiler and Mendonça, \textit{Carta Fitogeográfica de Angola: Memória Descritiva dos Principais Tipos de Vegetação da Colónia Determinados pelos seus Aspectos Fisiográficos e Caracteres Ecológicos segundo a Nomenclatura de Rübel…}, 284.
\textsuperscript{36} To know more about this second-generation of plant geographers in Germany see Nils Robert Güttler, “Scaling the Period Eye: Oscar Drude and the Cartographical Practice of Plant Geography, 1870s–1910s,” \textit{Science in Context} 24, no. 1 (2011): 1–41.
publishing the *Vegetation Map of Africa* – the first attempt to “all at once” subject “to scrutiny the vegetation of the entire continent”.

Through the scientific mapping practices of Welwitsch, Humboldtian romantic concepts of vegetation and natural region were put at the service of Portuguese ambitions in Angola. The plausibility of new imperial visions, of considering Angola a new Brazil able to sustain the production of tropical commodities such as coffee, was asserted by Welwitsch vegetation maps. This important presence of central European romantic science has escaped scholars of the late Portuguese Empire who tend to analyse this period based on parliamentary debates. Symmetrically, Welwitsch scientific focus on the virgin forests was justified by the new riches promised by this region. This was of course no coincidence since the aim of the expedition put in place by Sá da Bandeira had been to probe the possibilities of the territory for the production of colonial commodities as the ones that made the fortune of Brazil.

Such an imperial project in Tropical Africa was quite exceptional for the period before the scramble for Africa. As Jane Burbank and Frederick Cooper reminded us, European traders and explorers “had long been in contact with coastal Africa South of the Sahara”, but “with the notable exception of South Africa and the areas of the Portuguese settlement in what is now Angola and Mozambique, there had been little encroachment inland before the 1970s”. There were several scientists, explorers and missionaries crossing the African continent in the mid-19th century, and reporting back to their metropoles. Kew was preparing, as we’ve seen, a flora of Africa. But, no other European empire was better positioned to make an imperial inventory of African tropical plants, as was the Portuguese during the leadership of Sá da Bandeira. This would completely change with the scramble for Africa, when the project of imperial expansion towards the interior of the African continent became a priority to every colonial power. It was the beginning of the Age of Survey.

### 1.2 NEW BOTANY AND SCRAMBLE FOR AFRICA

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38 Küchler, “Vegetation Mapping in Africa”..., 75.
**Call from Angola**

In 1898, Júlio Henriques (1838-1928), director of the Botanic Garden of the University of Coimbra, was contacted by the Government of Angola and asked to suggest someone in the metropole for the task of launching of an “acclimatization garden” in this colony. His reaction was dismissive of his colleagues. Considering that no one in Portugal was equal to the job, he decided to write instead to the director of the Royal Botanical Gardens Kew, Sir William Thiselton-Dyer. The vacancy in Angola was therefore divulged, not in Lisbon or Coimbra, but at Kew, in one of Thiselton-Dyer’s classes. It is said that Gossweiler immediately stood up showing his interest for the job.

Soon Henriques was receiving his letter of presentation.

I presume you will have received full information from the authority at Kew concerning my experience, certificates and ability, therefore I think it is useless to dwell anymore upon that, but I should like very much if you will be kind enough as to allow me, to inform you of the very satisfactory Results I have had at the last government examinations held by the ‘Science and Art Departments South Kesington’. [...] I also think it will be of great advantage to me because I have friends in various Colonies, such as Jamaica and Dominica, (...) West Indies, also in Old Calabar, Lagos, Sierra Leone, French Congo and Congo free states. My friends are employed not only by the British governent, but also in French and German Colonies, either as Curators of Botanic Stations, Lectures on agriculture and botany, or as Directors of plantations.

Scientific competence and a good book of contacts – those were the features Gossweiler considered to be the backbone of a colonial botanist. Trained in the Kew

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41 Exell and Mendonça “John Gossweiler”…, 1.
42 Letter from Gossweiler to Henriques (University of Coimbra), London 20 October 1898, Correspondence of Júlio Henriques (CJH), Botanical Institute (BOT) of the University of Coimbra (UC). Henriques’s correspondence is available at http://bibdigital.bot.uc.pt/ (Biblioteca Digital de Botânica). During the first decades Gossweiler was in Angola he wrote regularly to Henriques, reporting on progress as well as sending exemplars to the Herbarium. This correspondence, deposited in the Botanical Institute of the University of Coimbra, provides a wealth of material for those who seek to understand the scientific environment in Angola in the years preceding the period of the effective colonial rule.
Gardens, one of the most important centres of the world of colonial botany, he was much mistaken. There were many unanswered questions nevertheless: “I will now commence taking lessons in the Portuguese language, or his the knowledge of that language not required in Angola?” And, needless to say, some bureaucracy to handle. The main issue concerned the contract that he was about to sign. As he informed Henriques, the Director of Kew required the contract between Gossweiler and the Portuguese government to respect the “conditions under which Kew men are employed on the West Coast of Africa the British government”. One month later, Gossweiler finally sent the contract revised by Thiselton-Dyer. In the enclosing letter he vehemently apologise for taking so long to execute the Portuguese professor’s requests: “Believe me, Sir, it was not at all my habit to delay official orders, I always executed this kind of work with greatest care and possible promptness.” Some months after (in 1899), he was disembarking in Angola – a land where, as he would soon find out, ‘promptness’ was far from being among the buzzwords.

Geography was the science of election during the first years of the scramble for Africa. As Valentim Alexandre stressed it was by seeing this science in action that the political elites in Lisbon first became aware of the emergent European interest for Africa and for the African colonial affairs, around 1875. Two main initiatives disquieted the Portuguese: the expeditions commissioned by other European empires to territories near the ones under Portugal rule – namely the one led by Cameron, between 1873 until 1875, from the Lake Tanganyika until Benguela –, and the creation of the International African Association, during the First Geographic Conference to Central Africa, a conference organized by Leopold II, in 1876 in Brussels, and to which the two main geographic institutions in the country – the

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43 Letter from Gossweiler to Henriques, London 20 October 1898, CJH-IB-UC.
44 Letter from Gossweiler to Henriques, London 20 October 1898, CJH-IB-UC.
45 Letter from Gossweiler to Henriques, London 30 November 1898, CJH-IB-UC.
Sociedade de Geografia de Lisboa (SGL) and the Comissão Central Permanente de Geografia (CCPG) – had not been invited.\(^48\) Miguel Bandeira Jerónimo, who analyses the diplomatic backstage behind this “non-invitation” (apparently attributable to British manoeuvring) and the subsequent reaction of the Portuguese government, describes SGL as “a key player in the definition of Portuguese colonial policies and programs, acting as a pressure group at a national level and as a privileged interlocutor at the international and colonial levels”.\(^49\) It was also SGL together with CCPG that commissioned the expedition of Serpa Pinto, Roberto Ivens and Brito Capelo to the Angolan hinterland, in 1877.

Scholars have emphasized the epistemic transition that took place in the end of the 19\(^{th}\) century, when geographers, trained for generalist knowledge, started to be replaced by other scientists such as botanists, zoologists, physicians and anthropologists.\(^50\) The recruitment of botanists was particularly notable in the last years of the 19\(^{th}\) century. Some were invited to organize expeditions that aimed at making “inventories of the colonial riches” that could then be used to design schemes of agricultural development in certain regions considered key to European empires\(^51\) – in Central and West Africa, and in clear response to the African rubber boom (1870-1914), the destinations of these expeditions were often rubber yielding plants-producing regions.\(^52\) Others were recruited to occupy permanent positions within colonial administrations, more precisely as heads of the future botanical stations (and jardins d’essay), founded in Africa between 1880 and 1900\(^53\), and to organize the first agriculture departments that emerged in the continent between 1890 and 1914.\(^54\) This

\(^{49}\) Miguel Bandeira Jerónimo, A Diplomacia do Império: Política e Religião na Partilha de África (1820-1890) (Lisbon: Edições 70, 2004), 204.
\(^{50}\) The epistemic nature of this transition is discussed in Tilley, Africa as a Living Laboratory…
\(^{52}\) Christophe Bonneuil, “The Manufacture of Species: Kew Gardens, the Empire and the Standardisation of Taxonomic Practices in Late 19th Century Botany,” in Instruments, Travel and Science. Itineraries of Precision from the 17th to the 20th Century, ed. M.N. Bourguet, C. Licoppe, and O. Sibum (Routledge, 2002), 4. One of these expeditions was to Soudan (1898-1899), the one that took for the first time to Africa the French botanist Auguste Chevalier, soon one of the influential colonial botanists of Tropical Africa.
\(^{53}\) I use here botanical stations as synonymous of experiment station, jardins d’essay and jardins de aclimatização. In French Africa, the Jardins d’Essai were founded between 1886 and 1899 (see Bonneuil, “Mettre en Ordre et Discipliner les Tropiques”…, 170); in British Africa the “botanical stations” emerged between 1887 and 1900 (see Tilley, Africa as a Living Laboratory…, 125).
\(^{54}\) Tilley, Africa as a Living Laboratory…, 124.
moment coincided with a period of great expansion of botanical stations around the Tropical world in the colonies of European empires and in the territories in Central America under the rule of the US. Botany started to be part of the European imperial strategies to deal with the scramble for Africa. It’s in this context that the call from Angola should be understood. What the letter from Henriques to Thiselton-Dyer also suggests us is that scientific networks prevailed irrespective of the competition between antagonistic imperial projects.

**John Gossweiler**

John Gossweiler was born on December 24, 1873, in Zurich, Switzerland. Here he concluded his preliminary studies in horticulture. He then entered the Institute of Horticulture in Stuttgart, in Germany, and continued his studies in Dresden. In 1896, at the age of twenty-three, he moved to England, London, where he stayed four years: he spent the first two years at the Royal College of Science, in South Kensington, and the third and fourth years at the Kew Royal Botanical Gardens.

His early biography runs parallel to the quick geopolitical repositioning of European powers in relation to Africa. Rivalries between the British, the French and the Portuguese empires as well as the imperial ambitions of the King Leopold II of Belgium and of recently unified Germany, all lead to an intense interest for Africa. As Gossweiler grew up, three main international events – hallmarks of the so-called “scramble for Africa” – took place: the First Geographical Conference on Central

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58 The fact that Switzerland, a country with no colonies, had produced several colonial scientists is addressed in Patricia Purtschert and Harald Fischer-Tiné, _Colonial Switzerland: Rethinking Colonialism from the Margins_ (Basingstoke: Palgrave Macmillan, 2015).
Africa (in 1876), organized by King Leopold II in Brussels and from which emerged the International African Association (later converted into a Belgian commercial organization for the exploitation of the Congo region); the Berlin Conference of 1884-1885, requested by Portugal and organized under the auspices of Bismarck, who was able to get together representatives of twelve countries in order to forge a joint policy of political control and economic exploitation in the African interior; and the 1890 Brussels Conference, whose agenda was nominally the discussion of anti-slavery international measures.

The Kew Gardens were not just any institution. At the turn of the 19th century they played a central role in the imperial and trans-imperial exchange and transfer of plants that took place between botanical stations in the colonies, and between them and the botanical gardens of metropolitan cites. In addition to plants, Kew also became a central node for the global circulation of experts and practices of botanical research and agricultural development. Moreover, in a time in which consensus on matters of botany systematics was hard to achieve, the Kew Gardens and other large institutions with huge herbaria had became a “metrological centre”, where issues such as the delimitation of species or the method that should be used to make this delimitation (study living plants or dried specimens) were defined. As Kew’s reputation increased, more and more botanists, explorers and other local collectors entrusted to Kew their botanical collections, expecting from this institution classification work that would in turn establish their own reputation. Solid training, good book of contacts and networking were obviously attributes that Henriques was seeking when in 1898 he decided to write to Thiselton-Dyer. Henriques inquiry was part of the normal task for any ambitious botanist at the turn of the century of cultivating a privileged relation with this global “metrological centre”.

In the 1870s Kew entered what Richard Drayton called its “high imperial phase”. Under the direction of Thiselton-Dyer, students were now trained according to the principles of the “new botany” and its focus on the relation between plants and their environment, which demanded a solid background on plant physiology as well as the necessary tools to give assistance to agricultural problems. For the “new botanists”, interested in studying the adaptations of plants to different local environments, previously ignored peripheral imperial territories became privileged places of study, in contrast to the well known and over studied fields of Europe. As Drayton argues, work in the colonies meant for the new botanists “an opportunity to reach the frontier of the discipline.” In the case of Gossweiler, one could add, the call from Angola also meant an opportunity to explore what Jane Burbank and Frederick Cooper would name “the last frontier for colonization”: Africa. And he was not alone in this venture. Two other “Kewites” arrived to Africa almost at the same time: Alexander Whyte, a botanist with experience in Asia, arrived in Uganda in 1899(?) to found the Botanical Gardens at Entebbe; and William Henry Johnson, recruited to work for the Agriculture Department of Golden Coast (Ghana), arrived in 1898.

1.3 OCCUPATION AND SURVEY

*From Luanda with concern*

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64 Drayton, *Nature’s Government*...


June 25th, 1901. Two years had passed since Gossweiler disembarked in Luanda, the capital of Angola, and he still had no instructions regarding the “acclimatization garden” that he was supposed to direct. “Until now, I have been stuck in Luanda, as if a prisoner of the capital, without being able to render any service of use to the Government or to anyone else for that matter”, he complained to Henriques.  

One year later, he went to Lisbon for a briefing with conselheiro Ramada-Curto in order to review the requirements of the “planned botanical garden in Angola.” Among other things, Gossweiler assured the politician that the Portuguese authorities could count on the help of the Director of Kew, who was “willing and ready to help with the resources at his disposal”. One month later another letter from Luanda arrived to Coimbra, now with greater dismay: “I seriously doubt whether the authorities will ever exert themselves to do anything for this province, and I can not but regret, as a consequence, wasting so pitifully my time”.  

Shortly after arriving to Angola Gossweiler made a travel across West Africa to “several Botanical Gardens and private fazendas (estates), mainly in Libreville, Victoria and Sierra Leone”. But afterwards, he badly came out of Luanda. The time was of military conquests and to leave the capital – even to the hinterlands of Luanda – one needed the permission of the Governor of Angola. Three years had passed and his herbarium was composed by no more than plants that he had collected in the “outskirts of the city”, helped by carriers (carregadores) that he had paid “from his own pocket”. One year later, in 1902, he organized an expedition to the district of Duque de Bragança (in the north of Angola) aimed not only at “assembling a collection of flora and vegetable products with industrial and commercial potential, but also intending to result in a general study on the agricultural value – past and present.” According to Gossweiler, the Government of Angola only had to provide carriers, since everything else was covered by him. However, he didn’t get the

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67 Letter from Gossweiler to Henriques, Luanda 25 June 1901, CJH-IB-UC.
68 Letter from Gossweiler to Henriques, Lisboa 19 Fevereiro 1902, CJH-IB-UC.
69 Letter from Gossweiler to Henriques, Luanda 20 May 1902, CJH-IB-UC.
70 Letter from Gossweiler to Henriques, London 25 January 1902, CJH-IB-UC.
71 Letter from Gossweiler to Henriques, Luanda 25 June 1901, CJH-IB-UC.
72 Letter from Gossweiler to Henriques, Luanda 25 January 1904, CJH-IB-UC.
73 Letter from Gossweiler to Henriques, Luanda 25 January 1904, CJH-IB-UC.
approval of the colonial administration, and four months later he found himself in Luanda, “spending my time improving the municipal gardens”.74

In 1904 rumours that the Governador Geral was looking for “an agronomist from Portugal (…) to oversee all the agricultural policies”, who, among other things, “should rule on whether it was advisable, or not, to set up a botanical garden in Angola”, was the last straw.75 To make matters worse, Gossweiler was accused of no less than betraying the Portuguese empire for sending herbarium specimens to Kew Gardens. Again, Gossweiler vented his discomfort to Henriques,

Regarding the accusations made against me by certain gentlemen in Luanda and their Excellencies the Directors of the Cazengo Agricultural Company, namely, that I have shipped a vast number of collections to Kew, I wish to inform you that it is mostly inaccurate. The number of examples in my Herbarium I have forwarded to Kew for classification can not exceed the number of 80 at the most – the same amount that I sent to Coimbra, and many also to Lisbon through Sr. José de Almeida.76

Apparently Gossweiler not only sent specimens to the Kew Gardens but he visited as well the British institution several times during his first years in Angola. It was here that he found the place, the time and the resources to study and classify his collection of Angolan plants. From his correspondence with Henriques one gets the impression of a symbiotic relation between Kew and the Government of Angola: Gossweiler brought from Angola plants to Kew’s African herbaria, and from Kew seeds to give to Angolan fazendeiros. This relation, however, was not always seen with good eyes, and criticism came, not only from the Portuguese side, but from his peers in London, who in 1904 accused him of giving Angolan farmers Kew’s seeds for free. In response to both sides he decided to offer his herbarium to Henriques (for him to “dispose of as he saw fit”) adding that if “Your Excellency were to offer it to Kew, you will receive a classification of each number of my Herbarium, which should prove extremely helpful to Coimbra.” Henriques followed Gossweiler’s advice “to

74 Letter from Gossweiler to Henriques, Luanda 26 May 1904, CJH-IB-UC.
75 Letter from Gossweiler to Henriques, Luanda 26 May 1904, CJH-IB-UC.
76 “Com respeito às acusações que têm feito alguns cavalheiros em Luanda e Exmos Directores da Companhia Agrícola de Cazengo, de que eu tinha remetido grandes coleções para Kew, desejo informar V. de que é na maior parte inexacta. O número de exemplares do meu Herbario que submeti para classificação aos Botanicos de Kew não excederá 80, mas os mesmos foram submetidos para Coimbra e muitos deles também para Lisboa por intermédio do Sr. José de Almeida.”, Letter from Gossweiler to Henriques, London 8 February 1905, CJH-IB-UC.
Thiselton-Dyer’s great pleasure satisfaction”.\textsuperscript{77} The correspondence with Henriques reveals Gossweiler’s efforts to keep “his” four “worlds” – Luanda, Coimbra, Lisbon and Kew – together. To accomplish this, he had to overcome the tensions between British and the Portuguese empires by making use of his negotiation skills.

Despite the institutional and political constrains Gossweiler found in Angola, the Portuguese colony never ceased to challenge him scientifically. When in 1905 he was invited to an expedition to São Tomé e Príncipe, organized by Henriques, he could not avoid saying to the Coimbra professor that one should not expect to find “many unknown species” because the flora from this Atlantic archipelago “is closely related to that of the Cameroon.” The same could not be said about Angola. As an example he mentioned the flora of Duque de Bragança, which according to him hold the promise of “a lot of interesting botanical discoveries to be made.”\textsuperscript{78}

**Botanical Campaigns**

Despite all of Gossweiler’s complaints about the many obstacles for moving outside Luanda, he did travel during his first years in Angola. In 1903 he went in a mission to the Plateau of Malange (in Northeast of Luanda) and lived temporarily there. From 1905 until 1907 he made “país dos Ganguelas” his home (district of Bié, centre of Angola), camped in Forte Princesa Amélia, where he studied the problem of rubber production in *chana*.\textsuperscript{79} His scientific activity during these first two decades was marked by the “pacification campaigns” (*campanhas de pacificação*). Started right after the Berlin Conference and intensified after the British Ultimate (1890), these military operations had as their first target the definition and control of the boundaries and the occupation of certain territories considered strategic for the expansion of the Portuguese rule.\textsuperscript{80} They aimed at transforming the formal

\textsuperscript{77} Letter from Gossweiler to Henriques, London 8 February 1905, CJH-IB-UC.
\textsuperscript{78} Letter from Gossweiler to Henriques, London 8 February 1905, CJH-IB-UC.
\textsuperscript{79} Exell and Mendonça, “John Gossweiler…”…, 7.
\textsuperscript{80} Renné Pélissier points out 1926 as a possible end for the “campanhas” in Angola, see René Pélissier, *História das Campanhas de Angola. Resistência e Revoltas, 1845-1941* (Lisboa: Editorial Estampa, 1986). On the other hand, Valentim Alexandre rejects Newitt’ claim that the “delayed” development of the Portuguese empire can be explained by an “belatedness” in the “pacification” period, Valentim Alexandre, “Situações Coloniais II - O Ponto de Viragem: As Campanhas de Ocupação (1890-1930),” in *História da Expansão Portuguesa* (dir. Francisco Bettencourt and Kirti Chaudhuri), Vol. 4 - Do Brasil para África (1808-1930), ed. Francisco Bettencourt and Kirti Chaudhuri (Lisboa: Círculo de
sovereignty obtained in the diplomatic circles into effective rule in the field. Depending on the region, their size and duration varied considerably: if in some parts of Angola they ended around 1914, in others they lasted until the 1920s.

A new strategy of coordination and planning the expansion of the Portuguese rule was implemented during the mandate of Paiva Couceiro as General Governor of Angola (1907-1909). Though Portuguese historiography has called attention to the many constraints his project had to deal with, this had very concrete repercussions as far as the organization of the Agriculture department is concerned. One example was the launching of the promised “acclimatization garden” (in 1907) and the publication of Boletim de Agricultura, Pecuária e Fomento (Bulletin of Agriculture, Husbandry and Development) (in 1908) (from now on, Boletim) – two central institutions of the Agriculture Department of Angola. Though I could not identify the exact date of the creation of this colonial department the oldest reference I found to the “Serviços de Agricultura” was in Boletim (1908).

The place chosen to launch the experiment (or botanical) station – called at the time Estação Experimental – was an old fazenda known as Granja de São Luís,

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81 Portuguese scholars have described the so-called “pacification campaigns” as a continuation of the military operations in the mid-19th century under the coordination of Marquis Sá da Bandeira, see, for instance, Valentim Alexandre, Velho Brasil, Novas Áfricas: Portugal e o Império (1808-1975) (Edições Afrontamento, 2000), 182.

82 The process of effective colonial occupation also benefitted from the increase of the white population in the colony – an increase that, even if small led to the rise of practices of domination over African labour and lands that even if “illegal” were tolerated by the colonial authorities. According to Cláudia Castelo the increase of white population in the first two decades was a direct consequence of private initiative, Cláudia Castelo, Passagens para África: O Povoamento de Angola e Moçambique com Naturais da Metrópole (1920-1974) (Porto: Afrontamento, 2007), 375. On the other hand, the droughts, the famine and the epidemics also played an important role in this process as they contributed to the dissolution of the political and economic systems of the African lineage societies. See Jill Rosemary Dias, “Famine and Disease in the History of Angola c. 1830-1930,” Journal of African History 22, no. 3 (1981): 349–78.

83 The journal under the designation of Boletim de Agricultura, Pecuária e Fomento was published between 1908 (by Repartição do Gabinete of the Government of Angola) and 1919 (by the Inspeção de Agricultura); after a three years interruption the same journal started again though under several names: Boletim da Secretaria de Agricultura (1922-1926), Boletim da Direcção dos Serviços de Agricultura (1928), Boletim da Direcção dos Serviços de Agricultura e Comércio (1928-1933), Boletim dos Serviços de Agricultura e Comércio, Colonização e Florestas (1934-1937). The journal was again interrupted and recommenced after the war under a considerable different editorial line and under the name of Agronomia Angolana (1948-1972). This thesis uses Boletim to refer to the journal of the Agriculture Department published between 1908 and 1937, and Agronomia Angolana to its editorial project after 1948.

84 This department changed name several times: Serviços the Agricultura, Inspeção de Agricultura, Secretaria Provincial de Agricultura, Repartição Superior de Agricultura, etc.
located in Dallatando, in the region of Cazengo. Thus, six years after arriving in Angola, Gossweiler finally moved from Luanda, in the coast, to Cazengo, some 200km to the interior, in the same area chosen by Welwitsch. His role was yet different from the one of his predecessor. Trained under the principles of the new botany, he approached plants differently and combined his interests in plant geography with a keen awareness about their agricultural uses. As other botanical stations of the turn of the 20th century acclimatization was an important part of the job.

Under his direction, this botanical station should, among other things, cultivate seeds of “useful plants” (for instance, onions) that it would be convenient to introduce in Angola. Many of these “rarities” in the colony (varieties or species) could be imported from the metropole. The station should also prevent episodes such as those regarding the recent failure of capitalistic enterprises of sugar cane and the alcohol industry. The most important crop during these first years of the station was rubber, in a clear response to the African rubber boom that lasted from 1870 until 1914.

Again, scientists in the field conveyed the idea that Angolan tropical forests were the ones that should supply the metropole with tropical commodities. The station was under the tutelage of the Agriculture Department and employed (in 1916) several serviços (native servants) that “needed to be fed” and paid whenever they “retire in accordance with Labour Law”. Moving to Cazengo brought great changes to Gossweiler. Finally he had the location and the resources to make the botanical expeditions he had planned. During the time he was responsible for the botanical station (1907-1911) he explored the district of Cuanza-Norte, becoming increasingly familiar with the coffee-producing regions of Cazengo and Golungo Alto. He also made expeditions to the North (Dembos) and to the South (Libolo and Amboim).

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85 The name of this botanical station changed several times: Estação Experimental (1907), Horto Experimental (1909), Jardim Colonial (1914), Estação Agronómica (1918), Estação Experimental do Café (1920) and, finally, Estação Agrícola Central, see Fausto Martins Lourenço, “História Do Café Robusta (III),” Revista de Ciências Agrárias 15, no. 4 (1992): 86.
86 Letter from Gossweiler to Henriques, Loanda 24 July 1908, CJH-IB-UC.
87 John Gossweiler, “Horto Experimental de Cazengo,” Boletim de Agricultura, Pecuaria e Fomento, 1908, 17.
However, in June 1911, one year after the end of the Constitutional Monarchy and the establishment of the First Portuguese Republic, Gossweiler was replaced as director of the botanical station by an *agrónomo* called Amilcar Carreira – according to Gossweiler, someone, who, from a scientific and agricultural point of view, had already carried out “plenty of blunders unwittingly”. In the following years Gossweiler would be forced to change several times of position, place of work and plans. In 1913 he was working in the metropole at the Colonial Garden in Belém (in Lisbon). After receiving a proposal to work in Mozambique, he was convinced that he probably would not come back to Angola. Around 1914 he was working on a project to write a catalogue of the plants he had collected in Angola, at the behest of the agronomists’. However, in 1915 he was back to Angola after having accepted an invitation to join the Governor of Congo (the Angola province, not Belgian Congo) in a field trip to this district as well as to Cabinda. In that summer, he wrote from Cabinda saying that he had been transferred to the province of Congo, where he now worked under the direction of the local Governor of the district and the Department of Agriculture.

So much instability might justify that he missed the project of the colonial garden in Lisbon and he even asked Henriques about a vacancy in the Polytechnic School *Escola Politécnica*, “for as your are doubtless aware one can only remain in Africa for so long”. But such afterthoughts would soon disappear. Between 1915 and 1918 (and in 1920) he conducted four new *campanhas* (*campaigns*), to Mayombe forest, which was an almost unexplored region of the African rain tropical forest in the North of Angola and thus promised relevant results for establishing Gossweiler’s name among the international community of botanists. In between the missions to Mayombe, he was also charged with an agricultural survey to the coffee-producing region of Encoge, in Congo. The report he wrote of this Encoge mission is an important source because it gives us an insight into the most important region of native coffee production in Angola (see Chapter Two).

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91 Letter from Gossweiler to Henriques, Granja de S. Luís, 22 July 1911, CJH-IB-UC.
92 He had already been invited to help in the construction of the Colonial Garden in Lisbon by José de Almeida around 1908, but he refused, according to him because ‘o Sr. Couceiro não me deixou sair de Angola’, Letter from Gossweiler to Henriques, Granja de S. Luís (Dallatando), 25 February 1908, CJH-IB-UC.
93 Letter from Gossweiler to Henriques, Lisbon, 10 February 1914, CJH-IB-UC.
94 Letter from Gossweiler to Henriques, Luanda, 15 October, 1917, CJH-IB-UC.
Also in this “new job” the time he spent studying the collected material was criticized. It was difficult for the Agriculture Department to see him “wasting” so much time organizing the collections of plants he had collected in the “jungle”. Time to organize the collected material was crucial for his botanical and cartographical, but not always acknowledged as such by his superiors. After dispatching some collection from Maiombe Português to Coimbra (and also to the Colonial Garden and University of Lisbon), he unburdened himself to Henriques: “My master, the Inspector General of Agriculture in Angola, asked me if Your Excellency saw real value in these collections, were this not the case he could not possibly authorize me to spent so much time at such task”. Meanwhile, he had been able to get “300 libras from this district” to publish the results of its collection. He asked Henriques and Pereira Coutinho if they could find the money for the edition, otherwise he would ask WAB Rendel, from the British Museum.

Gossweiler’s classificatory work depended on the networks he had with European institutions. At the beginning he sent regularly specimens to Coimbra and London, later on to Berlin and Lisbon, and occasionally also to Paris and to the United States. He also sent to the Colonial Garden of Lisbon (and sometimes to the University of Lisbon), though he was very critical about this institution. In vain he had made a proposal to its director to classify the plants he had sent since 1908. “They are over five thousand and I have hear they are still bundled in the original packages in which I shipped them! They must be in a pretty state! Why do people require that capim seco which they can not even properly shelve?”

The process of effective occupation of the Angola territory was a long and complex one. It had a different pace depending on the region. It depended on several local factors and on the implementation of colonial instruments. Historiography of this period have been primarily concentrated on the impact of legal instruments: the 1899 Regulation of Indigenous Work (and its revision of 1914), the 1906 African taxation (the so-called imposto de cubata, or hut tax) and the rules that determined the rights of the “natives” regarding the use and ownership of lands (whether inside concessions and reserves, or outside these limited spaces) are some examples. This

96 Letter from Gossweiler to Henriques, Luanda, 15 October 1917, CJH-IB-UC.
97 Letter from Gossweiler to Henriques, Luanda, 15 October 1917, CJH-IB-UC.
98 Exell and Mendonça, “John Gossweiler”…, 5.
99 Letter from Gossweiler to Henriques, Maiombe Português – Congo, 30 March 1919, CJH-IB-UC.
chapter draws our attention to less obvious instruments: the “botanical campaigns.” These campaigns kept pace with “military campaigns”, as it will be discuss more in detail in the next chapter. The job Gossweiler had been contracted for – to be the director of the first experiment station of Angola – appears as a minor episode in this scenario of intense survey activity. Moreover, this chapter also shows that Gossweiler’s botany was not disconnected from Europe, but relied on a trans-imperial network, involving, most importantly, the University of Coimbra and Kew, but also institutions in Lisbon, Berlin, Paris and the United States. The fact that he was able to conciliate the different interests and dynamics at stake is remarkable. His English colleague Arthur Wallis Exell had an opinion as to how he managed this:

In his relations with the Portuguese government, Gossweiler was always meticulously careful to avoid the entanglements in which Welwitsch constantly found himself embroiled. Their careers were extraordinarily parallel. Gossweiler, the Swiss, Welwitsch, the Austrian, both left their own countries to work for Portugal and became to all intents and purposes expatriates. Both went to England and made close scientific contacts there. Both were in their ways obstinate men but whereas Welwitsch allowed his obstinacy and pride (together with faults of negligence) to destroy the confidence of the Government for which he was working, Gossweiler was exceptionally careful to obey official instructions. He would never go anywhere or do anything until, as he would say, “they put it in the papers”. He wanted to see his permit in the official gazette.100

1.4 INTERWAR PERIOD: REFORMS, SURVEYS AND MAPS

Reforming the Portuguese Colonial State

The interwar period was a time of profound transformations in the political economies of the European empires in Africa. Ending the violent process of military occupation, it became a priority for Europeans to consolidate their colonial states. Colonial administrations saw the effect of a reformist tide aimed at modernizing

colonial institutions in which agriculture departments gained new prominence. The recruitment of technical personnel rose dramatically. In the case of the British Empire, technicians and scientists started to account for more than 40% of the total colonial administration. The peak was reached in 1930. Thomas Morgan Hodge, characterizes the interwar period as the “imperialism of science and knowledge”, criticizing historiography that only considers post World War II developments but neglecting as well previous efforts during the nineteenth century as the ones mentioned above.

Historians of the late Portuguese Empire identify two key moments for the characterization of imperial governance in the period. The first moment was marked by a plan of administrative and financial decentralization established during the First Republic that aimed at abolishing the old metropolitan practice of pooling the fiscal resources of the colonies while giving them enough financial autonomy to contract loans in their own name. This process of decentralization was initiated in 1914 and reached its peak in 1920 with the implementation of a regime of High-Commissaries in Angola and Mozambique. The second moment is related to Portugal’s transition to an authoritarian regime. In 1926, after the military coup d’état that threw down the Republic, the Minister of the Colonies of the dictatorial government João Belo issued the Estatuto Político, Civil e Criminal dos Indígenas das Colónias de Angola, Guiné e Moçambique (modified after 1929). The decree established a sharp legal distinction between natives and non-natives, establishing a regime known as indigenato that would last until 196. Three other legal instruments announced the new imperial policy focused on the centralization of power: the Colonial Act (1930), the

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101 Tilley, Africa as a Living Laboratory...
102 Joseph Morgan Hodge, Triumph of the Expert: Agrarian Doctrines of Development and the Legacies of British Colonialism (Athens: Ohio University Press, 2007), 10. As he notes, the organization of the technical services before the First World War “was sporadic and carried out on a departmental and territorial basis.”
103 For the numbers of the technical services in the British empire see Helen Tilley, Africa as a Living Laboratory ...
104 The expression is from Joseph Morgan Hodge, and to which he adds: “under which academic and scientific experts rose to positions of unparalleled triumph and authority”, Joseph Morgan Hodge, Triumph of the Expert..., 11.
106 There was four High-Commissaries in Angola between 1921 and 1930: Norton de Matos (1921-1923), Rego Chaves (1925-1926), Vicente Ferreira (1926-1928) and Filomeno da Câmara (1929-1930).
107 This transition comprises a military dictatorship (1926-1933) and a regime of fascist affiliations called Estado Novo (1933-1974).
The relative importance of each one of these moments has been the object of discussion in the generic literature on the Portuguese empire. Here, I pay particular attention to the attempts by the dictatorship of reforming State agricultural services in Angola. In 1927, during the government of the high commissioner Vicente Ferreira, the Department of Agriculture was the object of a huge reform through the issuing of its “Bases Orgânicas”. This reform included the creation of a Central Agricultural Station (Estação Agronômica Central) and three experiment stations (estações experimentais) “specialized in the mainstream crops”. These were: the Coffee Experimental Station (Estação Experimental do Café), that should be installed in Gossweiler’s experiment station in Cazengo, the Highland Multi-crops Experimental Station (Estação Experimental das Policulturas to Planalto), that should occupy the facilities of an old station located in Bié, and the Cotton Experimental Station (Posto Experimental do Algodão), that should have new facilities to be constructed in Catete “following the footsteps of the great Governor that was Paiva Couceiro”. The location of these experiment stations was not chosen at random, but was the result of a long process of mapping Angolan plants, in which Gossweiler had played a key role.

Moreover, the recruitment of technical personnel was a central issue of the 1927’s legislative reform. The law explicitly mentioned “senior positions” within the Agriculture Department to be occupied by agrónomos – Gossweiler, a botanist, was the exception that proves the rule; in the Portuguese (as well as in the French) tradition, agrónomos was a mixture between agricultural science and engineers. Under that provision, 58 individuals were expected to work at the department, among whom almost 50% were “technical graduated personnel” (30 individuals), half of them agrónomos (16 individuals). The technical graduated personnel included also agricultural technicians (regentes agrícolas) and the graduated farmers (agricultores

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109 Historians are yet consensual regarding the disastrous consequences that Norton de Matos’ government had from a financial point of view. The magnitude of his grandiose plans associated with practices of bad management resulted on an escalating debt with great consequences in the following years and his dismissal in 1923, see, for instance, Clarence-Smith, The Third Portuguese Empire...; Alexandre, “Situações Coloniais II - O Ponto de Viragem...”
diplomados). The Forest section had a similar organization, with forest scientists (sivicultores) and forest technicians (regentes florestais) in the place of agrónomos and agricultural technicians, respectively. Such ambitious program was apparently not materialized in the interwar period. In 1934, José Bento Alves, director of the Angola Agriculture Department, prepared a communication to be presented at the Portuguese Colonial Exhibition in Oporto, a major occasion for the display of the new regime colonial high rhetoric. He did not spare the metropolitan power of his criticisms regarding recruitment expectations. The situation was worrying: instead of sixteen agrónomos, there were no more than five, one of them dismissed for disciplinary motives – the department also included a place to be occupied by “a botanist” (Gossweiler). As for “auxiliary personnel”, the Agriculture Department had 3 functionaries instead of the promised 20 – the situation was even worse within the Forest Section, with 18 individuals working instead of the predicted 111.

These complains are the rule of any colonial service and they don’t constitute a major surprise. As for the other earlier moment, that is, the government of Norton de Matos, high commissioner of this colony between 1921 and 1923, it has been under particularly scrutiny by the literature. Scholars have reached a consensus, and they all mention new colonial infrastructures (roads, railways, hospitals, schools), plans to attract foreign capita, as well incentives to metropolitan functionaries to migrate to Angola – the white population in the colony rose from 20,700, in 1920, up to 36,192 individuals, in 1924. On the other hand, they also discuss the ideology behind the new policies aimed at modernizing Angola by abolishing forced labour and promoting a productive sector.

Here I want to emphasize how this period was key for the organization and institutionalization of State agricultural technical services. In 1922 new legislation

113 Boletim da Direcção dos Serviços de Agricultura, no. 2 (1928), 119-216.
115 For this congress Alves prepared a diagram with the organization of the Agriculture Department divided in “research departments” and “departments of agricultural and commercial assistance”: 1) “research departments”, that were composed by the three mentioned above experiment stations and by three laboratories located in Luanda (the Botanical Laboratory, the Agricultural Museum and the Laboratory of Agricultural Chemistry); and 2) “departments of agricultural and commercial assistance”, composed by three Stations for Breeding and Reproduction of Seeds – in Huila, Benguela and Malange –, agricultural delegations located in each province, and other support structures, Alves, “A Agricultura em Angola. Assistência Oficial à Agricultura”...
Robusta Empire

Conferring more autonomy to the Agriculture Department was published\(^{118}\), and in 1923 the publication of this department’s journal was retaken under the name of \textit{Boletim da Secretaria de Agricultura} – from now on, \textit{Boletim}.\(^{119}\) But, more importantly, historical records reveal that surveying activity of Angolan vegetation and agricultural practices increased in number and quality during this period. During the first years of the 1920s several technicians of the Agriculture Department were sent in agricultural and botanical survey missions to different regions of Angola. Like previous missions, interwar missions were also small initiatives often conducted by one scientist. The main difference now was that they were more regular and were 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 metropole – produced a report that was published in the department’s journal.\(^ {120}\) Chapter Three will analyse in detail the content of these reports, concretely those resulting from the missions to the coffee-producing regions. As we will seem this survey activity continued and was even intensified after 1927.

Gossweiler steps in Angola, not surprisingly, reflect the reforms of the interwar period. After twenty years working for the colonial administration, Gossweiler was hired by \textit{Companhia do Fomento Geral de Angola} (Fogerang), a product of the process of imperial

\(^{118}\) Decree 110, 14.03.1922 created by Secretaria de Agricultura, Agrimensura e Terras. Worth noting that at the beginning of the agriculture department (from 1923 until 1925), the two sections – agriculture and forestry – enjoyed relative autonomy from one another. The first director of the Forest Department was Raul da Silva Guardado.

\(^{119}\) This journal changed names several times: \textit{Boletim de Agricultura, Pecuária e Fomento} (1908-1919), \textit{Boletim da Secretaria de Agricultura} (1923-1926), \textit{Boletim da Direcção dos Serviços de Agricultura} (1928), \textit{Boletim da Direcção dos Serviços da Agricultura e Comércio} (1928-1933), \textit{Boletim dos Serviços de Agricultura e Comércio, Colonização e Florestas} (1934-1937). From 1937 until 1948, the agricultural department suspended its publishing activity, being in 1948 replaced by \textit{Agronomia Angolana} (1948-1972).

decentralization promoted by Norton de Matos. Just like Diamang, Fogerang was held by Companhia de Pesquisas Mineiras de Angola (CPMA)\textsuperscript{121} – a Portuguese company that had been created by the Belgian Société Général in 1912, when Belgian capitalists decided that the prospection of diamonds should go beyond political frontiers.\textsuperscript{122} In 1921, the high commissioner signed a “much criticized contract”, in which Diamang gained a monopoly over diamond prospection and extraction in most of the colony for fifty years.\textsuperscript{123} It was during these negotiations that CPMA started to invest outside the mining sector by channelling Société Général’s investments to Fogerang.

The years Gossweiler worked for Fogerang were years of intense travelling and survey.\textsuperscript{124} According to his testimony, this was “the most fruitful time he ever dedicated to the Angolan flora”.\textsuperscript{125} During this period Gossweiler travelled to the southern bank of the Congo (Quissâma), to the Dembos region and along the river Bengo.\textsuperscript{126} The degree of internationalism among the technical personnel was high. For example, the missão de oleaginosas that he led had been first directed by the French inspector of agriculture Maurice Bret and afterwards by a Belgian inspector of agriculture Paul Janssens. One of Gossweiler’s endeavours while working for Fogerang was a vegetation map of one of the company’s concessions called Sumba, located in the left bank of the Zaire River, the northern frontier of Angola.\textsuperscript{127} Gossweiler’s “fruitful” experience at Fogerang suggests that Norton de Matos’ policies of foreign investment attraction may have had a positive influence in the

\textsuperscript{121} The Diamang (Companhia de Diamantes de Angola) was formed in 1917.
\textsuperscript{122} Clarence-Smith, The Third Portuguese Empire... , 129-130.
\textsuperscript{123} Clarence-Smith, The Third Portuguese Empire..., 130.
\textsuperscript{124} Some of the works he made for this company were afterwards published in the journals of the colonial administration. This was the case of the report and vegetation map he produced to Fogerang, a botanical study about the ‘palmeira do azeite’ in Angola and an extensive report about the coffee-producing region of Seles, where he went in the year of 1920: John Gossweiler, “Reconhecimento Botânico e Agrícola da Concessão de Fogerang, entre Sumba e Ganga-Ginga, na Margem do Sul do Zaire, Missão de Estudos Botânicos, Fomento Geral de Angola, 1922 Junho,” Boletim Geral Das Colónias 2, no. 14 (1926): 97–134; John Gossweiler, “Contribuição para o Estudo Botânico da Palmeira do Azeite em Angola, Missão de Estudos Botânicos, Fomento Geral de Angola,” Boletim Geral Das Colónias 3, no. 30 (1927): 107–25; Gossweiler, “Relatório Sobre a Viagem à Região de Seles (3 de Dezembro, 1920)...”
\textsuperscript{125} Gossweiler cited in Exell and Mendonça, “John Gossweiler”..., 8.
\textsuperscript{126} Exell, “Obituary: John Gossweiler”..., 259.
\textsuperscript{127} Gossweiler’s vegetation map of the Sumba Concession (Carta de Vegetação (Ecologia Fisiográfica) da Concessão da Sumba) can be found in Gossweiler, “Reconhecimento botânico e agrícola da concessão de Fogerang”..., 112-113. A map of the concessions of the company Fomento Geral de Angola located in the left margin of the Zaire river, which includes the Sumba concession, is available online in the project Cartoteca, http://www.tveicentia.pt/tvccat/pageat/tvccat01.asp.
course of botanical and agricultural surveying activity in Angola. The fact that Gossweiler returned to the Agriculture Department in 1927 to be the head of the new Cotton Experimental Station also suggests that he recognized a moment of change inside the colonial administration after the beginning of the military dictatorship in Portugal.\footnote{A picture of the Cotton Experimental Station can be found in Boletim da Direcção dos Serviços de Agricultura e Comércio, Year III, no. 8-12 (1930).} Further research is though necessary to explore the causes of his return to State science.

There was also another institution that promoted botanical and agricultural surveys in the Angolan territory during the interwar period: the University of Coimbra. Luís Wittnich Carriço (1886-1938), botanist and professor of this university, was the promoter of these metropolitan missions. These were three: the first in 1927, covering Cabinda and the districts of Lunda, Benguela, Huila and Mossamedes; the second in 1929 (shorter); and the third in 1937 to district of Mossamedes, concretely to the desert of Namibe (where Carriço would die).\footnote{See biographic note in http://bibdigital.bot.uc.pt/.} I could not ascertain whether Gossweiler participated in the two first expeditions, but we know for a fact that he played a major part in the third one (see Figure 4, Annex I).\footnote{Photos of this mission are published in Paulo Bernaschina and Alexandre Ramires, eds., Missão Botânica Transnatural. Angola 1927-1937 (Artez, 2007).} Francisco Ascensão Mendonça (1889-1982) and the English Arthur Wallis Exell (1901-1993) also participated.

\textit{Afri}can Maps and the Forefront of Plant Geography

The first vegetation maps of Africa were published in the last decade of the 19\textsuperscript{th} century and beginning of the 20\textsuperscript{th} century.\footnote{Plant geographers of the so-called “golden age” of distribution maps (Humboldt, Darwin, Wallace, etc.) were more focused on other continents, and particularly in the Americas. African vegetation had to wait for the resolutions of the Conference of Berlin and for the “second-generation” of plant geographers. To know more about this second-generation in Germany see Güttler, “Scaling the Period Eye: Oscar Drude and the Cartographical Practice of Plant Geography, 1870s–1910s.”} Some examples are the vegetation maps of Tenerife by Hans Meyer (in 1896 and 1898-1899) and of upper Nile countries by Emmanuel de Martonne (in 1896), and most importantly the Vegetationskarten that A. Engler, a colleague of Oscar Drude, produced for the
German colonies.\textsuperscript{132} Some decades later, in 1923, H. L. Shantz published the Vegetation Map of Africa. Some years later, in 1923, the American Geographical Society took the initiative of publishing the Vegetation Map of Africa – the first attempt to “all at once” subject “to scrutiny the vegetation of the entire continent”.\textsuperscript{133}

A.W. Kuchler, a geographer of the University of Kansas who in 1960 studied the phenomenon of vegetation mapping in Africa, stressed the fact that the German and the American initiatives had resulted in “vegetation maps of several of the other European dependencies”. This would change in the 1930s decade when increased European colonial presence in the continent justified that colonial states published their own distribution maps.\textsuperscript{134} Examples can be found in Belgian Congo (the Comité Special do Katanga produced “La carte du Katanga, feuille Sakabinda”, 1936), in French North Africa where a wide range of maps were produced (in the 1920s), in French West Africa which also produced three vegetation maps (a map of the Yvory Coast, 1936; a map of Dahomey and Togo, 1937; a map of Sudanese central Sahara, 1937). Finally, in 1937 it was published a vegetation map of South Africa (by R. S. Adamson) and in 1939 one of Morocco (by Louis Emberger).\textsuperscript{135} For the American geographer, the most sophisticated map of this pre-war period of vegetation mapping in Africa is another map of Belgian Congo by J. Lebrun (1936).

According to Kuchler, the post World War II period gave rise to two distinct types of maps. The first type is the one that continues to follow the tradition of vegetation mapping of the interwar period – he calls it the “old maps”. For example, the series of maps of the Sudan published between 1896 and 1956 is one example, and also the map of Tanganika (1949), three maps of Mozambique (or parts of it) (Ministério das Colónias, 1948; L.A. Graveaux-Barbosa, 1952; Mario Myre Bento Ripado, 1953), the map of Northern Rodesia by C. G. Trapnell (1948) and that of South Africa by Acocks (1953). The second type of maps does not follow the old tradition of mapping, but is “a bold effort to apply to the African scene the highly developed ideas and techniques which had permitted European vegetation mappers to

\textsuperscript{133} Küchler, “Vegetation Mapping in Africa,”…, 75
\textsuperscript{134} Küchler, “Vegetation Mapping in Africa,”…, 75. According to this author those maps mixed physiognomic descriptions and floristic data.
\textsuperscript{135} Küchler, “Vegetation Mapping in Africa,”…, 78-79.
reach such unprecedented heights”\textsuperscript{136} “This effort involves, above all, the areas which are (or were) French, Belgian or Portuguese, comprising about half of Africa. The effect, however, is continent wide”\textsuperscript{137}

These empires, Kuchler argues, were responsible for the introduction in the African scene of “three advanced systems of studying and classifying vegetation”. “Largely restricted to Europe, they suddenly seemed to have reached a point of maturity which permitted their application in the tropics”. These systems were: the “physionomic (-ecological) system” by Rubel, the “floristic (-ecological) system” by Braun-Blanquet and the “ecological system” by Gaussen.\textsuperscript{138} Always according to Kuchler, these classification systems had two important features: on the one hand, “they all claim universal applicability, at least in principle, and they all claim usefulness in maps of any scale”; on the other hand, “they all claim to present the vegetation as an indicator of environmental conditions”.\textsuperscript{139} This second feature was done “directly or by implication”, but, as he underlines, “the important point is that they are directed toward a more profound appreciation of the African environment and, in turn, toward a more rational land use”.\textsuperscript{140}

For Kuchler, Rubel’s system was, until then, the one less used. One of the problems he identified was that Rubel proposed very few categories: “Rubel's terms are very good, based on sound thinking and comprehensive observation, but he organized his system in such a manner that every type of vegetation, no matter where in the world it occurs, must fit into one of only twenty-seven categories”.\textsuperscript{141} Ironically, it was exactly this over-simplification that was later perceived as the method’s main advantage: “From a geographical point of view, Rubel's system offers the advantage of establishing clearly defined physiognomic or ecological categories of vegetation in terms that can be used anywhere on the globe. This permits not only useful studies on the local scene but also intercontinental comparison”.\textsuperscript{142} The example mentioned by Kuchler demonstrating the success of the method is no other
than Gossweiler’s map of Angolan vegetation – the only map published before WWII that Kuchler includes in the “modern” post-war generation maps.\textsuperscript{143}

The Braun-Blanquet’s system was particularly used in the French empire though as the author stresses this is not a good example because the resulting maps “do not represent an unusual achievement”, since the vegetation under classification was more Mediterranean than African. “Surely its vegetation is more closely related to that of southern France than to that of Guinea”. In Kuchler’s opinion, the Belgians, “who were trained in the use of Braun-Blanquet’ system in northwestern Europe”, were the ones who “employed it right on the equator” – the examples pointed out were the post-war maps of Congo vegetation produced by the Institut National pour l’Etude Agronomique du Congo Belge (INEAC). Kuchler then discusses “the last of the great European systems”: the one developed by Gaussen of Toulouse. “Every American geographer interested in vegetation mapping is well acquainted with the superb map of Perpignan and the other sheets of the same series (…) Of all vegetation maps prepared by botanists, Gaussen's maps are the geographer's choice”.\textsuperscript{144} Again the comparison with Europe: “In Africa his maps are done just like the various sheets of France so that anybody acquainted with the system has no problem in recognizing the familiar features. The best examples are his maps of Beni-Abbes, Bosquet-Mostaganem, Oran, and Rabat-Casablanca”.

Finally, the article finishes with a map known as the “UNESCO’s map”, which closes the circle of this cartographic production: “we started with Shantz’ s map of the continent (excluding Madagascar) at 1: 10,000000 and now we return to a map of Africa (excluding the area north of the Tropicof Cancer) also at 1: 10,000,000”.\textsuperscript{145} In a discourse that explicitly links the United States and the United Nations Kuchler ends his analysis by stating that the greatest advantages of maps are to work as tools for comparative studies: “experiences gained in Africa due to the more advanced state of vegetation mapping there can serve as guideposts for similar research in all analogous vegetation types throughout the tropics”. Common to these country and international organization was their willingness to invest on a global view of Tropical vegetation.

