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Contextualizing the Cluster: Palm Oil in Southeast Asia in Global Perspective (1880s–1970s)

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CONTEXTUALIZING THE CLUSTER. PALM OIL IN SOUTHEAST ASIA IN GLOBAL PERSPECTIVE (1880S-1970S)

PhD Series 44-2016

Valeria Giacomini

CONTEXTUALIZING THE CLUSTER

**PALM OIL IN SOUTHEAST ASIA IN GLOBAL
PERSPECTIVE (1880S-1970S)**

PhD School in Organisation and Management Studies

PhD Series 44.2016

CBS  COPENHAGEN BUSINESS SCHOOL
HANDELSHØJSKOLEN

Contextualizing the cluster

Palm oil in Southeast Asia in global perspective (1880s–1970s)

Valeria Giacomini

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Doctoral School of Organization and Management Studies

Copenhagen Business School

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Foreword

This dissertation examines the role that the palm oil cluster has played in the integration of Malaysia, and to a lesser extent Indonesia, into the global economy. The analysis focuses mostly on the evolution of this agricultural cluster in the Malay Peninsula during colonial and post-colonial times.

The thesis is article-based. It includes three articles written for publication in three separate journals in the field of Business History and Organization Studies. The articles are preceded by a frame that provides background information on the historical and geographical setting, introduces the major theoretical and methodological themes, presents the design of the research, and concludes by discussing the arguments that bind the three articles together.

The first and the second articles have been conditionally accepted for publication at *Enterprise and Society* and at *Management and Organizational History* respectively. The third one has been presented in a session dedicated to Clusters and Business History at the World Business History Conference in Bergen, Norway in August 2016 and has been invited for publication by the *Journal of Global History*. Each paper will be presented with the formatting and referencing of its journal respectively, while the rest of the thesis will follow APA 5th Edition style.

The three articles are:

1. The emergence of an export cluster: Traders and palm oil in 20th-century Southeast Asia;
2. Negotiating cluster boundaries: Governance shifts in the palm oil cluster of the Malay Peninsula (1945–1970 ca.);
3. Winner takes all: Palm oil and cluster competition (1900–1970).

Acknowledgements

Now that my PhD journey has come to an end, the time has come to express my gratitude for the help and support that several people provided during the process.

Firstly, and most importantly, I want to thank my primary supervisor, Christina Lubinski. My collaboration with Christina has proven very inspiring and fruitful. Christina has always been extremely available and willing to discuss and comment on my work. Thanks to her sharp and insightful suggestions, I have been able to complete my thesis satisfactorily and to schedule. I have been very fortunate to have a role model as my supervisor; Christina has taken a sincere interest in my work and my development as an academic, and I am most grateful for all the time and energy she has devoted to this project. I also want to thank my secondary supervisor, Martin Iversen, for having believed in me and my work from its very beginning and for always having been helpful and proactive.

During my three years in Denmark, the Centre of Business History and MPP have made me feel thoroughly at home. These are wonderful environments in which to work, and they provided me with valuable soft skills and opportunities to improve as a teacher and researcher. I would like to thank Lotte Jensen and Henrik Hermansen as representatives of the MPP department and all my colleagues at the Centre for Business History for having been unfailingly helpful and shown a keen interest in my work, especially when I first arrived. Special thanks go to Anders and Ellen, who have helped me to understand the Danish system and have often read and commented on my work. I would like to thank the commentators on my opening and closing work in progress seminars, Michael Jakobsen, Dan Wadhvani, David Kirsch, and Nick White, for the excellent feedback and suggestions.

Many thanks go to Shakila Yacob for allowing me to spend more than two months as visiting PhD at University Malaya in 2014, directing me in my data collection there, and taking the time to read, comment on, and discuss my work. I would like to thank the staff of the five archives I visited in the UK, with special mention to Henry Barlow, who granted me full access to his fine family collection at Cambridge Library, and to Unilever archivist Jessica Hardy for her invaluable help and direction during my visits to Port Sunlight.

Finally, I must thank my boyfriend, family, and friends for their enduring support and for showing an assiduous interest in the Southeast Asian palm oil cluster.

TITLE: Contextualizing the cluster: Palm oil in Southeast Asia in global perspective (1880s–1970s)

Abstract

This dissertation examines the case of the palm oil cluster in Malaysia and Indonesia, today one of the largest agricultural clusters in the world. My analysis focuses on the evolution of the cluster from the 1880s to the 1970s in order to understand how it helped these two countries to integrate into the global economy in both colonial and post-colonial times.