\textsuperscript{143} Küchler, “Vegetation Mapping in Africa,”…, 78.
\textsuperscript{144} Küchler, “Vegetation Mapping in Africa,”…, 82.
\textsuperscript{145} Küchler, “Vegetation Mapping in Africa,”…, 83.
Kuchler’s internalist analysis has several problems. As we know, the history of science cannot be reduced to a succession of methods. But despite the obvious constraints, the insight it produces is useful as it sets aside any possible discussion about the backwardness of the Portuguese empire. What it shows is quite the contrary: Angola’s map is considered by this source the forerunner of African vegetation maps produced in the interwar period, using methodologies of classification that would only be found in maps published after WWII. Moreover, Kuchler’s account also suggests that were those empires that literature has described as having the most severe and archaic practices of governance that developed the most advances methods of vegetation classification. Environmental sciences and colonialism went hands in hands – an ascertainment that is also present in other parts of this dissertation.

1.5 CARTA FITOGEOGRÁFICA DE ANGOLA

Gossweiler’s map was published in 1939. The publication counted with the direct support of the metropolitan power and its now well established colonial bureaucracy. In November 1938 Ruy de Sá Carneiro, from the Ministry of the Colonies, argued that the money should come from the funds “attributed to the missions of scientific research in the colonies”.146 These funds should cover, not only the printings, but also the trips that Gossweiler should make to complete the revision phase with the contribution of an international expert in the subject. According to Gossweiler’s intentions, such expert should be Professor Dr. Brockmann, “a leading authority in geobotany”, who was at the time responsible for the vegetation map of Morocco.147

As a material demonstration of the Portuguese “scientific occupation” of Angola, the map grabbed the attention of politicians and decision makers in Angola.148 Already in 1938 Sá Carneiro had stressed that the Minister of the Colonies

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146 Letter from Ruy Sá Carneiro, Ministry of the Colonies, to (?) 23 November 1938, Lisbon, File “Direcção Geral. Trabalhos que se destinam ao VII Congresso de Agricultura Tropical e Sub- Tropical”, AHU, MU, DGE, RRN, 000, cx. 16.

147 Letter from Ruy Sá Carneiro, Ministry of the Colonies, to (?) 23 November 1938, Lisbon, File “Direcção Geral. Trabalhos que se destinam ao VII Congresso de Agricultura Tropical e Sub- Tropical,” AHU, MU, DGE, RRN, 000, cx. 16.

148 The expression “scientific occupation” appears in this correspondence, see Letter from Ruy Sá Carneiro, Ministry of the Colonies, to Mello Geraldes, High Institute of Agronomy, 11 March 1939,
wanted that *Carta Fitogeográfia* to be published in time to be presented at the 8th International Congress of Tropical and Subtropical Agriculture, to be held between 13 until 17 March next year, in Tripoli.\(^{149}\) In 11 March 1939, two days before the congress, and the map still being “in print”, the head of the Portuguese Delegation (Mello Geraldes) would be again pressed by Sá Carneiro: “The Minister has a particular interest that it is shown at the Congress and to the foreign delegations the high value of scientific occupation held by Portugal’s government in Africa’s land and from which they are notable examples”, he sustained.\(^{150}\)

This was the first time the International Congress of Tropical and Subtropical Agriculture was launched in Africa. Before, the congress had always been held in European cities: Paris (in 1905), Brussels (in 1910), London (in 1914), Seville (in 1929), Antwerp (in 1930) and Paris again (in 1931 and 1937). The choice of Tripoli to organize the 7th edition of this congress – organized by the *Ministero dell’ Africa Italiana* and the *Federezione Internazionale dei Tecnici Agricoli* – cannot be dissociated from fascist Italian policies. After the international isolation caused by the occupation of Ethiopia in 1935, it was important for Italy to refashion its image and nothing would be more appealing than to cooperate in international events such as this. Symmetrically, this congress was also symptomatic of the changes undergoing in the continent in terms of agricultural science.\(^{151}\) At the end of the interwar period, much of the European expertise on tropical agriculture came from agriculture departments located in colonial Africa. It should be said that the papers presented by the Portuguese delegation also reflect this moment of change. Instead of the usual “metropolitan voices” that traditionally marked presence in these international events, such as Mello Geraldes (see Chapter Three), there were several papers produced in colonial institutional contexts, namely in the agriculture departments of Angola and

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\(^{149}\) Letter from Ruy Sá Carneiro, Ministry of the Colonies, to (?) 23 November 1938, Lisbon, File “Direcção Geral. Trabalhos que se destinam ao VII Congresso Internacional de Agricultura Tropical e Sub-Tropical,” AHU, MU, DGE, RRN, 000, cx. 16.

\(^{150}\) Letter from Ruy Sá Carneiro, Ministry of the Colonies, to Mello Geraldes, High Institute of Agronomy, 11 March 1939, Lisbon, File “Direcção Geral. Trabalhos que se destinam ao VII Congresso de Agricultura Tropical e Sub-Tropical,” AHU, MU, DGE, RRN, 000, cx. 16.

\(^{151}\) They counted with the collaboration of the *Instituto Agronomico per l’Africa Italiana* (Florence) and the *Association Scientifique Internationale d’Agriculture des Pays Chauds.*
Mozambique. The involvement of the Portuguese metropolitan power in the internationalization process of Gossweiler’s map was not only due to the territorial question of the “scientific occupation” of Angola. The idea of a “colonial science made of comparisons”, in vogue in a period shaped by the internationalization of colonialism and colonial questions, also played its role. Aimed at legitimizing their colonial projects inside and outside the circle of the League of Nations, European empires were often impelled to compare their experiences of governance, and for that they needed scientists. Maps, concretely, artefacts that aimed at reducing complex realities into a supposedly universal language, offered empires the opportunity of making such comparisons, some of them even at a global scale. Likewise, not only they helped rulers to control and manipulate their subordinates, as Michel Foucault and James Scott so masterfully illustrated, but they allowed rulers to exchange information with other rulers, promoting the exchange also of imperial experiences.

For Portuguese politicians Gossweiler’s map was also a kind of “language of domination” – as postulated by Ann Laura Stoler and Frederick Cooper postulated in their book *Tensions of Empire* –, that kind of language that could cross “distinct metropolitan politics and linguistic barriers”.

Archival records do report the metropolitan involvement when the output of Gossweiler’s cartographical project becomes an unequivocal object of power for internal and external purposes. By 1939, these sources inform us, the empire wanted to show in Tripoli that Portuguese scientists could also speak the language of domination, and by doing this to give a clear demonstration of the “scientific occupation” of the Angolan territory. But, about the project itself and its motivations

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152 Copies of the papers of the Portuguese Delegation can be found in File “Direcção Geral. Trabalhos que se destinam ao VII Congresso de Agricultura Tropical e Sub-Tropical,” AHU, MU, DGE, RRN, 000, cx. 16.


no records were found.\textsuperscript{156} This situation contrasts, for example, with the vegetation map of Northern Rhodesia, by Trapnell, published in 1948.\textsuperscript{157} Being the output of a metropolitan project called “Northern Rhodesia’ s Ecological Survey”, conceived between 1927 and 1928, Trapnell’ s cartographical work has today a place in the colonial archive – under the umbrella of the written source “Northern Rhodesia’ s Ecological Survey”.\textsuperscript{158}

“Transparency”, Ann Laura Stoler emphasizes, “is not what archival collections are known for”.\textsuperscript{159} In her book \textit{Along the archival grain} she points out three possible causes for the ‘unwritten’ in colonial archives: “everyone knew it” so “it could go without saying”; it “could not be articulated”; it “could not be said”.\textsuperscript{160} The second set of causes, more straightforward epistemic, deals with a problem familiar to historians of science. To reconstitute the process of the production of knowledge means almost always to reach moments when, despite being produced, knowledge cannot be yet “articulated” into an idea, theory or discourse. Gossweiler’ s map also started being constructed before it was articulated into a concrete scientific project. It started when a botanist with an interest in plant geography entered this imperial setting in the age of survey.

\section*{1.6 POWER AND KNOWLEDGE}

This chapter points to an important presence of plant sciences in the making of colonial Angola. It identifies botanical and agricultural sciences as current practices in the process territorial survey. This presence is even prior to the scope of this investigation, as we’ve seen when we discussed Welwitsch and his botanical expedition (1853-1857), organized by the colonial empire when Portugal began to

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\textsuperscript{156} Further investigation on the three metropolitan botanical expeditions to Angola (1927, 1929 and 1937) may unveil written sources that explicitly link this metropolitan project and the political idea of making a vegetation map.

\textsuperscript{157} It’ s not by random that this case appears in Tilley, \textit{Africa as a Living Laboratory}... The object of this book is the African Research Survey, a State-centralized imperial and metropolitan project designed to make a “multi-disciplinary survey” of Africa on a continent-scale.

\textsuperscript{158} Tilley, \textit{Africa as a Living Laboratory}..., 147.


look to Angola as a “new Brazil” able to sustain the production of tropical commodities is an obvious example. Following his scientific mapping practices, this chapter stresses the important presence of central European romantic science, as aspect that has escaped scholars of the late Portuguese Empire.

In the proper remit of our study (1898-1961) there is also doubt of the presence of botany and agricultural sciences in the process of imperial construction. One can identify two patterns in the relationship between scientists and the imperial state: the first, which roughly corresponds to the first two decades of the 20th century, is characterized by power relations that are not centralized nor shaped by a dirigeiste agenda, but subtle and diffuse, relying on equilibriums that scientists learned to manage with the several institutions they interacted (scientific, military, colonial, metropolitan, international); and the second, emerging in the interwar period after important reforms in the colonial administration, characterized by an increasing centralization of the missions of botanical and agricultural survey around one colonial institution: the Agricultural Department.

Two conclusions are, in my opinion, relevant for the historiography of the Portuguese empire. The first is that the practices of botanical and agricultural survey are central to understand the relation between science and empire during the period in question. Historiography of science in late colonial contexts has provided us of several stories about colonial experiment stations and a variety of studies about the development schemes elaborated by colonial states. Common to these investigations is the search for the laboratory or merely the moments when an “experimental approach to nature” is put in place. This is particularly obvious in studies following seeds and plants, but also in studies aimed, for instance, to study the organization of agricultural settlements, in which not plants, but men were the scientists’ experimental subjects.\footnote{See Christophe Bonneuil, “Development as Experiment: Science and State Building in Late Colonial and Postcolonial Africa, 1930-1970,” Osiris 15 (2000): 258–81.} The same pattern can be observed in the historiography of science of the Portuguese empire, which has primarily privileged development schemes around colonial laboratories and agricultural settlements.\footnote{Tiago Saraiva, “Laboratories and Landscapes: The Fascist New State and the Colonization of Portugal and Mozambique,” Host. Journal of History of Science and Technology 3 (2009): 1646–1775; Saraiva, “Mimetismo Colonial e Reprodução Animal”...; Castelo, “Reproducing Portuguese Villages in Africa”...} Inspired in the recent turn of the historiography of life sciences that has brought the neglected
practices of modern natural history into light, this investigation gives weight to the missions that characterize what Robert Kohler called the Age of Survey. Kohler establishes a difference between the period of the “grand voyages” and the “age of surveys”, arguing that the latter was mostly based on “small and unpretentious” missions, whose purpose was to send “not exotica and accounts of heroic adventure and discovery, but rather crates of specimens”. My definition of “age of survey” is broader than Kohler’s: not only do I use this concept to describe a period rich in the reconnaissance of biodiversity, but also of matters of agricultural practices, indigenous knowledge and labor regimes.

The second conclusion is that we need to go beyond top-down initiatives, those with a visible place in the colonial archive, and follow the “unwritten sources” of those “unarticulated” projects, if we want to understand the complex relations between power and knowledge in Africa. This conclusion is based on Gossweiler’s vegetation map of Angola – which, I suggest, was already a political project before being articulated into a political idea. Following Gossweiler’s footsteps, we conclude that the power relations were not centralized and shaped by a dirigiste agenda, but subtle and diffuse, and relying on equilibriums he learned to manage with the several institutions with which he interacted (scientific, military, colonial, metropolitan, international). Frederick Cooper is the first to admit that one has to accept that colonial regimes in Africa were not always able to routinize and normalize their exercise of power. Though the argument is made for the governance of people it may be useful to help us think in terms of the governance of nature. Indeed, for most part of the first half of the 20th century the governance of Angolan nature did not

164 Kohler, All Creatures: Naturalists, Collectors, and Biodiversity, 1850-1950..., 8. According to Kohler, the “science of inventory”, as he sometimes addresses the field of natural history, can be divided into three cycles of “collecting and describing”: the “Linnaean period”, the “Humboldtian period” and the “survey period”. A detailed description of what he considers to be a “natural history survey” can be read in this book between pages 10 and 16.
165 Helen Tilley, who extensively studied the history of ecological and agricultural surveys and maps in the British Africa, is the first to admit that “some initiatives were carefully planned, while other (…) developed serendipitously.” Tilley, Africa as a Living Laboratory..., 116.
166 For a discussion about power and knowledge in the Portuguese colonial empire that also reflects on the vulnerabilities of the colonial power see Ricardo Roque, Antropologia e Império: Fonseca Cardoso e a Expedição à Índia em 1895 (Lisboa: Imprensa de Ciências Sociais, 2001) and Headhunting and Colonialism: Anthropology and the Circulation of Human Skulls in the Portuguese Empire, 1870-1930 (Basingstoke [England]; New York: Palgrave Macmillan, 2010).
167 Frederick Cooper, Colonialism in Question Theory, Knowledge, History (Berkeley: University of California Press, 2005), 143.
follow also a clear and stable pattern – quite the opposite. But, regardless of this lack of programmatic imperial view, knowledge was produced anyway.
II

“RATHER THAN CRITICIZING WE SHOULD LEARN FROM THEM”
(1918)

The first chapter of this dissertation followed the construction of a map, its itinerary of survey and practices of classification. We used scientists and their activities of botanical and agricultural survey to discuss the relation between knowledge and power in the making of colonial Angola. Trans-imperial connections between the Portuguese, the British and the Austrian empires were established as we examined the circulation of the scientific practices and artefacts in the field of plant geography. This chapter uses scientists to reveal instead the complexity involved in manipulating Coffea canephora in Angola, by exploring the human factor absent in our original map. Here we are introduced to the specificities of this cash crop in this colony – an agro-forest system located in and nearby its natural habitat – and to the local dynamics that were at stake.

On December 1917 Gossweiler was in Luanda to meet with the Acting General Governor to receive instructions about his next mission: three-months in the district of Congo to survey the “coffee-producing region” of Encoge.¹ At that time Congo had just been considered occupied land. The Portuguese were well aware of the potential of Encoge and its people, known as the Bakongo.² It had been in the early 1820s that the Bakongo, living out of the restricted sphere of colonial influence, started to gather coffee cherries from wild bushes and to commercialize it in the free ports of the North Angola. Evidences are that in 1823 “wild coffee” (café silvestre) of Encoge was already being sold in Luanda, and exported to Lisbon in 1830.³ The Bakongo initiative in the coffee business took place almost one decade before the

¹ John Gossweiler, Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje (Luanda: Imprensa Nacional de Angola, 1918).
² The Bakongo are the major ethnic group in Congo, the speakers of the language Kikongo, José Redinha, Etnias e Culturas de Angola (Luanda: Instituto de Investigação Científica de Angola, 1975), 82-83.
beginning of coffee cultivation in Angola – which, as we will discuss below, began in the 1830s, within the old colonial core of Angola, in the regions of Cazengo and Golungo Alto (later, district of Cuanza Norte). 4

There are many gaps in the literature when comparing our knowledge about the history of coffee production in Cuanza Norte with what we know about Congo. One of the most obvious gaps is that historians maintain that Congo’s early coffee production was the result of gathering practices and at the same time portray their people as very good coffee cultivators, without explaining when and how did this transition from gathering to cultivation happen. 5 Another problem is that they rely on the Bakongo’s ability to cultivate coffee to describe why they became one of the most important peasant elite in the colony, but they failed to explain how did they were able to resist the practices of coerced recruitment and forced labour coming from the owners of coffee fazendas. 6 My claim is that much of these gaps arise from the fact that general historians neglected the environmental dimension of coffee cultivation systems in Angola. Only by acknowledging it one can reconstruct the evolution from gathering to cultivation practices, and understand why this people was able to resist colonial pressure. This chapter wants to highlight these aspects by shortening the gap between humanities and sciences.

Our proposal is to zoom in on Gossweiler’s mission and to examine in detail the content his report – arguably the best source on coffee agricultural practices in Congo. Here Gossweiler leads us into his “cultural encounter” with the Bakongo, whose agricultural practices he studies minutely. By reflecting on his ideas about this people as horticultural innovators, about their agricultural history with Robusta and relation with the environment, we hope to contribute to a better understanding of the

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4 Aida Freudenthal was the only scholar, as far as I could ascertain, to address this fact directly, emphasising that the first to response to the demand of this global commodity came from African societies living in Congo, out of the sphere of direct colonial control, Freudenthal, Arimos e Fazendas: A Transição Agrária em Angola..., 110-111.


process that made the Bakongo an important peasant elite in colonial Angola. This chapter reinforces the idea of scientists as “go-betweens”, exploring Gossweiler’s skills as a translator and a mediator between African and European cultures – and a, we could also say, between natural sciences and humanities.

2.1 THE ORIGINS OF COFFEE CULTIVATION

The first coffee to be traded in Angola came from the Southern regions of Congo, in the lands of the Bakongo, beyond the restricted sphere of colonial influence. According to the available sources, Bakongo’s early coffee production (in the 1820s) was not based on cultivation, but on gathering practices. Cultivation, accordingly, only started one decade after in Cuanza Norte (circa 1830), within the old colonial core of Angola. Scholars are unanimous in saying that it was here that this cash crop was first cultivated. We need to understand the historical context in which coffee started to be planted if we want to fully reach the scope of Gossweiler’s report on the Bakongo. According to him, the agricultural histories of these two coffee-producing regions (Congo and Cuanza Norte) are connected.

When in 1830s Portugal started to look at Africa as the “new Brazil”, the African societies existing in what is now Angola were already undergoing a process of economic transformation. Some of these societies were still shaped by slave trade, controlled by the Portuguese and African chiefs, and headed for the coffee and sugar plantations in Brazil and Cuba. But at the same time a process of economic diversification towards the so-called “licit trade” was already underway. The result was the reconstruction of the systems of trade between Africans and Europeans, who had to directed their attention to other commodities, such as ivory, wax and rubber; and, more important to the argument of this dissertation, the transformations of the organization of the agricultural production systems. The latter were particularly

8 The metropolitan legislation (in 1836), the close of the Brazilian ports to slave traffic (in 1850), the increase of the demand of tropical agricultural commodities in industrialized countries and the historical dynamics in the social and political organization of the African people were some of the factors fuelling this transformation process, Dias, “Angola”..., 379-386.
intense in the hinterlands of Luanda, between the rivers Quanza and Nzenza Bengo – in the so-called “reino de Angola” or “Angola Portuguesa” (see Figure 7, Annex I).

Jill Dias has given us detailed accounts about the historical conjuncture of this imperial space in the 19th century. As she describes the military and administrative weakness of the Portuguese empire contrasted with the intense economic activity of local Mbundu societies that had been able to successfully respond to the increasing international demand for tropical cash crops. The Mbundu societies were at this point the product of many different people. Several centuries of Portuguese influence and slave trading had dramatically changed the ethnic composition of the population inhabiting the region, “through the influx of slaves from many different parts of the interior and through the intermingling of European race and culture”. But, according to this scholar, the most part of the immigrant groups had in the 19th century “coalesced” with the Mbundu – an ethnic group in Angola, the speakers of the language Kimbundu. From these encounters a strong and heterogeneous “Creole community” had emerged that represented an important sector of Mbundu entrepreneurship. The African chiefs composed the other sector. They were also the most influential rulers within this imperial space. At this time Portuguese colonial authority was heavily dependent on their loyalty – a situation that would only change in 1870.

It was in this imperial space – shared by Mbundu and Portuguese – that a process of “agrarian transition” towards the production of export crops began to operate, a process that, as Aida Freudenthal stresses, mobilized several sectors of this proto-colonial society. Part of this process happened in the African chiefs lands within the traditional agrarian structures of the African lineage systems. As the author described certain sobas started to use common lands as private property and start to invest in export crops. The other part happened also in the African chiefs lands, but within “agricultural states” that were under Portuguese jurisdiction as far as “the

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rights over land” were concerned. Some of these agricultural states, the *arimos*, had their roots in the 17th century, and were small to medium properties owned by African *civilizados* (the weakest group of the Creole community) and especially devoted to food crops. As Aida Freudenthal shows, in the first decades of the 19th century they also started to produce crops for exportation. The other agricultural states were an innovation from the 1830s: the *fazendas*. Owned by the elites living in this colonial core – the Portuguese, the members of the Creole elite (mainly the old Angolan aristocracy) and the African chiefs themselves –, these large properties were almost exclusively devoted to the production of cash crops and were dependent heavily on slave work. They mark the beginning of the so-called “economy of plantation” in Angola. Three cash crops were led this new integration of the territory in the Atlantic capitalism: sugar cane, cotton and coffee (Figure 8, Annex I).

Among the above-mentioned historians it is consensual that coffee started to be *cultivated* in Angola in the beginning of the 1830s and in the context of *fazendas*. The initiative came from Portuguese settlers “with experience in Brazil” and members of known *mestiza* families of Luanda, who were able to set up their coffee *fazendas* in the lands of the African chiefs in Golungo, Zenza, Dembos and Cazengo, in the district of Cuanza Norte. In the 1840’s decade, the African chiefs of Golungo’s and Cazengos’ *sobados* followed the example and organize some of their own *fazendas*. The circulation of knowledge between Brazil and Angola had been at the centre of these scholars’ concerns. According to them, some of the know-how used came from the experience of American *fazendas*. On the other hand, as David Birmingham, Jill Dias and Aida Freudenthal ascertained, the “American-style” plantation system failed and a new whole system had to be invented, one that was adapted to the environmental conditions of Cuanza Norte where coffee grew wild. This means that from the beginning coffee economy of plantation was very atypical in Angola: plantations were not monocrop spaces being instead agro-forest systems,
compatible with the calendar of food production and relatively cheap in terms of initial capital, at least when compared with sugar fazendas. The missionary and explorer David Livingstone is one of the actors to give us insight about the “extensive coffee plantations” existing on the “sides of several lofty mountains.”

The organization of the labour relations was in turn inspired by what was the norm in Brazil. Also in Angola, coffee fazendas relied on a large number of slaves for picking, weeding and pruning. In 1867 the biggest coffee fazenda in Cazengo, Protótipo, counted more than 400 slaves; in the second biggest, Colónia de São João, worked 200 slaves and libertos. With the implementation of anti-slavery legislation (a process that culminated with its legal abolition in 1869), slave workers were progressively substituted by contratados. The owners of coffee fazendas, who before competed for slaves with São Tomé planters, became dependent on forced labour colonial systems that explored migrants of the Southern Highland of Angola, who knew nothing about coffee cultivation. With the outbreak of the “great depression” (1873-1896) and the beginning of the scramble for Africa, military and political colonial pressure increased considerably and many African chiefs and mestiços lost their coffee fazendas. As Birmingham describes the first victims were the African chiefs. In the mid-19th century, several district chiefs of Cazengo (seventeen) had access to government agents when colonial land was being awarded and to people that they knew they could trust; but by 1910, no evidences of them were found in Cazengo. The same happened with many fazendas owned by the mestiça aristocracy of Angola.

To conclude, coffee started to be cultivated in lands under Portuguese colonial influence when this “influence” was indeed very fragile. When the first experiments of coffee cultivation occurred (in 1830s) African chiefs were the most influential rulers of this imperial space. Portuguese colonial authority was heavily dependent on

25 As David Birmingham noted, labour regime of coffee fazendas in the 20th century’s, which was centred on Southern African populations, more easily coerced to work, had its roots in the 19th century, Birmingham, Birmingham, “A Question of Coffee: Black Enterprise in Angola”..., 344.
26 Just to have an idea one of those African chiefs owned a ferry monopoly in the Lukala River, Birmingham, “A Question of Coffee: Black Enterprise in Angola”..., 344.
28 Dias, “Uma Questão de Identidade”...
their loyalty. Around 1940s, every sector of this colonial society – Europeans, the Creole elite (*mestiça aristocracy*), African chiefs, African assimilados and African peasants – was cultivating coffee. The first coffee fazendas – which, together with sugar cane and cotton fazendas mark the beginning of the economy of plantation in Angola – were *not* the monopoly of Europeans. Europeans were apparently the ones that took the initiative, but soon African chiefs and the Creole elite followed the example. All these fazendas were based on slave work. Again, the European owners of coffee fazendas depended on African chiefs since they had the enterprises in their lands. Though influenced by the Brazilian experience, coffee fazendas in Angola were adapted to environmental local conditions and therefore were very different from the American. For instance, they were not monocrop spaces being instead agro-forest systems, compatible with the calendar of food production and relatively cheap in terms of initial capital.

Yet, things are always more complicated – especially on the *African* side of the story. Within the sphere of colonial influence (in Cuanza Norte), other African entrepreneurs started to cultivate coffee in the mid-19th century, besides the owners of these large-scale capitalist production systems. The African *civilizados*, who start to use their *arimos* to plant this cash crop – among them the famous Ana Joaquina – also became leading coffee players in the 19th century.29 Some of them entered the 20th century with property rights, being partially entitled to the legal protection of a Portuguese citizen (exempt from forced labour). There are several accounts describing how the rights of African *civilizados* were taken away as the legal distinction between them and the bulk of Africans began to fade, but we know little about their role as coffee producers.30 We know even little about the role of African peasants, who cultivated coffee in their *lavras* inside the *sobas’* lands. We know that they were able to resist to the colonial pressure also in Cuanza Norte, and that became an important sector in the end of the 19th century, but the gaps in the literature are many. Gossweiler’s report not only brings to light the role of coffee peasants in Congo, but

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29 See Freudenthal, *Arimos e Fazendas: A Transição Agrária Em Angola*…; Dias, “Uma Questão de Identidade”…

also illuminates the relations of these peasants with those of Cuanza Norte. It’s exactly this African dynamics between peasants of different regions that Gossweiler’s report unveils, suggesting a possible explanation on how the Bakongo started to cultivate coffee. But let us then return to Gossweiler.

2.2 A MISSION TO CONGO

Congo was at the dawn of a new regime of occupation when Gossweiler arrived in January 1918. After five years of trying to suppress several foci of African resistance, the “pacification” of the region was virtually accomplished. The first conflicts had started spasmodically after 1908, with the beginning of the process of effective occupation; in 1913 they had turned into a full-fledged revolt, with populations of different parts of the district refusing to pay the hut tax, disrupting communication routes and assaulting military outposts. This rebellion, which ostensibly started as an uprising against the hut tax, had its roots at the end of the 19th century with the disintegration of the Kingdom of Congo. For centuries an ally of the Portuguese, this Kingdom had collapsed after his monarch had been dethroned by local chiefs, who accused him of being complicit with the Portuguese and their attempts of forcibly recruiting people to work in the roças of São Tomé and Príncipe. It was at the end of this period of African resistance – described in the literature as “the most significant episode of Bakongo nationalism before 1961” – that Gossweiler arrived to Congo.

The colonial situation was very unstable and the military occupation of the region still weak. This reality of an “occupation in progress” can be depicted from Gossweiler’s report. One of the first observations he made about this territory (“occupied only twelve months ago”) concerned the heterogeneity of the occupation.

34 Alexandre, “Situações Coloniais II - O Ponto de Viragem”..., 198. See also Pélissier, História das Campanhas de Angola...
According to him, the district included regions where the rule of the Portuguese was clear, but others (such as the region of Punde) where “we had the honour of being the first Europeans to have set foot there”. On the other hand, he also noted the flux of different people that crossed this frontier region. As Gossweiler wrote, it was common to find “repatriates of São Tomé” and also Africans “who had once worked as carriers for the commercial firms in the Cuanza district or in the coastal areas of the Congo district” – the latter, very “useful” because they spoke Portuguese.

The relations between scientific and military undertakings were tight. Gossweiler’s mission was conducted using the military post of Uíge as his base of operations. It was from here that with the help of lieutenant Tomás he prepared excursions to several neighbouring localities such as Quisseque, Calumbo, Serra de Uíge, Condo, Caricari, Gumba, Quica, among others. In this context of occupation, agricultural survey and fiscal survey went hand in hand. For instance, the day Gossweiler and his men left the military post of Uíge to visit the region of Condo, Tomás, not being able to accompany Gossweiler’s, sent his ensign so that he could “benefit from the occasion to survey [arrolar] the natives for the hut tax”. The excursion to Punde, on the other hand, could count with the presence of Tomás’, who “insisted on accompanying us to this region (…) since he had never had the occasion of acquainting himself with its people, who, in the previous year had presented themselves voluntarily to pay the hut tax, without being enrolled”. In this region where “no white man had ever been” they found exotic plants – such as “orange trees, around 25 years old, which yield an edible fruit, lemon trees, tamarind trees, pineapples (…)” – which led Gossweiler to wonder about the provenance of those plants.

While his report shows a botanist and a military working together, it also shows the differences in their predisposition and methods towards the unknown. This becomes clear when at a certain point Gossweiler wonders about the common roots of the people of the different places they were crossing, and concludes that they must belong to the same ethnical group because they shared the same language (kikongo), habits and uses. Intrigued about the name of this ethnic group, he asks Tomás, who informs him that they were called Mahungo [Mbundo], because their shared a

36 Gossweiler, *Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje…*, 3.
37 Gossweiler, *Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje…*, 10.
38 Gossweiler, *Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje…*, 15.
common trait which was “the absence of two incisor teeth”. But he would not rely on the information given through the military. As he would write in his report, he was subsequently informed through his own carriers, who were from the neighbouring people of Quisseque, that “all of them, including the ones at our Station, bore the collective name of Quicongos [Bakongo], and reacted bitterly if one called them Mahungos [Mbundo]”, he wrote. Though Gossweiler calls them Quicongo, I use the term Bakongo.

2.3 KNOWING THE BAKONGO

Gossweiler’s opinion regarding Bakongo’s coffee agricultural practices, the first object of the survey, is expressed unequivocally.

As lavras [de café] daquelas regiões encontram-se me tam boas condições que é preferível não censurarmos o método empregado pelo indígena na sua cultura; antes pelo contrário, devemos estudá-lo.

Such an opinion went against the idea that native agriculture was backward in both productive and conservationist terms. One of the agricultural practices Gossweiler paid more attention to in his reports was pruning. His observations also contradicted the widespread idea that Africans did not use this practice. Here, on the

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40 I make here a possible correlation between the names Gossweiler used to designate the ethnical groups living in these regions and the names used nowadays. Further research is needed to confirm this correlation.

41 Worth noting that, one year later, in a letter to Henriques, referring to this mission (“the trip from Ambaca to Bembe”), he would chosen the colonial version and not the native one, describing Encoge as “the interesting region of Mohungos known for the indigenous exploration of coffee”, Letter from Gossweiler to Henriques, Portuguese Mayombe, Congo, 30 March 1919, CJH-BOT-UC.

42 “The [coffee] lavras from those regions are in such a good shape that, rather than criticizing the native methods of culture, one should on the contrary learn from them”, Gossweiler, Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoge..., 16.

43 It should be noted that the colonial anthropologist José Redinha also classifies Bakongo coffee growers, as “advanced farmers” (agricultores evoluidos). He considers them an exception within the group of Bakongo. In his classification of Angolan ethnic groups Redinha considers the Bakongo the most important group “exclusively devoted to agriculture”, but relying on “very archaic” agricultural practices, adapted to the rainy season and to hot and humid areas with higher rainfall fall – in his own words, relying on practices with “a depth that is lost beyond the proto-history.” The exception to this rule are the coffee growers, José Redinha, Etnias e Culturas de Angola (Luanda: Instituto de Investigação Científica de Angola, 1975), 82-83.
contrary, he concludes that pruning was the reason why coffee plants in the region grew slower during the first years of the cultivation cycle:

Nesta operação o preto corta as guias do cafezeiro quando tem atingido a grossura dum dedo ou pouco mais; os arbustos, no geral, são por isso muito ramificados desde a base, e os vestígios da poda são visíveis nas hastes velhas. Nunca deixam chegar a uma altura demasiada ou inconveniente para a apanha dos bagos na ocasião da colheita.44

Another aspect that seems to have surprised Gossweiler was that he did not find traces of clearings. The old indigenous practice – clearings and burnings –, also very criticised by Portuguese agricultural scientists and colonial authorities, had simply no place among these coffee plantings.

É notável não se encontrarem árvores cortadas nas lavras. Além de uma ou outra safueira ou coleira dessiminadas aqui ou ali, não há outras plantações feitas entre cafeeiros.45

The only suggestion he makes to improve Bakongo’ s production systems concerned their methods of coffee processing (beneficiamento do café). The process used in Angola – not only in Congo, but also in Cazengo (Cuanza Norte) – was called the “dry method” and Gossweiler was very sceptical about it. He is a defender of the so-called “wet method”, a more controlled process and less dependent on the environment, very different form the “dry method”, in which “the fruits are laid on the dry swept floor, and the drying occurs naturally by heat from the Sun, requiring a month or even more, depending on the weather, till its completion”.46 Curiously enough is that, he also concludes, “no practical results could come from it among these people, who for more fifty years have been applying the dry method to their crops.” What he suggests is that the Agriculture Department – which has “all the

44 “In this operation [pruning] the black cut the guias of the coffee bushes when these have reached the thickness of a finger or so; the bushes, in general, are so much branched from the base, and the ancient remains of pruning are visible on old stems. Never leave reach a height too or inconvenient to the picking of coffee berries during the harvest”, Gossweiler, Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje..., 17.
45 “Remarkably, there are no cut trees in the lavras (…) and no other plantings made between coffee bushes.”, Gossweiler, Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje..., 17.
46 Gossweiler, Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje..., 18.
facilities at the Cazengo Post” – should be the first to make the necessary experiments, and only then, “if we are absolutely sure of the advantage of the process”, one should consider “introduce it in the Congo district coffee region”.47

Another question triggered Gossweiler’s attention: the great amount of coffee varieties encountered in Congo’s lavras. “This variety is not observed in Cazengo’s or Golungo Alto’s lavras, or in the new plantings (plantações) in Portuguese Mayombe,” he wrote.48 Such variety was the most important devaluation factor of Congo coffee in the markets, and a concrete disadvantage of this district in relation to Cuanza-Norte and Cuanza-Sul.49 To overcome this problem he suggested coffee huskers or other technological devices that could facilitate the sorting of beans, and he mentioned the Belgian Congo and Brazil as cases that had used this technology successfully. But, soon it becomes clear from his writings that he is less interested in how heterogeneity could be solved than in understanding why it existed in the first place.50 “These variations are not found in Nature without human intervention”, he explained. If Congo “had only been effectively occupied in the last years”, from where do they come from? 51

As he immersed himself in the region, the words of an old explorer echoed in his head. He had read them in a book he had found while preparing his trip to Congo, a book titled Coffea cultivation and Profit (1886), written by an English author and journalist, Edwin Lester Arnold.52

Almost the only part of Africa that I know of wherein coffee planting is carried on by the natives of the soil, and not by aliens of European or Arabian descent, is Northern Angola. It is possible that here the idea sprang originally from the Portuguese tuition, but, nevertheless, in many districts lying between Lower Congo and Angola [which in 1886 corresponded to the hinterlands of Luanda], wherein no white man has yet penetrated, Coffee planting and gathering is carried on by the natives, who bring their harvests down to the coast at Ambrig [Ambriz] and neighbouring settlements to sell to the white (principally French) traders.53

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47 Gossweiler, Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje..., 18.
48 Gossweiler, Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje..., 21.
49 Gossweiler, Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje..., 21-22.
50 Gossweiler, Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje..., 21-22.
51 Gossweiler, Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje..., 23.
52 Gossweiler, Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje..., 22-23.
53 Edwin Lester Linden Arnold, Coffee: Its Cultivation and Profit (WB Whittingham & Co., 1886), 265. In fact, Gosweiler’s translation to Portuguese differs from the English original. His citation is the
The words were not from Arnold, but from one of his informers, “one of the most popular of those explorers who are rapidly opening the ‘Dark Continent’”, who had contributed to Arnold’s book with a letter about coffee in Africa. This “old book”, containing this unsigned letter, had been the only reference Gossweiler had found in the literature before leaving to Congo.\(^{54}\) At the time he had read it he did not give these words much credit. But now that he trekked the mountainous lands amid domesticated coffee bushes growing in places where Europeans had never set their feet before, he remembered. His observations confirmed, indeed, the central predication of the unidentified explorer in Arnold’s book. That coffee cultivation in this region had developed independently from the Europeans. As Gossweiler stated: “the old bushes in many of these coffee plantings (plantações) are clear evidences that the black for over seventy years knows the value of coffee.”\(^{55}\) This means that according to his observations the Bakongo had started to cultivate their own coffee around 1840s and 1850s. But how had this happened? Intrigued, he had asked Tomás to question “the oldest blacks in the region”. Gossweiler cites their testimony in his report,

No tempo dos nossos pais havia no Encoje todos os anos uma grande quitanda, que eles frequentavam e onde encontravam muitos pretos reunidos das outras regiões. Pelas relações com os indígeneas doutras terras então principiaram a conhecer os cafezeiros.\(^{56}\)

It was therefore throughout local African dynamics between Congo and other regions that, according to this oral source, the Bakongo had learned to cultivate this plant. This would also explain why the high variety of coffee plants in their lavras, Gossweiler concluded. If coffee had been traded in local African markets such as quitandas (as the chiefs had described), it was comprehensible that in the course of following: “Talvez a única terra onde os pretos selvagens se ocupam da indústria do café em África ê no norte de Angola, não sendo provável que fosse o português que tivesse ensinado, porque nessas regiões situadas entre o Baixo Congo e Angola, nenhum branco tem penetrado.”, Gossweiler, *Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje...*, 23.

\(^{54}\) Gossweiler, *Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje...*, 22.

\(^{55}\) Gossweiler, *Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje...*, 23.

\(^{56}\) “In the time of our parents there was in Encoje a large quitanda that gathered many blacks from other regions. It was therefore through the relations with these natives of other lands that they started to know coffee plants”, Gossweiler, *Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje...*, 23-24.
this commercial activity coffee plants and seeds from different origins had been mixed giving rise to heterogeneous coffee lavras.\textsuperscript{57} It was also plausible, Gossweiler wrote, that those “inquiring black men” had got in contact with coffee “seeds and seedlings” in their trips “to the coast”, where coffee was commercialized, and “to the Cuanza Norte district”, where coffee cultivation in Angola began.

\subsection*{2.4 NATURE AND (AGRI) CULTURE}

There was, however, another factor explaining the variety of coffee in Bakongo’ s lavras: the existence of coffee varieties indigenous to certain regions of Congo. Gossweiler tries to imagine what had happened: the Bakongo, after acquiring coffee in markets and trips, had returned to Congo, and “planted them around their huts”, only after “discovering, in some places in the forest, shrubs with the same value and whose existence they hitherto ignored.”\textsuperscript{58} The best way to understand Gossweiler’s point is to return to the map of the previous chapter – the map of Angolan vegetation (Figure 1, Annex I).

For Gossweiler, \textit{Coffea canephora} belonged – or, using his own words, occurred “naturally” – in two different plant formations: \textit{Pluviisilva}, situated in the Cabinda enclave and corresponding to the Angolan \textit{tropical rain forest}, also known as the Portuguese Mayombe;\textsuperscript{59} and \textit{Laurisilva}, which corresponded to the \textit{mountain rain forest} and was situated in the sub-Plateau regions in NW Angola.\textsuperscript{60} The second formation included the main coffee producing-regions of Angola, such as Seles, Amboim, Encoge, Cuanza Norte, among others.\textsuperscript{61} Gossweiler considered \textit{Laurisilva} “the favourite habitat of the wild coffee, \textit{Coffea canephora}”, the reason why he

\begin{footnotesize}
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\item \textsuperscript{57}This intense commercial activity, and in particularly the role of \textit{quitandas} in the establishment of internal commercial networks, had been also identify by Redinha as one specific trace of Bakongo.
\item \textsuperscript{58}Gossweiler, \textit{Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje...}, 24.
\item \textsuperscript{59}According to him this “massive evergreen formation” can also be divided in three zones, depending on the altitude: the Mayombe Forest, near the Congo Basin, the Lower Mayombe, around 60 meters of altitude, and the Upper Mayombe, in between 100 meter and 500 meters. The Mayombe forest corresponds to the southern-western part of the tropical rainforest in the Congo Basin, which included at the time two other colonial states: the Belgian Congo and the French Gabon.
\item \textsuperscript{60}As mentioned in the previous chapter Gossweiler used the Rubel’s system of classification, which divided Angolan vegetation into main groups based on their “physiognomic and ecological characters”, John Gossweiler and Francisco de Ascensão Mendonça, \textit{Carta Fitogeográfica de Angola: Memória Descritiva dos Principais Tipos de Vegetação da Colónia Determinados pelos seus Aspectos Fisiográficos e Caracteres Ecológicos segundo a Nomenclatura de Rübel} (Luanda: Governo Geral de Angola, 1939), 25.
\item \textsuperscript{61}Gossweiler and Mendonça, \textit{Carta Fitogeográfica de Angola...}, 27.
\end{itemize}
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insisted that this community should be called “coffee forests” [floresta cafeira]” (see Figure 6, Annex I).\(^{62}\) The other name, and the one most frequently used by Gossweiler, was floresta dos nevoeiros – in English, “cloud forests” – due to the formation of fogs during the dry season:

O vapor de água arrastado pela brisa do mar que sopra prependicular às vertentes planálticas durante todo o ano é condensado nos vales e encostas abrigadas dando origem a precipitações pluviosas de 1200 m. média anual, distribuídas por dez meses do ano. Por outro lado são frequentes os nevoeiros densos mesmo fora da época das chuvas.\(^{63}\)

For someone like Gossweiler it was evident that coffee cultivation in Angola consisted in manipulating Coffea canephora within these forests. He had therefore no doubts that coffee production in this colony was based on a species indigenous to Angola.\(^{64}\) Also Welwitsch, half century before, had been absolutely convinced about the origin of Angolan coffee; the same could be said about the Portuguese botanist Conde de Ficalho, whose writings were based on Welwitsch’s work.\(^{65}\) Welwitsch expressed his opinion unequivocally: “it is from this wild coffee (café silvestre), domesticated by seeds in nurseries, that are originated every plantations now existing in Golungo Alto e Cazengo”. And he concluded: “It is therefore a mistake to assert, as

\(^{62}\) Gossweiler and Mendonça, Carta Fitogeográfica de Angola..., 75.
\(^{63}\) Gossweiler and Mendonça, Carta Fitogeográfica de Angola..., 74.
\(^{64}\) Gossweiler, Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje..., 22.
\(^{65}\) Conde de Ficalho, Plantas Úteis da África Portuguesa (Lisboa: Imprensa Nacional, 1884), 199. To add more confusion to the story, Welwitsch and Ficalho wrote Coffea arabica instead of Coffea canephora. The reason why they did it was simple: at their time, the name Coffea canephora did not exist yet. This does not mean that there was not controversy. Many of the new types matched the description of the genus Coffea but failed to be classified as Coffea arabica, the only species described so far by the Swedish Carl Linnaeus, in 1737. The first alternative description came from the French botanist Pierre, who based his description on a specimen collected by Klaine in the French colony of Gabon – Pierre at the time proposed a new species and proposed for the first time the name Coffea canephora. The Belgian botanist Emile Laurent followed Pierre’s description and classified material sent to him from the Congo basin also as C. canephora. However, new types arrived at the European centres that did not match Pierre’s description – for instance, De Wildman and Linden (also Belgians) argued they had found different species and they proposed the names C. laurentii and C. robusta, respectively. It would be only later, in the aftermath of the scramble for Africa, and as a direct result of the increasingly number of botanical expeditions to Africa, that a real debate started about the taxonomic status of this and other varieties of coffee found in the African continent. Still, the scientific community would have to wait until 1929 when a wide taxonomical consensus was reached (see Chapter Five), Gordon Wrigley, Coffee (Essex: Longman group UK Limited, 1988), 56; J. W. Purseglove, Tropical Crops. Dicotyledons (London: Longman group Limited, 1968), 482.
To state that Robusta was indigenous to Angola was not a minor issue. The voices against this idea were many. 19th century generalizations about Africa that tend to see this continent as merely “colonized” were powerful, and even plants were not spared. David Livingston, for instance, believed that Angolan coffee was an exotic species introduced by the “Jesuit and other missionaries.” On the other hand, to affirm the indigenousness of this coffee was a clear demarcation in relation to *Coffea arabica*, also an African species (originated in Ethiopia) but with a global repertoire, of conquering different continents as an exotic species. As we’ll discuss in Chapter Three, such demarcation would be extremely useful to the emergence of an interwar conservationist agenda that criticized attempts to reproduce in Angola agricultural practices used in Arabica coffee production systems in the Americas.

As shown in Figure 1, the Uíge Mountains (*Serra de Uíge*) in Congo were covered with the forests of *Laurissilva*. When Gossweiler explored these mountains in 1918 – many years before the publication of the map – he was beginning to realise that also here (and not only in Cazengo, that he knew well) coffee found the ideal conditions to thrive. Moreover, he became aware of how different this species was in this region, at least when compared with Cazengo (Cuanza Norte). The reasons why there were so many varieties in Bakongo’s *lavras* were therefore, not only because of the internal circuits of African trade bringing to Congo different seeds and seedlings from other regions, but because Congo itself had its own variety of Robusta and their

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66 “O Cafezeiro (*Coffea arabica*) é indígena de quase todas as matas virgens da 2ª região, mormente nas matas elevadas de Golungo Alto, Dembos, Cazengo e Hungo; e é deste café Silvestre, educado de sementes em viveiros, que resultaram todas as plantações agora existentes no Colungo Alto e Cazengo. É portanto errônea a asserção de um Geógrafo de ter sido o Cafezeiro introduzido em Angola pelos missionários!!”, Welwitsch, *Apontamentos Fito-Geográficos sobre a Flora da Província de Angola na África Equinocial*...


68 There is a discussion in the history of plant sciences about the ways the concept “indigenous” was influenced by historical political contexts. Alix Cooper argues that the term “indigenous” was “invented” in European German territories in the context of a nationalist reaction against the amount of exotics plants entering Europe after the Columbian exchange. Nils Gütter makes a similar argument for a more recent period, arguing that the concept of “indigenous” in plant ecology was shaped by certain agendas of the nationalist movement of Heimat in the 19th century (draft not published). See also Simon Pooley, “Pressed Flowers: Notions of Indigenous and Alien Vegetation in South Africa’s Western Cape, c. 1902-1945,” *Journal of Southern African Studies* 36, no. 3 (2010): 599–618. The author follows the trajectory of colonial botanists in South Africa and their attempts to adapt con

69 To complicate the interpretation of this report, Gossweiler calls *Coffea canephora* to the coffee species growing in Congo, and *Coffea welwitschii* to the one growing in Cuanza Norte. Remember that only after Chevalier’s treaty on coffee (1929) there was a general taxonomic consensus about Robusta.
mountains where this species was indigenous to. It was in the framework of a dichotomy “nature-culture”, with all the problems that this entails – and that makes any attempt to simplify Gossweiler’s report an extremely difficult task – that tries to reconstruct the agricultural history of the Bakongo. For him, it was clear that though Congo had the Laurissilva forests coffee production in this region was due, not to gathering practices, but to advanced agriculture. As he would write in the end of his report, coffee in Congo had been “all planted by the natives many years before the arrival of the European.”

It was a strong message of African initiative and autonomy that he conveyed to the colonial administration.

2.5 THE GO-BETWEEN

Gossweiler’s mission to Congo shows once again the important presence of plant sciences in the process of imperial building, identifying botany and agricultural sciences as central practices. Moreover, it suggests that these practices were an important “tool of empire” during the process of “effective occupation” of Angola. It was no coincidence of course that Gossweiler was sent to this region after the Portuguese were able to detain the movement of Bakongo nationalism, that last since 1913. Re-established the order, at least in principle, Gossweiler, “the botanist”, was needed to make the inventory of coffee lavras and agricultural practices, and to inform the colonial administration about the economic value of the region and its people. The call came directly from the Governor of Angola. Gossweiler’s report also shows that the relations between scientific and military undertakings were tight in this formally “occupied” but still unstable colonial context. As we’ve seen, his work relied considerably on military forces and structures present in the field.

Gossweiler emerges in this chapter as a “go-between”. The concept – coming from literature and literary studies – has been used to describe a wide range of actors engaged in the processes of intermediation, translation and negotiation between different cultures (i.e. intermediates, translators, brokers, traders, travellers, creoles, etc.). Based on the Brazilian case, Alida Metcalf classifies the go-betweens in three

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70 Gossweiler, Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje..., 24.
71 A discussion about the relevance of “go-betweens” for the history of science can be found in Simon Schaffer et al., eds., The Brokered World: Go-Betweens and Global Intelligence, 1770-1820 (Sagamore
different groups: the physical go-betweens, for instance, the migrants that moved from one part of the globe to another one; the transactional go-betweens, “the most immediately recognizable”, that including translators, negotiators and cultural brokers, such as the members of the Creole communities; and the representational go-betweens, “those who, through writings, drawings, mapmaking, and the oral tradition, shaped on a large scale how Europeans and Native Americans viewed each other”. Gossweiler fits well into the third category proposed by Metcalf. As the author stresses, those were above all European (though not only) and included “cartographers, letter writers, and chroniclers”, and even historians, “who positioning themselves between the past and the present, interpreted past cultures and represented for modern readers.”

Sent to Congo at the dawn of a new regime of occupation, Gossweiler tries to interpret and translate an agricultural culture hitherto unknown to the Portuguese. This cultural encounter with the Bakongo brings to light Gossweiler’s skills as a translator and mediator between African people and the colonial power, between native and scientific knowledge, between African and European (and colonial) cultures. Based on what he sees, he describes the Bakongo people as innovative horticultors and reports to the Governor of Angola the strong message that “rather than criticizing we should learn from them”. This attention towards native agriculture and knowledge is far from being exceptional in his time. It makes part of a broad and trans-imperial movement that had turned “African subaltern, or orally transmitted, knowledge” into an object of scientific study. Helen Tilley calls this disciplinary field closely tight to European colonialism in Africa “vernacular science”. It should be added that Gossweiler is also the author of one major work on Angola’s ethnobotany, *Indigenous names of the plants of Angola*.

In addition, his work as an “historian”, trying to understand the origin of coffee cultivation in Congo, also place him in between two other cultures: sciences

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73 Metcalf, *Go-Betweens and the Colonization of Brazil...*, 11.


and humanities. What makes Gossweiler’s perspective unique is that he bases his historical inquire precisely on the neglected aspects of *Coffea canephora*’s biological and environmental background. It’s because he wants to explain the heterogeneity of coffee plants in Bakongo’s *lavras* – the most important devaluating factor in Congo’s coffee producing region – that he gets interested in the history of coffee cultivation. He needs the past to understand the present. The methods he uses are two. One comes from natural sciences: observation. It was while he observed the old coffee bushes that he concluded that the Bakongo started to plant their coffee around 1840s and 1850s. It is worth noting that the chronology he proposes about the beginning of coffee cultivation in Congo coincides with the one given by Aida Freudenthal.\(^{76}\) The other method is oral history. It was while interviewing the oldest chief in the region that he became convinced that the Bakongo learned to cultivate coffee with the Mbundu people (from Cuanza-Norte).

The historiography of 20\(^{th}\) century Angola has approached coffee from the point of view of their labour regimes, world market positions and international relations. This perspective has totally blurred our historical understanding of the trajectory of coffee as crop. In this literature as coffee appears as an abstract entity, a commodity, with no grounds and agricultural history. This cannot be said about the historiography of the 19\(^{th}\) century. This chapter is greatly indebt to historians such as Jill Dias, David Birmingham and Aida Freudenthal, and follows closely their methodological insights, paying less attention to the general context of world markets, and privileging instead the relevance of local material conditions. But the voice of Gossweiler also adds to this historiography one more layer of complexity: the way the historian relates with the environment. In the case of *Coffea canephora* this aspect is particularly relevant given the intricate relations between environmental and agricultural conditions. As plant geographer Gossweiler approaches these relations by assuming that there is a “nature” out there. But as “go-between” the limits of the dichotomy between “nature” and “culture” are tested, challenged as he becomes increasingly interested in connecting (epistemologically) what Charles Peter Snow once called the “two cultures.”\(^{77}\) William Beinart and Karen Middleton have stressed that plant histories require “a combination of insights and research from sciences,\(^{76}\) Cf. Freudenthal, *Arimos e Fazendas: A Transição Agrária em Angola...*, 111.

social sciences and humanities”.\textsuperscript{78} Gossweiler – the “environmental historian” – would have agreed.

In the previous chapter we accompanied Gossweiler in his mission to Congo, the most important district of native coffee production. We described his encounter with the Bakongo at the dawn of a new regime of occupation, and how he became aware of their skills in manipulating this cash crop. Exploring Gossweiler as a go-between, we dig into the history of coffee in Angola and unveiled local African dynamics connecting Congo and Cuanza-Norte agricultural histories. In this narrative plant geography emerged, not only as a tool of empire, but also as a trigger prompting scientists to question the problematic distinction between nature and culture. Finally, we laid the ground to a discussion about the role of the environment in the imperial trajectory of *Coffea canephora*.

The present chapter follows the footsteps of Gossweiler and the other agronomists working for the Agriculture Department of Angola in missions of agricultural survey to coffee-producing regions during the interwar period. The growing importance of coffee for the imperial economy and the increasing awareness of the colonial authorities of their ignorance of how it was produce justify this activity of territorial survey. By closely following our scientists and how they engage with *Coffea canephora*, this chapter unveils environmentalist and conservationist agendas, and discusses the influence of agro-ecological notions and concepts in their practices. On the other hand, these agriculture experts’ reports, we contend, are precious sources to restore the materiality that living systems such as cultivated fields require and heterogeneous colonial societies demand. Not only we see being reconstituted the environmental relations of coffee agro-forest systems in Angola, but we are also confronted with the inadequacy of colonial dichotomies, such as *lavras* versus *fazendas*, or natives and Europeans, that do not seem to fit in some of the colonial spaces visited.
The coffee-producing regions that we are about to enter were located in the districts Cuanza-Sul, Cuanza-Norte, Congo, Malange, and Cabinda (see Figures 9 and 10, Annex I). Cuanza-Sul and Cuanza-Norte were the most important districts in terms of coffee production. Cuanza-Sul, the newest district in the business, economically relevant since only the beginning of the 1920s, was almost entirely in the hands of Europeans; native coffee production was insignificant and it was here that the biggest coffee fazendas in the colony were located (like CADA). Cuanza-Norte, comprising the lands where coffee had been first cultivated in Angola (in 1830s), remained divided between European and native producers; according to the colonial statistics, both groups contributed more or less the same to the district final production. Congo occupied the third place in the ranking, a district where African producers and their lavras ruled; during the interwar period there was an increase of European producers, but they remained insignificant when compared with native production. Finally, Malange and Cabinda (European growers dominated over Africans), which were also contributors to the colony’s coffee production, but very small when compared with the three mentioned districts (Tables 1, Annex II).\footnote{The mentioned colonial statistics are published in Boletim da Direcção dos Serviços de Agricultura e do Comércio (BDSAC), year II, no 7 (1929) 341; BDSAC, year III, no 8-12 (1930) 258-259; BDSAC, year V, no 16-19 (1932) pp. 102-103; BDSAC, year VI, no 20-23 (1933) 129-128; BDSAC, year VI, no 24-27 (1934) 180.}

The interwar period was a time of profound transformations in Africa. As mentioned before, it was the beginning of a new phase in European imperialism, when new policies and practices of colonial governance were implemented by European powers. Scholars have underlined the pressure coming out of the process of internationalization of colonialism, towards the development of colonial economies and the protection of native populations and local environments, and how Europeans responded to it to see legitimised and recognized their colonial states.\footnote{A major work is Susan Pedersen, The Guardians. The League of Nations and the Crisis of Empire (Oxford: Oxford University Press, 2015). On the Portuguese empire see Miguel Bandeira Jerónimo and António Costa Pinto, “Introduction. The International and the Portuguese Imperial Endgame: Problems and Perspectives,” Portuguese Studies 29, no. 2 (2013): 137–41; Miguel Bandeira Jeronimo and António Costa Pinto, eds., Portugal e o Fim do Colonialismo. Dimensões Internacionais (Lisboa: Edições 70, 2014); Miguel Bandeira Jerónimo and António Costa Pinto, eds., The Ends of European Colonial Empires. Cases and Comparisons (Hampshire: Palgrave Macmillan, 2015).} To discuss the relation between environmentalism and colonialism during this period is therefore to attend also to the way these processes were making in colonial agriculture departments. On the other hand, historians have also underscored that during these years the number of experts in colonial administrations increased considerably in
The activity of the Agriculture Department of Angola during the interwar period should be understood in this wider context.

During the first years of 1920s, which coincided with the period that Gossweiler worked for the private sector (see Chapter One), much of the missions of agricultural survey were entrusted to Portuguese agronomists. One of the goals of the chapter is to characterize this group of scientists, who were the only ones that could formally occupy a leading position in the agriculture departments of the Portuguese empire. We are interested in discussing until what extent the opinions of the agronomists that participated in these missions of agricultural survey differed from the views and interests of those in the metropole. But before accepting their lens, let us first make a brief overview of the institutional and intellectual backgrounds from where these experts came from.

3.1 IN THE METROPOLE: AGRONOMY AND AGRONOMISTS

In Portugal agronomists were trained at the High Institute of Agronomy (Instituto Superior de Agronomia, ISA), in Lisbon. This was the only institution conferring the diploma of engenheiro agrónomo (or agrónomo), the sine qua non condition to occupy a leading position inside the colonial agriculture departments. Founded in the mid-19th century, the High Institute of Agronomy had gained the status of a college in 1911, when the first Republican reform relocated it in Lisbon’s former Royal Gardens: Tapada da Ajuda. The new facilities provided students with a place to perform fieldwork and agricultural experiments. The Ajuda Botanic Garden

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4 It should be add though that at the beginning of the 20th century other institutions in Portugal contributed to the field of colonial agronomy: the Lisbon Society of Geography (Sociedade de Geografia de Lisboa), founded in 1875, the Tropical Medicine School (Escola de Medicina Tropical), created in 1902, and the Colonial School (Escola Colonial), from 1906, A. H. Oliveira Marques, “Introdução,” in Nova História da Expansão Portuguesa (dir. Joel Serrão and A. H. Oliveira Marques), Vol. 11 - O Império Africano, 1890-1930, ed. A. H. Oliveira Marques (Lisbon: Editorial Estampa, 2000), 42. The Colonial School played a crucial role in training the technical personnel who assisted agrónomos in the colonies (regentes agrícolas and agricultores diplomados).
(Jardim Botânico da Ajuda) and Belém Colonial Garden (Jardim Colonial) also came under ISA’s tutelage. Two graduations were available after 1911: engenheiro agrônomo (agronomist) and engenheiro sivicultor (forest scientist). There is no straightforward translation of engenharia agronómica (or agronomia) to English: it encompasses the anglo-saxon equivalent to “agricultural science” and the technical training (mainly mathematical skills) common to engineering education.\(^6\) This branch of plant and agricultural sciences was very different from the one Gossweiler came from, where agricultural problems were approached through the principles of new botany.

Colonial studies entered the curricula of the High Institute of Agronomy during the last years of the Constitutional Monarchy more exactly, in 1906, the same year that witnessed the founding of the Colonial School (Escola Colonial). Two courses were organized at the time: Economic Geography and Colonial Crops (Geografia Económica e CulturasColoniais), lectured by José Joaquim de Almeida, and Colonial Technology and Husbandry (Tecnologia e ZootecniaColoniais), given by Carlos de Mello Geraldes.\(^7\) The courses did not form part of the main curriculum and had been designed for students that wanted to pursue a colonial career. In 1917, a second reform created a third course on colonial studies, Mesologia Colonial: Regime Económico-Agrícola Colonial. Finally, in 1918, another reform was duly conducted with great benefits for colonial agronomy, offering students four possible graduations: agricultural science (agronomia), forestry (silvicultura), colonial agricultural science (agronomia colonial) and colonial forestry (silvicultura colonial). Also a new course on Chemistry and Technology of Sugar and Colonial Oils (Química e Tecnologia

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\(^6\) Worth noting that agronomia is a branch of engineering in a clear reference to the French example. “Agronomic”, “agronomiste” and “ingeneur agronomic” are also terms in the French scientific tradition, contrary to the British or the American ones. Despite the problems of translation I follow Christophe Bonneuil, who wrote extensively about the “agronomistes” in France and uses the English word “agronomist”. More about this scientific community and its role in social sciences in Frederico Ágoas, “Saber e Poder: Estado e Investigação Social Agrária nos Primórdios da Sociologia em Portugal” (Universiade Nova de Lisboa, 2010).

\(^7\) José Joaquim de Almeida worked in Lunda as an agronomist in 1901-1903, and in Luanda in 1904-1906. He participated in several scientific missions: to the German colony of Camarões (1904), to São Tomé (in 1909), and he visited some important European colonial gardens in France, Belgium, Holand and England (in 1910). He worked also in the Agriculture Department of Mozambique, form 1911 until 1919. Carlos Mello Geraldes, after his graduation on agronomy in 1902, worked in Angola as an agronomist of the Benguela district (1903-1905). There is mention of several “officials reports” Geraldes may have produced during his missions in the Benguela’s district, see Anais do Instituto Superior de Agronomia, year 1, no. 1 (1920): 40. These professors were assisted by two chefs de serviço, Bernardino de Oliveira Fragafteiro and Acríbio Canas Mendes. For the evolution of the Superior Institute of Agronomy’s curricula see Anais do Instituto Superior de Agronomia, year 1, no. 1 (1920).
Açucareira e dos Óleos Coloniais) was added to the curriculum. The fifth year of any graduation consisted of a dissertation project, called a *tirocínio*; in the case of “colonial graduations” this was generally conducted at the Colonial Garden. In 1918 was also created, as part of the High Institute of Agronomy, the Laboratory of Colonial Agriculture and Technology (*Laboratório de Tecnologia Agrícola e Colonial*), an institution also under the direction of Geraldes.

The number of dissertations on colonial topics increased considerably during the first half of the 20th century. The production was in fact scarce before WWI. For instance, between 1906 and 1909 only three dissertations devoted to colonial studies were defended at the ISA, and even these were mainly states of the art of a certain agricultural commodity. After 1911 there was an attempt made to add to this state of the art some laboratory work, which consisted chiefly of an analysis of the material stored at the Colonial Technology Laboratory and Museum – coffee was the object of one such dissertation in 1915. However, the big change came in the interwar period. More students started to choose this option – in the year of 1926 alone four graduate students defended their dissertations (*tirocínios*) on colonial subjects. Also the nature of the studies became less prosaic. Even so, the main core of the students followed the traditional model of dissertation on colonial agronomy – that is, to be supervised by Geraldes, who, again, was the director of the Colonial Garden, and to work with colonial material from this institution and a laboratorial protocol provided by him. In the interwar only two dissertations were based on fieldwork in the Portuguese colonies: António Monte Pereira, who made his dissertation on the cultivation of maize in the districts of Manila and Sofala in Mozambique, and João Quintella Pessoa Lopes, who travelled to Angolan make a thesis on coffee.

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

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introduction on the economic importance of a certain agricultural commodity, followed by a laboratorial analysis of certain characteristics (length, weight, humidity, etc.) of the grain, leaves, fruit or other parts of the plant, belonging to the colonial collections of the Colonial Garden or the Colonial Agricultural Museum. In some cases data were statistically treated and simple correlations were traced between features. He was above all a systematiser of data. When in 1920 an expert was needed to coordinate a scientific mission to San 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. Nevertheless, Geraldes’ influence on the intellectual milieu of his time was enormous and he is central to understand the relation between agronomy and colonial policies in a time when those were being discussed at an international level.

Geraldes was an assiduous participant of international conferences and meetings where the European models of colonialism in Africa were being rethought and reframed. 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 agronomist Émile De Wildeman, when the latter defended the involvement of natives in export agriculture and his vision of them as “genuine producers”. One year later, at the Third National Colonial Congress, hosted by the Lisbon Geography Society, he protested against the increasingly international trend, advocating the defence of indigenous rights, “especially since the end of the Great

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11 Câmara is considered the “father” of this scientific discipline in Portugal. The goal of this mission was to evaluate and to advice on the extent and ways of dealing with a plague of *rubrocintro* that was destroying cacao plantations.
12 Information about his presence in international events can be found in Maria Fátima Nunes, “Entre a JEN o o ISA: Um Eixo Colonial na Política Científica do Estado Novo?,” in *A Junta de Educação Nacional e a Investigação Científica em Portugal no Período entre Guerras*, ed. A. J. S. Fitas et al. (Lisbon: Caleidoscopio, Edições e Artes Gráfica, 2013), 89–112.
War”. According to him, these voices were partly propaganda and partly the opinions of “very intelligent and enlightened persons who unfortunately knew nothing about what it was to almost civilize a people, and colonise and develop agriculture and industries in Africa, and above all in Tropical Africa”.

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 from 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. Against the “total freedom of work” (liberdade de trabalho total), he stood for 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 practised in the Dutch colonies on tobacco and other plantations”. On the other hand, 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 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.

Finally Geraldes was not only concerned with legislation regulating native labour, but also with the rights of the Africans to use and own land. In the line of what Richard Grove, William Beinart and other historians have shown with regard to other

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16 Geraldes, “Alguns Aspectos do Problema da Mão-de-Obra Indígena na África Tropical,” ..., 15.
17 Geraldes, “Alguns Aspectos do Problema da Mão-de-Obra Indígena na África Tropical,” ..., 15.
18 Geraldes, “Alguns Aspectos do Problema da Mão-de-Obra Indígena na África Tropical,” ..., 19.
colonial contexts, also here ultra-colonialism and environmentalism were carefully sewn together.\(^{20}\) At the Congress International de la Société Indigène in Paris, in 1931, describing Africans as causers of “progressive destruction of forests”, due to their nomad agriculture and the practice of slash and burning, he ends arguing that the so-called movement towards “native agriculture” should be confined to native reserves.\(^{21}\) This colonialist and conservationist position is even clearer – and starker – on a communication presented at the First Congress of Colonial Agricultural, held in Oporto in 1934. Again invoking the nomad agriculture system and slash and burning as “the main culprit for the destruction of forests”, he concluded that it was “pointless to legislate on indigenous property rights, pretending 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.”\(^{22}\) 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 relation between agronomy and Portuguese colonial thinking during the crucial years of the interwar period. He was in charge of several scientific institutions devoted to study the colonial world and had the monopoly of students’ dissertations on colonial studies at the High Institute of Agronomy. But more importantly, 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. His position in relation to native agriculture was simple: for the sake of African landscape,


initiative should be taken away from Africans. Deforestation was central to his line of argumentation. Only two possible paths were envisioned for non-Europeans: to inhabit in native reserves or to work in European plantations.

At least this was his position theoretically speaking. Reality was a bit more complicated than this. Indeed in the same year Geraldes was criticizing De Wildeman’s ideas about transforming Africans into genuine producers of export crops, he also was publishing an article about coffee in the Portuguese colonies, in which he acknowledged that coffee exported from Angola came from the “exploitation” of wild coffee, “above all made by natives”, and from “cultivated fields” (plantation, in French) of the “spontaneous species”, “made by natives, companies (sociétés) and settlers”. 23 No doubt that Geraldes was well informed about the reality of Portuguese colonies and particularly about Angola. In the rooms of the Lisbon Geography Society, where legislation about native labour and their access to lands was being discussed, was probably best not to bring to the forefront the case of native coffee production in Angola.

3.2 CONCESSIONS, DEFORESTATION AND NATIVE AGRICULTURE

Geraldes’ s political ideas about the development of Portuguese colonies and disseminated in national and international conferences were based on common abstractions such as “Africans”, “native labour”, “native agricultural practices” or “white agriculture”. Yet, as he himself was aware, these terms meant different things depending on the crop and region and were the object of different interpretations. We seek now to see how Coffea canephora challenged the abstractions of those agronomists trained under Geraldes who were in the field during the interwar period. We are interested in understanding to what extent the opinions of those responsible for these missions of agricultural survey were different from those in the metropolitan and international circles.

23 “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”. He also adds that: “C’est surtout au Maiombe et dans les districts du Quanza nord et du Quanza sud, qu’ existent les plus importantes plantations de caféiers appartenant à des sociétés ou à des colons.”, Carlos de Mello Geraldes, “Aperçu sur le Café aux Colonies Portugaises,” Boletim da Agencia Gerdlas Colônias VI, no. 57 (1930): 27.
One of the main targets of criticism of Portuguese agricultural experts was the policy of concessions – later also one of the main issues the New State wanted to see changed in terms of colonial policies. In 1923, José de Almeida, agronomist and professor of ISA entrusted with one of these agricultural survey missions, criticized harshly 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 that traditionally counted with 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. 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”.

Also in Congo, concretely in Uíge, 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 disease that was affecting coffee beans, 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”. 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

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25 Almeida, “A Palmeira do Dendem. Algumas Observações acerca da sua Cultura”... 43. The region was again an object to the demarcation of concessions and reservas in between 1926 and 1928, see Joaquim Marques, “Do que viu e sabe do Libólo o Agrimensor Joaquim Marques (Luanda, 27 de Março de 1928),” Boletim da Direcção dos Serviços de Agricultura, no. 2 (1928): 181–86.
area of this gigantic estate was “almost totally devoted to cocoa and coffee”\textsuperscript{27} According to him, this company suffered from “a lot of problems”, namely the lack of proper scientific guidance, lack of workforce and capital.\textsuperscript{28} 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”.\textsuperscript{29}

Deforestation was also a common concern of those sent to coffee producing regions since it was often seen as a direct consequence of this crop cultivation. Far from being a problem only created by natives, as according to Geraldes’ s general interpretation of the phenomenon, this was mainly observed 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”.\textsuperscript{30} The problem was that, according to him, too much trees were put away in order to set a coffee plantation, thus authorities ought to “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”.\textsuperscript{31} Later, the head of the Agriculture Department, Bento Alves, would make the same association between deforestation and coffee plantations in Angola.\textsuperscript{32}

\begin{itemize}
  \item[28] Guardado, “Relatório de uma Missão de Reconhecimento Florestal ao Maiombe”\textsuperscript{...}, 49.
  \item[29] Guardado, “Relatório de uma Missão de Reconhecimento Florestal ao Maiombe”\textsuperscript{...}, 69.
  \item[30] António de Fiqueiredo Gomes e Souza, “Relatório de uma Missão de Reconhecimento Agronómico no Distrito do Cuanza-Sul” \textit{Boletim Da Secretaria de Agricultura} 1, no. 4 (1925): 20.
  \item[31] António de Fiqueiredo Gomes e Souza, “Relatório de uma Missão de Reconhecimento Agronómico no Distrito do Cuanza-Sul”\textsuperscript{...}, 32.
  \item[32] Bento Alves, \textit{Algumas Considerações sobre a Cultura do Café em Angola e Regulamento da Exportação} (Luanda: Serviços de Cultura e Informação, 1932). Deforestation is an old concern for scientists working in imperial settings. Richard Grove showed us that since the early modern period this is an issue. Scientists visiting and working in the West humid Africa in the early 20\textsuperscript{th} century were already strongly influenced by desiccationist ideas, which associate deforestation with climate change, see James Fairhead and Melissa Leach, “Desiccation and Domination: Science and Struggles over Environment and Development in Colonial Guinea,” \textit{The Journal of African History} 41, no. 1 (2000): 36.
\end{itemize}
However, it should be noted that, despite our agronomists’ concerns, deforestation caused by coffee cultivation in Angola was far less dangerous than the one occurred in Brazil, where this implied the “total destruction” of the forests. In Angola, as said before, coffee was planted in the middle of the coffee forests, but in the shadow of higher trees, which meant 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 some of higher trees, so that new coffee seeds or seedlings could be planted under the same conditions of shadow, humidity, soil, etc. On the other hand, it should be also noted that though some experts were worried with deforestation, others were arguing for the method of “total destruction”. This point was made by João Mesquitella Lopes – as mentioned before one of the few students of the High Institute of Agronomy to make his dissertation based on fieldwork in Africa during the interwar period –, who cited a “prominent expert on the subject”, who claimed that total destruction of the forest was still, not only the more economic method for planters, but also the healthier for cultivated plants because they did not have to be with old shadow trees. Also in this case controversy remained part of the process of the construction scientific knowledge – it would be strange to think otherwise.

Finally, native agriculture was also under their scrutiny. Unlike Gossweiler’s experience with the Bakongo, native agricultural practices were for several times criticized by these experts, and in some cases identified as the main causes for deforestation. Guardado in his visit to Amboim Company (one of the most important in the coffee business; in Cuanza-Sul) 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 tiles the land for a few

33 For a detail description on how plantations were set up in the interwar period in Angola see also the report of the Belgian inspector of agriculture Paul Janssens, who in 1930 published an extent report about the subject, Paul Émile Albert Janssens, *Le Café Robusta Dans l’Angola.* (Bruxelles: Impr. Industrielle et Financière, 1930).
years; he then leaves to inhabit other places of the forest where he proceeds to do the same”, he describes.\(^{35}\)

His opinion about native agriculture gets less clear, however, later in the report, when he describes the visits he made to the properties of Amboim Company (Boa Entrada, Progredior, Africana, Amizade e Boa Ideia) and to several other coffee “fazendas” belonging to “Pratas, Couto, Marques Seixas, Monteiro Nascimento, Faz Tudo e Sardinha”, wherein “the latter two are natives”.\(^{36}\) According to him, the owners of these coffee fazendas had been responsible for “great clearings of the woods”, which was pointed out as contra-productive for coffee cultivation. In this case, both Europeans and Africans committed the same mistakes.

Em todos estes terrenos concedidos existem pontos onde as derrubas do arvoredo foi demasiado, principalmente na Roça da Saudade, situada no morro do Pemba, pertencente ao agricultor Monteiro Nascimento, que fez cortes razos em alguns pontos, onde já tanto prejudicou as culturas do café que se apresenta etiolado e sem futuro. Tanto este concessionário como o indígena Sardinha, devem ser obrigados a rearborezar imediatamente os terrenos onde fizeram a derruba […] Não cumprindo esta condição regularmente, entendo que devem ser anuladas as concessões dadas.\(^{37}\)

Who were these Africans who owned coffee “fazendas” in Cuanza-Sul? Were they assimilados? Were they sobas? Where they Africans civilizados? And how different were they from those other natives that Guardado referred to as the “enemies of the forest”? Did these two categories of “natives” belong to different ethnic groups? Or did they differ only because of the different status each one had within the colonial state? Obviously, the obstacle to the interpretation of this report is the word “indígena” – native, in English. The insistence in using this colonial dichotomy (“Europeans versus natives”) makes of much of these reports terrible guides. But one thing one can conclude from them: these experts were well aware that the quality of coffee cultivation was independent from the farmers being European or “natives”.


\(^{36}\) Guardado, “Breve Relatório Sobre O Amboim Florestal”..., 139.

\(^{37}\) “In all the conceded lots there are spots where tree cuttings 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 indigene 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, “Breve Relatório Sobre O Amboim Florestal”..., 139.
This can also be concluded from Laurentino Pereira Coelho’s report on his mission to Congo in 1926. During the mission the agronomist visited two concessions (the Sociedade Agrícola do Uige and the German Sociedade Agrícola do Lucunga), two Portuguese fazendas and two lavras of African chiefs. According to him, the “plantações” (in the sense of “cultivated fields”) that were in best shape were one Portuguese and one African.\(^{38}\) To sum up, as one delves into these texts we realise that the dichotomy “natives-Europeans” is not only a problem to us, historians, but also to the scientists we are following. Despite their efforts to classify the whole African collective as “natives”, their reports cannot hide the heterogeneity of this group. The same could be said about European side of the story.

### 3.3 WHERE AND HOW TO SET A PLANTATION?

The most detailed reports about coffee producing regions in environmental terms, describing the physical and biological aspects (ecological, climacteric, etc.) that were involved in the setting of coffee cultivation fields, were not written by agrónomos, but by Gossweiler. After leaving the private sector and re-joining the Agriculture Department in 1927, he participates in several missions of agricultural survey. Three of these missions were to coffee-producing regions: Malange, Cazengo and Amboim. In 1920, he had also conducted a mission to the region of Seles, whose report was also published later in the journal of the agriculture department. The reports about these missions – taken as a whole – are probably the best introduction about coffee cultivation systems in Angola that we have.\(^{39}\) On the other hand, and in contrast with his report on Encoge (see Chapter Two), Africans and their agricultural activities are no longer objects of discussion. This is partly understandable since, unlike Encoge, the coffee-producing regions visited later were not dominated by

\(^{38}\) It should be noted that to make the process of translating this codified colonial language even more difficult the term plantaçôes has two meanings in Portuguese: not only “plantation”, but also any type of “cultivated field”.

“native production”; maybe there are also other reasons unknown to us. In any case, the relevance of these four reports as sources to our story is unquestionable: they are simply the most successful attempts to describe the systemic aspects of coffee cultivation in Angola and the specificities of the chosen agricultural system.

Gossweiler’s urge to advise settlers and colonial officials in relation to the ecological sustainability of coffee plantations is manifest. Two main subjects were at stake: where to set up a coffee fazenda – and therefore to explain how lands suitable for coffee cultivation could be identified – and how to do it, that is, to clarify which agricultural practices were appropriate for these kind of plantations and which weren’t. One conclusion he repeatedly writes in his reports is simple: plantations that were not set in places where *C. canephora* grew spontaneously were destined to failure. This was precisely what he observed during his trip to the region of Seles (in Cuanza-Sul) in 1920, where he visited several fazendas, namely the ones from Seles Company (see Figure 11, Annex I). Only where the abrupt elevation of the terrain causes precipitation from the condensation of vapour brought by the Atlantic winds, coffee plants are successfully cultivated, “sheltered by the *higrófila* forest” (here as a synonymous of “cloud forests”).

The repeated attempts to cultivate coffee in places “thick with sub-xerófila forest” (forests with a more dried environment, exposed to the sun and winds) have failed and the “vestiges and remains of failed plantation experiments signalled the limit zone for expansion”, he concludes. As he noted, it was common to find coffee planted “in gardens besides roses and carnations”, in plots where strawberries and apples are planted – and although these “essays” have been understood “as not serious”, the fact is that they “have proved to be of consequence for those who understand anything about cultivation”.

Once again Gossweiler reveals a particular interest for the African side of the story. According to his view “settlers are wrong when they say that banana trees [which they use in coffee plantations as “shade trees”] are wild from the region”. “Probably, long before the settlers arrived, they were planted by the natives, who inhabited this region”, he argued. On the other hand, he also takes some time describing the important contributions European companies made to the development

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40 Gossweiler, “Relatório sobre a Viagem à Região de Seles”…, 213.
41 Gossweiler, “Relatório sobre a Viagem à Região de Seles”…, 213.
42 Gossweiler, “Relatório sobre a Viagem à Região de Seles”…, 213.
43 Gossweiler, “Relatório sobre a Viagem à Região de Seles”…, 218.
44 Gossweiler, “Relatório sobre a Viagem à Região de Seles”…, 218.
of coffee cultivation in the region. For instance, as he notes, the lands of Companhia Agrícola de Angola (CADA) were under the supervision of “an administrator with an expertise background, a man with several years of practice in Sumatra and Java plantations” – who showed Gossweiler “a table he had adopted for the classification of each grain to be reproduced in plant nurseries, according to a scheme used by geneticists in the official stations of coffee selection in Java”. He also describes the process of standardization of coffee beans introduced in white fazendas: “each litre of coffee is handed to the women and children in small farms to be hand picked – in this operation every black bean or defective one is cast aside”. As he underlined that is the reason why the Novo Redondo coffee (the type from Cuanza-Sul) achieves a higher valuation than those from the Cazengo and Encoge.

The same preoccupation in identifying the lands suitable for coffee cultivation is found in the report of a survey mission to Malange, published in 1932. As he describes, also in this district (the most part located in a plateau), he found “certain slopes (...) affected by precipitation of aqueous vapour produced by fog and sheltered from dry winds of the plains due to topography” where coffee grew spontaneously. Once again, Gossweiler noted that the plantations that were in good shape were the ones that had been set up in these cloud forests. Moreover, the most appreciated seeds were those from Amboim, despite the very wide range of Robusta seeds tried out and that were “imported from Buitenzorg, Guatemala, Usambara Ocidental, Quilimanjaro, Kenia, etc”. But this conservative approach to coffee cultivation had not always been the case in the region. At that time, several experiences were being conducted in the plateau of Malange, to where more and more Europeans arrived attracted by the climate (“healthier for the white settlers”) and land “at modest prices”. For instance, he was very good impressed with the Arabica coffee plantations in the concessionary

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47 Gossweiler, “Relatório sobre a Viagem à Região de Seles”..., 219. After Gossweiler’s report, official data is published about the region of Seles (see page 220). According to this data, the coffee fazendas with more workers belong to Companhia Agrícola de Angola: a Monte Belo (with 1,610 cultivated hectares, a coffee production of 217,500 Kg and 454 workers) e a Monte Alto (with 258 cultivated hectares, a coffee production of 22,500 Kg and 424 workers). Afterwards comes fazenda Boa Esperança, property of Casal A. Bastos Herdeiros (with 750 cultivated hectares, producer of coffee, palm oil and coconote – 90,000, 80,000 e 60,000 Kg, respectively –, and with 350 workers. The smallest fazenda calls Chitembo and was property of the farmer Emília Gomes, had 20 cultivated hectares e 10 workers – it produced coffee (200 Kg), palm oil (8,000 Kg) e coconote (6,500 Kg).
area of the Bavarian Prince Gustavo Carolath – “where I saw for the first time in Angola this plant in good shape.” But, as far as Robusta was concerned, every time plantations were set up out of the cloud forests the results were disastrous.

Os colonos, não sabiam (...) fizeram grandes plantações em sitios que nunca darão colheitas remuneradoras, seja qual for o método cultural e a soma de trabalho empregado. Todo o arvoredo espontâneo que havia no terreno foi derrubado antes de se fazerem as plantações; e as essências destinadas a um guarda vento ou a fazer sombra aos cafeeiros novos não foram plantados no devido tempo. As plantações foram feitas como é costume fazê-las no Brasil, completamente expostas ao tempo, nem sequer uma bananeira para defesa das enxurradas e para abafar o capim foram postas nos intervalos, com receio que pudessem absorver o azoto que era destinado – mais tarde – ao cafeiro.

In 1930 he visited the fazenda Monte Belo, in Cazengo, with the purpose “gathering information about the development and production of different varieties of coffee introduced and cultivated since 1899”. Back to the place where he had been first assigned to launch Angola’s first botanical station, Gossweiler wrote an extensive report (published in 1932) with important considerations about the whole coffee-producing region (see Figure 12, Annex I). After all, it was in this region of Cazengo and Golungo Alto that the forests were located “under which the best coffee lavras are witnessed”. Monte Belo was one of the few estates “where small ravines of primitive forest still exist’ since in the most part of the fazendas of this region each and every acre at the top of mountains had during the last fifteen years stripped bare of trees”. “Such a waste of energy and labour only to plant coffee bushes in terrains where endemic species would be destroy forever”, he wrote.

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52 “The settlers (...) made their great plantations in places that will never yield rich harvests, regardless of their methods or work intensity. All the spontaneous shrub that existed there has been razed; and those trees that provide shelter from wind and sun to the new coffee bushes were not planted at the right time. The plantations were laid out as is the norm in Brazil, utterly exposed to the weather, without even banana trees planted at intervals to protect them from sudden floods and to smother the grass for fear that these would absorb the nitrogen that was destined to the coffee bushes”, Gossweiler, “Reconhecimento Agronómico no Distrito de Malange”..., 31.
53 Gossweiler, “Informação sobre Cafeicultura na Fazenda ‘Monte Belo’ - Cazengo”..., 73.
54 Gossweiler, “Informação sobre Cafeicultura na Fazenda ‘Monte Belo’ - Cazengo”..., 74.
With his feet on the lands where coffee plants had been cultivated for the first time in Angola, Gossweiler returned to the question of the origin of *Coffea canephora*.

Encontra-se escrito nalguns livros que os missionários portugueses introduziram o cafeeiro em Angola e é muito possível que isso sucedesse antes de se ter reconhecido a existência da planta espontânea; todavia não tenho encontrado até agora vestígios dessa introdução, julgo que já não existem descendentes. O carácter indígena da espécie é perfeitamente evidente; é natural também que o fenótipo bravo, propagado pela natureza, fosse a origem das plantações que hoje existem nos terrenos acidentados da floresta higófila de Angola, fenótipo que não se pode confundir com os outros cafeeiros conhecidos até hoje. Suponho que a casta introduzida pelos missionários era de origem abissínica [i.e. Arabica coffee], dessa altura cultivada nas Antilhas, donde vinha para as possessões portuguesas, incluindo as ilhas de São Tomé e Cabo Verde, onde ainda existe em cultura, distinguindo-se do cafeeiro de Angola, logo à primeira vista.  

Again, he insisted on a conservative approach to the agricultural practices:

Há mais de um século que os colonos começaram a fazer plantações de cafeeiros e destas remotas iniciativas encontram-se vestígios em localidades como por exemplo na Colonia de S. João, Golungo Ato e vale de Zondo. Nesses sitios existem ainda hoje cafeeiros, provavelmente plantados, com mais de 100 anos de idade, de maneira que é preciso para não tirar conclusões erradas estudar bem o método cultural adoptado e seguido por esses colonos (...).  

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57 "It is somewhere written that the Portuguese missionaries introduced the coffee in Angola and it is highly likely that this had occurred before the spontaneous plant was known in this colony; however, so far I did not find any traces of such introduction; I believe that there are no longer any descendants. The native character of the species is evident; it is also natural that the wild phenotype, spread by nature was at the origin of the plantations one sees in the steep terrains formed by the higófila angolan forest, a phenotype clearly distinct from all other known coffee plants. I believe that the variety introduced by the missionaries was of Abyssinian origin [i.e. Arabica coffee], which was used back then in the Antilles whence it came to the Portuguese possessions, such as the Islands of São Tomé and Cabo Verde, where it is still cultivated, and which is at first blush clearly dissimilar from the Angolan coffee", Gossweiler, “Informação Sobre Cafeicultura Na Fazenda ‘Monte Belo’ - Cazengo”…, 78.

58 "More than a century ago the colonizers began making coffee plantations and from these remotes attempts vestiges can be found in such localities as Colonia de S. João, Golungo Ato and vale de Zondo. In those places still exist coffee shrubs over 100 years old, and so in order not to reach the wrong conclusions one ought to fully study the cultural method adopted and followed by those colonizers. (...)", Gossweiler, “Informação sobre Cafeicultura na Fazenda ‘Monte Belo’ - Cazengo”…, 83.
3.4 FOLLOWING THE CLUES FROM NATURE

Gossweiler’s major critique to white settlers’ agricultural practices came in a report on the region of Amboim (Cuanza-Sul), when in 1932 he visited the region to investigate a disease that was affecting coffee plantations. According to him, one of the main problems it that many plantations were “too thinly spread”.

Às vezes dão a impressão que a ideia não era fazer plantações económicas mas hectares (...) Se a plantação fosse bem feita desde o início o terreno estava no fim de cinco anos completamente sombriado, as ervas não podiam desenvolver-se com este vigor, as colheitas eram maiores, e a despesa do saneamento e arranque de ervas nocivas menor. (...) não se perde nada em repetir que o cafeeiro angolano é um arbusto de floresta cerrada’ (...), as melhores condições para o seu desenvolvimento não consiste num cubo espaçoso de terra, nem na intensidade de luz ou abundância de água pela raiz, como sucede nas culturas de bananeiras ou do milho.59

Shadow was necessary in order to “maintain a fitting environment for the proliferation of microbial fauna and flora, in which symbiosis the Angolan coffee may reach a secular age”.60 According to his view, the reasons coffee plants were diseased was because they lacked shadow. Gossweiler urged settlers to ignore the advices of “horticulturalists” and their “catalogues of fruit trees” because the way agriculture was done in the “countries in the North” (for instance, with the use of chemicals) was very different and “would lead the Angolan farmer into the wrong path”.61 A short comment is made in relation to Africans: “the natives planted the first coffee plants with their light catanas. If this method had not been abandoned latter, the degeneration we witness of the active soil would not have arose.”62 Natives and the

59 “Sometimes one has the impression that the aim was not to achieve and economic method of planting but to occupy hectares. If the plantation had been from the onset correctly laid out, it would have been shaded completely in five years, and grass would not be able to grow with such force, harvest would be bigger, and expense lesser in destroying noxious weeds (...), one should stress repeatedly that the Angolan coffee is a shrub of thick forests (...), the optimum condition for its development is not reached by an ample allotment of land, nor by light intensity, nor by abundance of water at root-level, as in the case in banana-trees or corn.”, Gossweiler, “Relatório sobre as Doenças do Cafeeiro na Região do Amboim”…, 16.
60 Gossweiler, “Relatório sobre as Doenças do Cafeeiro na Região do Amboim”…, 16.
61 Gossweiler, “Relatório sobre as Doenças do Cafeeiro na Região do Amboim”…, 17.
First settlers were thus the most commendable, those who did not follow other countries and empires, but took their “clues from Nature’s orientations.”

(...) os cafezais das regiões de floresta hidrófila do Cuanza Norte explorados pelos colonos há quase um século são provas bastantes que o cafeeiro se deixa cultivar – sem receios de ser afectado ou prejudicado por doenças – desde que se realize em terrenos apropriados e que não tenham sido já utilizados pelas culturas de milho, ou desabrigados (desbaste total) e sujeitos à acção directa dos raios de sol. Os colonos dessa época forma orientados pelas indicações que a Natureza lhes deu, de escolher para o seu plantio sitios em condições fisiográficas aproximadamente iguais, que existem no seu estado natural, à sombra das árvores de alto porte dentro da mata cerrada dos vales e barrancos estreitos abrigados dos ventos secos. Não levaram muito tempo a perceber que este cafeeiro bravo, quando transplantado para cultura era necessário arranjar-lhe um meio apropriado para o seu desenvolvimento e adoptar medidas especiais – em geral antagónicas àquelas que se empregam no Brasil na cultura do cafeeiro oriundo da Abissínia, Coffea arábica. 63

As Gossweiler explains, this pattern of cultivation was also broken in Amboim “since the twenties”, when plantations started to be set up indiscriminately “even in non-appropriated soil or atmospheric conditions” and “not paying attention the forest regime where it spontaneously”. 64 For Gossweiler it was very obvious what was the cause of the disease he had been sent to investigate. As he would write there was no evidences of it in coffee populations

Todos os interessados na exploração do cafeeiro indígena não devem esquecer que esta Rubiácea se encontra no seu estado silvestre somente no estrato das microfanerófitas da floresta higrófila de Angola, uma formação muito aparte na flora da África Tropical, e em mais parte nenhuma. (...) Neste seu climax climatérico do

63 “(…) coffee plantations of the mountain rainforest regions of North Cuanza, explored by settlers for almost a century, are sufficient proof that coffee can indeed be cultivated without fearing occurrence of diseases, as longs as this is done on appropriate terrain, not previously used for corn, or exposed (in cleared treeless areas) to the direct action of the sun rays. Those settlers took their clue from Nature’s orientations, by electing as planting ground terrains which exhibit conditions fisiográficas that are largely similar, at the shade of high trees in the thick woodland of valleys and narrow ravines sheltered from the dry winds. It did not take long for them to figure that this wild coffee, if transformed into culture, should be given a suitable environment in order to thrive - special measures had to be adopted also, which contrasted in general to those employed in Brazil on the culture of the coffee hailing from Abyssinia, Coffea arábica, Gossweiler, “Relatório sobre as Doenças do Cafeeiro na Região do Amboim”…, 21.

64 Gossweiler, “Relatório sobre as Doenças do Cafeeiro na Região do Amboim”…, 21-22.
habitat edáfico, o cafeeiro produz um tronco dividido a pequena distancia sobre o chão, tal e qual como nas plantações, (...) produzindo porém colheitas insignificantes mas, em compensação, atinge uma idade de cem anos ou duas vezes tanto, sem se lhe manifestarem doenças ou esgotamentos fisiológicos.65

Men were damaging the environment and putting in stake the sustainability of coffee as a crop. His conclusion was clear: “a lesson should be drawn” for us who “observe such fantastic experiments” and see those settlers wasting such “huge amounts of workforce, for no avail but disappointment”.66 We were in 1932. Agriculture would change in a couple of years with the green revolution. As we will see further in this dissertation these “fantastic experiments” would be at the centre of post-war imperial imagination. But in the interwar period ecology reined in the colonial world as one of the key scientific paradigms to address problems in agriculture.

3.5 ENVIRONMENTALISM AND COLONIALISM

The voices of those using an environmentalist-driven agenda to criticize African knowledge and agricultural practices are well documented in the colonial archive. The first attempt to deconstruct this narrative, often the “official discourse” of colonial administrations, came in the late 80s and 90s, and the most influential work is probably Misreading the African Landscape (1996) by James Fairhead and Melissa Leach.67 This literature has demonstrated that scientists often helped to construct false environmental notions that would later have a negative impact on the development of African societies.68 These notions were also associated to a negative perception of the African agricultural practices, which described them as primitive, obtuse and dangerous to the sustainability of the environment. The way these considerations about the African environment and native agricultural practices were

65 Gossweiler, “Relatório sobre as Doenças do Cafeeiro na Região do Amboim”..., 22.
66 Gossweiler, “Relatório sobre as Doenças do Cafeeiro na Região do Amboim”..., 22.
68 Fairhead and Leach, Misreading the African Landscape..., 38.
used as instruments of power to impose a certain agenda of domination over Africans has been at the centre of the discussion.  

This biased environmental agenda is represented here 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 burning as “the main culprit for the destruction of forests”. As Benoit Daviron and Bárbara Direito stressed, this environmentalist argument aimed 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 much of his political ideas about the development of Portuguese colonies disseminated in national and international conferences were based on abstractions about Africans and white agriculture. What this chapter suggests is that the way Portuguese agronomists engaged with environmentalism concerns are not as instrumental and univocal as these scholars might have suggested.

Following agronomists in their surveys another view emerges, as one gradually perceives how Coffea canephora challenged their abstractions and formulaic notions about Africans and Africa. We see environmental arguments not being used as ideological devices to exclude Africans, but to condemn plantations whose environmental sustainability was considered to be at risk. These arguments concern the degree of deforestation caused by some European coffee plantations, as well as the criticisms against the politics of concessions, accusing the empire of giving too much land to those who could neither exploit it nor protect its biodiversity. Thus, by zeroing in on the case of coffee, a finer grained picture of the Portuguese empire emerges, placing agronomists as agents of a kind of “green imperialism” hitherto neglected in the literature – one that consider that the major environmental problems were “European” and not caused by native agriculture.

69 See Fairhead and Leach, “Desiccation and Domination: Science and Struggles over Environment and Development in Colonial Guinea”...
Of this alternative reading of the work and ideas of colonial experts, which avoids the pitfalls of the standard criticisms of backwardness of the Portuguese empire, one cannot found a better guide than Gossweiler, the author of the most detailed reports about coffee producing regions from an environmental perspective. Here again it is the Europeans who come under severe criticism. They are accused of setting their fazendas in non-appropriated soil and atmospheric conditions and of trying out practices of cultivating coffee not adequate to the cultivation system used in Angola – namely, of reducing shadow in order to increase yields. The practices of colonial mimesis aimed at reproducing the Brazilian experience in Angola are at the centre of Gossweiler’ s criticisms. According to him, the increase of environmentally unsustainable coffee fazendas in the Cuanza-Sul had started at the beginning of the 1920’ s decade, as a result of a sudden invasion of settlers.  

Particularly striking is to see how coffee plantations, usually presented as paradigmatic cases of retrograde imperial rule, appear in Gossweiler’ s reports as laboratories of an agro-ecological approach to the production of cash crops in Africa. Set up in the middle of the mountains as an “agro-forest system”, coffee cultivation fields offered the empire an exceptional opportunity for testing agro-ecological ideas and practices in vogue at that time among agricultural scientists and colonial officers. This chapter offers therefore a more nuanced picture of the roots of agro-ecology, which have been recently under discussion, but to a more recent period (green revolution) and often as a subaltern defensive mechanism. Also interesting is to see how disease in interwar colonial world was perceived as a problem created by humans, while in the Cold War, as something external, whose dispersion had to be

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75 We follow here Helen Tilley’s thesis that ecology in interwar colonial Africa was not only a concept or discipline, but also a tool of environmental management and a way of organizing knowledge about complex phenomenon, Tilley, *Africa as a Living Laboratory*… See also Helen Tilley, “Ecologies of Complexity: Tropical Environments, African Trypanosomiasis, and the Science of Disease Control in British Colonial Africa, 1900-1940,” *Osiris* 19, no. 2004 (2004): 21–38. An emblematic case linking agro-ecology and green revolution was the response of California farmers’ against the transference of technologies such as DDT, see Keith Douglass Warner, “Agroecology as Participatory Science: Emerging Alternatives to Technology Transfer Extension Practice,” *Science, Technology, & Human Values* 33, no. 6 (2008): 754–77. In the context of colonial history a good introduction to this discussion is Harro Maat and Sandip Hazareesingh, eds., *Local Subversions of Colonial Cultures. Commodities and Anti-Commodities in Global History* (London: Palgrave Macmillan UK, 2016).
“prevented” (see Epilogue). For those who did not want to face diseases in their plantations Gossweiler had only one advice: to do exactly what the first settlers and natives had done, that is, “to follow the clues from Nature’s orientations”; another version of “mimesis”, not from the colonizers to colonized, nor exactly in the inverse direction, but orientated towards “nature” and towards the past.76

Finally, to follow the trajectory of Coffea canephora through the lens of scientists also force us to put in question flat conceptions of the colonial world, and the use of dichotomies such as “colonizer-colonized”, “native-European”, “native agriculture versus white agriculture” and “lavra versus fazenda”.77 For instance, in this case, and contrarily to other cash crops, the differences between “plantation” and other cultivated fields are not clear. Indeed, one even wonders if we can talk about “plantation” in this case, and if yes where the line of demarcation should be traced. This means that to those that were in the field – the experts of the Agriculture Department –, and contrarily to the opinion that his colleague/leader (Geraldes) was disseminating in national and international congresses, “native agriculture” was not only acknowledged, but considered often equal to “white agriculture” – at least in technical terms; from an economic point of view, the conclusion was different, because size mattered and, as will see later in this dissertation, Europeans here much better positioned.

The histories of environmentalism and colonialism are tied together. The idea that late European empires were only concerned with the exploitation of natural resources is no longer tenable; nor that they only criticize natives and their traditional (or “modern”) practices for ideological reasons. 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.78 As imperial agents our

76 Mimetic practices from the colonized to the colonizer, and vice-versa, have been recently discussed in the context of the Portuguese empire in a dossier introduced by Ricardo Roque, “Mimetismos Coloniais no Império Português,” Mimetismos Coloniais: História e Teoria no Império Português, Etnográfica 18, no. 1 (2014): 101–9.
78 Beinart, “Soil Erosion, Conservationism and Ideas about Development”…; Anderson and Grove, eds., Conservation in Africa: People, Policies and Practice…
scientists wanted coffee fazendas and lavras to produce more and be sustainable in the future, and for that reason a conservationist agenda was put in place. As William Beinart, reminds us: “environmental regulation was not seen to undermine colonial development, but to facilitate it”. In the meanwhile an epistemic space was also created, a “living laboratory” that allowed them put in practice and experiment some of the most innovative theories of environmental management. There was nothing incompatible about these two purposes – quite the contrary.

79 Beinart, “African History and Environmental History”…, 273. This has not always been an easy discussion in the academis. As the author underlines, “analysing colonial conservationism has in itself been a controversial issue”, Beinart, “African History and Environmental History”…, 273.
80 Helen Tilley, *Africa as a Living Laboratory*...
PARTE II
The first part of this dissertation was devoted to scientists working for, or involved in the survey activities of the Agriculture Department of Angola. We’ve discussed their role as imperial actors during the first half of the 20th century, and specifically during the interwar period, crucial years for the consolidation of colonial states in Africa. We’ve seen how scientists acted as go-betweens brokering the encounter between Portuguese and African’s regimes of knowledge, and how their views about African environment and agricultural practices differed from the ones of their colleagues in the metropole. Most importantly, we’ve argued for the necessity of investigating local conditions and cultures from a viewpoint more saturated with agency giving native Africans and the environment their due.

Scientists’ knowledge about *Coffea canephora*, as plant and as crop, increased notably during the first four decades of the 20th century. At the end of the interwar period there was no doubt about its taxonomic status and geographical origin. The agro-forest system in which this crop was cultivated inspired scientists to seek answers for their problems in the emergent field of agro-ecology, and challenged them to think out of the “colonial” box as they followed Africans and Europeans cultivators. However, the efforts of the agriculture department to improve production systems – the coffee brigades, the interwar coffee classificatory system or the coffee experiment station – appeared to have been ineffective. As we shall see, it was only after 1940 – with the creation of the Coffee Export Board – that the colonial State started effectively to interfere and change coffee production systems in Angola. The Board main goal was clear: to transform Angolan coffee into a global commodity and thus increase the revenues of the Portuguese empire.

Angolan coffee became indeed a global commodity after WWII, due to multiple factors. As we have already underlined in the General Introduction a window of opportunities in the global market was opened to Robusta coffee after the conflict with the boom in instant coffee consumption in the United States. However, and
though the global market has played a crucial role in this process, the economic success of the Angolan coffee should not be reduced to exogenous or purely economic factors. This dissertation argues that it is important to consider as well the colonial strategy of modernizing Robusta put in place by the late Portuguese empire. It thus distances itself from some research lines of the historiography of the Portuguese empire, which tend to describe the economic achievements of the 1950s as a reactive by-product of external factors and the interwar period as no more than a long stagnation.\footnote{António José Telo, *Economia e Império no Portugal Contemporâneo* (Lisboa: Edições Cosmos, 1994), and Valentim Alexandre, “O Império Africano (Séculos XIX-XX). As Linhas Gerais,” in *O Império Africano - Séculos XIX e XX*, ed. Valentim Alexandre (Lisbon: Edições Colibri, 2000), 12.} This chapter details how during the interwar period the Portuguese empire implemented new forms of colonial governance that were being discussed by all European colonial powers since the 1920s. The setting up, namely, of marketing boards – such as the Coffee Export Board – proved crucial for colonial commodities production to take advantage from the increased demand from the global market”.

In the next chapter I will explore the role of agronomists and agricultural scientists in the materialization of an imperial strategy aimed at modernizing Robusta. But to write this history of science one has first to write the history of the Board. Only by dwelling into the political economy of the Coffee Export Board, we are ready to discuss the relevance of the scientists working for this institution. This chapter analyses the origins of the Board and its stated intentions, the evolution of these programmatic claims in time, and the circulation of the funds administered by the Board in the later years of its existence. My intention here is to understand the historical dynamics defined by the movements of economic protectionism popular among European colonial potencies after the Great Depression, the corporatist experiences in fascist European political regimes, and the policies of economic intervention widespread in coffee-producing states. Since there is no available scholarly work on the Coffee Export Board the discussion presented here is preliminary and exploratory. This chapter is based on primary sources found dispersed in four State Portuguese archives: Arquivo Histórico Ultramarino (AHU), Instituto de Apoio ao Desenvolvimento (IPAD-AHU) and Arquivo Nacional Torre do Tombo (ANTT).\footnote{Contacts were made during the course of this investigation with Instituto do Café de Angola (successor of the Coffee Export Board, in 1961) to work on their archives. Hopefully this will be achieved in the near future.
4.1 THE ORIGINS OF THE COFFEE EXPORT BOARD

Statement of Intentions

The Portuguese empire created three imperial marketing boards: the Cotton Export Board (Junta de Exportação de Algodão Colonial) and the Grain Export Board (Junta de Exportação dos Cereais das Colónias), both in 1938\(^3\); and the Coffee Export Board (Junta de Exportação do Café Colonial, JEC), in 1940.\(^4\) While the first two were dependent on the Ministry of the Colonies, the Coffee Export Board was under the tutelage of the Ministry of the Colonies and the Ministry of the Economy.\(^5\)

The headquarters of the Coffee Export Board were set up in Lisbon, complemented with local branches in Oporto and in every major coffee-producing colony, with the exception of East Timor. With the increasing importance of Angola’s coffee production, the local delegation in Luanda would hold a crescent role, operating as second headquarters.\(^6\) The institution had been created, ascertained the legislator, to protect coffee producers from traders and from the vagaries of the global market. It was maintained that without “special protection of the state in relation to the product price”, the most needy producers would have to sell at any price, resulting in a devaluation of the commodity with serious damages for both producers and the whole economy of the empire. The Board was therefore erected to “guide, discipline and supervise the activities related to coffee production and exportation” and to “build a corporate awareness and promote solidarity and understanding for the common interests among activities under coordination.”\(^7\)

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\(^3\) The Cotton Export Board is created by the Decree-Law 28,697 of 25 May 1938, and the Grain Export Board by the Decree-Law 28,899 of 5 August 1938. Both are created under the tutelage of the Ministry of the Colonies.

\(^4\) The Coffee Export Board was created by the Decree-Law 30,714 of 29 August 1940, pp. 1006-1007.

\(^5\) The other two boards on cotton and grains, created two years before, in 1938, depended only on the Ministry of the Colonies.

\(^6\) Regulamento da Junta de Exportação do Café, Decree 31,221 of 16 April 1941. This regulation was published in 1941, the year the Board was installed in Angola.

\(^7\) Decree-Law 30,714 of 29 August 1940, p. 1006. In Portuguese: “orientar, disciplinar e fiscalizar as actividades relacionadas com a produção e exportação de café colonial” and “criar consciência corporativa e fomentar a solidariedade e a compreensão dos interesses comuns entre os componentes das actividades que coordena.”
The stated aims of this Board were the following: to coordinate the work of different colonial corporatist institutions; to promote the study of coffee production, commerce and exportation in overseas territories; to promote surveys and the gathering of data for statistical analysis; to elaborate regulations for ministerial approval and to further the adoption of such measures; to offer technical guidance for coffee production; to help producers in the fight against plagues and diseases; to offer credit to European producers; to discipline internal commerce by fixing coffee purchase prices; to regulate exportation by fixing export prices and defining quotas for each import country according to coffee quality; to classify coffee and attribute origin certificates; and to promote propaganda aiming at conquering new markets in national and international territories.\(^8\) Below I will take a closer look at this program, geared to change coffee production systems in Angola. Here I will start by focusing on the Board’s legal instruments to control Angola’s coffee exportations. What were these instruments?

One of the aspects that the legislation made very clear was that indigenous coffee producers were out of the export business.\(^9\) The law was very precise: the only ones authorized to export coffee were “European producers and exporters registered in the Board”.\(^10\) This registration implied the payment of a substantial fee, one that was especially high for those Europeans who accumulated both activities – production and exportation.\(^11\) This meant that small and medium European coffee producers were discouraged from engaging on export activities.\(^12\) The Board had also the right to export coffee though it only used this prerogative it in the first years and from 1960 onwards. During the coffee boom of the post- World War II years the profits of the Board came mainly from taxation over exportations. Two players in the coffee business benefitted from this imperial strategy: big capitalistic fazendeiros and the Board itself.

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\(^8\) Decree-Law 30,714 of 29 August 1940, p. 1007.
\(^9\) Whether natives could, or could not legally export coffee before 1940 I could not ascertained.
\(^10\) Regulamento da Junta de Exportação do Café, Decree 31,221 of 16 April 1941, p. 350. In the legislation it was also anticipated the eventuality of the Board taking total control of coffee exportations.
\(^12\) If producers paid only 250 esc, exporters paid 1,000 esc and producers who were also exporters paid 2,500 esc. Those registered in the metropolitan corporate institutions such as Grémio dos Armazenistas de Mercearia and Grémio dos Retalhistas de Mercearia were exempt from these fees, Regulamento da Junta de Exportação do Café, Decree 31,221 of 16 April 1941, p. 351.
The Board also determined that producers should submit their coffee beans to a process of classification, which was controlled by the Board itself, while determining the minimum price at which coffee could be traded in the market. Prices depended on the quality and origin of the coffee, and also on whether the producer was indigenous or non-indigenous.\textsuperscript{13} After the establishing of the Board, those producers who had not the licence to export sold their commodity to the Board or to licensed exporters, while the licensed producers could try their luck directly in the global market. When licensed producers and/or exporters sold their coffee for an amount that was inferior to the minimum fixed by the Board, or did not properly use the certificates of classification required by the Board, the law determined that they had to pay a fine no less than 50 per cent of the order.\textsuperscript{14} In case coffee was exported to the metropole, the Board took control of further transactions: not only it established the sales orders at the commodities exchange (\textit{bolsas de mercadorias}), where coffee was effectively sold, but it also determined that only those inscribed in the Guild of Grocery Storers (\textit{Grémio dos Armazenistas da Mercearia}) could buy it.\textsuperscript{15}

The funding of the Board came from three places: taxes over coffee exportation (to foreign countries and the metropole), specific funds coming from colonial and metropolitan budgets devoted to the promotion of coffee cultivation and trade, and from registration fees and fines imposed by the Board itself.\textsuperscript{16} Among these funds, the first taxes over coffee exportation played the major role. The legislator underlined that the Governor of each colony determined these taxes.\textsuperscript{17} It is interesting to notice that the legislation creating the Board is revealing of an imperial strategy aimed at coordinating efforts made in different places of the empire. With its headquarters in Lisbon, the Board was designed as a centralized imperial institution, responsible for managing funds coming from five distant colonies and with the task of improving the so-called “Portuguese coffee”. The reality was nevertheless considerably less pan-colonial. As we will see, funds originated basically from one colony: Angola.

\textsuperscript{13} Regulamento da Junta de Exportação do Café, Decree 31,221 of 16 April 1941.
\textsuperscript{14} Regulamento da Junta de Exportação do Café, Decree 31,221 of 16 April 1941.
\textsuperscript{15} Regulamento da Junta de Exportação do Café, Decree 31,221 of 16 April 1941, p. 353.
\textsuperscript{16} Regulamento da Junta de Exportação do Café, Decree 31,221 of 16 April 1941, p. 350.
\textsuperscript{17} Decree-Law 30,714 of 29 August 1940, p. 1007; and Regulamento da Junta de Exportação do Café, Decree 31,221 of 16 April 1941, p. 350.
Portuguese Colonialism and Colonial Elites

Legislators described the “imperial marketing boards” – of grain, cotton and coffee – as a consequence of the Portuguese corporatist experience. They were presented as a new chapter of the overall project of transforming the country into a corporatist State, now extended to its imperial territories. As asserted by the legislator, the Coffee Export Board was only “one more step towards the corporatist organization of the colonies”, a process that, as he assured, had been “taken slowly but safely”, with its two counterparts devoted to cotton and grains, created two years before, in 1938. The Board principal aim was to concentrate in one institution the capacity of “disciplining the activities in the colony and in the metropole that are devoted to a branch of activity that deal with the same product”.

Corporatism, as a third way of organizing society alternative to both socialism and liberalism, was a central dimension of Salazar’s Estado Novo. Corporatist ideals emerged during the interwar period in the context of the crisis of capitalism, reaching their peak during the years of the great depression. As an economic theory, corporatism was based on the conviction that capitalism had to be saved from itself against a market that could no longer guarantee the equilibrium between national and international forces, defending instead that should be the states themselves to organize and coordinate the capitalist system. These ideas made their way in liberal democracies but it was in the emergent European fascisms that they found the breeding ground to grow. Of course that in these authoritarian regimes corporatism was not only used as a model to organize national economies but as powerful instrument of social control – a way to guarantee the so-called “social order”.

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18 Decree-Law 30,714 of 29 August 1940, p. 1006.
19 Decree-Law 30,714 of 29 August 1940, p. 1006.
21 The question whether the New State was a fascist regime has troubled scholars. Historians following the inclusive notion of “generic fascism” tend to consider the New State a fascist regime. Proponents of this position can be found in Álvaro Garrido and Fernando Rosas, eds., Corporativismo, Fascismos, Estado Novo (Lisboa: Edições Almedina, 2012). They follow political historians such as R. O. Paxton, “The Five Stages of Fascism,” The Journal of Modern History 70, no. 1 (1998): 1–23; and Aristotle A Kallis, “‘Fascism’, Para-Fascism and ‘Fascistization’: On the Similarities of Three Conceptual Categories,” European History Quarterly 33, no. 2 (2003): 219–49. Opponents to this view argue that despite the appropriation of formal and organizational fascist aspects Salazar’s regime did not share the
In the Portuguese corporatist nomenclature “imperial marketing boards” were classified in the category of “institutions of economic coordination” (organismos de coordenação econômica), belonging to the same family of metropolitan institutions such as the National Board of Wine, the National Institute of Bread or the Regulatory Commission of Cod Fish. There were obvious similarities between metropolitan institutions of economic coordination and their imperial versions. For instance, they both acted as “governmental agencies”, controlling and regulating economic sectors, product by product, in terms of production, wages, circuits of distribution, prices, imports and exports, etc. But while metropolitan institutions of economic coordination were a direct product of the Portuguese experience of corporatism – suggesting many similarities with the institutionalization of the Italian fascist regime – their imperial versions were not specific from fascist and corporatist political regimes. In fact, imperial marketing boards were structures common to almost every colonial state of the mid-20th century.

The creation of the “marketing boards” – “heirlooms of Great Depression and WWII” – was a major institutional innovation of 20th century colonial Africa. They appeared in the 1930s, in a decade of contradictory signs: while on the one hand, development policies promoted by colonial administrations and the increase of private investment led to the growth of agricultural production; on the other hand, the prices of tropical agricultural commodities in the global market remained low since the Great Depression and showed no signs of recovering. This situation not only led many European and African producers to despair, but it also produced an increasing discontent from the part of colonial governments, which saw their sources of revenue being severely reduced. In this scenario of economic crisis, European powers had

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fascist ideology of the Italian and the German cases, and therefore should not be classified as a fascist regime, see, for instance, António Costa Pinto, Os Camisas Azuis: Ideologia, Elites e Movimentos Fascistas em Portugal, 1914–1945 (Lisboa: Estampa, 1994).

22 In the Estado Novo’s jargon the “institutions of economic coordination” were called “pre-corporatist” structures. Apparently, they were created because Salazar thought the Portuguese society was not ready for corporations. In theory they should have been eliminated through time; in practice, the regime never did. See Manuel de Lucena, “Sobre a Evolução dos Organismos de Coordenação Económica Ligados à Lavoura (II),” Análise Social 15, no. 57 (1979): 117–67.1

21 Historians of the Estado Novo have identified the metropolitan “institutions of economic coordination” as crucial institutions in the Portuguese experience of corporatism; they have described them as the heavy hand of the State over Portuguese economy, having power over the primary corporatist institutions and reporting directly to the central administration, Fernando Rosas, “O Corporatismo enquanto Regime,” in Corporativismo, Fascismos, Estado Novo, ed. Fernando Rosas and Álvaro Garrido (Lisboa: Almedina, 2012), 34.

many good reasons to rethink their imperial strategy.\textsuperscript{25} Designed to serve as whole buyers of major agricultural colonial exports, “marketing boards” were presented as welfare institutions: to create stabilization funds that could be used for the benefit of farmers, by improving their production systems and by assuring them necessary protection in case of future recessions. As some scholars have already demonstrated, and I will discuss later in this chapter, this was not exactly what happened.\textsuperscript{26}

The first marketing boards in Tropical Africa emerged in East and Central British Africa, with the creation of the Marketing Board for Maize in Southern Rhodesia (in 1931) and the Kenya Coffee Board (in 1933).\textsuperscript{27} Later, in 1942, and as a “wartime measure”, the British Empire created the West African Control Board that covered several colonial states of West British Africa. Between 1947 and 1949 eight more marketing boards, each devoted to one commodity, emerged in Sierra Leone, Gambia, Ghana and Nigeria.\textsuperscript{28} In the French empire the first attempt to launch similar institutions, the sociétes de prevoyance, was also in the 1930s, though it was only after WWII that this form of State intervention was taken more seriously with the emergence of the caisses de stabilisation.\textsuperscript{29}

In the coffee case, this historical background of economic intervention went beyond the colonial world. In Brazil and other Latin American countries, institutions similar to marketing boards in colonial Africa were also created.

Esta mesma necessidade foi de há muito sentida por outros países exportadores que dirigem a sua cultura, comercio externo e expansão interna. Sem falar no Brasil, Repúblicas americanas do centro e do sul e ilhas Neerlandesas – mesmo em África se começa a sentir a nova vaga de intervenção económica. A Kenya já tem a sua junta (…) A Italia cuida com especial interesse da cultura e protecção do café na Etiópia.

\textsuperscript{27} Jones, “Food-Crop Marketing Boards in Tropical Africa”..., 378.
\textsuperscript{28} According to Jones the Africa Control Board was “the origin of marketing boards” in this part of the African continent, Jones, “Food-Crop Marketing Boards in Tropical Africa”..., 378.
\textsuperscript{29} See more in Jones, “Food-Crop Marketing Boards in Tropical Africa”... Similar initiatives can be found in Belgian Congo.
As colônias francesa, especialmente a África equatorial, tem especial relevo no consumo da metropole. (…)\(^{30}\)

These words are taken from the first draft of the decree-law founding the Coffee Export Board, found in *Arquivo Histórico Ultramarino* (AHU) – words that would later be deleted from the final legislative document. They disclose a full awareness of the international trend of State economic intervention in both colonial and non-colonial worlds. One cannot overstate the importance of drawing attention to the fact that this paragraph was erased from the final legislation and that Portuguese corporatism remained the only historical context mentioned. In the *Estado Novo*’s self construction one senses the need of presenting its “works” as originating organically from within the nation.

The removal of the international awareness from the initial picture goes hand in hand with the non-acknowledgement of the role of colonial elites pressure groups from the private sector in the shaping of colonial governance. Indeed, from the sources consulted at the AHU it became obvious that the pressure to implement imperial marketing boards came from the colonies (from Angola in particular), and not from the metropole, as one might have imagined from the legislator’s narrative. Moreover, those same sources suggest that the colonial elites involved in the coffee business were the most influential in the process. According to the documentation found it was in response to the appeals of the Traders Association of Angola (*Associação dos Comerciantes de Angola*) that the “corporatist organization of the colonies” was included as a topic in the Colonial Governors Conference (*Conferência dos Governadores Coloniais*) that took place in October 1936.\(^{31}\) For the Traders Association of Angola – a consortium that included important capitalistic enterprises involved in the coffee business, such as the firm Marques, Seixas & Cª Lda. –, it was imperative that a guild (*grémio*) was created for the protection of coffee production and trade. This guild should put an end to the “anarchy of prices”, especially in the

\(^{30}\)“This same necessity was long felt by other exporting countries that run their crop, foreign trade and internal expansion. Not to mention Brazil, the republic from Central and South America, and the Dutch East Indies – even in Africa one can already note a new wave of economic assistance. Kenya has already its board (…), Italy takes special care of this crop and its protection in Ethiopia. French colonies, especially Africa Equatorial, have particular importance in [coffee] consumption in the metropoles.”, Projecto de decreto de lei para a Junta Imperial do Café, p. 3, File “Projecto da ‘Junta Imperial do Café’”, AHU, MU, GM, ex. 536, 1E, 1936-1942.

\(^{31}\)Letter from the Chefe de Gabinete of the Minister of the Colonies to the *Associação dos Comerciantes de Angola*, 29 September 1936, Lisbon, File “Café colonial”, AHU, MU, GM, ex. 536, 1E, 1936-1942.
metropole,\textsuperscript{32} and help Angolan coffee producers and traders to place their product in Portugal.\textsuperscript{33} This association also urged the Minister of the Colonies to help coffee producers and traders to “conquer new markets” for colonial coffee, concretely in Spain,\textsuperscript{34} the reason why it considered “crucial” that the organization responsible for these tasks would be located in the “natural distribution centre of colonial production”, Lisbon.\textsuperscript{35} Not without irony, at this stage centralization was put in place, not against the wishes of colonial elites, but at their request. These appeals of the Traders Association of Angola had the support of the Associação Comercial e Agrícola do Amboim and the Associação Comercial, Industrial e Agrícola do Cuanza-Sul, “organizations that represented the majority of the [large] growers of coffee in the colony of Angola”.\textsuperscript{36}

What this documentation suggests is that local colonial actors were able to incorporate both the corporatist ideology and the centralizing trend of the regime in their bargaining strategies. Although further research is still required, what it also seems to suggest is that Angolan elites involved in coffee business were more influential in this process than those involved with cotton or grain production, with much more obvious relations with the metropolitan industrial elites. This influence of Angolan coffee elites is only more surprising when we consider that the Grain Export Board and the Cotton Export Board were the first to created, in 1938. The pressure of Angolan coffee capitalists was constant throughout the late 1930s. In the end of 1938 the Minister of the Colonies was receiving a letter from a coffee fazendeiro in Ganda, whose plea was accompanied by a “proposal to create a coffee board in the colony of Angola”.\textsuperscript{37} One year later, a letter arrived to Lisbon signed by the administrators of the main coffee enterprises in Angola – namely, Companhia Agrícola de Angola (CADA), Companhia de Cazengo, Sociedade Agrícola de Zavula and Marques,\

\begin{footnotesize}
\begin{enumerate}
\item Letter from Direcção da Associação dos Comerciantes de Angola to Minister of the Colonies, 18 September 1936, Lisbon, File “Café colonial”, AHU, MU, GM, cx. 536, 1E, 1936-1942.
\item Letter from the Chefe de Gabinete of the Minister of the Colonies to the Associação dos Comerciantes de Angola, 29 September 1936, Lisbon, File “Café colonial”, AHU, MU, GM, cx. 536, 1E, 1936-1942.
\item Letter from Direcção da Associação dos Comerciantes de Angola to Minister of the Colonies, 4 March 1936, Lisbon, File “Café colonial”, AHU, MU, GM, cx. 536, 1E, 1936-1942.
\item Letter from Direcção da Associação dos Comerciantes de Angola to Minister of the Colonies, 8 October 1936, Lisbon, File “Café colonial”, AHU, MU, GM, cx. 536, 1E, 1936-1942.
\item Letter from Direcção da Associação dos Comerciantes de Angola to Minister of the Colonies, 8 October 1936, Lisbon, File “Café colonial”, AHU, MU, GM, cx. 536, 1E, 1936-1942.
\item Letter from Almeida Afonso to Minister of the Colonies, 23 December 1938, Vila Mariano Machado, Ganda, File “Organismos Corporativos de Coordenação Econômica do Comercio e da Indústria”, sub-file “Coffee”, AHU, MU, GM, cx. 560.1, 1E.
\end{enumerate}
\end{footnotesize}
Seixas & Cª Lda –, urging the Portuguese government to promulgate “protection measures” as far as coffee trade was concerned.38 Finally, one year later, the Coffee Export Board was created.

4.2 VISIONS, CRITICISMS AND INQUIRIES

Metropole: From Solution to Problem

When in the mid-1930s Angolan elites decided to press the Portuguese government to start the “corporatist organization of the colonies” they were interested, among other things, in finding new ways to enter Portuguese internal market. The situation of economic crisis the colony had lived through is well documented in Anuário Estatístico de Angola. While in 1928 and 1929 trade (comércio especial) reached values around 272,000 and 281,000 contos (respectively), in 1930 and 1932, and though the production was higher, these figures dropped to 233,000 (in 1930), to 204,000 (in 1931) and to 199,000 (in 1932).39 As one can see in Table 2 (see Annex II), the situation was no different for those involved in the coffee business. If in 1928 coffee exports had reached 9,826 tones and represented an income of 61,790 contos, in 1931 they had increased (11,838 tones) but only represented half of the income (32,110 contos) of the total amount of coffee exported before the economic depression.40 1936, the year Angolan elites first pressured the metropolitan power, was particularly difficult: coffee production had more than doubled (9,826 tons in 1928; 19,553 tons in 1936), but the income was still lower (61,790 contos in 1928; 51,497 angolares in 1934).41 Angolan coffee producers were able to sell their product in the global market, but at very low prices. With commodities prices still down since the Great Depression and no prospects of economic recovery, they turned to the old

38 Letter from several coffee fazendeiros in Angola to the Minister of the Colonies, 21 April 1939, Lisbon, File “Café colonial”, AHU, MU, GM, cx. 536, 1E, 1936-1942.
40 Worth noting that it was only in 1942 that the value of coffee exports (74,761 contos) overcame the record figures obtain in 1928 (61,790 contos), see AEA (1933), pp. 170-171; and AEA (1940-1943), p. 443.
41 AEA (1933), pp. 170-171; and AEA (1936), p. 259. The unities used to describe these incomes are not always the same: sometimes AEA uses contos, others angolares. The figures need to be crosschecked with other sources.
and safe internal market offered by the Portuguese colonial empire as an alternative to
the competitive environment of the international market.

The Portuguese government tried to coordinate the work of the imperial board
with the corporatist machine. On January 1940, a few months before the creation of
the Board, the Minister of the Colonies discussed with the heads of the Conselho
Técnico Corporativo do Comércio e Indústria (of the Ministério do Comércio e
Indústria), the Junta de Exportação da Colônia de Angola and the Grêmio dos
Armazenistas de Mercearia strategies to increase the importations of Portuguese
colonial coffee. This led to the organization of several meetings. The goal of these
meetings was to discuss ways of bringing those “stockists disciplined corporatively
through their corporation” to accept protectionist measures – that is, to give their
preference to coffee coming from Portuguese colonies rather than from other
proveniences. ⁴² One of the main concerns was the importation of Brazilian coffee
considered the biggest threat to the importation of Portuguese colonial coffee. ⁴³ At
that time – when the prices of tropical commodities were down, the global demands
for Robusta coffee still low and international trade was restricted by wartime
constrains – the idea of regulating the commercial relations between Angolan
producers and metropolitan buyers was extremely convenient for the first. This
position, however, would change in a couple of years.

After 1945 the prices of tropical commodities rose dramatically. In the case of
Robusta this rise was intensified by the trend of instant coffee, which had a huge
impact on the global demands for this kind of coffee. This transformation of the
consumption habits of Europeans and Americans would radically change the position
of Angolan coffee in the global market. While in the mid-1930s half of Angolan
coffee production was exported to Portugal, in 1944 this fraction had been reduced to
one quarter and in 1949 to one fifth. ⁴⁴ The United States was the most important
market during those years: while in the 1930s no Angolan coffee was export
ed to this
country, in 1944 it occupied the second position in the rank of Angolan coffee

⁴² Letter from President of Grêmio dos Armazenistas de Mercearia (Carlos Alberto Martins) to
Delegado do Governo junto do Grêmio dos Armazenistas de Mercearia, 18 January 1940, Lisbon. See
correspondence in File “Projecto da ‘Junta Imperial do Café’”, AHU, MU, GM, cx. 536, 1E, 1936-
1942.
⁴³ Letter from President of Grêmio dos Armazenistas de Mercearia (Carlos Alberto Martins) to
Delegado do Governo junto do Grêmio dos Armazenistas de Mercearia, 18 January 1940, File
“Projecto da ‘Junta Imperial do Café’”, AHU, MU, GM, cx. 536, 1E, 1936-1942.
⁴⁴ AEA (1933), pp. 170-171; AEA (1948), pp. 358-359; and AEA (1949-1950), pp. 440-441. It should
be noted that in 1924 almost all coffee produced in the colony of Angola was exported to Portugal.
importers, and 1949 the first place. The rules of the game were radically changed. Angolan coffee capitalists had seen with good eyes imperial regulation, and even urged for centralization, when coffee prices in the international market were low, but not now that they were high. To those who had the licence to export coffee the metropolitan market – and imperial centralization – was no longer a solution, but a problem.

Lisbon, on the other hand, wanted naturally to protect the status quo ante. With this in mind the Board determined (in 1945?) that exporting transactions to foreign countries could only be made provided that 25% was exported to Portugal. However, many Angolan exporters of Angola did not abide to the terms of this new legal obligation. In 1949, in order to overcome the “debit balances of certain firms on exports of quotas to the metropole”, the Board posed an ultimatum to these enterprises, obliging them to pay their debts (or at least part) to the metropole until the end of that year. Those that did not pay were forbidden to export to foreign countries. The problem was circumvented often by subterfuges. For instance, Mario Cunha Lda., that had an outstanding debt (3,341 tons) and that was forbidden to export to foreign countries, continued to export through an associated enterprise, Matos & Teles Lda., “a firm that until then only work on exportation, not on production.” But nevertheless, the Board continued “to authorize exports abroad in a practically free way”, only requiring to enterprises a “commitment” of 25% towards the metropolitan consumption.

This would change on 7 October 1950 when a circular was published establishing new rules for the exportation for foreign countries. Likewise, firms with a

45 AEA (1933), pp. 170-171; AEA (1948, pp. 358-359); and AEA (1949-1950), pp. 440-441. There is no data about the destiny of exportations in AEA (1935), AEA (1936) and AEA (1937).
46 A similar pattern can be found in the Portuguese elites involved in the production of colonial cotton, see M. Anne Pitcher, Politics in the Portuguese Empire: The State, Industry and Cotton, 1926-1974 (Oxford: Oxford University Press, 1993).
credit balance could embark abroad “six times their creditor position” and the firms
with debit balance could ship abroad, each month, “three times the amount that they
have exported to the metropole the previous month”. The idea was to make the
exportations to the metropole “in advance”, which imposed on the debtor firms “the
obligation to export to the metropole one third of the quantities to be exported abroad
while the creditor firms only have to export one sixth.” However, this regulation did
not solve the problem because many enterprises saw their debts to the metropole
increased: irregularities in terms of the procedures inside the Board were apparently
the reasons why this did not work.

“Coffee Exploit Board”

Reactions to these policies regulating the economic relations between the
metropole and Angola were collected during the Parliamentary Committee of Inquiry
to the Institutions of the Corporatist Organization (Comissão Parlamentar de
Inquérito aos Elementos da Organização Corporativa), an initiative constituted in
1946. This inquiry – often called in the correspondence “inquiry to the institutions
of economic coordination” (inquérito aos organismos de coordenação económica) –
included reports on the three imperial boards. Ended the World War II Lisbon wanted
to understand until what extent the policies of State intervention – in the cases of
grain, cotton and coffee – were being implemented. The criticisms the metropolitan
inquirers encountered were many.

One of the most interesting letters is an anonymous one describing the “blatant
injustice” resulting from the “commercial disequilibrium” between the metropole and
the colony, and the deplorable activities of the “institutions of economic

51 Letter from Magistrado Inquiridor Álvaro Rodrigues da Silva Tavares to Governador Geral da
Provincia de Angola, 14 December 1951, p. 16, File 76-B/1º, “Organismos de coordenação económica,
Junta de Exportação do Café Colonial, Juncafé” (2º vol.), AHU, GANG, Governo Geral de Angola.
52 Letter from Magistrado Inquiridor Álvaro Rodrigues da Silva Tavares to Governador Geral da
Provincia de Angola, 14 December 1951, pp. 16, File 76-B/1º, “Organismos de coordenação económica,
Junta de Exportação do Café Colonial, Juncafé” (2º vol.), AHU, GANG, Governo Geral de Angola.
53 This documentation is available in ANTT, AOS, PC-17C cx. 512. See also Maria Fernanda Rollo,
“Desmandos da Corganização Corporativa e Reencontros do Corporativismo no Rescaldo da II Guerra.
O Inquérito à Organização Corporativa de 1947,” in Corporativismo, Fascismos, Estado Novo, ed.
coordination”. As the writer acknowledges, the problem was that Angola sold everything cheaper to Portugal, but bought Portuguese products up to “300% or 500%” more expensive. This disparity in prices resulted from different conditions in terms of transportation costs and insurances: while Angola sells everything to the metropole “with charges of his account up to the [river] Tagus,” it “buys everything in the factory or in the metropolitan warehouses.” What the imperial boards had done was to aggravate this disequilibrium that already existed before they had been created.

This anonymous source describes with great profusion of detail the case of Angolan coffee. The problem, he sustained, was that the price Lisbon paid for 15 kg of Angolan coffee did not compensate the effort of production. The price in Lisbon paid for Ambriz coffee, Type 7 (15 kg), for instance, was 68$10 (escudos). To this one should deduct “expenses” up to 43$25 – that is, several insurances, storage expenses in Angola and Lisbon, packaging, transportation to the port and shipment, fees and taxes for exportation, transportation by steam boat, among many other items. This meant that, theoretically, the producer would only receive 24$85. This was not the case, however, at least for those coffee producers who did not have the money to invest on the costs mentioned before (that is, 43$25 per 15 kg of coffee produced).

Likewise, many “natives and small European producers” had to sell their product to the hinterland trader (comerciante do interior), who then sold to the exporter trader located in the colonial centres (comércio exportador dos grandes centros) that finally dispatched the product to Lisbon.

The author of this letter also criticizes the policy of the Board that determining that a percentage of the coffee produced in Angola should be exported to the metropole, arguing that it had brought new complications to small producers. Instead of offering new market possibilities, this regulation had created additional costs to

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them since before distribution Angolan coffee spend lots of time (up to six months) in storage houses in Lisbon at the costs of the “colonial intermediary” (the exporter trader). Again this had consequences to the producer since to compensate “all the unforeseen circumstances of this business” the colonial intermediary defended himself “in the price by which it bought coffee.” In other words, the impact of the new regulations of the Coffee Export Board was seen as extremely negative as it had given more power to those who had already the power – that is, those who were allowed to export coffee.

For him it was clear that the Coffee Export Board, created to protect the producer and to improve the quality of the product, instead of reverting the disequilibrium between the metropole and Angola, had aggravated it, strangulating the producers and benefiting “its reserve funds” as well as “metropolitan coffee dealers”.

A Juncafé truncou em absoluto a missão para que foi criada, chamando a si o exclusivo de vendas para os mercados externos, quando estes escassearam. Fez lucros superiores a 50% que legitimamente lhe não pertenciam. Com esta prática, no momento mais crítico, desinteressou o comercio exportador Angolano da compra de cafés e abandonou o pequeno produtor à sua sorte.

Another very interesting letter attached to the reports of the Inquiry to the Institutions of the Corporatist Organization is the one by Maurício Marques da Paixão, owner of one of the largest coffee producing enterprises (Marques Seixas & Co.). Paixão vehemently criticizes the Board of Coffee Exports for having as its

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61 “Juncafé had absolutely no effect on the mission for which it was created, calling itself exclusive sales to foreign markets when they were scarce. It made profits over 50% that legitimately did not belong to it. With this practice, at the most critical moment, it disregarded the Angolan export trade in the purchase of coffee and abandoned the small producer to his fate.” Anonymus letter [to the Comissão Comissão do Inquerito Parlamentar dos Elementos da Organização Corporativa], 21 Agosto 1946, Lisboa, Document no 12, File “Relatório sobre a Junta de Exportação do Café Colonial” (Annexes), ANTT, AOS, PC-17C cx. 512, pt. 4, p. 376.
62 Letter from Mauricio Marques da Paixão (owner of the enterprise Marques Seixas & Co.) to the Comission of the Parlamentary Inquiry about the Institutions of the Corporatist Organization
principal goal the accumulation of “fabulous profits”. As he explains, producers were now forced to sell to the Board because they “lacked resources” or because they had no more access to foreign markets, “now taken by the Board”. According to him, these “fabulous profits” were due to three factors: firstly, the Board “did not buy the product for a fair price”; secondly, the Board did not invest anything on the promised technical assistance to the producer; thirdly, it had been approved an alteration of the Regulation of Coffee Classification, as well as the increase of the export coffee taxes, which damaged greatly the finances of those involved in the business.

The lack of investment in technical assistance to coffee production is perhaps the most mentioned of the Board flaws in the view of this large coffee producer. Curiously, he also includes the lack of African workforce in this domain. According to him, this “lack of assistance” became evident when “there was an abundance of indigenous workers employed in the cotton crop”, in opposition to the lack of workers available to work in coffee plantations. This fact, he further stressed, had also a negative impact on the indigenous economy since, in his opinion, the role of natives in cotton cultivation mandatory systems was “anti-economic”: Africans working for the big cotton concessionaires produced practically no money for themselves and their families. The other problem concerned the increase of taxation over coffee exportation. For him, the injustices as far as taxation was concerned were so many, at least when compared with other two imperial marketing boards, that the Board should

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(Comissão do Inquerito Parlamentar dos Elementos da Organização Corporativa), File “Relatório sobre a Junta de Exportação do Café Colonial” (Annexes), ANTT, AOS, PC-17C cx. 512, pt. 4, pp. 379-386.
63 Letter from Maurício Marques da Paixão (owner of the enterprise Marques Seixas & Co.) to the Commission of the Parliamentary Inquiry about the Institutions of the Corporatist Organization (Comissão do Inquerito Parlamentar dos Elementos da Organização Corporativa), File “Relatório sobre a Junta de Exportação do Café Colonial” (Annexes), ANTT, AOS, PC-17C cx. 512, pt. 4, pp. 381.
64 Letter from Maurício Marques da Paixão (owner of the enterprise Marques Seixas & Co.) to the Commission of the Parliamentary Inquiry about the Institutions of the Corporatist Organization (Comissão do Inquerito Parlamentar dos Elementos da Organização Corporativa), File “Relatório sobre a Junta de Exportação do Café Colonial” (Annexes), ANTT, AOS, PC-17C cx. 512, pt. 4, p. 380.
66 Letter from Maurício Marques da Paixão (owner of the enterprise Marques Seixas & Co.) to the Commission of the Parliamentary Inquiry about the Institutions of the Corporatist Organization (Comissão do Inquerito Parlamentar dos Elementos da Organização Corporativa), File “Relatório sobre a Junta de Exportação do Café Colonial” (Annexes), ANTT, AOS, PC-17C cx. 512, pt. 4, p. 381.
be called “Coffee Exploit Board.” Paixão’s complaints concerned in particular in Cuanza-Sul region, where the most part of the 1st class coffee was produced.

Não era justo que o café de Amboim e Seles sofresse novos agravamentos de taxas e alteração dos tipos existentes, que vinham onerar muitos agricultores do Amboim e Seles, já exaustos de recursos, devido aos das outras regiões não cumprirem a lei.

To conclude, the activities of the Coffee Export Board to protect the commercial relation between the metropole and Angola started to be rejected by colonial producers when coffee prices in the global market started to rise. According to the documentation, these policies were rejected by both small and large producers, the later often also exporters. Comprehensibly, no one was happy with the idea of selling coffee at a lower price to Lisbon: the small producers because they could not afford the costs and so they had to sell cheaper to traders; the large producers because they could sell the product to foreign countries at much higher price. Both seem to argue that they would accept the deal if they were compensated in another way, for instance, with technical assistance. In the first years of the Board, this was not happening in Angola and therefore this experience proved especially disappointing for the most part of the actors involved in the business.

Galvão and Small Growers

The performance of the imperial boards also concerned the Ministry of the Colonies. Two years before the Parliamentary Committee organized the Inquiry to the Institutions of the Corporatist Organization, efforts had been made to ascertain the well functioning of these institutions by this ministry. At 19 September 1944, two

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68 Letter from Maurício Marques da Paixão (owner of the enterprise Marques Seixas & Co.) to the Comission of the Parliamentary Inquiry about the Institutions of the Corporatist Organization (Comissão do Inquerito Parlamentar dos Elementos da Organização Corporativa), File “Relatório sobre a Junta de Exportação do Café Colonial” (Annexes), ANTT, AOS, PC-17C cx. 512, pt. 4, p. 382.
69 “It was not right that the coffees of Amboim and Seles should suffer further worsening of rates and alteration of existing types, which would greatly burden the already exhausted farmers of these regions, only because other regions did not comply with the law.”, Letter from Maurício Marques da Paixão (owner of the enterprise Marques Seixas & Co.) to the Comission of the Parliamentary Inquiry about the Institutions of the Corporatist Organization (Comissão do Inquerito Parlamentar dos Elementos da Organização Corporativa), File “Relatório sobre a Junta de Exportação do Café Colonial” (Annexes), ANTT, AOS, PC-17C cx. 512, pt. 4, p. 383.
weeks after Marcelo Caetano had been appointed Ministry of the Colonies, he entrusted the Inspector of the Colonial Administration Henrique Galvão with an inquiry to the imperial institutions of economic coordination. The story of Galvão is well known of the historians of the Portuguese empire: he was a colonial inspector and a deputy for Angola in the Nation who became increasing critical of the regime, and before he abandoned the country (in the beginning of the 1950s), he submitted a report in a secret session of the Commission of the Colonies (in 1947) that expresses many of his criticisms he maintained about Portuguese colonial rule in Africa. Scholars have widely cited this report. Less attention has been drawn to the “letter-reports” he wrote to Marcelo Caetano (in 1945), while he conducted the inquiry mentioned above.

Galvão arrived in Luanda in February 1945. His opinion about imperial marketing boards was generically negative, but it was the Coffee Export Board that was singled out for harsher criticism. He describes its functioning as “deplorable”. Natives and small European producers were in his opinion those suffering the most damages. It’s interesting to note that (again) it’s not only the distinction between Europeans and natives that emerges as historically significant. Not disregarding the huge differences between indigenous and non-indigenous producers, Galvão gives us insight into the demarcation opposing large (always European) and small (European or indigenous) coffee producers. As we saw above, the legislation creating the Board made this distinction very clear, by establishing that only those European who could afford a considerable fee were allowed to export their own coffee; those who had not the necessary possessions had to sell to the Board or to export firms.

His main objection concerned the lack of technical assistance that was expected given the stiffed taxation on coffee. Galvão was surprised with how little

70 The exact date of the ministerial order (despacho) that instructed Galvão as responsible for this inquiry is mentioned in “Relatório sobre a Junta de Exportação do Café Colonial” of the Comissão de Inquérito Parlamentar dos Elementos da Organização Corporativa, ANTT, AOS, PC-17C cx. 512, pt. 4, p. 291.
71 See the report “Exposição do Deputado Henrique Galvão à Comissão de Colónias da Assembleia Nacional, em Janeiro de 1947”, deposited with Arquivo Histórico Parlamentar (AHP).
73 Galvão had been in Angola in a mission eight years before, in 1937.
had been done in relation to indigenous coffee producers. The four technical brigades (brigadas técnicas) created to give them technical assistance were for him “pure propaganda stunts”.\(^{75}\) According to him, the action of these brigades, constituted by “European foremen and indigenous monitors” and coordinated by one “regente agrícola”, were limited to an “insignificant” number of lavras, being badly received by natives, “who think they are only going to prepare the way for someone who will rob them of the lands”.\(^{76}\) No huskers had been introduced in these regions, where, accordingly, coffee was still “hulled with a pestle as in the old days of Adam and Eve.”\(^{77}\) Finally, there was no global view of the “sustainability of the indigenous economy”. He describes that in Uíge the Board incited Africans to cultivate coffee without having in mind other aspects of their lives – the result being that “indigenous coffee production actually increased but food supplies were scarce because they have ceased to be cultivated.”\(^{78}\)

But Galvão was also concerned with small European producers. The message contented in the “reports and propaganda” of the Board, saying that a “great service” had been made to help small producers – by buying their coffee at a fix price, which supposedly was higher than the one offered by the merchant, freeing them thus from him”– was simply not true. As far as he could ascertain, the reality in the Angolan coffee-producing regions was much different:

O que realmente acontece é que tendo o produtor, durante o ano, de servir-se de crédito que o comerciante lhe oferece, é forçado a vender-lhe, no fim, a sua mercadoria a um baixo preço. A garantia do preço oferecido pela Junta, sem assistencia financeira durante o periodo das despesas (assistência a que alias a lei orgânica da Junta se refere e que nunca foi praticamente realizada) resulta inutil para

\(^{75}\) “Letter-report” from Henrique Galvão to de Minister of the Colonies, received in 18 February 1945, pp. 22-23, File “Inquéritos de Henrique Galvão / Colónias,” sub-file “Cartas-Relatórios, no 1,” ANTT, AMC, cx. 8.

\(^{76}\) “Letter-report” from Henrique Galvão to de Minister of the Colonies, received in 18 February 1945, pp. 22-23, File “Inquéritos de Henrique Galvão / Colónias,” sub-file “Cartas-Relatórios, no 1,” ANTT, AMC, cx. 8.


o produtor. É ainda o comerciante – e só ele – quem a aproveita nas suas operações por intermédio da Junta.\textsuperscript{79}

Galvão identifies Cuanza-Sul as the region from where he had received more complains from European smaller producers concerning the commercial policy of the Board. “I received from several small farmers of Gabela a rather distressing exposition and in such terms that I immediately went to Amboim,” he writes.\textsuperscript{80} The complains of these small producers concerned an “operation” promoted by the Board that in September 1944 offered to buy 4,000 tons of coffee, “guaranteeing that the shipment and therefore the payment of the coffee would take place in October.” Many small producers did not want to loose that opportunity and delivered their coffee to the Board and according to the contract received 30% of the payment. However, the boat never came, “and they were left to pay the costs of storage in the coast and the insurances during the entire period from the first days of October until today.”\textsuperscript{81}

His final conclusion about the impact of the three imperial boards was not encouraging. While European small producers – frequently called “farmer settlers” (\textit{colonos agricultores}) – “are in misery as they have always been more or less, but now aggravated by the high cost of living”, indigenous producers were “exploited by the concessionaires and by the Boards, and falsely presented abroad for the sake of decorum as free farmers.” On the other hand, he argues, those European producers that were also exporters, those “exploiting the black as farmers and as traders”, were the only ones to gain with the situation.\textsuperscript{82}

\textsuperscript{79} “What really happens is that having the producer, during the year, the necessity of using the credit that the merchant offers him, in the end he is forced to sell his commodity at a low price. The guarantee of the price offered by the Board, without financial assistance during the expenditure period (assistance which the Organic Law of the Board refers that has never been carried out), is unprofitable for the producer. It is still the merchant – and only he – who gains from the Board operations”, “Letter-report” from Henrique Galvão to de Minister of the Colonies, received in 18 February 1945, p. 14, File “Inquéritos de Henrique Galvão / Colónias,” sub-file “Cartas-Relatórios, no 1,” ANTT, AMC, cx. 8.

\textsuperscript{80} “Letter-report” from Henrique Galvão to de Minister of the Colonies, received in 18 February 1945, File “Inquéritos de Henrique Galvão / Colónias,” sub-file “Cartas-Relatórios, nº 1,” ANTT, AMC, cx. 8.

\textsuperscript{81} “Letter-report” from Henrique Galvão to de Minister of the Colonies, received in 18 February 1945, File “Inquéritos de Henrique Galvão / Colónias,” sub-file “Cartas-Relatórios, nº 1,” ANTT, AMC, cx. 8.

\textsuperscript{82} “Letter-report” from Henrique Galvão to de Minister of the Colonies, received in 18 February 1945, File “Inquéritos de Henrique Galvão / Colónias,” sub-file “Cartas-Relatórios, nº 1,” ANTT, AMC, cx. 8.
4.3 THE ACTIVITY OF THE BOARD

The First Years (1940-1945)

The first five years of the Board were shaped by constraints imposed on trade by WWII. One example was the British refusal to issue navicerts, which had an impact on export activities across colonial Africa. For Manuel Ramos de Souza, who between 1940 and 1945 wrote extensively about the activities of this board in Angola, it was impossible to analyse the performance of this institution without taking into account the “circumstances profoundly abnormal motivated by the War.” His small book (separata), A Junta de Exportação do Café Colonial em Angola. 5 anos de actividade (1946), published one year after the presentation of Galvão’ s report, represents the official voice of the Board. When analysed with caution, it offers us a very good insight into the Board’ s concerns, expectations and priorities during the first years of its existence.

One of the main activities of the Board during the wartime was the promotion of commercial transactions, in which the Board bought coffee from producers and sold it to countries with which an agreement had been previously arranged. Souza describes operations of state intervention in the markets as “a valuable service to the small farmer.” On the other hand, it stresses that the way they responded depended on the geographical regions. Apparently, only the “people of the North” (Cuanza Norte and Congo?) responded positively. In Cuanza-Sul, and in line with what had been suggested by Galvão, the resistance had been bigger. At stake were the conditions imposed by the Board to make the deal. As he explains, “the people of the South (from Cuanza-Sul) do not accept the payment conditions imposed by Juncafè: 30% at the delivery moment of the product, 20% at the time of shipment and the remaining 50% 30 days after the arrival to Lisboa”. In his opinion this position of

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83 Sources about the board and the British block to the use of navicerts can also be found in the File “Actividades da Comissão Parlamentar de Inquérito aos Elementos da Organização Corporativa,” ANTT, AOS, PC-17C ex. 512, pt. 1.
84 Manuel Ramos de Souza, A Junta de Exportação do Café Colonial em Angola: 5 Anos de Actividade (Luanda: Tipografia Mondego, 1946), 4. This small book (separata) is the compilation of several articles the author had written to the journal O Comércio. This explanation is given in a final note, Souza, A Junta de Exportação do Café Colonial em Angóla..., 153.
85 Souza, A Junta de Exportação do Café Colonial em Angóla..., 12.
86 Souza, A Junta de Exportação do Café Colonial em Angóla..., 11.
small producers in Cuanza-Sul had been “worked upon them by certain interested parties to whom it was not appropriate for Juncafè to carry out the operation.”

Though Souza does not explicitly say who are those “interested parties” we deduce that are those who could also export coffee, large producers and exporters. It should be underlined once again that Cuanza-Sul was the region where large capitalist enterprises were concentrated.

We can also identify from Souza’s writings the emergence of two development strategies that would be implemented more systematically after 1949. The first was a short-term strategy and concerned the improvement of Robusta coffee production systems belonging to small European producers and indigenous producers. The goal was to give technical assistance to these producers so they could improve their product in quantity and quality. In these first years large European producers were excluded from this strategy since they had their own private technicians and agricultural scientists. The second was a development strategy designed to be implement in a long-term period and aimed at promoting the cultivation of Arabica coffee in the Angolan Plateau.

Part of the short-term strategy was, for instance, the radio program called *O minuto do café*, made in collaboration with *Radio Clube de Angola*, whose aim was to spread the word of “the most distinct experts” working on coffee in Abyssinia, Dutch East Indies, Brazil and Angola to “the most hidden places in the forest (*mato)*.”

As Souza stresses, the radio program targeted small European and Afro-European producers, that is,

>aqueles brancos cujo espírito aventureiro da Raça tinha arrastado para o meio do mato a dermarcar terras, onde, sem eira na beira, começam por colher sem ciência o café quase expontâneo, terras que regam com o seu sour benditoe que acabam por transformar em roças ou fazendas para cuja exploração, ainda mais primitiva, falta tudo, a vontade do hoemen exceptuando.\(^9\)

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\(^89\) “(…) those whites whose Race adventurous spirit had dragged them into the middle of the forest (*mato*) to demarcate lands, and where, without a penny, they began harvesting the almost spontaneous coffee bushes, which they irrigated with their blessed sweat, turning them into *roças* or *fazendas*, where everything is lacking, the will of man excepting.”, Souza, *A Junta de Exportação do Café Colonial em Angola….*, 40.
The coffee brigades, whose goal as mentioned before was to improve native coffee production, were also part of this short-term strategy. Created to homogenize coffee lavras and standardize coffee beans in the regions of Uíge, Encoge and Cazengo, they had very concrete tasks to which they had to respond. Yet, and despite the enthusiasm of Souza’s writings about the impact of their activities of technical assistance in regions such as Bembe, little was done in this regard during the first years of the Board. From Souza’s words, however, another activity seems to have occupied the experts of the Board before 1945. We are talking about the registration of properties used for coffee cultivation (cadastro das propriedades), which were classified in “non-indigenous properties” (propriedades não indígenas) and “indigenous properties” (propriedades indígena), in a clear response to the Portuguese policy of indigenato.

As Souza explains, this inventory of coffee cultivated fields consisted on the demarcation of the native lavras, counting “the number of coffee trees in production” and “fixing them to its rightful owner.” This was the main goal of the coffee brigades before the end of WWII. In this sense, Galvão was right when in 1944 he wrote that indigenous populations were afraid that these brigades would take away their lands. As Souza also explicitly writes these brigades had the power to inform the Government of Angola about who were the “true coffee farmers” (verdadeiros cafeicultores) among the whole universe of native farmers. As he argues, this information was central to a good coordination between the policies of land and the policies of labour in the sense that “it will avoid possible mistakes in the recruitment of workers and abuses encouraging idleness and other bad practices, which are equally detrimental to the colony’s policy and economy.” The “true coffee farmers” would be provided with a card that would assure them the “fixation to lavra” (fixação na lavra). To the process of identifying the true coffee farmers the Board calls “adjustment” (ajustamento):

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90 According to Souza, the Uíge brigade counted with 4 capatazes e 24 monitores, the Encoge brigade with 3 capazes and 18 monitores and the Cazengo brigade with 1 capataz and 6 monitores, being all coordinated by one regente agrícola principal, Souza, A Junta de Exportação do Café Colonial em Angola..., 40.
93 Souza, A Junta de Exportação do Café Colonial em Angola..., 77.
94 Souza, A Junta de Exportação do Café Colonial em Angola..., 77.
Impor-se-à um criterioso ajustamento das lavras de forma a considerar-se como cafeicultor não aquele que tenha palmos de terra disseminados por matas distantes uma das outras, pretexto não raras vezes, para a ociosidade ou para a vadiagem, mas sim aqueles a quem o ajustamento, feito com são critério e absoluta justiça, atribua um número a determinar, de hectares em que possam cultivar racionalmente o café (...)

All this was couched in terms strongly reminiscent of *Luso-Tropicalism*. Accordingly, “it was thanks to our strong colonizing action” that the majority of the natives had “an accurate idea of ownership” – it was due to the Portuguese that “they knew what belonged to them and why they called themselves owners.”

Mestres na arte de colonizar, percursores da moderna ciência da colonização, nós os portugueses, baseando-nos na verdade e na humanidade, mais do que quaisquer outros povos, temos sabido respeitar a propriedade indígena, defendendo-a até dele mesmo, pelo que o exercício da imprescindível tutela que lhe não permite a sua alienação com o único fim de obter os meios de satisfazer caprichos momentâneos, e daí o facto dele sentir hoje por nós, em todas as latitudes do império, aquele profundo respeito e aquela sincera estima, que excluem a necessidade o emprego da força para o exercício do domínio.

The process of adjustment depended on the coffee producing regions. Cazengo, for instance, was considered the worst example of all, a concelho where indigenous production was dominated by traders who bought coffee production regardless of quality standards, “stimulating producers not to be careful in the

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95 “A careful adjustment of the lavras will be imposed in such a way as to consider a coffee grower, not the one that has spans of land spread by forests distant from one another, often a pretext for idleness or vagrancy, but rather those who the adjustment, made with criteria and absolute justice, assign a number of hectares where they can cultivate coffee in a rational way.”, Souza, *A Junta de Exportação do Café Colonial em Angola*..., 79.


98 “Masters of the art of colonization, forerunners of the modern science of colonization, we, the Portuguese, based on truth and humanity, more than any other peoples, we have been able to respect indigenous property, defending it even from itself, by the exercise of the indispensable tutelage, which does not permit his alienation with the sole aim of obtaining the means to satisfy momentary whims, and hence the fact that he [the native] feels for us today in all the latitudes of the empire that deep respect and that sincere esteem, which excludes the use of force for the exercise of mastery.”, Souza, *A Junta de Exportação do Café Colonial em Angola*..., 76.
harvesting and preparation of coffee.” Cazengo was therefore one of the cases in which the empire should make what they call a “judicious adjustment” (criterioso ajustamento). Ambaca was another concelho where the adjustment should be strenuous, not so much for the quality of the product, but for quantity produced by each African farmer. In terms of the quality, there was no doubt that the coffee produced here was “much better” than that in Cazengo – due to “more favorable climatic conditions, more obidiente natives (...) and a more exigent trading system.” Yet, there was a predominance of the “small lavras”, which run against indigenous producers during the process of adjustment since “they did not produce enough coffee to keep the original owner.” The concelho of Bembe (in Congo) was in a very different position, “offering us already (...) very interesting numbers.”

This native production is described, however, has being the product of the work of the technicians of the Board and the agriculture department – before the arrival of those Africans did not know how to plant coffee. The message was deceptively simple and crude.

The medium and long-term strategy of the Board consisted on the introduction of Arabica coffee in the Angolan Plateau. Previous attempts made by Europeans to plant this type of coffee had failed. As Souza explains it was also the purpose of the Board to “save these Arabica plantations” by providing the farmers with the necessary technical assistance. One of the goals was to install machinery in specific places – “machines that will give our coffees a very different presentation than they have today.” The example was to be taken from Brazil: “Soon, the technicians sent to Brazil by Juncafé to study Arabica will arrive in Angola, and they will bring to us sensible teachings that, applied as the local conditions demand, will give new life to the Arabica of our Plateau.” We will analyse this project in detail in Chapter Six.

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99 Souza, A Junta de Exportação do Café Colonial em Angola..., 78.
100 Souza, A Junta de Exportação do Café Colonial em Angola..., 81.
101 Souza, A Junta de Exportação do Café Colonial em Angola..., 80.
102 Souza, A Junta de Exportação do Café Colonial em Angola..., 81.
103 Souza, A Junta de Exportação do Café Colonial em Angola..., 41.
104 Souza, A Junta de Exportação do Café Colonial em Angola..., 41.
The “New” Board (1948-1961)

A few years after the war Salvador de Lucena was nominated president of the Board of Coffee Exports. To his mandate in Angola he received, in 1948, precise instructions from the Minister of the Colonies to transform the Board in something more than a marketing instrument. Those aimed at “intensifying coffee production” and mainly at “improving product presentation” so that it could “compete in international markets in competitive conditions compared to other exporting countries”. They concerned particularly measures of technical assistance: to construct nurseries with bred seeds, to distribute seedlings among native populations, to instruct African chiefs about the best places to plant coffee, to clean and treat actual plantations, to construct coffee processing facilities to help improving the product of native producers, to sell the same equipment for coffee processing, and arrange credit lines for that purpose, to European producers, to hasten the construction of coffee storing facilities in Luanda, to improve the transportation means from coffee production areas to the trading places in the coast, including railway and roads, among many others.

In 1949, Lucena returned to Angola to access the results of the instructions he had given one year before. The first period he stayed at Luanda, “taking contact with all the services of the delegation” and advising on certain affairs he felt more urgent. This was only interrupted with a trip to Uíge, in which he visited “various European estates along the Dembos road” and took also the opportunity to visit the “coffee processing factory”, one of the Board’s project in this region and recently

105 Letter from the Minister of the Colonies to the President of the Coffee Export Board (Salvador de Lucena), 5 January 1948, File 76-B/1º, “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafé” (1º vol.), AHU, GANG, Governo Geral de Angola.
106 Letter from the Minister of the Colonies to the President of the Coffee Export Board (Salvador de Lucena), 5 January 1948, File 76-B/1º, “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafé” (1º vol.), AHU, GANG, Governo Geral de Angola.
107 Letter from the Minister of the Colonies to the President of the Coffee Export Board (Salvador de Lucena), 5 January 1948, File 76-B/1º, “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafé” (1º vol.), AHU, GANG, Governo Geral de Angola.
108 Letter (list of instructions) from the Minister of the Colonies to the President of Coffee Export Board (Salvador de Lucena), 3 August 1949, File 76-B/1º, “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafé” (1º vol.), AHU, GANG, Governo Geral de Angola.
109 One of those included the “Administração das Propriedades Alemãs” for which he prepared a separate report, a topic that I will not discuss in this dissertation; see Letter (list of instructions) from the Minister of the Colonies to the President of Coffee Export Board (Salvador de Lucena), 3 August 1949, File 76-B/1º, “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafé” (1º vol.), AHU, GANG, Governo Geral de Angola.
inaugurated, and the houses (moradias) to the functionaries of the Board that were being constructed in the villages of Ambrisete and Ambriz.110 The second period was passed in the region of Seles and Amboim. In the end, Lucena writes a letter to the Governor of Angola expressing his opinion and enumerating four concrete aspects he would like to see improved.

His first advice concerned the expansionary movement of European fazendas, which he considered to be the biggest problems of coffee economy in Angola. With the exception of the regions of Libolo and Ganda (regions in the South of Cuanza) – where, according to him, there was a “relative ease in obtaining labor” –, there were no doubts for him that the “increases in cultivated area” had to be stopped.111 If the fazendas in the North of Cuanza dealt already with serious problems of labour, how could one allow the setting up of even more fazendas? This problem was especially acute in Congo:

Começam já, e talvez com razão, a chegar à Junta as reclamações dos proprietários das antigas fazendas, os quais afirmam que as novas concessões os privam já da reduzida mão de obra de que dispunham. Apenas para se poder constatar até que ponto estas reclamações são fundamentadas, apenas informarei (...) que desde 1 de Janeiro do corrente ano até esta data já foram apresentados na Administração do Concelho do Bembe 23 pedidos de demarcação para um total de 14.500 hectares e, na Administração do Concelho de Ambaca, 81 pedidos de concessão, parte dos quais com area já demarcada de 58.840 hectares.112

Lucena continues saying “all these future states” are going to be made in “unoccupied forests” (matas desocupadas) and based on workforce that “starts now to

110 Letter from the President of the Coffee Board Export (Salvador de Lucena) to the Governor of Angola, Luanda, 22 November 1949, p. 2, File 76-B/1º, “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafé” (1º vol.). AHU, GANG, Governo Geral de Angola.
111 Letter from the President of the Coffee Board Export (Salvador de Lucena) to the Governor of Angola, Luanda, 22 November 1949, p. 11, File 76-B/1º, “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafé” (1º vol.), AHU, GANG, Governo Geral de Angola.
112 “The Board has received, and perhaps rightly, complaints of the owners of the old farms, who claim that the new concessions already deprive them of the small manpower available to them. One has to verify the extent to which these complaints are justified. But I can only inform that from 1 January of the current year up to this date, requests for demarcation for a total of 14,500 hectares have already been submitted to the Bembe Concelho Administration, and that in Ambaca Concelho Administration of Ambaca 81 concession applications arrived, some of them referring to 58,840 hectares of land that had been already demarcated.”, Letter from the President of the Coffee Board Export (Salvador de Lucena) to the Governor of Angola, Luanda, 22 November 1949, p. 11, File 76-B/1º, “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafé” (1º vol.), AHU, GANG, Governo Geral de Angola.
be requested to the Administration”, concluding that “this problem creates insurmountable difficulties”. In his opinion, and though he did not consider “feasible and logical to establish total restrictions on the free demarcation of land”, it was advisable to “establish new rules that would avoid solutions with antagonistic effects for the Direcção dos Serviços de Agrimensura and for local administrative authorities.”

A second advice concerns the welfare of the natives working on coffee. As he underlines, policies had been recently implemented, “and very aptly”, “forcing (...) all properties to build permanent camps for the natives who work there” – a measure that had been accepted by the majority of owners of coffee fazendas. Yet, in his opinion, the preoccupation with the levels of indigenous welfare should go much beyond the boundaries of European fazendas.

In a third advice Lucena urges the European owners of fazendas in the North to invest on industrial equipment for coffee processing and standardization. “It is not understandable”, he says, “that there is a compelling claim against the lack of manpower, and that, on the other hand, in a large number of properties, no effort has been made for the industrial re-hauling of coffee processing factories and for a better

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113 Letter from the President of the Coffee Board Export (Salvador de Lucena) to the Governor of Angola, Luanda, 22 November 1949, p. 12, File 76-B/1º, “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafé” (1º vol.), AHU, GANG, Governo Geral de Angola.

114 Letter from the President of the Coffee Board Export (Salvador de Lucena) to the Governor of Angola, Luanda, 22 November 1949, p. 12, File 76-B/1º, “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafé” (1º vol.), AHU, GANG, Governo Geral de Angola.

115 “It seemed to me that (...) it would be of great use if equal measures were taken for the progressive improvement of the housing conditions of the natives who work in matas that are their own property. Under strict administrative monitoring, I believe that it would not be impossible to compel these natives to apply their present hefty proceeds to the improvement of their living conditions and to avoid that those considerable sums have a perfectly useless application.”, Letter from the President of the Coffee Board Export (Salvador de Lucena) to the Governor of Angola, Luanda, 22 November 1949, p. 12, File 76-B/1º, “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafé” (1º vol.), AHU, GANG, Governo Geral de Angola.
management of human resources, by investing for instance on vehicles to transport the product.\footnote{116 Letter from the President of the Coffee Board Export (Salvador de Lucena) to the Governor of Angola, Luanda, 22 November 1949, p. 13, File 76-B/1º, “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafé” (1º vol.), AHU, GANG, Governo Geral de Angola.}

Finally, a forth advice concerns the “recruitment system for the contract” and the “constant friction and difficulties” that this system created in the native forests (matas). According to Lucena, it should be established a limit quantity of production (500 kg of coffee per year) from which the indigenous producer should gain “exemption from recruitment for the contract”. As he argues, this demarcation “had the advantage of giving these lavras an owner”, avoiding thus “the constant complaints of the natives against the requests for demarcation of lands embracing these same lavras.”\footnote{117 Letter from the President of the Coffee Board Export (Salvador de Lucena) to the Governor of Angola, Luanda, 22 November 1949, p. 14, File 76-B/1º, “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafé” (1º vol.), AHU, GANG, Governo Geral de Angola.}

This letter, found within untreated documentation deposited at the AHU, is revealing of a reformist agenda in post-war high officials of the Portuguese empire in the line of what has been suggested by Alexander Keese for the 1950s.\footnote{118 Letter from the President of the Coffee Export Board, Salvador de Lucena, for General Governor of Angola, 22 November 1949, p. 1, File 76-B/1º, “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafé” (1º vol.), AHU, GANG, Governo Geral de Angola.} Together with this author, it argues that the same was happening with those occupying executive positions in a metropolitan and centralized imperial structure such as the Coffee Export Board.

4.4 FOLLOWING THE MONEY (1948-1961)

As the Board’s coffers filled with increasing demand for Robusta in the global market, the Portuguese empire tightened the cycle with more centralizing measures. In the end of 1948, during the “tariff reform of the colony of Angola”, the Portuguese government decided to modify the funding system of the “institutions of economic coordination”. From then onwards, these were no longer directly dependent on custom duties (taxas aduaneiras), but they first entered on the budget of the colony and only then, accordingly, were distributed to these institutions. In practical terms, this meant that the Board’s incomes were “subsidized annually by the colony’s...
budget, with sums assigned by the general governor after hearing the Government Council.”

Taxation over exportation also increased. From a tax (taxa) of $06 (escudos) over each kg of Robusta coffee, established in the 1940’s legislation, Lisbon now determined a tax of 10,5% ad valorem. Three years later, in 1952, the regime of taxation was again reviewed and the procedures centralized. The new legislation established a new tax – known as sobretaxa (added tax) – that was channelled to the Serviços de Fazenda and then distributed in duodecimos to the Board in the format of an annual amount of 12,000,000$00. Finally, in 1957, again a second over-taxation was implemented. This was particularly high for lower quality coffee, a fiscal strategy (“tributação regressiva”) aimed at stimulating the production of higher quality coffee in the colony. Through this system of taxation the Board accumulated enormous funds during the 1940s and 1950s. For instance, in 1959 the most part of the Board’s incomes came from these taxes: 4,500,000$00 (legislation of 1948), 12,000,000$00 (legislation of 1952) and 10,211,420$15 (legislation of 1957).

All these three taxes over coffee exportations (1948, 1952 and 1957) were lower if the commodity was exported to the metropole (and not to foreign countries). But this protectionist measure, as others discussed before in this chapter, did not produce the expected results. For Angolan exporters preferred to sell their coffee in the global market at much better prices and pay more taxes to the Portuguese empire, than to export it to the metropole. In fact, it was a win-win situation. Clearly, this alliance between the Board and Angolan exporters during the coffee boom period contradicted the alleged intentions of the Board created to protect producers, not only from the inconstancy of the markets, but also from the interests of traders. For an anonymous observer of the Angolan situation (an economist?) the problem was that the policy of State intervention implemented by the Board had been “relatively

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119 Decree 37,214 of 16 December 1948, p. 1473.
120 Decree 37,214 of 16 December 1948, p. 1473. Taxation (taxa): 1% ad valorem; Over-taxation (sobretaxa): 11,5 % ad valorem. For this type of coffee see article 422 of the pauta de exportação of Angola, approved in the Decree 37,214 of 16 December 1948. A difference was made between “roasted coffee” (milled or not) and “non-specified coffee” (café não especificado) though the commodity in Angola was always “green coffee” (that is, “non-specified coffee”).
121 Decree 38,643 of 14 February 1952.
122 Decree 38,643 of 14 February 1952, p. 310.
123 Portaria 16,396 of 2 September 1957. Accordingly, coffee sobretaxa was altered to: 9,5 % ad valorem for first quality coffee; 11,5 % ad valorem for the second quality coffee; 15,5% ad valorem for the rest; $10 per quilo for “every quality”; p. 852.
easy”.

One example had been the minimum FOB prices established by the Board, prices that were fixed when the market was down but that were never revised when the market went up, having hence no practical effect on small and medium producers during the coffee boom. In the end, both continued to be in the hands of traders, now large coffee producers or export companies licensed in the Board.

There is no doubt about the accumulation of funds during the 1950s. To know exactly to where did these funds go is more difficult and it’s in fact out of the scope of this dissertation. Still, there is an interesting comparison to be made here, and again between coffee and cotton. The expenses regarding “social and development expenditure” in the overseas (and Madeira) of the imperial marketing boards responsible for each cash crops are more or less the same. However, in the case of the Cotton Export Board the funds were concentrated in one scientific institution whose goal was to change the colonial landscape in order to produce better and more cotton: Centre for Cotton Scientific Research (Centro de Investigação Científica Algodoeira) located in Mozambique. In contrast, the Coffee Export Board development policy was characterized by a multitude of projects, which also included a research centre located in the metropole – the Coffee Rust Research Centre (Centro de Investigação das Ferrugens do Cafceiro). The reason why the Board funded this metropolitan centre is, I argue, directly related to the international and political dimension of Robusta coffee as a commodity and to the constant negotiations that this implied (see Epilogue).

By the end of the 1950s there were several signs indicating that the Board had to change its policy. The fall of tropical commodities in the global market and the dispute between American Arabicas and African Robustas had led coffee producing countries across the world to engage on negotiations that aimed at finding common grounds between their policies – it was the beginning of the Coffee International Agreement, signed in 1961. Angolan Robusta was not one of the commodities most affected, but it had important fragilities. According to a study commissioned to the

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127 Barata, Localização da Sede dos Organismos de Coordenação Económica no Ultramar..., 92.
Board of Overseas Research (Junta de Investigações do Ultramar) and executed by the Centre of Political and Social Sciences (Centro de Estudos Políticos e Sociais), more than half (55.9%) of Angolan coffee exportation went to the United States in the year of 1957, and only 9.4% to the metropole. In 1958, when this study is published, the author, Alfredo de Sousa, adverts the Portuguese authorities that “in the long run, the concentration on the North American market, by the situation of dependence that it creates, is a danger.” The situation, he argued, was even more serious when one considered that 40% of Angolan exportations consisted of coffee. According to him, this level of economic dependency was not observed in the French, Belgian and British empire, because, above other reasons, they all were able to channel part of their coffee exports to their metropoles. In the Portuguese empire this did not happen and it was not expected to happen in the near future. As he would conclude: “the proportion in which the consumption increases is smaller than the increase of population in the set of the four provinces.” The solution was therefore not protectionism, but diversification of markets.

It was in 1960 that the Board’s policy of economic intervention was stiffened. As far as coffee exportation was concerned, the minimum FOB prices were finally revised and a new regulation was imposed to eliminate “opportunists.” But the most important measure concerned the sector of production: from then onwards the Board assumed the purchase of coffee “per price set at the production cost limit.” To storage the amount of coffee bought the Board created the Armazéns Gerais. In 1960 this measure only concerned 3rd quality, but one year later it was extended to every type of coffee, including 2nd and 1st quality coffee. The Board centralized now the whole sector of exportation. In the words of the observer above cited, it was the “crown of the incomplete system that had been practiced.”

130 Sousa, Ensaio de Análise Económica do Café..., 47.
131 Sousa, Ensaio de Análise Económica do Café..., 46.
132 Barata, Localização da Sede dos Organismos de Coordenação Económica no Ultramar..., 66.
133 Barata, Localização da Sede dos Organismos de Coordenação Económica no Ultramar..., 61.
continued to have the right to export but they had to compete now with the Board. Step by step the Board came closer to the most extreme cases of marketing boards, those that were also sole buyers of agricultural exports.

At the same time its place within the Portuguese empire was also being analysed. In 1960, Nunes Barata, also working for the Centre of Political and Social Sciences (of the Board of Overseas Research) was entrusted with a study entitled *Localização da sede dos organismos de coordenação económica*, whose goal was to investigate the transition of the headquarters of imperial marketing boards from the metropole to the colonies. The coordination between the metropole and the future headquarters of imperial marketing boards, the destination of the employees, and the financial impact on colonial and metropolitan budgets were some of the problems this study wanted to address. The study vehemently supported the transition of the headquarters of the Coffee Export Board to Angola; it was the beginning of the end of the Coffee Export Board, as it had been created. One year after, in 1961, the board gave place the Coffee Institute of Angola (*Instituto do Café de Angola*).

### 4.5 TRACING ROBUSTA AS A COMMODITY

Marketing boards are just one among several examples of imperial structures that were incorporated in post-colonial States during the process of independences in Africa. Their impact in shaping the development of African societies was enormous. Indeed Robert H. Bates in *Markets and States* makes the case that is precisely the existence of these marketing agencies which distinguishes “modern” Africans States from States elsewhere. According to him, it was only in African states that the transference of resources from traditional economic sectors (such as the production of cash crops) to industry and manufactory activities was monopolized by institutions that were “by law sanctioned to serve as sole buyers of major agricultural exports”. According to Bates and others, this model of State intervention in the markets, a fixture of both imperial past and totalitarian presents, would dramatically thwart the process of economic, social and political development in Africa. This present relevance explains why historians and political scientists – not only in the academia,
but in development projects funded by governmental and non-governmental organizations – have hovered around the subject like moths around the light.\textsuperscript{138}

However, one should approach with caution this “African Sonderweg” thesis. Scholars working in the field of commodities studies have shown us that the relation between coffee and state transcends European imperial history in Africa and its post-colonial aftermath.\textsuperscript{139} They have, for instance, described very similar institutions to imperial marketing boards being set up in Latin America during the 20\textsuperscript{th} century, such as the state agency Instituto Brasileiro do Café, in Brazil, or the semi-private Federación Nacional de Cafeteros de Colombia (Fedecafé), in Colombia.\textsuperscript{140} But more importantly, the emergence of imperial marketing boards in Africa should also be understood in the wider context of the war of empires that boosted the rise of the politics of economic protectionism since the beginning of the 20\textsuperscript{th} century.\textsuperscript{141} Also interesting are the historical continuities between imperial marketing boards and non-state institutions, such as the Chicago Board of Trade, a pioneer in the introduction of standards in the mid-19\textsuperscript{th} century commodity market.\textsuperscript{142}

But let us presently narrow our scope to the Portuguese case. What is it that one can say about the relation between these trans-national structures and the Portuguese experience of corporatism? We saw the ways in which Angolan elites


\textsuperscript{140} The history of coffee economic integration was marked by the valorisation program that was implemented in Brazil in 1906 (after the convention of Taubaté), enabling the Brazilian state to intervene in the market in order to stabilize prices, Topik, “The Integration of the World Coffee Market”, 26-28; André Felipe Cândido Silva, “A Campanha Contra a Broca-do-Café em São Paulo (1924-1927),” \textit{História, Ciências, Saúde – Manguinhos} 13, no. 4 (2006): 959.

used corporatist ideology as a rhetoric device to instigate Lisbon to start a discussion about the “corporatist organization of the colonies”. But, could we reduce this to rhetoric? Or, on the contrary, were the imperial and the national political contexts strongly interwoven? The answer in the case of the imperial marketing board analysed in this chapter lies probably in the middle. It’s unambiguous that several actors (metropolitan and colonial) used corporatist ideology for their one benefit. On the other hand, one cannot deny that there were concrete State efforts to link corporatism to these imperial structures. As we saw, corporatist structures were incorporated in the policies that regulated coffee as a metropolitan commodity. The impression one is left with is that the nature of the “imperial institutions of economic coordination” was not even clear for the regime. The fuzziness of Marcelo Caetano’s attempt to historicize them, as he addressed the Assembleia in 1945, is revealing of this tension:

Não há organismos corporativos que imediatamente dependam do Ministério das Colónias, pois que o próprio Grémio do Milho Colonial Português, tendo sido organizado anteriormente à instauração da ordem corporativa, não foi depois nela integrado. Mas dependem deste Ministério três organismos de coordenação económica imperial destinados a estreitar as relações das colónias entre si e com a Metrópole, a dirigir a política de certos produtos coloniais relativamente aos mercados externos e a fomentar, orientar e melhorar a cultura e a qualidade desses produtos.\textsuperscript{143}

Yet, we’ve also seen that, regardless of the regime’s efforts to tailor the Coffee Export Board to corporatist purposes, the goal was never accomplished. The reason behind this failure is the same explaining the failure of protectionist measures. Angolan Robustas had become a global commodity after the end of WWII, and for all actors involved – for the empire and for the local elites – the international markets were a much better option than the Portuguese internal market. As I argue in this chapter, the metropole that during the recession had been considered by the Angolan

\textsuperscript{143}“There are no corporatist bodies that immediately depend on the Ministry of Colonies, even the Guild of Colonial Corn itself, having been organized before the establishment of the corporatist order, was not integrated into it. But under the tutelage of this ministry are three imperial economic coordination institutions, aimed at strengthening the relations between the colonies and the metropolis, directing the policy of certain colonial products towards foreign markets, and promoting, orienting and improving the culture and quality of these products.”, Speech draft of Marcelo Caetano, Minister of the Colonies, adressed to Presidente da Assembleia Nacional, to be presented at the Assembleia, s/d (1945?), File “Inquéritos de Henrique Galvão / Metrópole,” sub-file “Documentos singulares, n° 3,” ANTT, AMC, cx. 8.
elites the solution, was now a big problem – a market saturated with corporatist institutions and regulations, fixed prices, yet ridden with uncertainties. Unlike cotton, where there was a textile industry and a powerful metropolitan elite interested in this raw material for their fabrics, coffee had not a roasting industry to backing it up at home. These industries were located in foreign countries, namely the Netherlands, Germany, Switzerland, United Kingdom and the United States.

This chapter argues that the main goal of this marketing board after World War II was to turn Angolan coffee into a more competitive commodity in the global market – this may also explains why, contrarily to the Board for Cotton Exportation and the Board for Grains Exportation, which were solely under the tutelage of the Ministry of the Colonies, the Board for Coffee Exportation, in the institutional labyrinth had to respond also to the Ministry of the Economy. On the other hand, this chapter also stresses, and again in stark contrast to cotton, that the elites with which the empire had to negotiate, make compromises and grant concessions to, were not metropolitan but colonial. The colonial archive demonstrates the regime’s concern not to antagonize the needs and expectations of the Angolan coffee capitalists. Many of these capitalists were not new to Angola; as we saw in Part 2 they were insiders, with a long history in this colonial space and a network of power relations encompassing different key local players. To put it bluntly, agency was in the colonial side.

To conclude, two important lessons can be drawn from this exercise of following Robusta coffee as a commodity. The first is that the narrative about the “backwardness” of the Portuguese empire simply disappears when we switch from why to how. Portuguese marketing boards were created at the same time as marketing boards in other colonial states – in fact, they were one of the first to be launched in Africa. This is important because it adds leverage to the arguments of those who question descriptions of the interwar as a period of long stagnation. Indeed, it terms of colonial governance, this was a period of major innovations. The second conclusion returns to the old methodological concern, that urges to see empires, not as monolithic structures, but as multidimensional ones, adapting and adjusting to different local and global conditions. The exercise of following imperial commodities, I argue, makes a

For the cotton case see Pitcher, Politics in the Portuguese Empire: The State, Industry, and Cotton, 1926-1974... It should be noted that one of the most powerful sector of the corporatist state was organized around cotton and the textile industry; the other was grain, particularly wheat, which also had a powerful industry associated in Portugal.
very pretty good case for the relevance of this methodological proposal. Colonial cotton, for instance, and as the work of Tiago Saraiva shows, is strongly connected with the presence of fascist traits in *Estado Novo*;\(^{145}\) in the coffee case, those connections are more nuanced. Robusta as a commodity came with a set of assembly instructions that privileged the dynamics of global markets, pushing the empire to the sphere of foreign affairs and to forge alliances with colonial elites. Robusta therefore unveils an empire at variance with protectionism, corporatism and metropolitan elites that nevertheless remains anti-liberal, strongly extractive and centralizing. It reveals different dynamics at play, in which, as we will in the next chapters, negotiation was paramount.

Coffee was not just any sort of commodity for the Portuguese empire. Together with cotton and grains, it was subject to special policies of exportation control centralized by a state marketing board. Constructed around the idea of “Portuguese coffee”, the Board intended to have an equal intervention in every colony of the Portuguese empire where the crop was planted. Yet, this rhetoric was far from being accurate. As demonstrated in the previous chapter, the origins of the marketing board were closely connected to one colony – Angola – and the funds accumulated throughout the years came almost totally from coffee exportations produced there. Angolan Robusta was the basis of the Coffee Export Board.

In the previous chapter it was affirmed that Angolan Robusta became a global commodity, but I didn’t explain how; I identified Angola’s dependency on the United States without explaining why that was happening; I assumed the empire was responding to an increasing demand for Robusta in the global market, but I didn’t clarify what exactly was this response and how did it impact coffee cultivation; I established significant causality patterns between the fluctuations in the coffee global market and the policies of Portuguese imperial State in Angola, but I didn’t explore the social relations behind these patterns. In other words, Robusta appears in the previous chapter as generally commodities appear in narratives from economic history, as an abstract figure, a commodity traded in the global market with no grounds, nor embeddedness in Angola. The goal of the present and next chapters is to unify the history of Robusta as a commodity, as a crop and as a plant. Aspects that normally appear separated in the historiography – such as the biology of these plants, the crop technology involved, the policies of the Portuguese colonial empire and the dynamics of global markets – will therefore appear together, tightly woven. Only by such unification is the reconstruction of the Robusta Empire possible. This chapter is, foremost, a dialogue with economic history and commodity studies, fields that
provided the knowledge and information without which it could had never been written.¹

From a methodological viewpoint, these connections emerge when going beyond the distinction between Robusta and Arabica. This switch in perspective makes the present analysis very different from the one used in the first three chapters. While in Part I, this distinction served to delve into Robusta’s environmental history – and to discuss the role of the environment and of native people in the making of a specific imperial configuration –, in the present chapter this divergent path no longer suffices. In fact, the “Robusta factor” is only one among many elements that has to be considered when reconstructing the history of Angolan coffee as a commodity. At stake are intra-specific differences (varieties, sub-species, etc.) and differences on individual plants, caused by different environmental conditions and agricultural practices. Here it won’t be enough to criticize the general idea of “coffee” by emphasizing the particularities of Robusta as an indigenous species to Angola; the research will have to go further in the variety of life.

The first step to reconstruct the history of Angolan Robusta as a commodity is therefore to bring to our historical narrative the biological diversity at a sub-specific level (i.e. regional varieties and individual differences). The second step is to follow the practices and artefacts created to standardize this very same diversity in order to meet international markets criteria. In both cases we need scientists – the ones that give us the most accurate descriptions about coffee as plant and as crop, and the ones involved in the design of the standardization practices and artefacts. To follow them is therefore to understand how Angolan Robusta became a global and an imperial commodity and why Angola became one of the first world producers. Important connections will be made with Brazil and United States, two main actors in coffee global market. These connections will be debated in the end of the chapter in the contexts of the end of European imperialism, of the hegemonic presence of the United States in the world, and of cold war and decolonization. I will rely on the John Krige’s

notion of “co-produced hegemony” to analyse and comprehend the rise of the Portuguese Robusta Empire after WWII.²

The main human actor interacting in this story with Robusta coffee is Artur Rocha de Medina – agronomist, graduated in the High Institute of Agronomy and sent to Brazil by the Board in 1945, in the first mission aimed to survey the modes of coffee production in a foreign country. Medina, an expert on technical and agronomic issues of coffee production, is central to understand the priorities, constraints and challenges the Board was having in Angola in the mid 1940s and during the 1950s. He was also the man chosen by the Board’s President to accompany him when the latter was invited to participate in the first trans-continental meetings to discuss the coffee international agreement. Medina’s trajectory gives us a glimpse of the negotiations that the Portuguese empire had to make in order to become a key player in an increasingly competitive and politically-engaged coffee global market.

5.1 THE GREAT REVOLUTION

In 1929, the prices of tropical commodities plummeted and panic broke out in coffee-producing countries. Across the world, states took extreme measures to control markets. In Brazil 4,200,000 tons of coffee were destroyed.³ But for the producers of Robusta in Africa there were also good news. The year the world awoke to the great depression was also the year of the beginning of a new order in the coffee global market. Technology and industry were the motor behind this new order. Not only Robusta was increasingly wanted as a “filler” in certain blends, but it was the crucial composer of a new beverage – instant soluble coffee – that was being tested among consumers since the First War.⁴ Instant soluble coffee, in particularly, was paramount for Robusta-producing states. As Steven Topik explains, “drinkers of instant coffee were concerned with speed and convenience, not the quality of the brew” and therefore “the small number of roasters who capture this capital intensive-market used

low-priced beans, especially Robusta beans that Africa and Asia began growing.”

The increase in demands for Robusta after WWII is directly related with this new invention and with the way it spread, as a cultural trend among consumers, especially in the US – by the 1960s one third of the coffee prepared at home was instant coffee.

This great revolution in the history of the commodity is associated with the year of the great depression because it was then that Robusta entered the American market. Robusta had to be included in the American definition of “coffee”, which only happened in 1929. Until then, only Arabica and Liberica species were recognised by the United States Department of Agriculture as coffee. By changing the American definition of “coffee”, it was established that Robusta was a plant “grown from a coffee seed” and that it should no longer enter the American market labelled as “other than coffee”. Apparently, Dutch lobbying, aimed at protecting Robusta production in Dutch East Indies (Java coffee), was central in convincing the Americans. In the United States, the process was led by the Food and Drug Administration, which organized several “discussions and hearings”, in which the Green Coffee Association also “took an active part.” Being the United States the most important coffee consuming country in the world, and where some of the most powerful roasting industries in the world were concentrated, this was a major achievement for Robusta producers. However, as we will see later in this chapter, the American market would close again to Robusta-producing states in Africa, only to reopen in 1945.

Coincidently or not, it was also in 1929 that Robusta got a name. Since the end of the 19th century, several Robusta varieties had been classified as species – *C. canephora* Pierre, *C. laurentii* de Wild, *C. robusta* Linden, *C. ugandae* Cramer, among many others – and no one understood each other. Not only did this type of coffee come under different names, but also its taxonomic status was chaotic – in

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5 Topik, “The Integration of the World Coffee Market.”…, 45.
7 Wrigley, *Coffee...*, 57.
8 Wrigley, *Coffee...*, 57.
9 Wrigley, *Coffee...*, 57.
10 According to its official history, the Green Coffee Association was an association of importers, brokers and agents of New York City, created in 1923 and responsible for “setting up a committee to write up a Standard Coffee Contract, and to establish the rules and procedure for arbitration of disputes, both quality & technical”, [http://greencoffeeassociation.org/about/history_of_the_association](http://greencoffeeassociation.org/about/history_of_the_association). More research is needed.
contrast with other commercial coffees, such as Arabica coffee or Liberica coffee, with a stable taxonomy. Yet, this would change in 1929 with the publication of Auguste Chevalier’s treaty on coffee, *Les Caféiers du Globe*. According to this French botanist, the types collected in the Congo basin region and nearby territories since the end of the 19th century did not correspond to different species, but to different varieties. In terms of species, there was only one: *C. canephora*. An authority in tropical botany, his opinion prevailed among others – although not indisputably. From its natural dispersion in nature, from its several varieties indigenous to different places in the basin of Congo, Robusta now emerged as one single entity, one that could be named according to the rules of Linnaean nomenclature.

In Angola the repercussions of a global increase in demands for this “new coffee” had immediate effects. The volume of coffee exported almost doubled from the beginning of the 1920’s decade (a period when Angola’s first place in the African rank started to be disputed by Kenya) to the mid 1930s (competing with other African colonial states, such as Ethiopia, Tanganyika and Madagascar). But it was after WWII that exportations dramatically increased – indeed they quadrupled between 1946 and 1960 (the Belgian Congo and Uganda were now the two new competitors). The Netherlands occupied the first position in the rank of Angolan coffee importers after the end of the war, but after 1949 (and until the end of the empire) a new leadership

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13 As J.W. Purseglove, an expert on tropical botany, would write in 1968: “the taxonomy of this sp. is very confused and for the time being, until further detailed studies have been made, it is probably wisest to lump above under the general name of *C. canephora*”, Purseglove, *Tropical Crops.Dicotyledons*..., 482.

emerged: the United States.\textsuperscript{15} This meant that, when the Board started to implement concrete measures to improve the systems of production and control exportations (in 1949), Angolan Robusta was already a commodity highly dependent on the American market. This conjuncture had huge implications in the process of coffee commodification in Angola, as we will see.

5.2 STANDARDIZING ROBUSTA

The Brazilian Connection

In 1945 the Board sent to Brazil Artur Rocha de Medina, an agronomist, and João Carrolo, an 18 years’ experienced Angolan fazendeiro.\textsuperscript{16} It’s easy to understand why Brazil was the first destination of a mission to a foreign country organized by the Board. Not only had the world main producer been part of the Portuguese empire, but it was also there that one of the most advanced researches on coffee was being undertaken, namely at the Instituto Agronômico de Campinas, located in the State of São Paulo.

The science being made in Brazil was not translated into the practices of coffee cultivation. For the Portuguese the agronomic and ecological problems of the extensive production system adopted in Brazil were obvious (see next chapter).\textsuperscript{17} In a small book Medina wrote about this trip – called \textit{O Café no Estado de São Paulo} (1947) –, he was unambiguous in saying that, from an agronomic point of view, Angolan coffee production systems were much more “modern” than those in Brazil because they were more environmentally sustainable and therefore had more economically value in medium and long terms.\textsuperscript{18} But there was an aspect in which Brazil was far more advanced than Angola. This aspect concerned the “coffee preparation for market”, known as the coffee processing operations. Though coffee in

\textsuperscript{15} AEA (1948), pp. 358-359; AEA (1949-1950), pp. 440-441.
\textsuperscript{16} Medina was in Brazil from 22 February 1945 until 14 November 1946 and Carrolo from 22 February 1945 until 5 February 1946, Letter from President of the Board (Salvador de Lucena) to Minister of the Colonies, 12 January 1950, File “1” Volume,” AHU, MU, GM, cx. 213, 1E.
\textsuperscript{17} Manuel Ramos de Souza, \textit{A Junta de Exportação do Café Colonial em Angola: 5 Anos de Actividade} (Luanda: Tipografia Mondego, 1946), 43.

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Brazil was Arabica and not Robusta, these operations were very similar and therefore our visitors could learn a lot from the Brazilian case.

The process of coffee preparation for market (preparação do café) consists on a series of processing operations. Coffee processing (or reprocessing) can be divided into two phases: “primary processing” (in Angola consisting on the drying process; secagem), which isolates “coffee beans” (or “coffee seeds”; sementes do café) from the fruit picked from the tree (“coffee cherries” or “coffee berries”; cerejas do café)\(^{19}\); and “secondary processing” (benefício or rebenefício do café), which transforms “coffee beans” into “commercial coffee”. The next step is roasting, responsible for transforming these “green coffee” (café verde) beans into “roasted coffee” (café torrado), but unlike coffee processing, traditionally done in the local of production, roasting has been an activity mainly concentrated in consuming industrialized countries.

As far as “primary processing” is concerned, it should be added that in Angola farmers (European and indigenous) used the dry method. In 1950, and “apart from very few exceptions”, this was the prevailing rule.\(^{20}\) Coffee beans were spread in the ground (terreiro) of both large and small farms and left there to dry under the sun. In Angola, secondary processing comprised six operations: selection of impurities (expurgo das impurezas no café em coco), hulling (descasque), polishing (polimento), sorting by size (calibragem), sorting by density (that separates impurities and defective beans from normal beans; catação por ventilação) and manual selection (catação manual).\(^{21}\) Secondary processing was therefore the first important moment for standardization, in which coffee beans were separated according to different sizes and textures, in an attempt to reduce individual variation and impurities, that is, by separating coffee from side products.

For Medina there were no doubts that in order to modernize coffee production systems in Angola it was crucial to improve processing operations. Particularly astonishing in Brazil was the state of mechanization of some of them. The comparison

\(^{19}\) There are two methods of primary processing: the wet and the dry methods. The first, more complete and sophisticated (more operations included), implies submerging coffee cherries in water, inducing them to a fermentation process; the second, more simple and with less operations, consists on leaving them dry at the sun.


with Angola was worrying. As he would later ascertain for the Portuguese colony: 100% of African farms and 75% of European small farms “did not have mechanical installations for hulling”; 25% of medium farms “did not have technological facilities”, 50% were “equipped for mechanical hulling”, and only 25% “had full processing facilities”; 100% of large farms “had technological facilities”, but only 60% “had full processing facilities.” In his report Carrolo also stresses the discrepancies between Angolan and Brazil: in the later “the hulling and processing machines are so perfect that there is almost no manual picking.” “From what I have seen and observed, I conclude that Angola is well advanced in all aspects of agricultural work from sowing to harvest, but to a degree of great delay in drying the product”, he also wrote. As far as sorting was concerned, it’s interesting to see that he considers “the manual”, which consists on the picking made by women of all fruits that are not capable of being incorporated into our first quality type”, as the “only advantage” of Angola. Yet, from the point of view of this fazendeiro, there were also important economic reasons to take into consideration. As he writes, each women “costs money” and if one should opt for men, it would be even more expensive, “with the aggravating of the income being inferior since the masculine native does not adapt nor knows this kind of work.”

When in 1949, three years after his trip to Brazil, Medina addressed these topics at the First Agronomic Colloquium (Primeiras Jornadas Agronómicas) held in Nova Lisboa (Huambo), he had one purpose in mind: the mechanization of coffee processing operations. According to him, “the cheaper process of solving the problem of the coffee processing in Angola is the construction of a network of processing factories located in the producing regions at points of easy coffee inflow.” These state standardization factories (fábricas de benefício) should respond to the needs of small and medium farms, while large farms should rely on their own

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22 We translated the Portuguese word propriedades to farms. Medina considers “small farms” (pequenas propriedades) those producing less than 50 tons of coffee per year – this group comprehended all “indigenous farms” (representing “20% to 25% of the total production of the colony”) and 200 European farms; the “medium farms” were those that produced between 50 and 300 tons of coffee per year; and large farms were those producing more than 300 tons per year, Medina, “A Tecnologia do Café e o Tamanho da Propriedade”…, 14. Cf. Sousa, Ensaio de Análise Económica Do Café...
23 Report of João Nobre Carrolo to the President of the Board of Coffee Exports, 5 March 1946, File “1º Volume”, AHU, MU, GM, ex. 213, 1E.
24 Report of João Nobre Carrolo to the President of the Board of Coffee Exports, 5 March 1946, File “1º Volume”, AHU, MU, GM, ex. 213, 1E.
facilities. According to Medina these factories should be managed by “producer cooperatives”, “like in several countries of South and Central America”’, or by traders, who then “increase their social engagement.” There was also the state-funded option “which it is necessary to resort to in the absence of private investment” – which predictably was the one that Angola would eventually follow.

The construction of these factories had already started when Medina was speaking at the colloquium. Between 1949 and 1954 six factories along the Angolan coast were launched. The location of these factories is revealing of an imperial strategy that was focused on improving small-scale coffee production – similar to what was happening in other colonial contexts in Africa.\(^\text{27}\) The first (1949) was launched at Uíge, the centre of native production. The following two (between 1949 and 1953) were built in the ports of Ambriz and Ambrizete – again, ports receiving great quantity of coffee coming from African lavras, including “an appreciable amount of Encoge coffees.”\(^\text{28}\) The third factory was launched at the port of Luanda (1953), where coffee from both Europeans and natives arrived and where it was built “one of the largest, most modern and best equipped in the world.”\(^\text{29}\) Finally, the last two factories were located at Porto Amboim and Novo Redondo (around 1954), the most important recipient ports of coffee produced in European large fazendas (Figure 13, Annex I).\(^\text{30}\)

These factories – called Fábricas de Rebenefício e Homogeneização – were divided in three sections: selection of impurities (expurgo), processing and sorting by ventilation (rebenfício and ventilação) and mechanized pile, weighing and automatic


bagging (pilha mecanizada, pesagem e ensaue automático).\textsuperscript{31} The factory of Luanda, for instance, included “tables of manual picking”, where, according to the official journal of the Board, “groups of expedited and snipping women undertook the last operation of coffee treatment.”\textsuperscript{32} The machineries in which these factories relied on were “of Brazilian design” and “consecrated as the most modern and advanced for the purpose intended.”\textsuperscript{33} The pinnacle of these machines was the Blasi huller, a Brazilian invention used worldwide, which in Angola was acquired directly from their eponymous engineer, Brasil Blasi.\textsuperscript{34}

These were not the first machines introduced in Angola with this purpose. The “Africa hullers”, relatively small machines that came to substitute the old tradition way of hulling coffee, with a wooden pestle and mortar, were the first to help Angolan producers in the process of coffee processing.\textsuperscript{35} According to Ukers, twenty-four of these hullers existed in the Cazengo and Golungo Alto districts in the beginning of the interwar period.\textsuperscript{36} They also had Brazilian roots, having been patented in São Paulo by a man called Evaristo Conrado Engelberg of Piracicaba. Very popular among African farmers due to their efficiency in hulling dry cherries, these hullers were manufactured in the United States (at least since early 1900s), by the Engleberg Huller Co. of Syracuse, established in New York.\textsuperscript{37} Designed in Brazil, made in US and used in Angola, the African hullers materialize the beginning of an economic and political integration of three players in the global market, which, I claim, is one distinctive trace of the Portuguese Robusta Empire.

\textsuperscript{31} Matias, “Fábricas de Rebenefício e Homogeneização do Ambrizete e Ambriz”..., 38.
\textsuperscript{32} Anonymous, “Documentário da Junta: A Inauguração da Fábrica de Luanda”..., 33-36. According to this source this factory had a production capacity of 12 tons of coffee per hour.
\textsuperscript{33} Matias, “Fábricas de Rebenefício e Homogeneização do Ambrizete e Ambriz”..., 37.
\textsuperscript{34} Letter from Manuel Pedro Benedito de Castro (delegate of the Board of Coffee Exports) to the Government of Angola, 17 February 1950, AHU, File “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafé,” Governo Geral de Angola, Processo 76-B/1º (1º vol.). See also Wrigley, \textit{Coffee}..., 471.
\textsuperscript{35} Wrigley, \textit{Coffee}..., 441 and 469-471.
\textsuperscript{36} William Harrison Ukers, \textit{All about Coffee} (New York: The Tea and Coffee Trade Journal Company, 1922), 268.
\textsuperscript{37} Wrigley, \textit{Coffee}..., 469.
**Creating an Angolan Standard**

The same year Medina was sent to Brazil the Board launched the Regulation for Portuguese Coffee Classification (1945) establishing that the classification of coffee destined to exportation should always be the Board’s responsibility, whether it occurred in the colonies or in the metropole. If processing operations can be seen as a first moment of coffee standardization, the official classification is certainly the second. The goal here was to classify the coffee lots into certain market categories (grades) using an official grading system. There had been previous state attempts to control the quality of coffee exports in Angola. In 1914 the Government of Angola determined that “clean coffee and with no impurities” (café limpo e expurgado de impurezas) could be exported, and in 1918 it explicitly forbidden the exportation of “dirty coffee”.\(^{38}\)

Later, in the interwar period, when the rate of coffee exports dramatically rose, the Agriculture Department of Angola launched the first Regulation of Coffee Exportation (Regulamento da Exportação do Café) (1932). Here it was determined that no coffee could leave the colony of Angola “unless it owned a origin and type certificate”.\(^{39}\) The most important achievement of this regulation was that producers and traders had to submit their products to a system of classification designed by the experts of the Agriculture Department in order to obtain the “certificates of origin and type”. The “origin” category could be “regional” or “exotic”\(^{40}\), while the “type” category could vary from nº 1 to nº 7, according to the coffee grains form, size and defects.\(^{41}\) The Regulation also established that coffee destined for exportation should be packaged accordingly and identified with an official symbol of the colony.

Though well intentioned, this regulation was weak and allowed numerous irregularities. Only with the launch of the Board in 1940, were the political conditions

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\(^{38}\) Decree 777 of 19 August 1914, and Portaria 733 of 21 March 1918, see J. E. Mendes Ferrão, *O Café: A Bebida Negra dos Sonhos Claros* (Lisboa: Chaves Ferreira Publicações, 2009), 34.

\(^{39}\) Until then Angolan coffee was already classified into five types of coffee (Novo Redondo or Amboim, Cazengo, Encoge and Ambriz), but this only happen after it had been arrived to the metropole, giving space to all sort of parallel deals. *Regulamento da Exportação do Café*, Portaria 954 of 29 March 1932, Bento Alves, *Algumas Considerações sobre a Cultura do Café em Angola e Regulamento da Exportação* (Luanda: Serviços de Cultura e Informação, 1932).

\(^{40}\) Indigenous coffee (Robusta) was classified according to seven regional origins (Congo, Ambriz, Encoge, Cazengo Novo Redondo, Amboim and Chela), while exotic coffees were classified according to their species (Arabica or Libérica), Alves, *Algumas Considerações sobre a Cultura do Café em Angola...*  

\(^{41}\) Alves, *Algumas Considerações sobre a Cultura do Café em Angola...*
met for an effective implementation. With the Regulation for Portuguese Coffee Classification, Portuguese metropolitan authorities established that every coffee destined to exportation was the Board’s responsibility, regardless of whether this classification occurred in the colonies or in the metropole.\textsuperscript{42} Much of the contents of this new regulation were adapted from its predecessor. The difference was on the power attributed to each one of these institutions – and, in this regard, the Board was by far the much better position. Also, unlike the previous one, the new regulation was a truly imperial instrument – that is, it not only concerned Angolan coffee, but coffee produced in two other coffee-producing colonies, São Tomé e Príncipe and Cabo Verde.\textsuperscript{43} Well, at least, theoretically; as we will see this Board would be completely centred on the case of Angolan coffee.

Based on this regulation, the empire determined that all coffee destined for exportation should be “submitted to classification” after being submitted to processing operations – in the hands of producers or storekeepers, and performed either in private or state facilities. The experts of the Board were in charge of the classification process of the coffee lots brought into the Board’s facilities, a procedure that was conducted in the presence of the lot owner or its legal guardian. The process was based on a sampling method: first a portion of the several bags composing the lot was selected, never less than 20 or 25 % of the total of the lot;\textsuperscript{44} then, the coffee extracted from each bag was blended and three samples (450 gr. each) were again taken. One of these samples was used to classify the whole lot, while the other two will be archived in the facilities of the Board, assuring the Board of the material necessary in case of a second classification was required.\textsuperscript{45}

According to this classification system, Angolan Robusta was first classified in terms of its origin and biological variety. The “origin” was determined based on seven coffee-producing regions: Cazengo, Golungo, Cabinda, Encoge, Ambriz, Libolo and Novo Redondo/Amboim (see Figure 14, Annex I). The Board distinguished also three “Angolan varieties” of Robusta, which, to add more confusion to this story, are mentioned using the nomenclature for species: \textit{Coffea welwitschii}, \textit{Coffea encojensis} and \textit{Coffee canephora}. According to this classificatory system, the first two varieties occurred in more than one coffee-producing region:

\textsuperscript{42} \textit{Regulamento para a Classificação dos Cafés Portugueses}, Portaria 10,835 of 12 January 1945.
\textsuperscript{43} East Timor is not mentioned.
\textsuperscript{44} \textit{Regulamento para a Classificação dos Cafés Portugueses}, Portaria 10,835 of 12 January 1945, p. 32.
\textsuperscript{45} \textit{Regulamento para a Classificação dos Cafés Portugueses}, Portaria 10,835 of 12 January 1945, p. 32.
“Coffea welwitschii” was produced in every region with the exception of Cabinda, while “Coffea encojensis” was cultivated in both Encoge and Cazengo; only “Coffee canephora” was confined to one coffee-producing region, Cabinda. Then, coffee beans were classified in terms of their form (moka or bago chato), size and defects of the grain – a process that was based on a sequence of complicated procedures. The classification of the two later categories (size and defects) was dependent on one another. Needless to say, that several attempts were made to corrupt them the functionaries in charge of this classification process. The colonial archive shows this unequivocally.

But, at least in what concerns Angolan coffee, and despite the flaws of the system, there was another thing happening with much more historical relevance: the creation of an Angolan coffee standard.

The process ended when the coffee lots brought to the Board were classified in one of the following four grades: “first quality” (less than 165 defects in 450g of coffee), “second quality” (defects raging between 165 and 250), “no choice” (sem escolha) quality (more than 250 defects) and “coffee wastes” (resulting from cleaning and reprocessing operations). The coffee lots were then packed in bags with the “official brand” of the Board. This brand consisted on a triangle having written in each face: a) the name of the producing colony; b) the geographical origin (in the case of Angolan Robusta coffee) or the name of the coffee species (in the case of Arabica or Liberica); and c) the word “coffee” followed by the type, crivo or size of the bean (see Figure 15, Annex I).

To sum up, this classification system allowed the empire to accomplish simultaneously two different things: to centralize coffee production destined to exportation in one obligatory act, increasing therefore the control of the colonial state over exportations, and to standardize Angolan coffee, and by doing to transform it into a stable product. The implementation of this classificatory instrument allowed hence the Board to reduce to a small number of grades the variety of coffee production systems existing in Angola – native and European, small and large.

47 In the inquiry made to the Board in the beginning of the 1950’s decade (processo de inquérito à JEC), this was one of the issues under investigation, having been demonstrated that certain “classifiers” had accepted bribes from Angolan exporters, Letter from the magistrate Álvaro Rodrigues da Silva Tavares to the General Governador of Angola, 14 December 1951, File 76-B/1º, “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafê” (2º vol.), AHU, GANG, Governo Geral de Angola.
48 Regulamento para a Classificação dos Cafés Portugueses, Portaria 10,835 of 12 January 1945, p. 32.
growers, with or without standardizing equipment, etc. Moreover, the Board assumed the responsibility if the coffee exported from this colony did not correspond to the grade with which it had been classified. It was the beginning of Angolan Robusta as a true commodity.

5.3 CO-PRODUCED HEGEMONY

Meanwhile, it was also in 1945 that the United States opened its market to Angola. After several years of being closed to the coffee producing states outside the American continent, as a result of the Inter-American Agreement (1940), this gigantic market opened its doors again.49 This was a great opportunity. Not only because of the dimension of this market, but also because of the kind of coffee it was mainly interested in. The United States was not interested in high quality Arabicas, like some European countries were. American traders, roasters and industrials were the first buyers of Brazilian “Hard Arabicas”, low-quality Arabica coffees – whose identity was not biological but cultural, being related with the way coffee cherries were treated and processed after harvest –, cheaper and therefore ideal to use in certain blends. Robusta couldn’t compete with Mild coffees (the high quality Arabica coffees), but high-quality Robusta could, in some cases, compete with “hard Arabicas”. This competition was aggravated with emergence of instant soluble coffee that had Robusta as its main component.50 Economic historians show us that in few years the Portuguese colony became the first Robusta provider of the United States – what they have missed is the imperial trajectory designed to meet this goal.

The first transactions between the two countries occurred in the aftermath of WWII. David Gannon, attaché of the Mission of Purchases of the Government of the

49 The Inter-American Coffee Agreement (1940) was signed between the US and fourteen Latin American, which established export quotas of 98% of the estimated US market to those countries, and left a quota of 355,000 bags, corresponding to “21,3000 tons, to be distributed every year” for the other countries, which had to pressure the institution responsible – the Inter American Coffee Control Board (based in Washington) – in order to have a good slice of the cake, Marcelo Raffaelli, Rise and Demise of Commodity Agreements: An Investigation into the Breakdown of International Commodity Agreements (Cambridge, UK: Woodhead Publishing Limited, 1995), 37. On the Portuguese position, see letter from A. Champel to Mário Malheiro Reymão Nogueira (JEC) and letter from A. Chambel to João A. de Bianchi, Ministro Plenipotenciário de Portugal (in Washington), New York 15 August 1941, File “Coffee”, AHU, MU, GM, ex. 560.2, 1E
50 For a discussion about the relation between instant soluble coffee and Hard Arabica coffees of Latin America see Talbot, “The Struggle for Control of a Commodity Chain: Instant Coffee from Latin America”...
United States (*Missão de Compras do Governo dos Estados Unidos*), mediated the first transaction buying 1,500 tons of Angolan Robusta that were destined for the American army in France.\(^{51}\) The first beneficiary of this new order was CADA and Sociedade Remus, the large fazendas from where the first bags of Angolan Robusta came from.\(^{52}\) At the beginning everything seemed to go well. However, on 27 September of 1945 the President of the Board was surprised with a letter from the minister of the Colonies informing him that the US State Department had communicated (via the Portuguese embassy in Washington) that the Portuguese had not authorized a further transaction of 15,000 tons.\(^{53}\) These complaints were conveyed through other channels of communication, pressing the Board to give a response and to explain to internal and external authorities what had happened.

Such justification was given to Lisbon some days after. According to the Board, the “American importers themselves” were the ones who had stymied the transactions. Moreover, two demands had been made on their part which the Board found unacceptable: firstly, the American importers wanted to use only the ports of Luanda and Lobito because allegedly they could not hire ships that went to the ports of Novo-Redondo and Porto-Amboim (near the large coffee fazendas in Cuanza-Sul); and secondly, the Americans demanded that “the exporters of the colony could only use their credits after coffee exports have been accepted by the [American] Department of Agriculture.”\(^{54}\) This second demand was overcome in a couple of days. On 10 October 1945 the Board sent a telegram with the news that Portuguese terms had been accepted. Angolan Robusta became hence a true commodity – that is, a traded good whose identity is established independently of the seller – within the United States’ market. The telegram was unambiguous, though it also alerted for the responsibilities this conquest represented.

América depois grande esforço nosso junto autoridades aceitou condição pagamento cafês Angola contra certificados Junta prescindindo aprovação qualidade departamento agricultura para utilização créditos Ponto nossa delicada posição exige


\(^{52}\) Letter of the Board (S.L./F.S.) to the Vice-President of the Conselho Técnico Corporativo, Lisbon, 21 September 1945, File “24/46 Café”, AHU, MU, GM, cx.148, 1/1D (1945-1947).


\(^{54}\) Letter from the Board (S.L./F.S) to Vice-Presidente do Conselho Técnico Corporativo, Lisboa, 1 October 1945, File “24/46 Café”, AHU, MU, GM, cx.148, 1/1D (1945-1947).
maiores cuidados conforme me transmitiu embaixador América pois se falhar a nossa fiscalização perdemos futuro regalia obtida sombra nosso prestígio oficial Ponto certificados deverão indicar primeira qualidade até máximo tipo 7 e que café não ultrapasse oito por cento bago furado conforme artigo 10 regulamento.55

Still, complaints from the United States continued. At stake was now a shipment of Angolan coffee that had been retained in New York, which, after being analysed, had found to contain berry-borer (bagos furados) with “worms, alive and dead, and also excrements” (lagarta viva e morta e também excrementos).56 This time it was the American state department responsible for food security that warned the Portuguese authorities that future shipments would have to be prepared with “maximum care”, otherwise they would be rejected. At the Board, this decision of the American department was the object of mockery: they “discovered (…) a very serious infection in Angolan coffee” that was “nothing less than the most common disease in coffee-producing countries!” It could be fought, the Portuguese argue, but not eliminated, being already acknowledged in the very process of classification. “How can it be that Angola’s berry-borer bears a disease other than Brazil's berry-borer when the insect that causes it is the same in both countries?”, they protested.57 On the other hand, we should also acknowledge that the Portuguese authorities remained silent on the core of the American charge: the existence of biological leftovers of the insect in the Angolan coffee lot. Were there reasons for the Americans to protest?

It is not the aim of this chapter to evaluate the validity of the American accusations in relation to the problem of berry-borer. More interesting for us is the conclusion that the Portuguese authorities seem to draw from these first disputes with the Americans, which, we argue, had implications on the Board’s exportation policies

55 “America after our great effort with authorities accepted condition payment coffees Angola in exchange certificates Board dispensing quality approval department agriculture to use credits Point our delicate position demands greater care as it transmitted me ambassador America because if we fail our inspection we lose future privilege obtained damaging our official prestige Point certificates must indicate first quality up to maximum type 7 and assure that coffee does not exceed eight per cent bago furado according to article 10 regulation.”, Telegram from the Board to (?), Lisboa, 11 October 1945, File “24/46 Café”, AHU, MU, GM, cx.148, 1/1D (1945-1947).
in the following years. This conclusion can be gleaned from the letter the president of the Board writes in 16 January 1946 to the Minister of the Colonies. According to him, there were “strong reasons (...) for not believing in the good intentions of the American trade, especially when this country, after invoking the principles of commercial liberty and provoking a rise in export markets, intends to achieve unclear goals.”\(^5^8\) From the Board’s perspective, coffee exported to the United States was submitted to a rigorous inspection according to their classification system, which contained “rules adopted internationally in this matter” – for instance, “the maximum limit of 10% of berry-borer allowed by American law was not exceeded, nor even reached the limit because our legislation, by means of intelligent prudence, reduced this limit to 8%.”\(^5^9\) The conclusion was simple:

(... \(\text{(...) será aconselhável voltarmos a insistir junto do comércio exportador de Angola pela necessidade de reforçar as medidas de precaução comercial nas transacções com os Estados Unidos; pois não sabemos quais sejam as intenções do comércio americano no presente momento, depois de se encontrar suficientemente abastecido, e bem assim até que ponto não estará fazendo, voluntária ou involuntariamente, o jogo de protecção aos interesses dos países nossos concorrentes na exportação do café.}^{6^0}\)

High competition equals high standards. But – how to tailor these standards to the needs of the most powerful country in the business in a context of distrust? The solution seems to have been to start “co-producing” Angolan coffee standards with the Americans. The first moment was in 1947, when a high representative of the American roasting industry, called Carl Borchsenius, visited Angola. According to an expert of the Board, the visit came in the aftermath of the tension between Portuguese and American authorities about the high percentage of berry-borer.\(^6^1\) This source points out that the American businessman had played a “very important” role in the

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\(^{5^8}\) Letter from president of the Board to the Minister of the Colonies, Lisbon 16 January 1946, File “24/46 Café”, AHU, MU, GM, cx.148, 1/1D (1945-1947).

\(^{5^9}\) Letter from president of the Board to the Minister of the Colonies, Lisbon 16 January 1946, AHU, File “24/46 Café”, MU, GM, cx.148, 1/1D (1945-1947).

\(^{6^0}\) “(...) it would be advisable to insist again with Angola’s export trade on the need to strengthen trade precautionary measures in the transactions with the United States; for we do not know what the intentions of the American trade are at present, after having been sufficiently supplied, and to what extent this country is not, deliberately or accidentally, protecting the interests of our competitor countries in the business of coffee exportation.”, Letter from president of the Board to the Minister of the Colonies, Lisbon 16 January 1946, File “24/46 Café”, AHU, MU, GM, cx.148, 1/1D (1945-1947).

process of standardizing Angolan coffee, though more research is needed to clarify his concrete role.62

In 1949, a new legislation was implemented concerning coffee exportations to the United States. To guarantee a place in the American market, the Board decided that Angolan producers and exporters should be forbidden to export “second quality” and “no choice” quality coffee to this country – only “first quality” would be approved from now on.63 This policy of high quality coincided with the beginning of the war between African Robustas and American Arabica. The rise of Robustas demand undercut the prices of Arabica as it lowered the overall quality of coffee consumed.64 Lower quality Arabica coffee produced in countries such as Brazil and Columbia were the most affected. The notoriety of Angolan Robustas, on its turn, grew. In the end of the 1950s, Portugal was proud to affirm that also in Europe Angola was known as producing “the best Robustas”.65 The press in Angola was also very supportive of this imperial policy that had been able to impose the brand of Angolan coffees in the world.

As far as Angolan producers and exporters were concerned the opinion was very different. They wanted immediate results and the ban to second (and lower) quality coffee reduced considerably their potential profits. They wanted more from the American market and for this reason they criticized this policy of high quality since the beginning. But, if at first they had done it moderately, their position hardened with the rapid expansion of instant soluble coffee, in the beginning of the 1950s.66 There was also a problem of equality: Ivory Coast, Uganda and Belgian Congo (but specially the first) provided now the United States of second quality Robusta at a much cheaper price.67 If these African colonial states could, why not Angola? In addiction, suspicions about Angolan “second quality” and ”no choice” coffee being exported to Canada and then re-exported to the United States became increasingly plausible.68 Complaints of Angolan producers and exporters reached a peak in 1954, urging the Board to reconsider the adequacy of the 1949 policy. Once

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64 Topik, “The Integration of the World Coffee Market.”..., 47.
65 Sousa, Ensaio de Análise Económica do Café..., 49.
66 See documentation in File 76-B/1", “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafé,” AHU, GANG, Governo Geral de Angola.
68 Loureiro, “A Portaria 15.913, de 19 de Julho 1956”..., 42.
more, Lisbon, before taking any decision, decided to “consult” (in August 1954) the Green Coffee Association, an American organization of coffee importers, brokers and agents. When confronted with their insistence to not change the grading system of Angolan coffee standard, the Board opted to stick to the original terms as a way to protect its “prestige”.69 This was the second moment of American interference in the process of commodification of Angolan Robusta.

Finally a third moment occurred in 1956 when the sole first grade rule was finally waived, allowing the exportation to the United States of “second quality” coffee.70 The new policy resulted from changes on the Regulation for the Classification of the Portuguese Coffee.71 Three changes were imposed: to broaden the upper limits of the “second quality” category until 250 defects; to call “third quality” to the previous “no choice”; and to broaden the upper limits of this later until 720 defects. In addiction, the Board imposed a second level of change by informally sub-dividing some of the four regulated categories. Likewise, a sample of Angolan coffee (450g) under inspection at the Board facilities could be classified into six possible categories: 1) “first quality” (until 165 defects); 2) “second quality AA” (from 166 until 250 defects); 3) “second quality BB” (from 251 until 360 defects); 4) “third quality CC” (from 351 until 550 defects); 5) “third quality DD” (from 551 until 720 defects); and finally the category “industrial purposes” (fins industriais) (when defects were over 720 defects).72 Again, the Board was not alone. The new standard for Angolan Robusta was co-produced with the experts from, and supervised by, the Green Coffee Association. As an expert of the Board recalled,

No esclarecimento das situações de exportadores e importadores perante a Portaria nº 15.913 e a regulamentação que se seguiu, teve papel preponderante a “Green Coffee Association”, que deu sugestões muito úteis, submeteu o assunto ao seu ‘Standard Type Comitte’, e contribuiu largamente para a divulgação da ideia, que é exacta, de que as entidades oficiais portuguesas apenas desejam regularidade nos negócios e bom crédito para o producto, defendendo assim interesses que são bilaterais, como o

70 To be exact the ban was lifted in 1955 (August) though it was only in 1956 that it became a more wide practice in Angola, Loureiro, “A Portaria 15.913, de 19 de Julhlo 1956”…, 42.
71 This change was formalized by an ordinance of the Ministry of the Overseas: Portaria 15,913 of 19 July 1956.

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demonstram pela aceitação da subdivisão em escalões das segunda e Terceira qualidades.  

All these tedious but necessary specifications for both the technicians and historians allow us to focus on the following point: Angolan coffee standards were “co-produced” with the Americans. The idea of co-production is important because it would be wrong to reduce this process to the power of the dominant structure; as we saw this was a negotiated process not imposed. The actors involved were the experts of the Portuguese marketing board and the agents of American organizations, namely the Green Coffee Association, an organization representing the vested interests of American brokers, importers, industrials and agents in the coffee business. On the other hand, there is no doubt that the historical background was the post-war American hegemony. The presence of American state institutions and actors of the industrial lobby in the process of coffee standardization in producing countries is well known in the literature. This happened in Brazil, in a more direct way, in the beginning of the 20th century, but also in other coffee-producing countries of Latin America, when American roasting industry started to send their agents (mainly after WWII) to purchase directly from producers and have control over prices and grades. What this chapter adds to this literature is the African (and colonial) dimension of this historical dynamics. Of course, this “co-produced hegemony”, paraphrasing John Krige, was only possible due to the imperial structure (the Board) that had been previously put up by the Portuguese empire. American hegemony was hence built on European imperialism – with not one contradicting the other.

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73 “The Green Coffee Association played a leading role in clarifying the situation of exporters and importers before Ordinance nº 15.913 and the regulations that followed, giving very useful suggestions and submitting the matter to the ‘Standard Type Comitê’, and contributed greatly to the idea that the Portuguese official entities only want regularity in business and good credit for the product, thus defending interests that are bilateral, as shown by the acceptance of the subdivision of the second and third grades.”, Loureiro, “A Portaria 15.913, de 19 de Julhho 1956”..., 44.

74 Topik, “The Integration of the World Coffee Market.”..., 46.

75 “Co-produced hegemony” is a concept proposed by John Krige to describe the hegemonic position of US-funded projects designed to reconstruct European science after WWII, but “co-produced” with the European, see Krige, American Hegemony and the Postwar Reconstruction of Science...
5.4 SCIENCE IN INTERNATIONAL RELATIONS

Robusta and Cold War

At the turn of 1954 Medina was back in Brazil. He had been chosen to accompany the President of the Board to the I Coffee World Congress (*I Congresso Mundial do Café*), held in Curitiba in the State of São Paulo from 14 to 22 January. It was a historical moment. For the first time American coffee producers organized a congress at a global level, uniting 35 countries, in which 15 were “typically producing countries”, 15 were “typically consuming countries” and five were countries (Portugal included) “that being consumers in their metropolitan territories are producers in the overseas territories.” In the pages of the Board’s journal, Medina describes the atmosphere of exhilaration in this intercontinental congress in which several topics regarding the economic and environmental sustainability of this crop were being discussed. It almost seemed as if Portugal and the other four European colonial powers had been invited for matters of purely technical nature.

By 1954, the ghost of overproduction had returned to Latin America, particularly to Brazil. Wary that Arabica coffee prices would fall drastically again, Latin American countries began to do what they could to forge a unified response to the problem. At the heart of this response was the belief that an international agreement between coffee producing and coffee consuming countries was needed to stabilize prices. If in the past this idea had taken shape in the form of “American agreements”, by 1954 it was obvious that the continental scale was no longer sufficient. The strong affirmation of African Robustas in the coffee market had changed the rules of the game and according to experts the success of instant soluble coffee among consumers had come to stay. If rules were to change and concessions to be made, European colonial powers, which hitherto had benefitted from the changes in the market, had also to participate.

In the years after 1954, Latin American countries, led by Brazil and Colombia, started with several initiatives that aimed to lay the ground for this “international

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agreement.” Some preliminary conventions were signed, but the major problem remained: they did not have the full support of the United States. The position of this country during the period was ambiguous: while it was ideologically against a solution with stipulated price clauses, which flew in the face of their strong belief that prices should be determined by supply and demands, Washington was also afraid that a sharp fall in coffee prices would create social agitation, leaving Brazil and other Latin American countries vulnerable to Communist ideologies.78

Ambiguity, however, did not mean disengagement for the Americans – quite the contrary. Motivated by both political and economic reasons, the United States made sure that the “think tanks” created to debate the challenges of such a forced integration of the global coffee market were being launched and operated under its aegis. It was not fortuitous that the Comissão Especial do Café, created in 1954 by Brazil and Columbia, and the first institution made for this purpose, would first meet in Washington, in 1955. Three years later, the US itself would fund the Coffee Study Group – the organization that is at the base of the agreement. This group, which assembled producers from Latin America and from Africa, was created in 1958, within the purview of the United Nations, was based in Washington and led by a Brazilian economist, João Oliveira dos Santos.

In addition to this institutional setup in American soil, the United States was also engaged in observing the evolution of the economies in coffee-producing countries. Again, much of the missions and trips to these countries were organized by private organizations, namely from the National Coffee Association (NCA), which represented the interests of American roasters and importers. John Talbot noted that coffee traders and NCA’s agents travelled extensively in Latin American during those years.79 Yet, it was not only Latin America to be under the radar of this organization. In 1957, John McKiernan, president of NCA, visited the main coffee-producing colonial states in Africa.80 The main goal of this visit was precisely to measure the willingness of colonial states to sign an international agreement.81

79 Talbot, Grounds for Agreement..., 60.
80 Boletim Mensal Informativo da Junta de Exportação do Café, no 3, 15 July 1957, p. 1. According to this source, the agenda of McKiernan also included check the possibility of “local manufacture of soluble coffee;” apparently he delivered a report at the National Coffee Association. Further investigation in needed. Mckiernam would return to Angola in 1962. Some information about this later
In Angola McKiernan was received by Medina and by the Governor General of Angola (Figure 16, Annex I). When the Africa tour ended, he made a stop in Europe and visited the “four European capitals with connections to coffee crop in Africa”: London, Brussels, Paris and Lisbon. He passed four days in Lisbon, a visit receiving a great deal of press attention, where he met with some high representatives of the Portuguese empire – the governor of Banco de Angola, the director of the Fomento do Ultramar, the president of the Board, among others – and with big names of Angolan exportation. He also visited CIFIC, an institution sponsored by the US (Point Four program), which he praised effusively (see Epilogue). The good relations between the Board and NCA continued, and in 1958 it was the time for Medina and the President of the Board to assist as “special guests” the NCA annual convention in Florida.

For those who have studied the history of coffee there is no question that this commodity was a pawn in the cold war. The International Coffee Agreement (ICA) is a typical cold war story. It was only with the culmination of the Cuban Revolution (1959) and the spectre it raised of the spread of communism throughout Latin America that the United States (after years of ambiguity) shelved its liberal principles and signed the agreement. The International Coffee Agreement with the full participation and support of the United States was firmed in 1961 and signed in August 1962 at an United Nations convened conference in New York. In this “global cold war” NCA seemed to have played a crucial role in informing the United States government of the situation in coffee-producing countries. John Talbot describes that “as soon as 1958” NCA approached the Foreign Affairs bureau worried that the political instability in Latin America could damaged the interests of those it represented. Was there also cold war concerns in the trip of NCA to Africa? Or was

trip can be found in the correspondence (March and April 1962) between the Minister of the Overseas and PIDE, in AHD, GNP, file John F. Mckieriam.
81 Boletim Mensal Informativo da Junta de Exportação do Café, no 3, 15 July 1957, p. 1. The agenda of McKiernan also included to check on the possibility of “local manufacture of soluble coffee.” In July 1957 this journal published a note to a certain report that McKiernan delivered at the Conselho Directivo of the National Coffee Association in the end of May, Boletim Mensal Informativo da Junta de Exportação do Café, no 3, 15 July 1957, p. 1. Further investigation in needed in the American archives. Mckieriam would return to Angola in 1962. Some information about this later trip can be found in the correspondence (March and April 1962) between the Minister of the Overseas and PIDE in AHD, GNP, File “John F. Mckieriam.”
84 Topik, “The Integration of the World Coffee Market”..., 47.
85 The Coffee Study Group had prepared the draft of this agreement in 1961, Talbot, Grounds for Agreement..., 58.
only, as it was argued, a way to check the availability of Europeans to sign the international agreement? More research is needed in this regard. What we can say is that it was the emancipation of African Robusta coffees that forced the “free” world and the colonial world to sit at the same table for the first time, in 1954. If this “more globally” integrated coffee market resulted in “a more global” cold war it is not clear and a matter for future investigations.

Robusta and Decolonization

Meanwhile, it should be noted that in Europe’s diplomatic circles the idea of an “international coffee agreement” was also met with reservation. The problem concerned the main European colonial powers in Africa since all were important Robusta producers – the British in Uganda, the French in Ivory Coast, the Belgians in Belgian Congo and the Portuguese in Angola. There was no crisis of overproduction as far as Robusta was concerned, yet concessions had to be made. It was their imperial projects that were at stake. Decolonization was the ruling context. In 1958, representatives of these empires met in the French capital (Conference of Paris) to discuss their views and concerns about the Latin America proposition. One of the topics in the agenda was the “formula of exportation quotas” proposed by Portugal and France.86

In 18 April 1959 the President of the Board was sent by the Minister of the Overseas to “contact the competent French and Belgian authorities” in order “to assess the present position of these two countries and Portugal as regards the possibility of celebrating an international agreement on coffee, in which African producers are included.”87 According to him, the Inspector Real of the Belgian Congo (Pierre Staner) “personally” agreed with the celebration of an agreement. However, he did not think that his country would accept “restrictions to exportation” in Belgian


87 Letter from President of the Board to the Director Geral dos Negócios Económicos e Consulares do Ministério dos Negócios Estrangeiros, 25 April 1959, File 76-B/1º, “Organismos de coordenação económica, Junta de Exportação do Café Colonial, Juncafé” (2º vol.), AHU, GANG, Governo Geral de Angola.
Congo and Ruanda-Urundi. To the president of the Board it was obvious that “the current political situation in these territories should not be alien to Staner’s position.” On the other hand, the French representative, Pierre Valdant, who “in the presence of Staner”, “strongly supported the conclusion of the agreement”, later, in private conversations with the President of the Board, unburdened to him “the biggest concerns about the possibility of bringing all the territories that are part of the Franc zone to a restrictive export agreement.” A pact was made in the end between France and Portugal, in the likelihood of “being addressed individually by Latin Americans”: France would expose their political difficulties in the French Union “with its regimes of quasi-independency”, but would also stress that it would be available to sign if Belgium and United Kingdom would also enter; Portugal, in turn, would insist on the view that those two countries were key to the agreement, “for which the aforementioned countries should be the first to be contacted by the Washington Study Group.” The players positioned themselves. No one wanted to take the first step.

The position of Portugal in this game is “pro-agreement”. This is at least what the diplomatic correspondence analysed suggests. Although all these empires were under the same international pressure, which forced them to make compromises in order to guarantee the legitimation of their colonial territories, some had more room for manoeuvre than others – and Portugal was not one of them. Why was this country so keen in signing the agreement and not so concerned with the implications resulting from future constrains to coffee exportations? According to the President of the Board he had informed Staner and Valdant that to say no to an international agreement (“and much more if this effort was materialized in export quotas”) would be “terribly difficult” given “our position towards Brazil.” What did the president mean by “our position”? 

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The articles of the Board’s journal published around these years use an arsenal of imperial rhetoric to answer this question. In the journal of June 1954, covering the Curitiba congress in Brazil, it was written that Portugal “was particularly interested in the case of Brazil, our brother country, where the ‘green wave’ (coffee) broke out and spread through the Portuguese hands of the first planters, giving the future nation its greatest wealth.”91 Some lines below, the writer adds one more sentence that probably conceals the true reason behind the Portuguese diplomatic position. À propos the crisis in Brazil he writes: “Robusta coffees can not compete with fine Arabica coffees, but they can and should (...) serve as a complement to the lots and help to ensure their consumption (...).”92 In other words, the market fates of Robusta and Arabica were tightly interwoven. But, why was this “inter-commodities” dependency such a burning issue to the Portuguese?

It is worth noting that Angola was at this time a key player in the global market. In 1956 George Gordon and Co. had estimated that the Portuguese colony occupied the fourth place among coffee world exporters (exporting 1,500,182 bags of 60 kg) – after Brazil (16,804,101 bags), Colombia (5,059,777 bags) and French West Africa (2,148,733 bags).93 But more importantly, it was the first African provider of the United States. During the first months of 1957 it had exported to this country 183,710 bags against 77,176 bags coming from West French Africa, 73,176 bags from Madagascar, 66,037 bags from British East Africa, 44,894 bags from Ethiopia and 21,772 bags from Belgian Congo.94 The reason the Ivory Coast was not the first African provider of the United States was because much of its coffee was channelled to the metropole and other colonies of the French empire itself. The same happened with the British and the Belgian empires. This did not happen in the Portuguese empire. Angola was completely dependent on the United States.95 And, as this chapter has showed, this outcome was not only due to the failure of protectionist measures; it was the deliberate result of state development policy that aimed to place the product in the US market.

The Portuguese empire was therefore in a much more delicate position than other European empires when Latin American countries started to pressure them to be

signatories of the international agreement. Given the high levels of economic integration between Brazil and the United States, and being the coffee global market a monopoly in the hands of these two countries, it’s understandable that Portugal wanted to avoid at any cost a confrontation with Brazil. Robusta challenged the establishment and forced colonial states to negotiate with the free world for both economic reasons (dependency on Arabica) and political ones (decolonization) – what made the case of Angolan Robusta different was that it was also part of the establishment.

5.5 THE MAKING OF A GLOBAL COMMODITY

This investigation suggests that Angolan Robusta entered the United States’ market as a true commodity in 1945, when the Portuguese were able to convince the American importers to buy the product and let Angolan exporters use the ensuing “credits” before its arrival to the United States and inspection by American authorities. This frontier was crossed due to several factors affecting the dynamics of the coffee global market after the world conflict – namely, the end of the Inter-American Agreement (1940) and the increasing popularity of instant coffee in consuming countries. But, it would be wrong to interpret this historical process as a merely product of external and economic factors. The process of transforming Angolan Robusta into a commodity – i.e. into “a standardized good that is traded in bulk and whose unites are interchangeable” – was a long one and precedes 1945, which, as we’ve discussed in the previous chapter, has its roots in the imperial politics of the mid-1930s, when marketing boards began to be discussed, organized and tested within the Portuguese empire. It was the Coffee Export Board that grounded on, and legitimized by scientific and technical expertise and artefacts, provided the market with the stability and confidence it needed. It’s the trajectory of Angolan Robusta as an imperial commodity that this investigation brings to light.

Two conclusions are, in my opinion, relevant for the historiography of the Portuguese empire. The first is that Angolan coffee was the object of a very concrete development plan; a plan that, not was only successfully implemented, but proved

extremely successful results in the global market. This plan, I claim, lies hidden in the technicalities of a classification system. Investing on the final phase of coffee production systems (improving homogenization and other processing operations) and on the centralization of classification processes (creating an Angolan coffee standard), the empire apparently squared the circle: it modernized coffee production in Angola without touching the interests of the big capitalists and their regimes of forced labour. Moreover, it optimized the pooling of resources by both African and European small and medium producers, giving them also a share in the exports. To be exported coffee lots had only to be classified according to its variety, region and grade; the reference to the specific unit of production disappeared. Thus this investigation inscribes coffee in the agenda of a “developmentalist state” in Angola, distancing itself from the historiography of the Portuguese empire that tends to describe this cash crop as one paradigmatic case of retrograde imperial strategy. The art of modernizing without reforming existing and well-entrenched (socially and environmentally) production systems based on forced labour – this was, we argue, the challenge of the Board efficiently met by its scientists and technicians.97

The second conclusion is that this imperial strategy was “co-produced” with the Americans. To affirm the status of the Board as a credible institution in the world coffee market, the Portuguese empire negotiated with the United States exceptional high quality policies that in the long run turned more stringent than those in other Robusta-producing African states; moreover they also collaborated with them in the process of making an Angolan standard Robusta. In this chapter we argue that the rise of the Robusta Empire in Angola was the result of a co-produced hegemony, in the sense that the Portuguese did not “consent” on rules imposed by the Americans (on export policies and quality standards), but rather invited them to participate on their own.98 Inspired in Charles S. Maier’s “consensual hegemony”, Krige’s “co-produced hegemony” describes cases of hegemony, in which “dominated” actors, not only give their “consent” (in the Gramscian sense), but actively participate and cooperate in the

98 Krige, American Hegemony and the Postwar Reconstruction of Science...
making of this hegemony. The notion of “co-production”, coming from the field of science and technology studies, is there to emphasises the dynamics and interactions between the actors involved in the making of these power relations, and the creativity and plasticity that they required.

The forces and dynamics that led to this “co-produced hegemony” are yet several, and difficult to grasp, as they are often intermingled and change intensity and historical relevance over time. The global crisis of European imperialism that made colonial powers willing to make compromises in order to obtain international legitimation for their colonial projects was clearly one of the forces at stake. In this particular case, however, more important to the Portuguese seems to have been the economic reasons. As we discussed earlier, demographic and structural features of the Portuguese empire made it heavily dependent on the American market, as far as coffee was concerned, at least when compared with other European colonial empires. The maintenance of the Portuguese colonial empire depended on how well the Portuguese were able to coordinate actions with coffee American industry. This economic dependency may also explain the political positions of the Portuguese empire when later, in the global context of cold war and decolonization, Latin American countries started to pressure to sign the international coffee agreement.

On the other hand, this chapter also shows that this “co-produced hegemony” was only possible due to the imperial structure (the Board) that had been previously put up by the Portuguese empire. It offers thus more evidence to the case of an American hegemony built on European imperialism. The forces driven the Americans in this case were those of global capitalism – as we saw, most part of the negotiations with the Board occurred, not with American state institutions, but with members of American associations of roasters, industrials and brokers. By examining these negotiations and the way they influenced Angolan coffee standards, this chapter also establishes an interesting relation between the American industry of instant soluble coffee – the reason why the Americans were so interested in Robusta

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99 Krige, American Hegemony and the Postwar Reconstruction of Science..., 5-6.
100 Krige, American Hegemony and the Postwar Reconstruction of Science..., 112.
101 The history of science has contributed significantly to this debate. Several accounts can be found in Gabrielle Hecht, ed., Entangled Geographies: Empire and Technopolitics in the Global Cold War (Cambridge, Mass.: MIT Press, 2011).
coffee – and a colonial state known for its violent modes of coffee production; as Sven Beckert would put it, offering more evidence of how “war capitalism” and “industrial capitalism” often made their way together.  

This chapter aims to contribute to the recent debate about the end of the Portuguese empire, which has been crucial in stressing how metropolitan and colonial process interacted with international, transnational and inter-imperial connections and dynamics. Scholars have given us several examples of these interactions, drawing our attention to the importance of the different imperial “idioms”, repertoires of rule and rhetorical devices that circulated in between empires. Here we propose to address another kind of interactions that were not caused by ideas, but by practices – scientific, technological and political – materialized in expertise and technological systems. These interactions are more diffuse and also harder to retrieve. As Gabrielle Hecht argues, “technological systems and expertise offered less visible – but sometimes more powerful means of shaping or reshaping political rule, economic arrangements, social relationships and cultural forms.” Such technopolitical systems can remain hidden in front of our very eyes – like a standardized coffee lot waiting in a colonial doc.


105 Hecht, Entangled Geographies: Empire and Technopolitics in the Global Cold War...

106 I follow here Gabrielle Hecht and her use of the notion of technopolitics as a way of capturing “the hybrid forms of power embedded in technological artifacts, systems, and practices.” As she argues, “the strategic practice of designing or using technology to enact political goals” often produce technopolitical systems “whose design features mattered fundamentally to their success and shaped the ways in which those systems acted upon the world”, Gabrielle Hecht, “Introduction,” in Entangled Geographies: Empire and Technopolitics in the Global Cold War, ed. Gabrielle Hecht (Cambridge, Mass.: MIT Press, 2011), 3.
In the previous chapter we saw how state science was able to transform Robusta into an imperial commodity able to feed American coffee roasting industry. We saw how that happened. Following the experts of the Board, we showed how the empire invested at the final phases of the commodity production systems, introducing instruments that facilitated the standardization of coffee beans and a classificatory system in accordance to international standards. But, was this all? Were there any development plans that aimed to impact the productive sector in its earlier phases? Were there attempts to improve and standardize the genome of Robusta seeds and agricultural practices traditionally used in Angola? Did the experts of the Board try to transform the agricultural systems at the basis of coffee production in this colony? The answer to these questions doesn’t rely on the projects that succeeded in their goals, such as the ones analysed in the previous chapter, but on those that failed. This chapter is about such projects.

These failed plans aimed to create alternative modes of producing coffee in Angola. Traditional systems of coffee cultivation came with several problems that hampered any reformist attempt. Being agro-forest systems highly dependent on environmental conditions of mountainous regions (the cloud forests and nearby areas), and having evolved apart from the process of agricultural mechanization, they had to rely on an enormous amount of coerced African work. This means that the “environmental robustness” of the Robusta Empire became also, as time passed by, its most important weakness – in political terms, and in both national and international contexts. This chapter is about strategies adopted to address this problem. As we will see the imperial strategy was not to improve or merely change the existing agricultural systems, but to create alternative modes of coffee production independent of practices of forced labour. These agricultural development plans were therefore, and above all, projects of social engineering that associated this tropical plant to plans
of white colonization. The condition for this to happen, and the common ground for these projects, was one: to take coffee production out of the cloud forests.

Scholars have signalled a causal relation between the resistance of the Portuguese empire to implement labour reforms and the coffee boom of the late 1940s. Reforms to end the practices of forced labour and enforced contracts started to be implemented in the British, French and Belgian colonial empires after WWII. In the Portuguese colonies, however, the legal mechanisms that allowed these practices to continue were maintained until 1961. The post-war agricultural boom, which in Angola turned all around coffee and was supported by vested interests – metropolitan, colonial, private and State –, has been identified as the reason why Salazar decided for a more conservative imperial strategy. However, this should not lead us to conclude, as Alexander Keese stresses, that there were no “pro-reform networks and agendas” created to implement reforms to abolish forced labour within the Portuguese administration. This historian demonstrates that several attempts were made by high officials of the Portuguese administration to implement such reforms. Together with Alexander Keese, this chapter also emphasizes these pro-reform networks and agendas, and, with him, refutes the idea that Portuguese officials were “unable to imagine reform”. The method followed here is, however, substantially different. To take a closer look at what was happening in the fields of the Board’s experiment stations, and to the actors involved in the design of the experiments that would take place here, is what I propose to do.

By retrieving the projects that failed, this chapter contributes to the ongoing discussion about the powers of science and how they were used by “modern states” –

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4 Keese, “The Constraints of Late Colonial Reform Policy”…, 188.
5 Keese, “The Constraints of Late Colonial Reform Policy”…, 188.
a debate much indebted to the work of James Scott.\textsuperscript{6} The core of the analysis, however, is closer to Timothy Mitchell when he argues that he is less interested in the misuses of science and more in the “kinds of social and political practice that produce simultaneously the powers of science and the powers of modern states”.\textsuperscript{7} Instead of judging science or the state for their negative outcome, I also want to unveil the social and political practices that empowered both science and the state. These practices, as I will detail below, were being constructed as our actors (the scientists) engaged in the process of imagining a new coffee empire. This approach will enable us to understand why these alternatives – the empire that failed – had been conceived in the first place, how they were conceived, and why in the end they were not successfully implemented. The answer again is more complex than the historiography of the Portuguese empire is probably ready to admit.

6.1 “CONQUERING ANGOLA FROM NATURE”

In 1949, between 15 and 22 May, the First Agronomic Symposium of Angola (Primeiras Jornadas Agronômicas de Angola) took place in Nova Lisboa (Huambo). It was the first time that the four main State institutions in Angola devoted to agricultural sciences – the Agriculture Department of Angola and the three imperial marketing boards for cotton, cereals and coffee – co-organized an event.\textsuperscript{8} As the agronomist Guilherme Guerra emphasized at the opening session the main goal of this symposium was to “improve and strengthen the relationship between all technicians.”\textsuperscript{9} Around 40 agronomists and forest scientists responded to the call with one or more communications about their work.


\textsuperscript{8} The communications during this symposium were published in the journal \textit{Agronomia Angolana}, issues no. 2 (1949), 3 (1950) and no. 4 (1950).

Much of these communications concerned the ways in which science could innovate and improve agricultural systems – breeding experiments, improved seeds, new agricultural techniques, etc. Wheat, above all the crops, but also cotton, inspired scientists to design breeding experiments that aimed at improving the productivity of agricultural systems.\(^\text{10}\) Nothing of this happened, however, as far as coffee was concerned. The expertise on coffee that came together in 1949 seemed much less worried with innovation than with problems of sustainability. The matter that was preoccupying these experts was another one: the costs and availability of African labour in European coffee production. It was the economic sustainability of coffee fazendas that was the object of exhaustive analysis. Basically, all sort of calculations, direct or indirect, in the present and in the near future, about the costs of African labour (men, women and children) were presented in this symposium.\(^\text{11}\) In 1949, at the beginning of the boom of coffee, experts were well aware that the scarcity of workforce for coffee fazendas was an exponentially growing problem.

In the previous chapter we discussed the causes of the increase of Angolan coffee production in the interwar period and after WWII, and the imperial strategy to turn this production more competitive in the global market. But we said nothing about the impact that this increase in production had in terms of cultivated land. The numbers are quite extraordinary. According to data published by the Anuário Estatístico de Angola about 123 thousand hectares of land were devoted to coffee in 1948.\(^\text{12}\) Three quarters of this land remained, apparently, in the hands of Europeans.\(^\text{13}\) In 1949, at the beginning of the coffee boom, these figures preoccupied the experts of

\(^{10}\) See Agronomia Angolana, issues no. 2 (1949), no. 3 (1950) and no. 4 (1950).


\(^{12}\) AEA (1948).

\(^{13}\) The only source I found mentioning the ratio of coffee cultivated land between Europeans and Africans was a table attached to a letter from René Coste, Director of the Institute Français du Café e du Cacao, to the President of the Board, Lisbon, 28 September 1959. In this table, apparently made from information provided by the Board to the French institute, is mentioned that in the years 1954–1955 Europeans planted around 141 thousands hectares and Africans around 53 thousands hectares. This means that the ratio of cultivated land between Africans and Europeans accompanied the ratio concerning production after WWII – that is, 3:1. One should note that AEA is an ambiguous source as far as these figures are concerned. In the volumes before 1954 the item “area devoted to coffee cultivation” is presented as being only due to European fazendas, while in the AEA volume of 1954–1955 (as well as in the following volumes) the same item (in this case, 198 thousands hectares) corresponds now to an area cultivated by both “Europeans and indígenes.”
the Board. Was this a sustainable project? Could the empire provide indefinitely the labour conditions the Europeans needed? Would it be possible to maintain the legal mechanisms that allowed them to coercively force Africans to work? Until what extent the expansion of European fazendas threatened the sustainable units of coffee production managed by Africans?

After three days of an intense program, which included visits to experiment stations, settlements and private fazendas, another agronomist, Luís Leite do Rio, closed the symposium using the following words:

(...) por infelicidades dos tempos e pressão de populações cujo número e as necessidades a cada momento crescem, não basta afirmar e louvar os valores morais que são as linhas de força da colonização portuguesa, tal como magistralmente o fez Gilberto Freyre; impõe-se a obrigação de actualizar integralmente as riquezas potenciais das terras ultramarinas, tirar delas o máximo de pão para se seja repartido pelo maior número de lares; numa palavra, e parafraseando Ezequiel de Campos, diremos que cinco séculos depois de termos conquistado Angola ao Desconhecido, chegou o momento inadiável de conquistá-la à Natureza.14

“Conquering Angola from Nature” – the sentence neatly captures the scientific and political imagination of the epoch. Yet, in the case of coffee, it literally translates the concerns and priorities of the scientists working at the Board. At the heart of their concerns was the belief that it was necessary to conquer coffee production from nature – to rescue it, that is, from the cloud forests. The goal was to produce coffee in landscapes where this crop cultivation could be easily mechanized with white settlers responsible for the agricultural work. This was not a new idea. As we will show, since the beginning of the Board experts discussed the constraints and possibilities of this idea. But it was only in 1949 that concrete steps were taken in this direction. This consisted on the launching of three experiment stations: the Congo Experiment Station (Estação Regional Congo, ERC), the Amboim Experiment Station (Estação

14 “Given the unfortunate times and the pressure of populations whose numbers and needs at every moment grow, it is not enough to affirm and praise the moral values that are the lines of force of Portuguese colonization, as masterfully did Gilberto Freyre; there is an obligation to fully update the potential wealth of overseas lands, to take maximum yield from them in order to be distributed among the largest number of households; in a word, and to paraphrase Ezequiel de Campos, we shall say that five centuries after we conquered Angola from the Unknown, the moment arrived to conquer it from Nature.”, Luis Leite do Rio, “Sessão de Encerramento. Discurso do Eng. Agrónomo Luis Leite do Rio.”, Agronomia Angolana, no. 2 (1949): 20.
Regional do Amboim, ERA) and the Ganda Experiment Station (Estação Regional da Ganda, ERG). The location of these projects is revelatory, in my opinion, of the development schemes that were being designed by the experts of the Board: 1) the expansion of Robusta to the savannah (ERC and ERA), and 2) the introduction of Arabica in the Angolan Plateau (ERG). In this chapter, mainly due to the constrains imposed by available archival materials, I will only follow those scientists working at the ERA and ERG.

6.2 IMAGINING OTHER ROBUSTA

Robusta’s Resistance to Manipulation

I will start with the experiments at ERA that aimed at expanding Robusta into the savannah. Before though, let us make a detour into the biology and agricultural history of this coffee species. The first important thing to understand is that this is an allogamous species, that is, sexual reproduction in these plants is made through means of cross-fertilization: the pollen of one plant fertilizes the flower of another one. This is the opposite from Arabica coffee, an autogamous species, meaning that one single plant can reproduce sexually as its flowers are fertilized by its own pollen. This apparently minor difference in terms of their reproduction systems has huge implications in the agricultural histories of each species. To cut it short, it was much more difficult for humans to control Robusta than Arabica. The reason was that no

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15 It was not possible to ascertain the exact date when these experiment stations were created. The information gathered is somehow dispersed. According to the mentioned above report it was around 1948 and 1949 that they began to be set up. See “Primeira Conferência Agronómica dos Serviços Técnicos, Programa de Trabalhos”, Junta de Exportação do Café, Delegação de Angola (Serviços Técnicos), Luanda, Setembro 1955, p. 10, Library of EAN.

16 I did not find enough material about the work conducted at the Congo Experiment Station. Also an object for future investigations is the indigenous settlement Vale de Loge (Colonato de Vale de Loge), also launched by the Board in the same context of agricultural and social engineering.

17 See, for instance, Gordon Wrigley, Coffee (Essex: Longman group UK Limited, 1988).

one could ever say who the father of a cross-fertilized plant was.\textsuperscript{19} This helps to understand, at least partly, how European empires were able to disseminate Arabica across the world, and why in their hands, and throughout time, this species evolved, many times mutating, in an endless number of varieties. In contrast, the history of Robusta cultivation is much more a history of resistance – resistance to farmers, to breeders, to scientists; an agricultural history where heterogeneity had to be part of the plan, especially when this plan was designed in the middle of this species’ natural habitat – as it was in Angola.

A second biological difference between Arabica and Robusta coffee concerns their genome in modern times. This aspect has been recently discussed by Stewart McCook, who, based on the writings of an American plant pathology – Frederick Wellman – has concluded that Arabica in the modern world had an extremely narrow range of genetic material.\textsuperscript{20} According to Wellman’s argument – to which we will return in the Epilogue of this dissertation –, the Arabica coffee that was planted in the American continent in the 19\textsuperscript{th} century was descendent from the “one tree” that had been brought from Ethiopia by the Arabs and planted in Yemen at the end of the Middle Ages.\textsuperscript{21} This narrow genetic variability was synonymous, in ecological terms, of low resistance to environmental changes. Again, Robusta evolutionary history stands sharply against this story. Until late modernity it had been confined to the African forests, preserving high levels of genetic variability and therefore much more resistance to environmental changes than much of the Arabica planted across the world.\textsuperscript{22}

In fact, it was only to rescue Arabica planters from bankruptcy, when Arabica was disseminated by an epidemics in the end of the 19\textsuperscript{th} century, that Robusta was first planted in other place than Africa – Java. Though this story goes a little out of our focus, it helps us to make the point about the biological “robustness” of this

\textsuperscript{19} It was the Danish botanist Wilhelm Johannsen who use the expression “no doubts about the father” apropos of self-fertilized plants. More about this topic in Staffan Müller-Wille, “Hybrids, Pure Cultures, and Pure Lines: From Nineteenth-Century Biology to Twentieth-Century Genetics,” Studies in History and Philosophy of Biological and Biomedical Science 38, no. 4 (2007): 801.


\textsuperscript{21} Wellman, Coffee: Botany, Cultivation, and Utilization..., 129.

\textsuperscript{22} The exception was Ethiopia, from where Arabic\textsuperscript{a} was originated, and where it preserved high levels of genetic variability. This explains, at least partly, why FAO funded a project here (see Epilogue). See also Frederick Meyer, “Notes on Wild Coffea Arabica from Southwestern Ethiopia, with Some Historical Considerations,” Economic Botany 19, no. 2 (1965): 136–51; Christine B Schmitt et al., “Wild Coffee Management and Plant Diversity in the Montane Rainforest of Southwestern Ethiopia,” African Journal of Ecology 48, no. 1 (2010): 78–86.
species. In the end of the 19th century European empires in Asia and Oceania saw long-time profitable Arabica coffee businesses being suddenly destroyed by a fungus, Hemileia vastatrix, known as the orange rust. The British in Ceylon (now Sri Lanka) decided to substitute coffee for tea, but the Dutch in Java did not give up on coffee. Instead they preferred to substitute Robusta for Arabica since that species revealed high levels of resistance to Hemileia.\(^{23}\)

In 1900, 150 plants under the name of Coffea robusta Linden arrived to Java to the dispatched from a nursery firm in Brussels directed by Linden himself and called L’ Horticulture Colonial.\(^{24}\) Robusta became one of the most studied cases of the botanical station of Java, one of the world’s centres on breeding and physiology of tropical plants at that epoch.

Robusta’s arrival in Java had a perfect timing.\(^{25}\) At this colonial station a new generation of plant breeders and scientists arrived spurred by the progresses in the emergent science of heredity. The Dutch agricultural scientist P. J. S. Cramer was the protagonist of this story.\(^{26}\) He designed extensive breeding experiments, which would become “exemplary to all subsequent breeding programmes of Robusta coffee in India and Africa”, and produced research that had implications on the physiology of the genus Coffea in general.\(^{27}\) As Wellman would write in 1957: “to the specialist who is at work on the Arabica variety, it may come as a disappointment that this book by Cramer is mostly about the Robusta variety.”\(^{28}\) The words he used to describe the encounter between Dutch plant scientists and Robusta coffee are worth to be cited.

These scientists were men with “green thumbs”, and made virtue out of necessity. They turned to Robusta, and liked the tree. Where it had been passed off because it had such small beans they bred and selected types with beans to suit the market.

\(^{23}\) Stuart McCook, “Global Rust Belt”…: 183-185.

\(^{24}\) Apparently, the Belgian firm received the seeds from one of its agents exploring the region of Belgian Congo – about the origin of these plants see J. S. Cramer, A Review of Literature of Coffee Research in Indonesia, ed. Frederick L. Wellman (Turrialba, Costa Rica: Inter-American Institute of Agricultural Sciences, 1957), 12-13.


\(^{26}\) J. S. Cramer (1879-1952). More information about him see introduction of Frederick L. Wellman in J. S. Cramer, A Review of Literature of Coffee Research in Indonesia…


\(^{28}\) Frederick L. Wellman in his introduction to Cramer, A Review of Literature of Coffee Research in Indonesia…, XIV.
Where quality of Robusta was once thought of as far below basic likes in the world, they isolated strains that were not only good natural blending coffees, but some that by themselves stood the test for fair cup quality. They did not have all the aroma of C. arabica, but were better than the common Robusta and were drinkable, filled a place, and a future. These quality selection studies were just under way when the war stopped their progress.  

Descriptions about Cramer’s experiments of selection and breeding are revealing of the tension between the scientific and technological thrust to reduce heterogeneity in order to produce populations suitable for quasi-industrial farming and the biology of the plant, which tended to preserve genetic variability through means of cross pollination. It’s interesting to see how at the beginning Cramer and his team tried to fight Robusta biology. At the Government Experiment Station of Bangelan, breeding programs used several methods, the methods of mass selection (in 1905), of selection of mother trees and their seedling progenies (in 1907) and artificial self-pollination. In 1916, however, scientists opted for another strategy. A new set of breeding experiments was designed that used vegetative propagation techniques (namely, grafting) as auxiliary tools experiments and counted with large fields of clones, “living herbaria”. Later, in 1927, the Bangelan Station, the Experiment Station of Central and East Java and the Besuki Experiment Station were using...
combined techniques of vegetative propagation (the production of clones) and the propagation by seed executed by means of controlled pollination.

Ironically, Robusta, the most resistant species to manipulation, became at centre of researches on *Coffea* in the turn of the 20th century. Indeed, and despite of the chaotic state of Robusta’s taxonomy and of its residual importance in the global market, this was the most studied coffee species in breeding and physiological experiments in the first two decades of the 20th century. But, did state science in Angola follow the Dutch tradition of breeding Robusta? The answer is no. The reasons why this never happened are probably several. The amount of funds and personnel required to set up the programs of asexual reproduction that the Dutch had designed for the Javanese landscape may have dissuaded the Portuguese from investing on the fields of clones. But also the environment might have played its role. The fact that Robusta was an indigenous plant to Angola, near to its centre of origin, where, theoretically, its highest levels of genetic variability were concentrated, may had also posed additional difficulties. Was it worth to try to change this allogamous species in such ecological context? Wouldn’t it be better to accept Robusta’s biological resistance to change and change instead its environment? Agricultural experts at the Board decided for the second. As their predecessors of the Agriculture Department, they also became interest in plant breeding. But soon realised that they did not have to make Angolan Robusta as Javanese Robusta, or as Arabica in general. Plant geography and agro-ecology continued to be the most relevant traditions in this case.

**Testing the Savanna**

How to make Robusta production systems ecologically sustainable in a region where there are no clouds during the dry season? This was ERA’s main challenge. ERA was located in the savannah region of Amboim and though particularly focused on Robusta it also tested the performance of Arabica. Essays were conducted in the station and in nearby private *fazendas*, and started around 1947, though much

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34 For Trancoso Vaz, “savanna” is “the area that does not have great concentration of arboreal species, but on the contrary, the predominance of grasses and dispersed shrubs”, *J. Trancoso Vaz, “Cultura do Caweeiro em Savana,” Gazeta Agrícola de Angola*, no. 6 (1956): 219.
experimental data was only collected around 1951. 35 Medina, Mesquitela, Noronha, Pereira Caldas and Trancoso Vaz were some of the designers of these experiments. 36 According to the mentioned above report, the station counted with a very good collection of Robustas and Arabicas coming from all over the world.

As we discussed in Part 1, the “clouds” of the cloud forests were an essential component in the life cycle of this species. Formed from huge bodies of water that evaporated from the sea during the dry season, these clouds moved from the sea to the continent, but failed to cross the mountains, ending concentrated in the slopes of these mountains. These clouds provided the region of a permanent fog during the dry season, which created specific environmental conditions to which Robusta was well adapted: a high relative humidity of the air and median fertility of the soil. 37 To take the clouds out of Robusta’s life cycle during this season (from May to September) would be to give these species a “true period of torture”. 38 What could science do to minimize this ordeal?

To fabricate “artificial forests” (matas artificiais), in Noronha’s own words, was thus the first thing to do. 39 If there were no shadow trees (árvores sombreadoras) in the savanna, planters should plant them when they start to plant coffee trees. Shadowing not would only increase the levels of relative humidity of the air, but also the levels of fertility of the savanna soil, by decreasing the effects of sun exposure and erosion. The performance of several trees (indigenous and exotic in the region) as “shadow trees” for Robusta coffee (and Arabica) cultivation was therefore one of the main experimental lines at ERA. These shadow trees had to meet three important

36 See “Primeira Conferência Agronómica dos Serviços Técnicos, Programa de Trabalhos”, Junta de Exportação do Café, Delegação de Angola (Serviços Técnicos), Luanda, Setembro 1955, pp. 10-36, Library of EAN. Until 1955 those who designed essays for ERA were Medina, Mesquitela, Noronha and Pereira Caldas. After 1956, Trancoso Vaz seems to have taken the leadership since it’s him that it’s presenting almost all the station’s results at the FAO’s meeting in Abidjan, Ivory Coast, in October 1960.
37 The climate in Angola can be roughly described in four moments: wet season (October, November, December, January, Mach and April); first month of transition (May); dry season (June, July and August); and second month of transition (September).
38 Jorge Trancoso Vaz, Aspectos de Fertilização do Café em Angola (Luanda: Instituto do Café de Angola, 1965), 4, IPAD-AHU.
requirements: good shadowing, reduced competition with coffee plants and quick growth.

The third aspect was of particular importance. The time these trees took to grow also meant time of “sun exposure” for the young coffee bushes. For instance, Muanza (Albbizia sp.), one of the most popular indigenous shadow trees, and unequivocally “a magnificent shadow” in the coffee forests, was not suitable for artificial forests because of its “slow growth”. The solution was to introduce exotic shadow trees in the Angolan savanna and Plateau. In the mid-1950s, the species that had “revealed better qualities as a shadow tree” was Grevilea (Grevillea robusta). The performance of Inganzeiro (Inga edulis), a tree original from Brazil and introduced in Angola by the Board, was still under surveillance. Also Medina designed an essay to ERA (in 1948) that aimed “to study ways of extending Robusta to the savanna regions, planting coffee and shadow trees simultaneously.” As Medina argues, the challenge hinged on the concept of “simultaneity” as the shadow trees “only after a long period [two to three years] would ensure sufficient shadowing.” The technique was based on what he had saw in Arabica plantations in Brazil, and consisted on planting two coffee plants in the same hole hopping that the two plants would “shadow each other”. “To ensure Robusta adaptation in full sun during the first years of life” was the goal of the experiment.

Another experimental line at ERA concerned the design of coffee plantation, which clearly differed from those set up in Robusta’s natural habitat. The savanna enabled scientists to experiment new plantation methods, for instance, the method of plantation using contour lines (curvas de nível). As stressed by Noronha, the method, “not only fought erosion” but provided the farmer of several advantages, among them “the possibility of mechanization of some agricultural practices.” At ERA scientists this method was tested in both coffee species, Robusta and Arabica, and in some cases associated to another method known as linhas cerradas, which, according to them, offered “more protection against wind and other climacteric agents” (Figure 17, 40)

40 Trancoso Vaz, “Cultura do Cafeeiro em Savana,” ..., 221.
41 Trancoso Vaz, “Cultura do Cafeeiro em Savana,” ..., 221.
42 Trancoso Vaz, “Cultura do Cafeeiro em Savana,” ..., 221.
45 Noronha, “Plantação de Cafezal em Curvas de Nível.,” ..., 18.
Annex I). As diagram X shows, the location of shadow trees in this new spatial arrangement was also under inspection, enabling scientists to study the equilibrium between these trees and coffee plants in terms of the competition for water and nutrients (Figure 18, Annex I).

Finally, the soil also needed special treatments, particularly during the initial phase when shadowing was still weak and moderate, according to Trancoso Vaz. A soil exposed to sun and erosion did not have natural fertilization and therefore this had to be provided by men. The negative effects that these two climacteric agents could have on soil were very present in our scientists’ minds. The most devastating experiences came from Brazil, where “vast areas are now in a state of exhaustion” after the natural forest had been destroyed in order to plant Arabica in fields exposed to the sun. For this reason in Brazil some considered coffee production a “cause of deserts”, a problem that was now trying to be overcome with animal fertilization (from milk cows) in the so-called “coffee and milk fazendas” (fazendas café com leite). Around 1956-1957 the experimental stations in Angola started to make tests of soil fertilization and to make “large-scale applications” of mineral fertilizers (adubos químicos).

Nature was no longer an obstacle. Scientists knew they could conquer Angola from nature, the savanna, at least in a short and medium terms. The problem was that they also wanted this conquest to arrive fast. Two or tree years waiting for shadow trees to grow was too much. Soils also need to be quickly fertilized; farmers’ work was not compatible with the process of natural fertilization. It was a fight against time. Time to modernize, time that the empire did not have. At the same time, the savanna also offered the possibility of experimenting other plantations methods that would allow Angola to start the process of mechanization of coffee cultivation and even other modes of labour organization. The experts put their hopes in methods such as the contour lines, with a long tradition in European agriculture and that had already proved successful in coffee cultivation in the Americas, namely in Brazil.

47 Trancoso Vaz, “Cultura do Cafeeiro em Savana.”…, 218.
48 Trancoso Vaz, “Cultura do Cafeeiro em Savana”…, 218.
49 Trancoso Vaz, Aspectos de Fertilização do Cafeeiro em Angola…, 1.
50 Medina, “Sistema de Plantação.”…, 17.
As we will discuss below, all eyes turned to Brazil: for what it was worth to follow, and for what it was not.

These agronomic experiments were also social projects. The savanna offered the experts the possibility of imagining a new beginning for Robusta, based on intensive agriculture and familiar units of white settlers. This vision can be grasped from Trancoso Vaz’s article on Congo, in 1956.\(^{52}\)

Grande parte do nosso Congo possui razoáveis condições para a fixação de colonos. O tipo da grande exploração actualmente poderia ser sub-dividido em pequenas parcelas em regime de cultura familiar. Desta forma, por administração directa ou por arrendamento em regime de parceria teríamos resolvido, pelo menos nos casos mais cruciais, o magno problema da mão de obra.\(^{53}\)

The inspiration came from Brazil, Columbia or Mexico in associating models of “familiar exploitation” with models of “intensive exploitation”.\(^{54}\) According to Trancoso Vaz, the ratio found in Brazil, where “each working man-unit can grow from 3000 up to 3500 feet of coffee”, could be “easily” be adopted in this colony.\(^{55}\) Meanwhile, European families to be “fixated” in Angola should be conveniently prepared and even trained before being recruited: “one must prepared him spiritually, undoing the false illusions of rapid enrichment and providing him with the knowledge of agriculture in tropical regions, where certain operations diverge considerably from the metropolitan ones.”\(^{56}\)

This project of social engineering was never implemented. It’s also plausible that this was an “one’s man pipe dream”. Robusta’s conquest of the savanna, indeed a process that we know little about it in agronomic terms, did not bring, for sure, a new and “modern” organization of labour. Quite the contrary: it perpetuated the existing one based on coercively African workers. The problem troubling scientists in 1949 symposium – that put in cause the sustainability of coffee fazendas, the social peace in the region and the prestige of the Portuguese empire in international spheres – was


\(^{53}\) Trancoso Vaz, “Problemas da Cafeicultura no Congo.”…, 31.

\(^{54}\) Trancoso Vaz, “Problemas da Cafeicultura no Congo.”…, 31.

\(^{55}\) Trancoso Vaz, “Problemas da Cafeicultura no Congo.”…, 30.

\(^{56}\) Trancoso Vaz, “Problemas da Cafeicultura no Congo.”…, 30.
aggravated in the following years. Fortunately, there was another development plan that until the end it was fuelled enough: the Arabica dream.

6.3 IMAGINING OTHER SPECIES

The “Arabica Dream”

The idea that the empire should invest on the production of Arabica coffee in the Angolan Plateau makes part of the Board’s plans since the very beginning. At first this meant to save the existing Arabica plantations that the Board considered to have failed due to the lack of technical assistance. It’s not clear when exactly the first plantations of Arabica coffee were set up in Angola. But we know this happened prior to 1930, and probably in Serra da Chela, spreading afterwards to Benguela plateau, Bié and Congo. In 1930, signs of success came from the region of Ganda, but then again they did not thrive. Almost all Arabica fazendas were abandoned, with some few exceptions, such as those belonging to German entrepreneurs that, according to Portuguese experts, were located in a “microclimate”. When the Board was launched, in 1940, Arabica coffee had a long repertoire of failures in the colony. Still, there were no reasons to believe that science could not change this trajectory of history.

The Board was not interested in producing only Arabica, but Arabica Milds. Their price stability in the global market was one of the main reasons. As Souza argues, “there was are always markets” for this type of coffee. But there was also “strong political reasons.” This high quality Arabica was seen as the ideal commodity to cut with a way of producing coffee based on large states and the practices of forced labour. The idea was that Angolan coffee could be produce by Portuguese farmers

57 This is clear in the writings of Manuel Ramos de Souza, A Junta de Exportação do Café Colonial em Angola: 5 Anos de Actividade (Luanda: Tipografia Mondego, 1946), 41-45.
60 The role these German fazendas played in the state development plans needs further investigation. More information about this German entrepreneurs can be found in Aida Freudenthal, Arimos e Fazendas: A Transição Agrária em Angola (Luanda: Chá de Caxinde, 1989).
61 Ramos de Souza, A Junta de Exportação do Café..., 43.
organized in small farms in the Plateau. Not only Arabica Milds offered very good revenues even if produced in small quantities, but also Arabica was supposedly adapted to the environment of the Angolan Plateau. This second aspect was not a detail; with its almost temperate climate, the Southern highlands of the colony offered the empire a new range of possibilities. As Souza argues, a production system based on “small or medium” farms was justified because “such a distribution of land is best suited for colonization purposes.” And by colonization, he meant, evidently, white colonization. The eyes were in Colombia, the world’s biggest producer of Arabica Milds, where the number of small coffee producers was “truly remarkable”. The foundations for the arabica dream were laid.

A luta sera grande mas se todos se compenetrarem no seu dever, agentes da Juncafé e cafeicultores, estamos certos de que se poderá dar, dentro de pouco uma apreciável masi valia ao Arábica angolano, que, cultivado intisivamente em pequenas plantações tratadas com esmero, quase com o culto da jardiniagem e preparado devidamente pela via húmida poderá vir a ser um ‘mild’ ou ‘suave’ muito apreciado e de alta cotação no Mercado.

One of the main reasons Medina and Carrolo were sent to Brazil in 1945 was to improve their know-how on Arabica. Brazil was chosen, not because of its quality standards – Brazil was mainly a Hard Arabica’s producer –, but because, as already mentioned, the most advanced researches on Arabica coffee were happening at the Campinas Agronomic Institute (Instituto Agronômico de Campinas), in the State of

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62 Ramos de Souza, A Junta de Exportação do Café..., 43.
64 “The struggle will be great, but if all those who are involved do their job, agents of Juncafe and coffee growers, we are sure that Angolan Arabica, cultivated intisently in small plantations treated with care, with the cult of gardening and duly prepared by the humid way, will almost certainly be appreciated, and could become a Mild or very Mild Arabica, highly valued in the market”, Ramos de Souza, A Junta de Exportação do Café..., 42.
65 Medina was in Brazil from 22 February 1945 until 14 November 1946, and Carrolo from 22 February 1945 to 5 February 1946, see Letter from President of the Board (Salvador de Lucena) to Minister of the Colonies, 12 January 1950, AHU, MU, GM, cx. 213, 1E, File 1º volume.
São Paulo.\textsuperscript{66} In 1933, an intensive breeding programme was started in the Division of Genetics of this institute, which soon became known as the “chief centre of genetic studies in \textit{Coffea}”.\textsuperscript{67} C. A. Krug was one of the leading scientists of this division, also the future head of the FAO’s World Coffee Survey.

Much of the time Medina and Carrolo spent in Brazil was in the company of the scientists of this institute, following them in their breeding experiments and in their visits to the coffee farms in the state.\textsuperscript{68} Divided on several research lines – agricultural practices, physiology, diseases, etc. –, Campinas in the post-WWII was for Arabica’s breeding \textit{with} genetics what Java had been in the beginning of the 20\textsuperscript{th} century for Robusta’s breeding \textit{without} genetics.\textsuperscript{69} The Campinas’ team was responsible for important cytogenetic discoveries; for instance, it finally settled the controversy about the number of chromosomes in coffee species;\textsuperscript{70} and it was also from here that came the first demonstration that the two most known varieties of \textit{C. arabica} (the var. typical and the var. bourbon) were genetically different.\textsuperscript{71} These results contributed to a better understanding on the origin of Arabica mutants, some of them for long described by botanists and taxonomists. For instance, it became known that “Caturra” had evolved from var. \textit{bourbon}, and “Maragogipe” from var. \textit{typica}.

Campinas’s scientists also identified three mutants of Arabica, which resulted from changes in the number of chromosomes: the hexaploid and the octoploid forms of

\begin{thebibliography}{9}
\bibitem{66} Ramos de Souza, \textit{A Junta de Exportação do Café}..., 43. Founded in 1887 by D. Pedro II as \textit{Imperial Estação Agronómica}, this institute also connected to Austria as the reputed Austrian scientist Franz Dafert von Sensel Timmer (1863-1933) was the man entrusted by the emperor of Brazil to direct the station in its early phase, Helder Lains e Silva, “Cafeicultura no Brasil,” \textit{Revista do Café Português}, no. 13 (1957): 14.
\bibitem{67} C. A. Krug would be the director of the World Coffee Survey, organized by FAO in the 1950s.
\bibitem{68} More research is needed about the funds behind this institution, namely its relation with the United States. At least in the 1950s the Campinas Institute was receiving money from Point Four in the framework of a very concrete project (see Epilogue).
\bibitem{70} Until then this was a controversial topic: some cytologists argued, for instance, that \textit{Coffea arabica} could have either 2n=16 or 2n=22, and that \textit{Coffea liberica} had 2n=44. From then onwards it became clear that almost every species of the genus \textit{Coffea} were diploid (2n=22) and that \textit{C. arabica} was the exception to the rule, being tetraploid species, with a number of chromosomes of 4n=44. Such “unusual” condition of polyploidy explained why it was ever so difficult to cross Arabica with other species. Wellman, \textit{Coffee: Botany, Cultivation, and Utilization}..., 130.
\bibitem{71} According to these authors, the \textit{typica} variety (or var. \textit{arabica}) is supposedly the primitive form of \textit{C. arabica}, with dominant \textit{typical} alleles TT. The bourbon variety was considered to be a double recessive mutant (tt) from var. \textit{typica}. Since var. bourbon was giving at that time higher yields than var. arabica, authors considered of great economic importance the mutation from “A” to “a”, see A. E. Haarer, \textit{Modern Coffee Production} (London: Leonard Hill (Books) Ltd., 1956), 35.
\end{thebibliography}
“Bullata” and “Monosperma”. There are, however, much more Arabica mutants – some discovered around these years, others known at least since the 18th century.72

But the knowledge Medina and Carrolo gained during their visit went well beyond the experiments in the fields of the Campinas Institute. Brazil was at the time in the middle of an environmental and economic crisis provoked by traditional agricultural systems. Arabica coffee, introduced in the early 18th century (in Pará), had spread to Rio de Janeiro in 1774 (where the first large plantations were set up) and afterwards to other states (São Paulo, in 1800). Its cultivation system was based on two pillars: 1) full sunshine, to which Arabica was able to be adapted to, an aspect that guaranteed the farmer much higher yields; and 2) the use of virgin soils, meaning that Arabica plantations were planted after total destruction of the virgin forests. When after a certain amount of years of sun and erosion soils became impoverished, plantations were abandoned, and the cycle of forest destruction was repeated in other region or state.

As Krug would summarize years later in the World Coffee Survey Arabica coffee in Brazil was a “constantly moving crop” given that “it was more economic to shift it to virgin areas which existed in extraordinary abundance than to try to maintain production levels in old plantations or replace them in loco by new ones”.73 At the heart of this discussion was the State of São Paulo where the situation was particularly worrying. Since 1933 the number of coffee plants had started to diminish. The great depression had played its role, but the extraordinary drought in 1940-1941 and the big frost in 1942-1943 had clearly helped to worsen the situation. For the experts it was obvious that the “impoverishment of the soils” (depauperamento dos solos) was at the bottom of the problem.74 This environmental reflection was taking place at Campinas when the two Portuguese visited the place in 1945 and 1946.

On the other hand, their knowledge about Latin American social model that used “families” as their basic unities of coffee production was also improved. In Brazil they became familiar with the two existing models: the small farms, whose

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72 The reasons why there are so many mutants in C. arabica are briefly exposed in Wrigley, Coffee..., 390.
owners (and their families) worked the land for themselves; and the medium and large farms (fazendas), whose owners made an annual contract with several settlers (colonos), each one became responsible (with their families) for the cultivation of a certain number of coffee plants – known in the literature as the “colono system”. It’s very interesting to see our visitors expressing a very negative opinion about live conditions of settlers and their families in these fazendas. Medina described settlers working in fazendas as “almost always completely helpless, underfed and without adequate medical care.” According to Carrolo, “they dress badly, had a sick aspect, could not leave the property – not even to the Sunday – without authorization of the boss, using very much the system of fines for the committed small and great faults.” For this Angolan fazendeiro the “colono system” could easily compared with slavery:

Temos a impressão que se os nossos patrícios provincianos conhecessem a verdade das condições em que emigram, nenhum se aventuraria a fazê-lo porque a vida ali, nesse period do contrato, é duríssima e tão dura que muitos não resistem pois o sistema de trabalho e maneira de viver é pior do que a dos pretos no tempo da escavatura.

In the state of São Paulo, small farms were the majority – in 1935 this number was 66%. But this did not mean that the majority of coffee production came from these farms. It didn’t. The fazendas were the ones that had more number of coffee plants and from where the majority of coffee production came. Also, because small farms had not the technology necessary for coffee processing, the quality of their coffee was inferior to that produced in the fazendas. Medina is quick to explain how this phenomenon of “division of land” – which has been widely described in the

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75 Medina, O Café no Estado de São Paulo..., 51. The definition of colono (settler) in Angola was completely different from the one in Brazil, the reason why both Medina and Carrolo felt the necessity to give their own definition of the world in Brazil. According to Medina, colonos are “rural workers who sign an annual contract to cultivate a certain number of coffee trees”; Medina, O Café no Estado de São Paulo..., 142. For Carrolo colono is “any emigrant who goes to Brazil without expertise and for that reason becomes obliged to render four consecutive years of service in the Brazilian fields”, Report of João Nobre Carrolo to the President of the Coffee Export Board, Lisbon, 5 March 1946, AHU, MU, GM, ex. 213, 1E, 1º vol.
76 Medina, O Café no Estado de São Paulo..., 143.
77 “We have the impression that if our fellow contrymen knew the truth about the conditions in which they emigrated, no one would venture to do so because the life there, in the period of the contract, is very hard, and so hard that many do not resist because the labour system and way of living is worse than that of the blacks in the time of slavery.”, Report of João Nobre Carrolo to the President of the Coffee Export Board, Lisbon, 5 March 1946, AHU, MU, GM, ex. 213, 1E, 1º vol.
78 Medina, O Café no Estado de São Paulo..., 54.
79 Medina, O Café no Estado de São Paulo..., 53.
literature – came to be the best solution for the Brazilian case. Basically, the rise of production and the decrease of the value of the land had made “coffee business was no longer interesting from a capitalistic point of view”, while the small farm resisted because they had other products.

As grandes crises de superprodução cafeeira e particularmente a recente crise de 1929 e 1944 aceleraram a divisão da propriedade cafeeira. Durante a crise o valor venal da propriedade baixou enormemente. A exploração cafeeira perdeu o interesse do ponto de vista capitalista, que era o do grande proprietário que vivia quase exclusivamente dos lucros produzidos pelo café. A resistência do pequeno proprietário era porem maior uma vez que, no cafezal, se dedicava a culturas intercalares de plantas alimentares ou industriais, por esses motivos grandes fazendas foram vendidas e divididas.\(^{80}\)

In the introduction of his book – *O Café no Estado de São Paulo* – Medina wonders about the extent to which the solutions found in this state could help the Portuguese to overcome the problems of Robusta production.\(^{81}\) For Medina, a big lesson (as we’ve discussed in the previous chapter) concerned the post-harvest phase dealing with the preparation of the product, since both countries prepared it using the “dry method” and there was an “huge technical lag” of Angola in relation to São Paulo”.\(^{82}\) In relation to the cultivation systems per se, however, there was not much to gain from its study since Robusta was planted in a completely different way. The scenario would change completely if the Board were to introduce Arabica in the Plateau. Here Brazilian experience would be of great help. Moreover, it was in Brazil that researches were being made to transform Arabica cultivation systems from an extensive to an intensive model. This project was being conceived and tested in the experimental fields of the Institute of Campinas. This was why it was so important for Medina to be there.

\(^{80}\) “The great crises of coffee overproduction and particularly the recent crisis of 1929 and 1944 have accelerated the division of coffee property. During the crisis the property value of property fell sharply. Coffee exploitation lost its interest from the capitalist point of view, which was that of the great landowner who lived almost exclusively from the profits made by coffee. The resistance of the small owner was greater because apart from coffee it also planted intercalary crops of food or industrial plants, and for that reason large farms were sold and divided.”, Medina, *O Café no Estado de São Paulo*..., 54.

\(^{81}\) Medina, *O Café no Estado de São Paulo*..., 9-10.

\(^{82}\) Medina, *O Café no Estado de São Paulo*..., 10.
When Medina arrived he was nominated the head of the Technical Services of the Board.\textsuperscript{83} Carrolo had returned some months before him, already instructed by Medina to improve existing Robusta coffee production systems and to implement “measures to introduce Arabica in the Angolan Plateau.”\textsuperscript{84} But it was with Medina that the experimental work with Arabica genuinely started. The first initiative was in 1948, when the Board bought a “decadent plantation” in the Serra da Chicuma, “belonging to the last Portuguese coffee grower [of Arabica] in the region”, and setting up the \textit{Posto de Fomento da Ganda}, later called \textit{Estação Regional da Ganda} (ERG). Essays using several varieties of Arabica and designed by Medina and Mendes da Ponte were set up between 1949 and 1953.\textsuperscript{85}

\textbf{Arabica’s Resistance to Angola}

In 1955, the results of several experiments conducted at ERG were presented at the First Agronomic Conference of the Board’s Technical Services.\textsuperscript{86} These experiments tested Arabica on a wide range of topics, from agricultural practices to shadowing and fertilization, among many others, but they were not very promising. Basically, and contrarily to the Brazilian experience, Arabica seemed to show considerable resistance to the Angolan Plateau. The reasons behind this were unknown. A second round of scientific trips to South and Central America took then place. These surveys were conducted by two of the Board’s leading figures: Lains e Silva, the new head of the Technical Services of the Board (after Medina), who made an internship in the Campinas Institute between 1955 and 1956, and visited Costa Rica and Colombia in 1958;\textsuperscript{87} and Mendes da Ponte, the head of the Ganda Regional

\begin{footnotes}
\item[83] Letter from President of the Board (Salvador de Lucena) to Minister of the Colonies, 12 January 1950, AHU, MU, GM, cx. 213, 1E, File 1\textsuperscript{st} volume.
\item[84] Report of João Nobre Carrolo to the President of the Board of Coffee Exports, 5 March 1946, AHU, MU, GM, cx. 213, 1E, File 1\textsuperscript{st} volume.
\item[85] See “Primeira Conferência Agronómica dos Serviços Técnicos, Programa de Trabalhos”, Junta de Exportação do Café, Delegação de Angola (Serviços Técnicos), Luanda, Setembro 1955, pp. 37-53, Library of EAN.
\item[86] “Primeira Conferência Agronómica dos Serviços Técnicos, Programa de Trabalhos”, Junta de Exportação do Café, Delegação de Angola (Serviços Técnicos), Luanda, Setembro 1955, pp. 37-53, Library of EAN.
\item[87] Lains e Silva’s internship in Brazil occurred from 1 October 1955 until 9 April 1956, and was funded by a grant of the University of São Paulo, see File “Hélder Lains e Silva”, IC. For his report about Brazil see Lains e Silva, “Cafeicultura no Brasil”…; for his reports on Belgian Congo, Costa Rica and Colombia (published together) see Helder Lains e Silva, “Progressos Técnicos Da Cafeicultura Do
\end{footnotes}
Station, who was sent in a two-years (?) tour to seven of the more important coffee-producing countries of South and Central Americas (circa 1955) – Brazil, Venezuela, Colombia, Costa Rica, El Salvador, Guatemala and Porto Rico.  

The Brazil these two actors encountered, or more precisely the São Paulo state they encountered, was much different from the one Medina had seen. While in the mid-1940s coffee was almost exclusively cultivated using an extensive system, in the mid-1950s there were already successful cases of coffee cultivated in intensive systems. As Krug would argue in his report of the World Coffee Survey (1965) it was the adoption of an “intensive orchard method” that had put an end to coffee’s “invasion phase” responsible for deforestation. This transition process from a “traditional cultivation system” to a “more rational system”, in which “new plantations” were set up in the so-called “old coffee areas”, he argued, had only been possible with the support of scientists of the Campinas Institute. Not only they had provided the farmers with selected seeds, but also with the technological artefacts that the new intensive system required – that is, fertilizers and insecticides. In other words, green revolution had emerged in Brazil as the ecological response against the destruction of virgin forests caused by coffee business.

Lains e Silva had no doubts that this “modern” way of farming was the only that should interest Portuguese authorities. He describes the traditional “extensive coffee cultivation” as a product of an irrational “European occupation of the Tropics” based on the “the inexhaustible mirage of virgin lands” and on the conviction that more productivity implied more plants. In his argumentation he is in all likelihood excluding native agricultural methods. But, the point was made: extensive coffee cultivation was a synonymous of an irrational colonial occupation of Tropical environments. To put it more bluntly, if Portugal wanted to modernize its empire one

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88 The information about the period and date of this tour was deduced from António Mendes da Ponte, “Oito Anos de Actividade na Estação Regional da Ganda”, Junta de Exportação do Café, Estação Regional da Ganda, 15 March 1959, Library of EAN. The reports he produced during the visits to the countries of South and Central Americas, published in the Revista do Café Português, are extremely rich material, having very complete descriptions of the production systems used in each on of these countries and covering a very wide range of aspects, from agronomic to environmental to social, political and economic.  


90 Lains e Silva, “Cafeicultura no Brasil.”…, 12.  

91 Lains e Silva, “Cafeicultura no Brasil.”…, 13.
had to start investing on intensive systems – morally, politically and economically justifiable, and (falsely) considered at the time environmentally sustainable. This would also imply tipping the balance of power towards science in what concerned the production of its most valuable commodity.

In his visit to Brazil, Mendes da Ponte was also impressed with these new intensive modes of coffee production. The case of a cooperative initiated with Brazilian and Dutch capital arose his interest. It had started with an old plantation that everyone considered to be “bad land”. But in the end, those who had mocked the initiative now called it a miracle. It’s worthy of note, for our narrative, that Mendes da Ponte compares the relatively weight of the word “miracle” in Brazil and Angola. Indeed, the environmental constraints in the African highlands were much bigger.

Para nós que estamos habituados a trabalhar em terras velhas, cansadas e erosionadas, o milagre não terá sido muito grande, mas para os brasileiros, habituados ao “abafo do sertão”, à mata recém-derrubada e às terras que dispensam qualquer fertilização durante anos sucessivos, não há dúvida que o sucesso da Holambra [cooperativa] é retumbante.

In his visit to Colombia, he had the opportunity to study what caused the “good quality of Colombian coffee”. He confirmed what others had said before, that the quality of Arabica Milds depended on the “wet method” of coffee processing and on the stage of maturation at which coffee cherries were harvested. On the other hand, shadowing during the growing period seemed also to influence the quality of coffee beans. But, as he also sustains, much of these aspects had been introduced in experiments in Brazil and no results had been obtained. Apparently, the environment played a much more important role than it had been previously believed. For Mendes da Ponte, “the main explanation for the good quality of Colombian, Venezuelan,

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93 “For us who are accustomed to work in old, tired and eroded lands, the miracle was not spectacular, but for Brazilians, accustomed to the heat of the sertão, to the felled forest and to lands that do not need fertilization for years, there is no doubt that the success of [the cooperative] Holambra is resounding.”, Mendes da Ponte, “Viagem de Estudo a alguns Países Cafeiros das Américas do Sul e Central [Brasil],”…, 30.
95 Mendes da Ponte, “Viagem de Estudo a alguns Países Cafeiros das Américas do Sul e Central [Continuation of Columbia]…, 30.
Costa Rican, Salvadoran, Guatemalan coffees reside first hand in the nature of the soil and the climate, and only then in the methods of processing coffee.”

According to him, volcanic soils, “of more recent formation and rich in calcium”, were generally those that tended to produce high-quality Arabica Milds.

Costa Rica was another case of great success. Indeed, the country produced the most highly quoted Arabica Milds in the global market. “Generally speaking, all the production has been sold in advance, and there are firms with contracts signed, to deliver coffee to be made in a few years later”, Mendes da Ponte explains. The causes identified by him for this success are very similar to those concerning Columbian coffee. Perhaps the only differences he noted concerned the disciplinarian power of the state to control coffee production. According to him, the law of this country determined that “he who permits the harvest of still-green coffee (...) can be punished with prision sentence.” Moreover, after harvest coffee went to “big processing plants” (centrais de benefício), very high tech facilities that centralized and bought coffee production from every region – unlike Columbia, where, according to these records, small facilities of coffee processing predominate. Finally, it was in this country that was located the Instituto Interamericano de Ciências Agrárias – Turrialba, an institute created by the United States that benefited from funds of the Point Four, which had as its principal goal to have a transversal approach to the agricultural problems of all countries in Latin America (see Epilogue).

After concluding his tour to South and Central Americas Mendes da Ponte returned to Angola to reassume the direction of the ERG (in 1957). New essays based on the knowledge accumulated were set up. Other agronomists collaborated in the design of these experiments: Medina, Carlos Mesquitela or Oscar Pinto (director interino of the ERG). The lack of material conditions in this station was obvious. The station counted at the time, apart from its director, with one regente agrícola, one

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96 Mendes da Ponte, “Viagem de Estudo a Alguns Países Cafearois das Américas do Sul e Central [Continuation of Columbia].”…, 33.
98 Mendes da Ponte, “Viagem de Estudo a alguns Países Cafearois das Américas do Sul e Central [Costa Rica]”…, 66.
prático agrícola, four capatazes and one escriturário – though the number of Africans working in the station, which is not mentioned, was probably high.¹⁰²

These new essays tested several factors but at the centre of the research was shadowing, which “never ceased to be a concern for us”, Mendes da Ponte underlined.¹⁰³ In the case of Angolan Plateau, and given the “poverty of Angolan soils in mineral elements”, fertilization was not considered enough. Shadowing, also in the case of Arabica, proved to be a necessary condition for coffee cultivation in Angola.¹⁰⁴ In 1959 the ERG was responsible for the distribution of selected seeds of Arabica and for the implementation of a Plant Health Brigade (Brigada Fitosanitária). This brigade was considered “one of the most successful measures” of the ERG, given that “one cannot consider” planting Arabica in the plateaus without the permanent treatment of insects and other plagues.¹⁰⁵

Through the voices of our actors we see “green revolution” emerging as transnational process with the ability of cutting with a retrograde past – the destruction of the virgin forests, in the case of Brazil, and the primitive forms colonialism, in the case of Angola. Fertilizers, artificial shadowing, improved material seeds and insecticides: the price of bringing modernity into the Angolan Plateau. If Brazilians were able to do it in São Paulo’s plateaux, why would not the Portuguese be successful in Angola’s Southern highlands? Despite this optimism, scientists were aware of the several environmental constraints they were facing. “For those who are accustomed to the ecological conditions of the Angolan highlands, the region of Campinas appears as if it were a ‘paradise’ for the farmer”, explains Mendes da Ponte.¹⁰⁶ For him, there was no doubt that to produce Arabica in the Angolan Plateau would always require a “technical cultivation” and that the crop deficiencies in this particular environment “would be very expensive to pay.”¹⁰⁷

¹⁰⁴ As Mendes da Ponte reminded us, the polemics about the shadowing was again opened in Angola, though now not in relation to Robusta but to Arabica, see António Mendes da Ponte, “Ainda acerca do Sombreamento dos Cafezais - sua Viabilidade nos Planaltos de Angola,” Revista do Café Português, no. 11 (1956): 15–25.
¹⁰⁶ Mendes da Ponte, “Viagem de Estudo a alguns Países Cafecieiros das Américas do Sul e Central [Brasil].” 34-35.
6.4 THE EMPIRE THAT THRIVED

René Coste, the head of the Institute Français du Café et du Cacao, and C. A. Krug, researcher of the Campinas Agronomic Institute and recently commissioned by FAO with the World Coffee Survey, visited Angola in 1957 (Figure 19, Annex I). Coste wrote a report that was published in the official journal of the Board. The enthusiasm that he and his peer felt while seeing Arabica coffee cultivating fields at the ERG is obvious: “The view of these coffee trees in good vegetative state, growing in an extremely poor soil and under the sun of fire, due to appropriate agricultural techniques, is, we must confess, very impressive and of a high interest in terms of future prospects.”108 There had been many failed attempts to plant Arabica in Africa in regions with poor soils such as the Angolan plateau, he explains, due to Arabica’s lack of robustness and high susceptibility to diseases. The only places where this species seem to thrive was in Kenya and Ethiopia (from where Arabica was originated) –, where the soil (volcanic) was much more fertile than in other places of Tropical Africa. In 1957, the experiments the Portuguese were conducting in Angola raised great expectations among the international community of experts.

As realizações da Estação da Ganda estão aí para provar como este juízo era demasiadamente categórico e para nos levarem, com toda a objectividade, a revê-lo. Há que louvar os agronomos de Angola, e particularmente o Eng. A. Mendes da Ponte, por terem sabido, com técnicas bem adaptadas, suprir a mediocre fertilidade do solo e vencer um regime climático onde pelo menos cinco meses consecutivos do ano são de uma secura quase total.109

Mendes da Ponte was also confident. “The results of our action are beginning to be an unbearable reality, and coffee plantations in the Planalto have ceased to be a

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109 “The achievements in Ganda Station are there to prove how this judgment was too categorical and to force us to review it with all objectivity. Angola’s agronomists, and particularly Eng. A. Mendes da Ponte, should be applauded as they were able to use well-adapted agricultural techniques to overcome the mediocre soil fertility and the adversities of a climate regime where at least five consecutive months of the year are of almost total dryness.”, Coste, “Impressões de uma Viagem às Regiões C fluorideas de Angola”..., 10.
source of disappointment to become a world of hope,” he would write in 1959.\textsuperscript{110} This “world of hope” was grounded on science. To grow Arabica in Angola was only possible due to the work of the Health Plant Brigade, the distribution of seeds and seedlings, and all sort of “boosters” disseminated with the green revolution – fertilizers, fungicides, insecticides, etc.\textsuperscript{111} Everything pointed towards an Arabica success: in the end of the 50s, Arabica was cultivated in several central and Southern regions of Angola – Namibe, Moxico, Huila, Huambo, Benguela and Bié –, and even in the regions of Robusta, like Cuanza-Sul, Cuanza-Norte, Malange and Uíge, there were experiments with this exotic species.\textsuperscript{112} But, contrary to what was expected, this never happened. In 1975 – the year the Portuguese empire formally ended – Arabica represented roughly 2\% of the total Angolan coffee production.\textsuperscript{113} As many other development agricultural projects designed to bring prosperity into the Angolan Plateau, the Arabica dream had failed. Arabica, the most “well voyaged” coffee species in the world, with its long repertoire of cultivation sites, in different states and empires throughout history, never really got adapted to Angola. The reasons were environmental, according to our scientists.

The Robusta business, on the other hand, could not have fared better. Between 1948 and 1961, the land devoted to coffee (almost all Robusta) doubled, from 122,531 hectares to 266,185 hectares.\textsuperscript{114} African lavras seem to have expanded in the same proportion as European fazendas.\textsuperscript{115} The most important share came from Congo, where a true peasant elite, having a solid productive base, was well inserted in the market and with high incomes.\textsuperscript{116} But the most part of this expansion resulted from the establishment of new fazendas. We know very little about this process, in agronomic terms, I mean – we don’t know which part of this expansion occurred within the so-called cloud forests, which part occurred in its surroundings, and which part occurred in the savanna. According to Trancoso Vaz, the demarcation of lands in

\begin{footnotesize}
\begin{itemize}
  \item Mendes da Ponte, “Oito Anos de Actividade na Estação Regional da Ganda”, Junta de Exportação do Café, Estação Regional da Ganda, 15 March 1959, p. 3, Library of EAN.
  \item Mendes da Ponte, “Oito Anos de Actividade na Estação Regional da Ganda”, Junta de Exportação do Café, Estação Regional da Ganda, 15 March 1959, 3, Library of EAN.
  \item See also José Mendes Ferrão, “Realidades Agrícolas de Angola,” \textit{Agros} 47, no. 6 (1964): 471.
  \item See, for instance, J. E. Mendes Ferrão, \textit{O Café: A Bebida Negra dos Sonhos Claros} (Lisboa: Chaves Ferreira Publicações, 2009).
  \item AEA (1948) and AEA (1961).
  \item Letter from René Coste, Director of the Institute Français du Café e du Cacao, to the President of the Board, Lisbon, 28 September 1959.
\end{itemize}
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the savanna – Gossweiler’s “fantastic experiments” – started in the beginning of the 1950s, mainly in the regions of Amboim and Congo. In 1955, he reports that in Amboim “almost all of the new farms were in unshaded areas”, and that in Congo, “although there are still many muxitos de mata available,” the occupation and demarcation of “good lands located out of the forests” had already started.\(^{117}\)

Heterogeneity was a fundamental piece of the equation. This aspect was underlined by a leading Belgian agronomist J. Frazelle, head of the division of the Plant Pathology and Agricultural Entomology of the Institute National pour l’ Étude Agronomique du Congo, who visited Angola in 1960 at the Board’s invitation. For him, it was obvious that plant breeding had been inexistent in the Portuguese colony: “no selection of canephora coffee has been made in Angola so far, so this material is likewise very heterogeneous in genetic terms.”\(^{118}\) The translator of Frazelle’s report to Portuguese, António Fonseca Ferrão, an agronomist of the Board, also confirms this in a note. Though admitting that the Board had conducted several breeding experiments, he agrees that, in practical terms, “the percentage of plants originating from selected seeds is, in relation to the total, practically insignificant.”\(^{119}\) The method used in Angola to choose mother trees was “mass selection”, a method that, as discussed before, did not imply a reduction of heterogeneity, in contrast with pure line breeding. It was basically mass selection that had originated the types of regional Robusta coffees existing in Angola – types that, as he put it, “are no more than ecotypes that have remained very heterogeneous.”\(^{120}\)

Agro-ecology was the other piece. While visiting Angola, Coste noted that it was “encouraging for any agronomist concerned with soil conservation” to look to Robusta plantations, because “in this mountanous region nothing has been neglected in the fight against rainfall erosion”.\(^{121}\) In contrast to what had struck him about the Arabica experiments, now it was the hybrid nature of Robusta agricultural systems

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\(^{117}\) Trancoso Vaz, “Cultura do Caffeeiro em Savana”, 218.


\(^{120}\) António Fonseca Ferrão and Wanda Chaves Ferrão in Frazelle, “O Problema da ‘Morte Súbita’ do Robusta”…, 61, note 1. The importance of the ecology in the diversification of Robusta into different varieties has been discussed by Portuguese agronomists, see, for instance, Ferrão, O Café: A Bebida Negra dos Sonhos Claros; and Fernando Oliveira Baptista et al., O Café de Angola (Castro Verde: 100Luz, 2012).

\(^{121}\) Coste, “Impressões de uma Viagem às Regiões Caffeeiras de Angola”, 8.
that caused his admiration. As he described, these were systems that benefited from
natural shadowing, “the forest trace”, but at the same time incorporated “contour
lines” (curvas de nível) or all sort of European techniques to deal with a mountainous
terrain, such as “socâlos, covas de absorção, terraços individuais, etc.” The
results were too important not to be praised: “The shrubs are beautiful and healthy. It
seems that Angola has so far been preserved from serious diseases and dangerous
parasites known elsewhere. May the authorities appreciate with proper value, which is
high, this exceptional situation (...).”

It is surprising, then, that despite the compliments to these extensive agro-
forest systems, the French expert advised the Portuguese that in order to increase
yields they should “diminish shadowing in the forest areas” and proceed with the
“generalization of mineral fertilizers”. Reducing shadowing would never be
considered an option for Portuguese experts, who knew from the past that Robusta
could not survive without its canopy. But fertilizers were already being introduced.
This was unprecedented. Never coffee farmers in Angola, “used to coffee as a natural
product of the land,” had needed artificial fertilization. As Trancoso Vaz explains,
“the soil retained a reasonable fertility fund at the expense of the organic matter that
had been embedded in the soil for centuries, and that originated from the vegetation
cover which on its turn was gradually reconstituted.” Even natural fertilizers, like
farmyard manure (estrume de curral) or coffee straw (palha de café), were rare
practices in this colony. According to him, however, the situation was changing. The
first essays with Robusta and chemical fertilizers started in 1956 and 1957 at the
Board’s experiment stations, being then, he argues, “generalized to many private
fazendas.” But, as far as I could ascertain, this introduction was not a game-
changer, and Robusta continued being planted mainly in the traditional and extensive
way.

To conclude, in the turn to the 1960’s decade the problem the Board had
proposed to solve remained critical. Arabica coffee wasn’t yet an economic viable
alternative to Robusta, and Robusta extensive cultivation systems continued to
expand. The problem scientists had promised to eliminate, the heavily dependence on
African workforce, not only was still there, but remained so at an even greater scale.

122 Coste, “Impressões de uma Viagem às Regiões Cafeeiras de Angola”..., 8.
123 Coste, “Impressões de uma Viagem às Regiões Cafeeiras de Angola”..., 8.
124 Trancoso Vaz, Aspectos de Fertilização do Cafeeiro em Angola..., 1.
125 Trancoso Vaz, Aspectos de Fertilização do Cafeeiro em Angola..., 1.
6.5 IMPERIAL IMAGINATIONS

This chapter is about the process of political imagination in the Portuguese colonial empire, and the role that scientists played on it. After the end of the Second World War European colonial empires, mainly the British and the French, began to make reforms to end with the practices of forced labour. The Portuguese resisted to these post-war reformist movements, at least until 1961. In colonial Angola, coffee was at the core of this resistance. The Portuguese wanted to protect the European interests associated with Angola’s most important agricultural commodity. But this does not mean that the empire did nothing to put an end to the forced labour regimes upon which European coffee production was grounded. This chapter demonstrates that, at the same time that the authoritarian regime of Salazar refused to participate in the reforms to abolish forced labour, concrete development schemes were being conceived to change the way Angolan coffee was produced. This Janus-faced empire was materialized in the Board: on the one hand, facing the past, avoiding conflicts with the European coffee elites (from where the great dividends came from) and proceeding to exports taxation; and, on the other hand, facing the future, using its accumulated funds and scientific expertise to seek for alternative modes of production, based on “modern” labour regimes. This chapter is about this other face of Janus – or, what we may call, the subjunctive face of empires.

Through the hands our actors we reached the old, and though not always acknowledged conclusion that the history of labour is intricately connected with environment history. As we’ve seen, the common premise of these development schemes was to take this crop out of the coffee forests – to plant Robusta in the savanna and to plant Arabica in the Angolan Plateau. The new agricultural systems did not promise only to improve yields and open Angola to other markets, but to revolutionize the organization of coffee production in terms of land and labour. These new environments (savanna and highlands), more suitable for white colonization, provided the empire with a new range of possibilities, an imagined future where coffee could be cultivate by white settlers in small-scale units of production. As we’ve seen, the hold of “green revolution” over Robusta was tenuous. Not only this was an indigenous and conservative species, cultivated using an agro-forest system highly
dependent on a specific environment, and known for its genetic resistance to human manipulation, but also, one could say, an anarchist one, in the sense that it evolved into different varieties, but never in a controlled way. In Angola, to accept Robusta’s heterogeneity was *sine qua non*. The idea of producing “purifying landscapes” of Robusta was simply an utopia. In contrast, Arabica offered scientists a “world of hope”, in a post-green revolution era. The great expectations relied on this species and on its adaptation to the Angolan Plateau. Once again, this ancient land of “shepherds and herds” (*pastores e manadas*) with its almost Mediterranean climate, became the laboratory of an imagined empire.

Though subtle, Arabica’s “politics of difference” had a sizeable hold in imperial imagination. Science was the mean through which this differentiation would occur. The intensive agricultural systems the experts invented depended on scientific artefacts and techniques, which were not easily accessed by Africans. If before scientists had advised farmers in the cloud forests to “follow the clues from Nature”, now in the Plateau they urged them to follow the clues from science – the transforming power of fertilizers and herbicides. Africans were excluded from the process though not formally forbidden. Miguel Bandeira Jerónimo and António Costa Pinto’s have recently pointed out the process of “engineering socio-cultural differentiation” as a central to the “developmentalist state” in the Portuguese empire. This chapter offers one more demonstration in this direction: no doubt there is that Arabica was conceived to be primarily a “white crop.”

To associate Arabica to white settlers and to small-scale familiar units of production was the goal – but where to start? As we’ve seen, the transition from large coffee estates to smallholdings was the rule: it had started in the mid-19th century and since then it was happening worldwide. Africa was no exception. But in this case,

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smallholding coffee production was mainly in the hands of Africans, and this was not what the Portuguese wanted for the Plateau. They had already a successful case of African smallholding production in the cloud forests. The goal was to know how to put white people working with coffee in their own farms. The most interesting agricultural and social experiences in this regard came from Latin America, almost all based on Arabica. Experts were sent to study coffee production there; Brazil was particularly examined. One of the main conclusions of this chapter concerns hence the transnational nature of the process of political imagination and the central place of the “global south”, as privileged space of circulation and exchange of agricultural experiences and social models of production. My contention is that historiography – often driven by the debate about Luso-tropicalismo – has been too focused on the relation “metropole-colony”, concretely on the reproduction of metropolitan experiences in the colonial space. 130

During the course of this investigation I conducted some informal interviews with Portuguese agronomists that had worked on coffee in Angola. Invariably, when they became aware of the topic, they talked about the “outstanding work” that had been done with Arabica. It was this species – and not Robusta – that was in the collective memory of this scientific community. The amount of reports published about Arabica experiences in Angola supported this view of the past. The fact that the outcome of those efforts had turned out economically insignificant to Angola did not seem to bother them. Frederick Cooper and Jane Burbank urge us “to understand the kinds of social relations or institutions that were conceivable or plausible in specific situations”. 131 Arabica was the species that materialized these social relations that were conceivable in post-war colonial Angola – the “empire that failed”. The reasons why it failed are probably many. Our scientists blamed the environment. Maybe also the powers of science and the powers of the state were not at their very best. It seems though fair to say, that other forces – not human – were blocking this other face of Janus. In the end, the Portuguese continued stuck to an indigenous, conservative and anarchist species, mainly produced in the coffee forests and its surroundings, where they had chosen not to interfere. And though African coffee farmers had managed to

become a powerful peasant elite, Europeans fazendas continued to grow, and with them the demand for African workers.

Still, there is a question we failed to answer. Why did the empire choose not to interfere in the cloud forests? Why not put an end to the large fazendas and give the land to the Africans? This is a recurrent question throughout this dissertation. As we’ve seen in the previous chapter, the politics of the Board until 1961 favoured European large-scale producers, who were also exporters, and therefore main beneficiaries of this state intervention policy. In the 50s they had become one of the most powerful elites in the colony. On the other hand, as we have discussed in Chapter Four, their bargaining power and local networks of influence went deeper in this tropical environment, not least because of the generations and generations of settlers living and making business here. Perhaps, the much longer time arch of these “European occupants of the cloud forests” – in relation to other Europeans involved in the coffee business in Africa – made them a more powerful elite. Finally, to answer this question we also need to know more about this “peasant elite” associated with coffee. In the present work we addressed this topic, describing the Bakongo as one of the ancient “inhabitants of the cloud forests.” But this is clearly insufficient, and much more work is needed about the African side of Angolan coffee. In his book, William Cronon incited us to follow the “cloud of Chicago” in order to understand the social changes operating in the fields around this city. Here we urge those who want to answer this question to follow the “cloud of Angola” – a chemically inoffensive cloud, made only of water vapour, but whose power to shape agency and thwart its understanding remains incommensurate.

CONCLUSIONS

Let us now return to the main goals of this dissertation. They were: 1) to discuss the relation between science and empire, analysing how Angolan coffee entered the agenda of botanists and agronomists, and how they contributed to transforming it into a global commodity; and 2) to gain a firm grasp on the historical dynamics that shaped the imperial trajectory of Angolan coffee by tracing scientists and detailing their knowledge making practices. The present work thus ends with two sets of conclusions, whose content is intermingled but are better presented separately for argumentative purposes.

ON THE RELATION BETWEEN SCIENCE AND EMPIRE

Power Relations: a Possible Chronology

This dissertation points to a significant presence of plant sciences in the making of colonial Angola. This presence is prior to the scope of this investigation, as we have seen with Welwitsch’s botanical expedition (1853-1861), organized by the colonial empire when Portugal began to look to Angola as a new Brazil able to sustain the production of tropical commodities. It was of course no coincidence that the virgin forests were at the centre of Welwitsch’s scientific inquiry, since it was from here that Angola’s most promised new riches came from – namely coffee, which, as we saw, grew spontaneously in these forests since ancient times. Following his scientific mapping practices, this dissertation stresses the important presence of central European science in the Romantic period, an aspect that has escaped scholars of the late Portuguese Empire and that is crucial to understand Gossweiler’s work. In the proper remit of our study (1898-1961) there is also no doubt of the importance that botany and agricultural sciences played in the course of imperial construction, as crucial practices in the process of environmental and agricultural surveying, commodification and political imagination.

Three patterns in the relationship between scientists and the imperial state are identified. The first, which roughly corresponds to the first two decades of the 20th century, is characterized by power relations that are not centralized nor shaped by a
dirigiste agenda, but subtle and diffuse, relying on equilibriums that scientists learned to manage with the several institutions they interacted with (scientific, military, colonial, metropolitan, international). This pattern is materialized in the early life of Gossweiler in Angola and in the map he produced later (in 1939). A second pattern emerges in the interwar period, after important reforms in the colonial administration. The example is the set of missions of botanical and agricultural survey organized by the Agriculture Department of Angola and involving scientists and other experts from different colonial and metropolitan institutions. Unlike what happened in the course of the first two decades of the 20th century, one discerns here an attempt to centralize survey activities in one colonial institution. Finally, a third pattern is visible in the years following World War II, at least in the case of those scientists working on grains, cotton and coffee – the three crops that were organized around marketing boards. As we have seen, the Coffee Export Board was not only responsible for controlling exportation trade, but for producing expertise concerning this cash crop. This institution and its very concrete agenda would mediate the relation between scientists and the imperial state from then onwards.

In terms of the nature of the role plant scientists played in the making of colonial Angola, this dissertation also suggests some discontinuities. It argues scientists performed a roughly similar role during the two first decades and the interwar period: it was by informing the colonial power about the environmental and human resources of each region, the adequacy of European and African agricultural practices, among other relevant local data collected in their missions of botanical and agricultural reconnaissance, that scientists contributed to the process of empire building. Such role would change with the creation of the Coffee Export Board. This institution had a very concrete development plan that aimed to transform Angolan Robusta into a global commodity and invent new modes of producing coffee. Scientists would play a key part in the commodification process, as well as in shaping what one may call the political imagination of the empire, providing politicians with the information and data to forge alternative labour regimes. To put it bluntly, until the beginning of World War II, scientists aimed primarily to inform the Angola colonial state, while afterwards their goal was to transform it – or, using their own words, “to develop” it.

This perhaps too neat chronology comes yet with a counter conclusion: imperial marketing boards were a political innovation of the interwar period. This
more nuanced chronology, bringing to the foreground the interwar years, makes a
case for the barrenness – or poverty – of a history of science untethered from its
political moorings. Moreover, this dissertation also shows, the top-down development
project implemented by the Coffee Export can only be understood if one takes into the
equation the environmental and agricultural reconnaissance of the territory, conducted
in the interwar period in the context of the Agriculture Department. These continuities
matter if we want to discuss the relation between science and developmentalist states
in Africa.¹

Survey and Colonial History

This investigation suggests that the practices of botanical and agricultural
survey are central to understand the process of imperial construction. Historiography
of science in late colonial contexts has furnished us with several stories about colonial
experiment stations and a variety of studies about the development schemes
elaborated by colonial states. Common to these investigations is the search for the
laboratory or merely the moments when an “experimental” approach is put in place.
This is particularly obvious in studies following seeds and plants, but also in studies
aimed, for instance, to study the organization of agricultural settlements, in which not
plants, but men were the scientists’ experimental subjects.² The same pattern can be
observed in the historiography of science of the Portuguese empire, which has
privileged development schemes around colonial laboratories and agricultural
settlements.³ Inspired by the recent turn of the historiography of life sciences that has
brought the neglected practices of modern natural history into light, this investigation
gives weight to the “small and unpretentious” missions, as Robert Kohler would have

¹ The same argument is made by Christophe Bonneuil, “Development as Experiment: Science and State
Morgan Hodge, Triumph of the Expert: Agrarian Doctrines of Development and the Legacies of
British Colonialism (Athens: Ohio University Press, 2007); Helen Tilley, Africa as a Living
Laboratory, Empire, Development, and the Problem of Scientific Knowledge, 1870–1950 (Chicago and
² This pressure towards the “experimental” and the “laboratory” is obvious in Helen Tilley’s seminal
study about science, colonialism and Africa, Tilley, Africa as a Living Laboratory...
³ Tiago Saraiva, “Laboratories and Landscapes: The Fascist New State and the Colonization of
Tiago Saraiva, “Mimetismo Colonial e Reprodução Animal: Carneiros Caracul no Sudoeste
Angolano,” Mimetismos Coloniais: História e Teoria no Império Português, Etnografica 18, no. 1
put it, that characterize the Age of Survey.\textsuperscript{4} It claims that without them we cannot fully apprehend the relation between plant sciences and the imperial state.\textsuperscript{5}

The second conclusion is that we need to go beyond top-down initiatives, those with a visible place in the colonial archive, and follow the “unwritten sources” of those “unarticulated” projects, if we want to understand the complex relations between power and knowledge in Africa. This conclusion is based on Gossweiler’s vegetation map of Angola – which, I suggest, was already a political project before being articulated into a political idea. Following Gossweiler’s footsteps, we conclude that the power relations were not centralized and shaped by a dirigiste agenda, but subtle and diffuse, and relying on equilibriums he learned to manage with the several institutions with which he interacted (scientific, military, colonial, metropolitan, international). Frederick Cooper is the first to admit that one has to accept that colonial regimes in Africa were not always able to routinize and normalize their exercise of power.\textsuperscript{6} Though the argument is made for the governance of people it may be useful to help us think in terms of the governance of nature. Indeed, for most part of the first half of the 20\textsuperscript{th} century the governance of Angolan nature did not follow also a clear and stable pattern – quite the opposite. But, regardless of this lack of programmatic imperial view, knowledge – the map – was produced anyway.

By taking the age of survey seriously, this investigation leads us to scientific traditions that have been neglected by colonial historians working on the 20\textsuperscript{th} century. Plant geography, for many scholars the birth of ecological sciences, occupies a central place. We follow scientists less interested in transforming the Angolan landscape of coffee (though breeding or genetics) than in controlling the environment, starting by identifying the places in this colonial space where the plant could benefit more from environmental conditions. Coffee plantations, usually presented in the literature as paradigmatic cases of retrograde imperial rule, appear here as laboratories of an agro-ecological approach to the production of cash crops in Africa. Set up in the middle of the mountains as an “agro-forest system”, coffee cultivation fields offered the empire


\textsuperscript{5}This work is also much indebted to the reflection coming from the historians of science of the modern period, like Staffan Müller-Wille and Isabelle Charmantier, “Natural History and Information Overload: The Case of Linnaeus,” \textit{Studies in History and Philosophy of Biological and Biomedical Sciences} 43, no. 1 (2012): 4–15.

\textsuperscript{6}Frederick Cooper, \textit{Colonialism in Question Theory, Knowledge, History} (Berkeley: University of California Press, 2005), 143.
an exceptional opportunity for testing agro-ecological ideas and practices in vogue at that time among agricultural scientists and colonial officers. For those who wanted to plant coffee in Angola Gossweiler had only one advice: “to follow the clues from Nature’s orientations.”

Also playing an important role was what Helen Tilley designed by “vernacular science” – a broad and trans-imperial movement that aimed at turning African orally transmitted knowledge into an object of scientific study. The cultural encounter between Gossweiler and Bakongo coffee growers reveals his role as a “go-between,” interpreting and translating an agricultural culture hitherto unknown to the Portuguese. For him, there was no doubt that the Bakongo devoted to coffee are innovative horticulturalists and that “rather than criticizing we should learn from them.” This fine approach to native agriculture and indigenous knowledge did not come from an outsider but from the man responsible for one of the most obvious tools of empire (the map). This investigation reinforces thus the view of go-betweens, not as mere agents of cultural exchange, but as key players in the government of imperial institutions and structures. The thesis has been magisterially illustrated for the late 18th century. The present work adds one more layer to the discussion by suggesting that they remain central actors to understand imperial formations in the 20th century.

This dissertation also shows how these scientific traditions and the case of Coffea canephora challenged scientists’ abstractions and formulaic notions about Africans and Africa. This is obvious in Gossweiler’s reports, where the ones who come under severe criticism are the Europeans, accused of setting their fazendas in inappropriate soil and atmospheric conditions and of trying out practices of cultivating coffee not adequate to the cultivation system used in Angola; the practices of colonial mimesis aimed at reproducing the Brazilian experience in Angola are at the centre of Gossweiler’s criticisms. But the same can also be said about Portuguese agronomists. We’ve witnessed a wide range of environmental arguments at play, not being used as ideological devices to exclude Africans, but to condemn plantations whose environmental sustainability was imperilled. Such arguments concern the

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7 Gossweiler, “Relatório sobre as Doenças do Cafeeiro na Região do Amboim”…, 21-22.
9 John Gossweiler, Um Reconhecimento Fitogeográfico à Região Produtora do Café Encoje (Luanda: Imprensa Nacional de Angola, 1918), 16.
degree of deforestation brought about by some European coffee plantations, as well as the criticisms against the politics of concessions, accusing the empire of giving too much land to those who could neither exploit it nor protect its biodiversity. A finer grained picture emerges thus, describing Gossweiler and Portuguese agronomists as agents of a “green imperialism”, an aspect far from being discussed in the literature about colonial Angola.

Moreover, this dissertation urges historians interested in studying the relation between science and empire to go beyond the “metropole and colony” relation. This is obvious from the analysis of Geraldes’ biased environmental agenda. As we’ve seen, this metropolitan agronomist uses environmentalist arguments to hamper an international movement in favour of the involvement of natives in export agriculture. Assiduous attendant of international conferences, where the European models of colonialism in Africa were being discussed and negotiated, he is often taken by historians as a reference to discuss Portuguese agronomic thinking; this is far from being accurate when we take a closer look at the ideas of those agronomists in the field, who we have analysed here in the context of the Agriculture Department of Angola.

_Scientists and the Janus-faced Empire_

One of the main conclusions of this dissertation is that Angolan coffee was the object of a very concrete development plan, one that, not only was successfully implemented, but proved extremely successful in the global market. This plan aimed to standardize Robusta. The strategy was not to improve plant material (the genome) by means of breeding experiments, but to accept regional heterogeneity and to focus on the standardization of coffee beans. By investing on the final phase of coffee production systems (improving homogenization and other processing operations) and on the centralization of classification processes (creating an Angolan coffee _standard_), the empire squared the circle: it modernized coffee production in Angola without touching the interests of the big capitalists and their regimes of forced labour, and it optimized the pooling of resources produced by a variety of small and medium producers (both African and European), granting them also a share in the exports. Every coffee lot exported coffee had to be classified according to its variety, region and grade; the reference to the specific unit of production disappeared. This
dissertation distances itself from scholars who describe this cash crop as a paradigmatic case of a retrograde imperial strategy.\textsuperscript{11} The art of modernizing without reforming existing and well-entrenched socially and environmentally production systems based on forced labour – this was, I argue, the challenge of the Board efficiently met by their scientists and technicians.

As we’ve seen, surveying remained an important activity for the agronomists of the Coffee Export Board. In this case, the scientific traditions are no longer plant geography and vernacular science, but agronomy, more broadly understood, encompassing environmental and social sciences.\textsuperscript{12} This dissertation follows the Coffee Export Board’s development project, which aimed at placing white settlers producing coffee into small-scale familiar units of production, as an alternative to the traditional large states based on coerced African labour. The board believed that by changing the species from Robusta to Arabica, the conditions were created for white people to cultivate coffee in small farms – what I call in this dissertation, the \textit{arabica dream}. This belief was grounded on economic and environmental factors: not only Arabica (and specially Arabica Milds) was more lucrative and stable as a commodity but the experts of the Board believed that it could easily be adapted to the Angolan Plateau, which was a much more suitable environment for Europeans to live (and work) in than the coffee forests. The most interesting agricultural and social experiences with Arabica coffee came from Latin America. Experts were sent to survey coffee production there; Brazil, especially, was scrutinized. Again, this dissertation forces us to gain distance from the “metropole-colony” nexus, concretely on the reproduction of metropolitan experiences in the colonial space, identifying the “global south” as privileged space of circulation and exchange of agricultural experiences and social models of production.

This dissertation also describes scientists as central actors in the process of triggering imperial imagination. After the end of the Second World War European colonial empires, mainly the British and the French, began to make reforms to end with the practices of forced labour. The Portuguese resisted these post-war reformist movements, at least until 1961. In colonial Angola, coffee was at the core of this resistance. The Portuguese wanted to protect European interests associated with

\textsuperscript{11} This narrative is present in the work of Gerald J. Bender, \textit{Angola under the Portuguese: The Myth and the Reality} (Berkeley and Los Angeles: University of California Press, 1978).

Angola’s most important agricultural commodity. But this does not mean that the empire did nothing to put an end to the forced labour regimes upon which European coffee production was grounded. This investigation demonstrates that, at the same time while the authoritarian regime of Salazar refused to participate in the reforms to abolish forced labour, concrete development schemes were being conceived to change the way Angolan coffee was produced. This Janus-faced empire is materialized in the Board: on the one hand, facing the past, avoiding conflicts with the European coffee elites (from where the great dividends came from) and proceeding to exports taxation; and, on the other hand, facing the future, using its accumulated funds and scientific expertise to seek for alternative modes of production, based on “modern” labour regimes.

ON THE IMPERIAL TRAJECTORY OF ANGOLAN COFFEE

Indigenous Robusta: the Environment, Plant Agency and the Empire

Following the path of an environmental history of Angola initiated by Jill Dias, this dissertation challenged us to think about the role that the environment played in shaping the imperial rules of engagement. What role did the environment play in the process of transforming coffee into the most important commodity of Angola? The key to this discussion is to accept that this was a species indigenous to Angola. Starting from here, we analysed the agro-forest system invented to manipulate this indigenous species Coffea canephora in its natural habitat – the cloud forests, a mountainous environment, over which the empire had little control. Moreover, we discussed the extent to which coffee growers in Angola heavily depended on the environmental conditions of these forests and nearby areas.

To acknowledge that coffee was indigenous to Angola also helps us to understand the environmental constraints scientists had to deal with, and the alternative path they took. In Angola, given the high levels of genetic variability, the idea of producing “purifying landscapes” was considered a utopia. This was compounded by Robusta’s reproductive system (cross-fertilized), known for its

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resistance to human manipulation. There was little space to improve. In the end, breeding methods inspired in modern genetics – and most notably pure line breeding – were not considered a viable option. To accept Robusta’s heterogeneity was a condition *sine qua non* in Angola. The varieties existed, but they were less the product of human action than the result of selective adaptation mechanisms to different ecologies. In this sense, this dissertation follows the legacy of those historians that have discussed different forms of plant agency in the construction of agricultural landscapes (and organization of commodity markets), but takes a different path – the one of natural history. These scholars have been particularly focused on the role of breeding and genetics as the scientific traditions that turned plants into more efficient crops. This dissertation draws attention away from Robusta’s genome, focusing instead on its environment – one that was continuously monitored, surveyed, tested.

This dissertation argues that Robusta’s environmental history – which was both “conservative” (dependent on its natural habitat and biologically resistant to human manipulation) and “anarchist” (evolving into different varieties, but never in a way that could entirely be controlled by science) – influenced its trajectory as imperial commodity. This environmental specificity is crucial, in my opinion, 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 cultivated. Our hypothesis is that a more liberal model of native policies was attempted, which, at least to a certain degree, left African coffee producers to compete with the Europeans for the best lands. Coercion was permitted but within certain limits; it was better for the empire that those Africans who knew how to cultivate this crop, tied to longer historical dynamics, would be allowed to do so. This investigation points therefore to the importance of paying more attention to the policies and practices of land use in the empire. Those are probably the ones that could elucidate the hitherto puzzling history of the coffee peasant elite.

*Robusta Negotiated: Portuguese Corporatism, Colonial Elites and the Market*

What is it that one can say about the relation between trans-national structures such as marketing boards and the Portuguese experience of corporatism? We saw the ways in which Angolan elites used corporatist ideology as a rhetoric device to
instigate Lisbon to start a discussion about the “corporatist organization of the colonies”. But, should we reduce this to rhetoric alone? Or, on the contrary, were the imperial and the national political contexts strongly interwoven? The answer in the case of the imperial marketing board analysed in this chapter lies probably in the middle. It’s unambiguous that several actors (metropolitan and colonial) used corporatist ideology for their own benefit. On the other hand, one cannot deny that there were concrete State efforts to link corporatism to these imperial structures. As we saw, corporatist structures were incorporated in the policies that regulated coffee as a metropolitan commodity.

Yet, we’ve also seen that, regardless of the regime’s efforts to tailor the Coffee Export Board to corporatist purposes, the goal was never accomplished. The reason behind this failure is the same explaining the failure of protectionist measures. Angolan Robustas had become a global commodity after the end of WWII, and for all actors involved – for the empire and for the local elites – the international markets were a much better option than the Portuguese internal market. The metropole, which during the recession had been considered the solution by the Angolan elites, was now a big problem – a market saturated with corporatist institutions and regulations, fixed prices, yet ridden with uncertainties. Unlike cotton, propped up by a textile industry and a powerful metropolitan elite interested in this raw material for their fabrics, coffee had not a roasting industry backing it up at home.

This dissertation argues that the main goal of this marketing board after World War II was to turn Angolan coffee into a more competitive commodity in the global market, and that, in stark contrast to cotton, the elites with which the empire had to negotiate, make compromises and grant concessions to, were not metropolitan but colonial. The colonial archive demonstrates the regime’s concern not to antagonize the needs and expectations of the Angolan coffee capitalists. Many of these capitalists were insiders, with a long history in Angola and a network of power relations encompassing different key local players. To put it bluntly, agency was on the colonial side. It thus offers one more case that entreats us to see empires, not as monolithic structures, but as multidimensional ones, adapting and adjusting to different local and global conditions. The exercise of following imperial commodities, I argue, makes a very good case for the relevance of this methodological proposal. Colonial cotton, for instance, as the work of Tiago Saraiva shows, is strongly
connected with the presence of fascist traits in *Estado Novo*;\textsuperscript{14} in the coffee case, those connections are more nuanced. Robusta as a commodity came with a kit of “assembly instructions” that privileged the dynamics of global markets, pushing the empire to the sphere of foreign affairs and making it mandatory to forge alliances with colonial elites. Robusta therefore unveils another empire – one at variance with protectionism, corporatism and metropolitan elites, but which remains nevertheless anti-liberal, strongly extractive and centralizing.

These different dynamics at play implied an imperial strategy in which negotiation was paramount. Scientists again played their role. This was particularly true during the diplomatic manoeuvring in the late 1950s. The rise of Robusta coffee in the global market (mainly produced in African colonial states) challenged the protectionist agreements established between Latin American producers (mainly Arabica producers) and forced them to negotiate with European empires. The Europeans had both economic (dependency on Arabica) and political (decolonization) reasons to negotiate. The pressure over European powers to sign the Coffee International Agreement increased. That was obvious in the Portuguese case, as we have demonstrated. The high levels of economic integration between Brazil and the United States, and the dependency of Angola over the later placed the Portuguese empire in a very delicate position.

*Robusta’s Technopolitics: Portuguese Colonialism and the American Hegemony*

This investigation suggests that Angolan Robusta entered the United States’ market as a true commodity in 1945. It was then that the Portuguese were able to convince the American importers to buy the product and let Angolan exporters use the ensuing “credits” before its arrival to the United States (and inspection by American authorities). This new status of Robusta was due to several factors affecting the dynamics of the coffee global market after the world conflict – namely, the end of the Inter-American Agreement (1940). The demands for Robusta increased exponentially as a response to the increasing popularity of instant coffee in consuming countries. But, it would be wrong to interpret this historical process as a mere product of external and economic factors. As we discussed before, Angolan coffee was the object

of a very concrete development plan that not only was successfully implemented, but proved extremely successful results in the global market. This plan lies hidden in the technicalities of a classification system.

On the other hand, the present investigation also shows that this “co-produced hegemony” was only possible due to the imperial structure (the Board) that had been previously put up by the Portuguese empire. It offers thus more evidence to the case of an American hegemony built on European imperialism. The forces driven the Americans in this case were those of global capitalism – as we saw, most part of the negotiations with the Board occurred, not with American state institutions, but with members of American associations of roasters, industrials and brokers. The forces and dynamics that led the Portuguese towards this “co-produce hegemony” are several and difficult to grasp. The global context of decolonization, pressuring colonial powers to make compromises in order to obtain international legitimation from their colonial projects, was clearly one of the forces at stake. Yet, in the case of Angolan Robusta, there were also important economic reasons. As we’ve discussed, demographic and structural features of the Portuguese empire made it heavily dependent on the American market, at least when compared with other European colonial empires. The maintenance of the Robusta Empire depended on how well the Portuguese were able to coordinate actions with the American coffee industry.

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15 The history of science has contributed significantly to this debate. Several accounts can be found in Gabrielle Hecht, ed., *Entangled Geographies: Empire and Technopolitics in the Global Cold War* (Cambridge, Mass.: MIT Press, 2011).
In 1956 the inauguration of a new research centre near Lisbon attracted media attention. The Coffee Rust Research Centre (Centro de Investigação das Ferrugens do Caféeiro, CIFC – shortly, Rust Centre), under the tutelage of the Board of Overseas Research (Junta das Missões Geográficas e de Investigações do Ultramar, JIU) and located in the grounds of the National Experiment Station (in Oeiras), was news of international dimension. It was the result of an agreement between the governments of Portugal and the United States signed one year before, in 1955 (Figure 19, Annex I). The accredited press reported the presence of members of both governments in the ceremony, as well as of two plant pathologists: the head of the new centre, the agronomist António Branquinho de Oliveira, and an American “expert on coffee”, called Frederick Creighton Wellman. To give an account of the setting up of this institution the newspapers relied on three poorly connected narratives: that the centre was an international institution aimed to “help coffee production in Portuguese colonies and around the world of coffee,” that the centre was indebted to the Americans, who had provided a considerable amount of funds; and that Branquinho had randomly met Wellman as a result of his scientific work.1 Despite their best efforts, something was not quite right in this institutional etiology.

According to the terms of the agreement, the main purpose of the Rust Centre was to fight against the spread of Hemileia vastatrix to the American continent.2 Hemileia had become a plague at the end of the 19th century, spreading to every continent in the world with the exception of the Americas.3

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1 Diário da Manhã, 13 June 1956; Diário de Notícias, 13 June 1956; Primeiro de Janeiro, 13 June 1956; and O Século, 23 June 1956.
2 “Project Agreement between FOA and the Portuguese Department of Agriculture of the Overseas Territories of the Government of Portugal”, Project 72-11-004, Agreement no. FO-PO-05, Centro de Investigação das Ferrugens do Caféeiro (CIFC), Reports-CIFC.
3 For recent accounts on the history of this plague see William Gervase Clarence-Smith and Steven Topik, eds., The Global Coffee Economy in Africa, Asia, and Latin America, 1500-1989 (Cambridge,
Africa, the rust had almost destroyed every Arabica plantations, being the cause of many bankruptcies and economic crisis. As mentioned before, Robusta’s high levels of resistance to diseases, and particularly to this rust, had led many colonial states to reinvent their economies of plantation by replacing Arabica for Robusta. When *Hemileia* arrived to Ceylon (now Sri Lanka), the British decided to plant tea, but in the Dutch East India, farmers chose to replace Arabica coffee for Robusta coffee.\(^4\) One question immediately arises: why did Portugal agree to have and co-fund an institution devoted to coffee whose chief purpose was to study a plant disease that did not pose a threat to Angola?

The Rust Centre was not a minor institution in the Portuguese coffee empire. Many of the scientists we followed hitherto crossed this institution at one time or the other. The connection between the Coffee Export Board and the centre was tight. To write about coffee, science and the Portuguese colonial empire is also to reflect about the puzzling nature of this institution, and to understand why the question of its involvement with Arabica research has never been clarified so far is to deal inevitably with Portuguese post-colonial history. This institution would be alone the object of a dissertation. On the other hand, it would impossible to follow its trajectory without understand, as we’ve done, the nature of the Portuguese Robusta Empire. Here we will share some preliminary results found during this investigation and hopefully point out some possible lines of research.

**THE AMERICAN MISSION**

Definitely, it was not by random that Branquinho met Wellman.\(^5\) And Wellman was not just any plant pathologist: he was a functionary of the United States

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\(^5\) Branquinho graduated in agronomy in 1932 at the High Institute of Agronomy with a dissertation about a fungal plant disease. He continues his studies at Cambridge in 1937, where he concludes the PhD, also in the field of mycology. In the same year, António Sousa da Câmara, director of the National Experiment Station, invited him to be the founder of the Plant Pathology and Entomology Department of this station. Branquinho’s scientific career unfolds during the emergence and consolidation of *Estado Novo*. Branquinho was affected by the second university purge occurred in 1947, being expelled from the High Institute of Agronomy, where he was the chair of Plant Pathology.
Department of Agriculture (USDA), and more precisely an employee of the Office of Foreign Agricultural Relations (OFAR). The first meeting between Wellman and Oliveira – which took place in Lisbon, in 1952 – was the result of very careful planning. The context was Wellman’s most cherished project: the World Coffee Mission (WCM), a mission that aimed to prevent the spread of the rust *Hemileia* to the American continent. A good starting point to understand this project is the map illustrated in Figure 20 (Annex I), dividing the world in two parts: a “rust free” area (the New World) and a “rust infected” area (the Old World).\(^6\)

Wellman’s interest in this disease had started in the beginnings of the 1940s, when “the planning of this trip began to be delineated.”\(^7\) At that time, major works on coffee, such as the French botanist Auguste Chevalier’s and the American editor William Harrison Ukers’, had already been published.\(^8\) Both authors had tried to reconstruct the history of dispersion and cultivation of this crop, by crosschecking historical sources with sources from natural history. Based on these authors, Wellman concluded that Arabica coffee had been first brought from Ethiopia to Yemen (in the end of the Middle Age), then from Yemen to Europe, and finally, from the 16\(^{th}\) century onwards, with the expansion of European empires, from Europe to the rest of the world. In other words, much of the coffee of world commerce came from an “extremely narrow range of genetic material.”\(^9\)

It is apparent that practically all of the trees producing commercial Arabica probably came from only one tree. That was The Tree, the tree of noble connection with Louis XIV of France. Even if this exact story were not quite true, a most conservative guess was would be that, at most, the original ‘brood’ of *Coffea arabica* could not have

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\(^6\) The map is included in the Report of the World Coffee Mission, “The European stops made by Wellman and Cowgill on this World Coffee Trip”, F. Wellman to C. Horn, August 2, 1952, Wellman’s Papers, North Carolina State University (WP-NCSU), Box 4, Folder 13.


come from more than a very few trees of that species, all from the same handful of seed; and I believe that the one tree theory is a greater probability.\(^{10}\)

From an epidemiological point of view, Wellman’s “one-tree-theory” meant that Arabica plantations in the Americas were very susceptible to an attack of *Hemileia*.\(^{11}\) This threat became even more serious given the progressive integration of the world coffee production, which connected ever more closely the different ecosystems where coffee was produced. In other words, the dispersion of the rust to the American continent should be taken as a *fait accompli*.\(^{12}\) The thing scientists should do in a globalized world was not to stop the rust from travelling, but to replace coffee plants varieties traditionally used in South and Central Americas by other “improved varieties” that were able to resist the disease. However, for this preventive plan to work, it would be needed to access the whole genetic variability that was at stake, which meant that samples of every coffee plant and of every rust varieties existing in the world would have to be collected. Such was the purpose of the trip organized by the World Coffee Mission.

The purpose of this trip is to see this disease [*Hemileia*] in many countries as possible, to study it, to become personally acquainted with those scientists working on it in the Eastern Hemisfere, and to bring back to the Americas knowledge and plant materials that will allow coffee farmers to be confident that when the dread scourge comes it can be successfully fought.\(^{13}\)

Naturally, global survey implied diplomacy. This was why the mission included a small trip to Europe (in 1952) for Wellman and his associate Cowgill to obtain the permissions to enter the colonial world, identify local contacts and access colonial maps and other scientific material.\(^{14}\) Six cities were included: London, Brussels, Amsterdam, Paris, Rome and Lisbon – in common they all had a present or past empire with a stake in coffee. The key word in these diplomatic initiatives was

\(^{10}\) Wellman, *Coffee: Botany, Cultivation, and Utilization*..., 129.

\(^{11}\) Wellman, *Coffee: Botany, Cultivation, and Utilization*..., 129.

\(^{12}\) This discussion about the relation between the “economic” and the “ecological” integration of coffee global production is made in McCook, “Global Rust Belt: Hemileia Vastatrix”...


“international cooperation”. On the other hand, cooperation meant trust, something that scientists were convinced they could provide. “One of our most often repeated purposes in this trip has been to get acquainted with brother scientists, the workers themselves. This has invariably been received with warmth, with a statement of full understanding, and with much wished for cooperation and exchange of publications and information”, Wellman writes in his report.15

This “European tour” benefitted from the engagement of the diplomatic corps and other state departments of the United States with representation in these countries: for instance, in London, Wellman and Cowgill “were met by a United States Embassy car and taken to a hotel where reservations had been made for us by a Dr. Eric, old OFAR man and Agricultural Attaché for England”; in Amsterdam, they had the help of the United States Consul General, who ‘assisted us as to who we were to see, and made contacts’; in Brussels, “the use of the Embassy cars and facilities added greatly to the economy of our time”; in Paris, they were also assisted by an state agricultural attaché; in Rome, the contacts with the Food and Agriculture Organization had been made together with the diplomatic community.16

It was also through an attaché of the Agriculture Department of the United States, a certain Mr. Howard – “very well known in USDA and OFAR circles” – that Branquinho met Wellman in 1952, in Lisbon.17 Mr. Howard welcomed the two American scientists at this city airport. Branquinho had come along and was presented to them as “the key” to enter the Portuguese world.18 In Wellman’s report to the director of OFAR, he describes how he and his partner had dispelled the suspicions that their mission arose in this weary dictatorial regime – “there seemed to be some question as to what we were after.”19 However, according to him, “even the slightest hesitancy immediately disappeared when it was known that we were two plant scientists, wanting to know their scientists and see their work, and that we were

anxious to bring them whatever our facilities had to offer, and hoped to obtain from
them help to our own problems.”

Wellman did not take to draw on the social savviness of Branquinho, who
soon put him in contact with the actors and institutions relevant for his mission. But it
was above all with Branquinho’s experimental work that the American was
overwhelmed. During his stay in Lisbon, Wellman discovered to his surprise that
Branquinho had a research line with living coffee plants infected with *Hemileia*.
Wellman’s visit was truly timely: Branquinho had started to work with this rust just
the year before, after a visit to the archipelago of S. Tomé and Principe, where had
been sent to study a plant disease that was infecting cocoa tree. During this trip (in
1951), he had bumped by chance into plants infected with *Hemileia* and had decided
to collect some samples and accommodate them in the National Experiment Station’s
glasshouses. It was not easy to create the necessary conditions for the rust to thrive
in artificial environments, but apparently this was working well in Portugal. For
Wellman this was “the most exciting thing I saw in Europe”.

Wellman decided to invite Branquinho to join him as a partner of the World
Coffee Mission. Branquinho’s role would be to accommodate in National Experiment
Station’s glasshouses samples of the rusts collected by Wellman during his travel
around the world. Branquinho would gain biological variability for his studies, and
Wellman a place to maintain infectious samples *out* of the American continent.
Branquinho accepted the trade of terms, and thus the beginning of the first global
database of *Hemileia* began. The idea was that this global database could assist
breeding programs for rust resistance around the world. Scientists and farmers all over
the world would be able to send their breed and improved plants to Portugal, and test
them at a global scale. Lisbon offered the possibility of scaling-up experiments taking
place worldwide, and particularly in the American continent, from where the greatest
concerns about this disease came.

This partnership continued, and two years after (in 1954) the National
Experiment Station appears mentioned in an annual report of the World Coffee
Mission as a partner of the “Inter-Hemispherical Consultative Work on Hemileia

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World Coffee Trip”, F. Wellman to C. Horn, August 2, 1952, WP-NCSU, Box 4, Folder 13.
World Coffee Trip”, F. Wellman to C. Horn, August 2, 1952, WP-NCSU, Box 4, Folder 13.
World Coffee Trip”, F. Wellman to C. Horn, August 2, 1952, WP-NCSU, Box 4, Folder 13.
Rust’ – a platform in which Wellman considered himself “an informal agent and coordinator”. This platform included the following institutions: 1) the Plant Introduction Section of the United States Department of Agriculture (C. O. Erlanson and W. H. Hodge), with its work at the Glenn Dale, Maryland greenhouses and the “newly established” germplasms garden for coffee in Coconut Grove, in Florida; 2) the Campinas Agronomic Institute and its “coffee breeding work” (under the coordination of C. A. Krug), in the State of São Paulo, Brazil; 3) the “Coffee Development Project” of the Foreign Operations Administration, led by Allan G. Newhall, in Los Baños, Philippines; 4) the “Project on Coffee Studies and Development” (coordinated by Pierre G. Sylvain), funded by the Food and Agriculture Organization of the United Nations, and located in Addis Ababa, Ethiopia; 5) the Plant Industry Department, led by Jorge León and Damon Boyton, of the Inter-American Institute of Agricultural Sciences, in Turrialba, Costa Rica; 6) and the Plant Pathology Department of the National Experiment Station, under the supervision of Branquinho.

THE PORTUGUESE CENTRE

Meanwhile, the space available in the greenhouses of National Experiment Station to accommodate the rust samples flowing in from all parts of the globe was getting scarcer and scarcer. Moreover, Câmara was not happy with the importance that this external project was gaining within this institution. Wellman and Branquinho began to study a way to create a centre in Portugal, with Portuguese funds and devoted exclusively to Hemileia. They then decided to adapt the general goals of the World Coffee Mission to the Portuguese case – a task that proved not to be difficult. The first goal of this centre would be to prevent the spreading of Hemileia to rust-free territories. The difference was that by “rust-free territories” they meant now, not only those in the America continent, but also in other parts of the globe, such as Angola. The second goal, outside of the World Coffee Mission’s purview, was to rehabilitate territories that had been already infected by the disease.

23 Annual Report for the Calendar Year 1954, Diseases on Coffee, WP-NCSU, Box 4, Folder 10.
The fact that Robusta was highly resistant to *Hemileia* and that there were great chances that the rehabilitation of infected territories would not be considered a priority in Africa, did not dissuade them. Three years before, during his visits to the African continent in the context of the World Coffee Mission, Wellman had concluded that even in the states where *Hemileia* was endemic (for instance, in Belgian Congo), Arabica farmers lived quite well with it; in fact, this was only one among other diseases that they had to deal with – an opinion shared also by other agricultural scientists working in the field. Moreover, to argue that *Hemileia* was a threat in Africa contradicted the theoretical basis of the World Coffee Mission that sustained that Arabica had a much higher genetic variability in this continent, because it was from there that it originated. But scientists do what they have to do when funding was at stake.

In 1955, an agreement was signed between the American and the Portuguese governments, and the Rust Centre was created, under the tutelage of the Board of Overseas Research. According to this agreement, the construction costs (central building, greenhouses, etc.) were split between both governments. The Portuguese government, however, remained responsible for the maintenance of the centre. In the budget for 1956 (approximately 270,000 escudos) Branquinho notifies that “from

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24 “Project Agreement between FOA and the Portuguese Department of Agriculture of the Overseas Territories of the Government of Portugal”, Project 72-11-004, Agreement no. FO-PO-05, CIFIC, Reports-CIFIC.
25 Reports of the World Coffee Mission on Angola (26 August 1952), on Belgian Cong (21 September 1952) and on French Cameroon (12 August 1952), F. Wellman to C. Horn, August 2, 1952, WP-NCSU, Box 4, Folder 13.
26 Project Agreement between FOA and the Portuguese Department of Agriculture of the Overseas Territories of the Government of Portugal, CIFIC, Reports-CIFIC. In FOA, the Rust Centre was known as Project 72-11-004 and the agreement signed between Portugal and the United States designated as Agreement no. FO-PO-05.
December 31 this year the charges taken by the United States terminate” and requests authorization “to propose that the financial burdens so far solved at the expense of the FOA [Foreign Operations Administration], in the economic year 1956 and beyond should be borne by the JIU [Board of Overseas Research].” As he underlines, from 1956 onwards the United States “will only fund expenses incurred in transporting coffee bushes to be tested for resistance to rust, and foreign scholarship holders who come to the center for training.” In conclusion, with the exception of the first year, the Rust Centre became an institution almost totally funded by the Portuguese colonial empire.

The Foreign Operations Administration was the institution that coordinated the American funds, which came from the Point Four program, as we will discuss below. From the Portuguese side, this job was in the hands of the Board of Overseas Research, whose funds came from the colonies. The same legal mechanism used to pay this board’s scientific expeditions and studies, was now used to fund the Rust Centre. According to a 1944 legislation, expenses with “personnel and material for carrying out scientific work” of the Board of Overseas Research could enter the “expenditure tables of the budgets of Cape Verde, Guinea, Sao Tome and Principe, Angola and Mozambique.” It was this legislation that first was applied. Later the legal framework changed, but the funding system prevailed: money flowing from the colonies to the Board of Overseas Research, and from this board to the Rust Centre. In the first trimester of 1957, the Rust Centre received 52,500 escudos, money that came from Guiné (1,942,50), São Tomé (1,102,50), Angola (23,100,00), Moçambique

27 Memorando, Estação Agronómica Nacional, File “Centro de Investigação das Ferrugens do Càfe,” Arquivo intermédio do IICT, IICT-AHU.
28 Among the expenses not covered by the Board of Overseas Research were the scholarships of two trainees (one from the Philippines and another one from Ethiopia), covered by the United States, and the salary of Carlos José Rodrigues Júnior (who would later succeed Branquinho as director of the centre), who was paid by the Coffee Export Board, Memorando, Estação Agronómica Nacional, File “Centro de Investigação das Ferrugens do Càfe,” Arquivo intermédio do IICT, IICT-AHU.
29 More research is needed regarding the involvement of the Coffee Export Board.
30 Article no. 3, Decree 34,177 of December 1944.
31 Letter from JIU to Director of CIFC, 4 February 1958, File “Centro de Investigação das Ferrugens do Càfe,” Arquivo intermédio do IICT, IICT-AHU. This legislation (Decree no. 41,388 of November 22, 1957) determined that the amount each colony should give to the Board of Overseas Research should be used in “expenditure on personnel, material, payments for services and various charges for the carrying out of scientific work and research and training of researchers […], geographical missions and other missions and studies.”
ROBUSTA EMPIRE

(23,625,00) and Índia (2.730,00). In 1958, the amount had risen to 250,000 escudos – Angola being the most important donor.

This dependency was suppressed from official records during the colonial period. But this would change in 1975, with the end of the empire, and therefore the end of the funding. In a memorandum referring to the independence of Angola, the Rust Centre alerts for the “financial difficulties” that this represents to the “future work of the centre” and explicitly says that it was from Angola that the Rust Centre “received directly or indirectly the funds for its maintenance and development.” Accordingly, efforts had to be made to get the support of the new regime in Portugal, which had to be aware of “the mission CIFC [Rust Centre] had played in the world of coffee, the tacit commitments that this mission implied, and the interest of its lines of work.” “This awareness, which has been worked on diplomatic channels by CIFC and by some countries, will aim to ensure that the Portuguese Government assures the existence of the CIFC,” it was written. More interesting, though, it to see that, in 1975, it was not only Portugal that was being pressed, but also those “more than 30 countries” that over “more than 20 years” benefited from the work of the centre. According to this memorandum, the governments of those countries, the most part located in Latin America, should be called into reason, and start to “join efforts” to avoid the “possible slowdown” of the Rust Centre, or “even” its disappearance.

Meanwhile, during the colonial period, the cries for help coming from Angolan agronomists regarding a dangerous disease that was destroying Robusta coffee plantations arrived every day to the Rust Centre. In Angola, people called it “sudden death” (morte súbita). But the centre would not assist them. There were no funds, nor space available in the greenhouses: Hemileia research occupied every corner in the greenhouses and all the funds raised were channelled to this project. In 1971, Branquinho wrote to the Governor of Angola. This letter is a rare document where we see him admitting the contradictions of the centre. From his perspective, he

32 Letter from the President of JIU to Director of CIFC, 5 March 1957, File “Centro de Investigação das Ferrugens do Café de Eira,” Arquivo intermédio do IICT, IICT-AHU.
33 Letter from the President of JIU to Director of CIFC, 4 February 1958, File “Centro de Investigação das Ferrugens do Café de Eira,” Arquivo intermédio do IICT, IICT-AHU.
34 Memorando, Centro de Investigação das Ferrugens do Café de Eira, Oeiras-Portugal, 10 July 1975, WP-NCSU, Box 4, Folder 12.
35 Memorando, Centro de Investigação das Ferrugens do Café de Eira, Oeiras-Portugal, 10 July 1975, WP-NCSU, Box 4, Folder 12.
36 Memorando, Centro de Investigação das Ferrugens do Café de Eira, Oeiras-Portugal, 10 July 1975, WP-NCSU, Box 4, Folder 12.
only deserves “words of censure”, and acknowledges with regret that he should have had “the courage to abandon all other work” to dedicate himself “exclusively to the problem of such great economic and social importance as sudden death is.”

The same spirit of remorse is conveyed in the letter he wrote to the Associação dos Agricultores de Angola.

Só tenho mágoa – e muito profunda – de que a minha vida profissional, dispersa por tantos problemas da fitopatologia metropolitana, não tenha permitido continuar a estudar quando há mais de uma dezena de anos, não tinha as preocupações que tenho hoje, a ‘morte súbita’ do cafeeiro, que é ainda o problema fitopatológico nº 1 de Angola, trabalho para o qual se torna cada vez mais necessário congregar todos os esforços técnicos.

COLD IMPERIALISMS

“Sudden death” was until the end of the empire considered the most serious threat to Robusta production in Angola. This was consensual among local experts. The causes of the disease were never quite fully understood. The Rust Centre, however, was practically absent from this discussion. Branquinho’s regrets were justified. The question probably in his mind was: why had not this centre, paid with Angolan coffee money, done nothing to solve its most important problem? For us, however, one question takes precedence: what is that this metropolitan institution is telling us about the making of the Portuguese empire?

Official documentation consulted in Lisbon describes the Rust Centre as a singular institutional project. Our investigation in Wellman’s Papers suggests the

37 Letter from Oliveira to the General Governador of Angola, 17 March 1971, Dossier “Junta de Exportação de Café”, CIFC, Correspondence-CIFC.
38 Letter from Oliveira to the Associação dos Agricultores de Angola, 31 March 1971 (document given by Eng. Vítor Vázea), CIFC, Various-CIFC.
39 In the 50s, opinions were divided between those that relied on an ecological explanation – an interpretation that associated “sudden death” to the cases of “clorose” identified by Gossweiler in the interwar period – and those that argued to be originated by a pathogenic agent. In order to solve the nature and origin of this mysterious disease that continued to make damages in Angola through the years, the Coffee Export Board asked two foreign plant pathologists, one from Kenya and one from the Belgian Congo (INEAC), to give their opinion: A. G. Whitehead, “Os Nemátodos Parasitas do Coffea Canephora e a ‘Morte Súbita’ dos Cafeeiros em Angola,” Revista do Café Português, no. 28 (1960): 5–16; J. Frazelle, “O Problema da ‘Morte Súbita’ do Robusta (Coffea Canephora). Relatório de uma Visita de Estudo Feita de 17 de Agosto a 20 de Outubro de 1960 em Angola,” Revista do Café Português, no. 32 (1961): 58–88.
opposite. The centre was just a clog in the system – the system being the World Coffee Mission. The funds of the World Coffee Mission that, eventually were channelled to the Rust Centre, came from the Point Four program\(^40\) – a program that has been described in the literature as a typical product of cold war politics.\(^41\) Created by the Truman Administration in 1949, this program aimed at providing technical assistance to “countries in development”, and was based on the idea that scientific and technological expertise were necessary track for development not to derail: scientific and technological power would help the colonized people to “emancipate” through capitalism, and not by socialism.\(^42\) To manage the Point Four program the Technical Cooperation Administration (TCA) was setup. After 1953, during the Eisenhower Administration, TCA changed the name to Foreign Operations Administration (FOA) – the name that is mentioned in the agreement creating the Rust Centre.\(^43\)

The Rust Centre was therefore a product of the global cold war. This relation was not only material, but also discursive. Words such as “enemy”, “threat”, “prevention” appear with insight to be stepped in the fraught atmosphere of the period, so much so that occasionally it’s difficult to keep in mind that the “villains” were not communists, left ideologies or nuclear weapons – but little fungus threatening to destroy coffee bushes. That said, it should be also underlined that, as far as coffee was concerned, cold war North American policies were always strongly connected with economic concerns due to the importance that this commodity had on the United States economy. As we mentioned in other parts of this dissertation, many coffee-producing countries had developed their economies under the hegemonic

\(^{40}\) Foreign Agricultural Circular of the Office of Foreign Agricultural Relations (OFAR), FCB 7-52, September 18, 1952, WP-NCSU, Box 4, Folder 14.

\(^{41}\) For instance, Donna Mehos and Suzanne Moon, “The Uses of Portability: Circulating Experts in the Technopolitics of Cold War and Decolonization,” in Entangled Geographies: Empire and Technopolitics in the Global Cold War, ed. Gabrielle Hecht (Cambridge, Mass.: MIT Press, 2011), 43–74. This program was first presented to the public by Harry Truman in the discourse for his second mandate as President of the United States. In the “fourth point” of this discourse, Truman argued for the necessity of the United States create measures capable of helping stimulating the economies and fight hunger in the non-developed regions in the world: “Greater production is the key to prosperity and peace. And the key to greater production is a wider and more vigorous application of modern scientific and technical knowledge”, Truman Library, Truman’s Inaugural Address, January 20 1949, http://www.trumanlibrary.org/whistlestop/50yr_archive/inaugural20jan1949.htm.

\(^{42}\) Such strategy based on the circulation of experts put the Point Four in direct competition with other programs of technical assistance promoted by international organizations, such as the United Nations – namely the Expanded Program of Technical Assistance for the Economic Development of Less-Developed Countries (EPTA), see Mehos and Moon, “The Uses of Portability: Circulating Experts”…., 58.

\(^{43}\) In the case of the Word Coffee Mission, FOA operated in cooperation with the US Department of Agriculture (USDA), see Foreign Agricultural Circular of the Office of Foreign Agricultural Relations (OFAR), FCB 7-52, September 18, 1952, WP-NCSU, Box 4, Folder 14.
power of the United States, where roasting and other coffee industries were concentrated. The economic integration of the United States and Latin American countries was particularly high, which explains why the first was so keen in protecting Arabica plantations in the American continent. In this sense, the World Coffee Mission was so much a product of global cold war as it was of the American hegemony in the global coffee economy. The non-overlapping rationalities of politics and economics should not be approached separately in this case.

The Rust Centre crystalizes important entanglements between cold war and European imperialism in Africa. As we investigate the origins of this metropolitan institution, the United States emerges as a “networking empire” with a global outreach. In this context the World Coffee Mission is the techno-political system that enables the US to access and use geographic and environmental resources of other sovereign countries. The creation of the Rust Centre captures the expansion of this system, and its “deployment” from the Americas and the Pacific to Africa.

Meanwhile, the creation of the Rust Centre also reminds us that techno-political systems tend to “exceed or escape the intensions of the system designer”, as clout is often displaced from humans into technical and living things. This was what happened to Wellman in Lisbon. At that time he had already an “African” partner: a UN’s funded-project on coffee located in Ethiopia. And though the meeting between Branquinho and Wellman was the result of careful planning, Wellman had not at first thought about Portugal as a partner. But after he witnessed the experiments with living plants infected with Hemileia, he changed his mind, and decided to create in Lisbon a global database of this rust. The level of contingency in this story is high: if Branquinho had not been sent (in 1951) to the archipelago of S. Tomé and Príncipe to

44 As we know there was already an important network of scientific institutions and programs promoted by the United States in many of these countries since the beginning of the 20th century. In the cases of Porto Rico and Cuba this started immediately after the beginning of the imperial expansion in 1898, and were funded directly by state agencies, such as the USDA, see Stuart McCook, “States of Nature: Science, Agriculture, and Environment in the Spanish Caribbean, 1760-1940” (Austin: University of Texas Press, 2002), 47-48. In other cases the American hegemony took more diffuse contours, as it was the case of the Inter-American Institute of Agricultural Sciences, em Turrialba, in Costa Rica, an institution created in 1943, by the international organization Pan American Union and according to the laws of the United States, see Convention on the Inter-American Institute for Cooperation on Agriculture, Instituto Interamericano de Cooperación para la Agricultura, http://www.iica.int/Eng/infoinstitucional/Documents/Convention_eng.pdf
study a plant disease that was affecting cocoa trees, he would never had collected samples of *Hemileia*. On the other hand, there were rational reasons for this partnership: 1) Lisbon was located outside of the coffee producing regions, which diminished the risk of contaminations; 2) Portugal was a warm and sunny country, which facilitated the fabrication of artificial conditions for the rust to live; 3) Portugal was also a colonial power, which could provide the Americans with a foothold into the colonial world; 4) and the colony of Angola was located in Robusta’s centre of genetic variability.47

Finally, and crucially, the Rust Centre was a product of the dynamics of decolonization on the run since 1945. Only taking into consideration this historical context one can understand why the Portuguese empire agreed to fund an institution whose main priority was to prevent the spread of a plant disease to the American continent. If the United States needed a partner in the old colonial world to extend its networking empire and to maintain experiments with highly contagious living material out the American continent, Portugal needed an opportunity to refashion its image in international circles, which continued to be damaged by Angolan coffee labour regimes.48 Portugal used the Rust Centre to show its Atlantic alignment, taking advantage of the “ambivalence” of the American diplomacy towards the European colonial powers in the 1950s.49 And yet, this imperial strategy, I suggest, did not solely aim at restoring the empire’s international reputation. To put Portuguese scientists, facilities and funds at the service of the global coffee economy was also an effective message of economic diplomacy. And as we’ve underlined in previous moments, negotiation and international relations were paramount for the viability of the Robusta Empire. With no roasting industry, nor a sizable coffee consumption in the metropole, this empire depended almost totally on foreign countries. There was a game to play at an international level, and the Rust Centre was the right asset.

47 These later two aspects are widely mentioned in the correspondence between CIFC, US and Angola, see Dossier “Angola” and Dossier “Estados Unidos,” CIFC, Correspondence-CIFC.

48 The strategic and instrumental advantages gained of making part of international networks or organizations has been a central theme in the historiography of decolonization; for the Portuguese case, see Miguel Bandeira Jeronimo and António Costa Pinto, eds., *Portugal e o Fim do Colonialismo. Dimensões Internacionais* (Lisboa: Edições 70, 2014); Miguel Bandeira Jerónimo and António Costa Pinto, eds., *The Ends of European Colonial Empires. Cases and Comparisons* (Hampshire: Palgrave Macmillan, 2015).

49 As we know, a distinctive trace of the US’s foreign policy in the 50s was its ambivalence: on the one hand, criticizing European colonialism, on the other delaying the process of decolonization, afraid that it would bring more damages than advantages, see, for instance, Hecht, “Introduction”…, 5.
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  - Dossier “Junta de Exportação de Café”
  - Dossier “Angola”
  - Dossier “Estados Unidos”
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ANNEX I (FIGURES)
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Table 1 – “Native” and “European” coffee production by district, 1928-1932.

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FONTE: Dados dos Serviços de Agricultura de Angola publicados no Boletim da Direcção dos Serviços de Agricultura e Comércio (BOSAC)

Mapa da produção de café referente ao ano de 1928
 pela Secção de Estatística da Direcção dos Serviços de Agricultura e Comércio
 Fonte: BOSAC, ano I, nº 7, 1929, p. 341.

Mapa da produção de café referente ao ano de 1929
 pela Secção de Estatística da Direcção dos Serviços de Agricultura e Comércio
 Fonte: BOSAC, ano III, nº 8-12, 1930, pp. 258-259

Mapa da produção de café referente ao ano de 1930
 pela Secção de Estatística da Direcção dos Serviços de Agricultura e Comércio
 Fonte: BOSAC, ano V, nº 16-19, 1932, pp. 103-103.

Mapa da produção de café referente ao ano de 1931
 pela Secção de Estatística da Direcção dos Serviços de Agricultura e Comércio
 Fonte: BOSAC, ano VI, nº 20-23, 1933, pp. 129-128.

Mapa da produção de café referente ao ano de 1932
 pela Secção de Estatística da Direcção dos Serviços de Agricultura e Comércio
 Fonte: BOSAC, ano VI, nº 24-27, 1934, p. 180

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* valor em "contos" de 1924 a 1933, em "angolares" a partir de 1934 e em "escudos" a partir de 1940.

FONTE: Anuário Estatístico de Angola (AEA)

AEA (1933), pp. 170-171
AEA (1934), p. 185
AEA (1935), p. 217
AEA (1936), p. 259
AEA (1937), p. 290
AEA (1938), p. 325
AEA (1939), p. 343
AEA (1940-1943), p. 443
AEA (1944-1947), p. 365
AEA (1948), p. 277
AEA (1958), p. 176
AEA (1961), p. 184

Table 2 – Evolution of Angolan coffee exports, 1924-1961 (Source: Anuário Estatístico de Angola).