The study is based on empirical material drawn from five UK archives and background research using secondary sources, interviews, and archive visits to Malaysia and Singapore. The dissertation comprises three articles, each discussing a major under-researched topic in the cluster literature – the emergence of clusters, their governance and institutional change, and competition between rival cluster locations – through the case of the Southeast Asian palm oil cluster.

With a few exceptions, since Porter first introduced the cluster concept in the 1990s, cluster scholarship has suffered from “self-containment” and a “local obsession.” Indeed, studies on clusters have traditionally overemphasized the dynamics arising in specific cluster locations to the detriment of the impact of external factors. When considering non-local sources of cluster development, the literature has focused on how they have been absorbed and repackaged at the local level. Alongside this, local specificity has represented a barrier to conveying (i) comparative analysis of competing clusters and (ii) a consistent picture of what a cluster is, what its boundaries are, and what it entails. In contrast to this, the overarching idea across my three papers is that the palm oil cluster was the result of global forces as much as of local ones: over the period under study, it shifted from being an outlet for colonial exploitation to an engine of development for modern Malaysia and Indonesia.

In so doing, it came to serve as a device for international business and facilitated the globalization process.

This argument is supported by several findings in the three articles: (i) the cluster first emerged as a result of the specialization of international trading houses' activity; (ii) it thrived in Southeast Asia, based on almost exclusively imported input factors; (iii) once its organizational structure had been perfected in one location, the cluster could be "moved" to or converge towards the same organizational model in climatically similar locations; and (iv) negotiation between foreign companies and colonial and native governments defined the boundaries of, and institutional changes within, the cluster. Furthermore, adopting a comparative perspective on analogous clusters in different locations, (v) this cluster can be seen as a component of a certain location strategy on the part of multinational enterprises, and hence (vi) this allows us to evaluate cluster success not only in terms of the local business environment, but also according to the quality of the location in relation to competing regions. Thus, I propose a new conceptualization of clusters as *intermediary institutions*, facilitating the transformation of local structures and organizations into manifestations of global forces.

Studying the palm oil cluster from this historical perspective has made it possible to document the complexity of the cluster as part of the broader global economic system. The thesis thus provides cross-fertilization between Business History and Economic Geography and extends the multidisciplinary literature on clusters through insights from Development Studies and International Business.

TITEL: Kontekstualisering af en klynge: palmeolie i Sydøstasien i et globalt perspektiv (1880erne–1970erne)

Abstrakt

Denne afhandling undersøger palmeolieklyngen i Malaysia og Indonesien, som i dag er blandt de største landbrugsklynger i verden. Min analyse fokuserer på udviklingen af denne klynge fra begyndelsen af 1880erne fremt til 1970erne og søger at forstå, hvordan denne udvikling førte til de to landes integration i den globale økonomi både i koloniale og post-koloniale tider. Studiet er baseret på empirisk materiale fra fem britiske arkiver og baggrundsresearch fra sekundære kilder, interviews og arkivbesøg i Malaysia og Singapore. Afhandlingen diskuterer tre vigtige understuderede emner indenfor klyngelitteraturen: hvordan klynger udvikler sig, deres styring og institutionelle forandring samt konkurrence imellem rivaliserende klynger.

Med få undtagelser siden Porter først introducerede klyngebegrebet i 1990erne, har klyngestudier haft en tendens til at fokusere på klyngen i isolation. Således overvurderer eksisterende studier de beliggenhedsrelaterede dynamikker på bekostning af eksterne faktorer. Når man medtænker eksterne kilder til klyngeudvikling bliver disse ofte absorberet og markedsført på det lokale niveau. Samtidig har lokale karakteristika skabt en barriere for (i) komparative analyser af konkurrerende klynger og (ii) et homogent billede af hvad en klynge er, hvad dens grænser er og hvad en klynge indebærer. Mine tre artikler argumenterer derimod, at palmeolieklyngen i lige så høj grad var et resultat af globale kræfter som lokale, og at disse globale kræfter som banede vej for skiftet fra kolonial udnyttelse, og gjorde klyngen til primusmotor for udviklingen af det moderne Malaysia og Indonesien. På denne måde blev klyngen også et instrument for international handel og en større globaliseringsprocess.

Dette argument understøttes af adskillige af artiklernes hovedfund; (i) klyngen udviklede sig først som et resultat af en specialisering af aktiviteterne i internationale handelshuse; (ii) klyngen voksede i Sydøstasien næsten udelukkende baseret på udefrakommende faktorer; (iii) da organisationen af klyngen var blevet forfinet på en beliggenhed, kunne klyngen 'flyttes' til eller assimileres til lignende klimatiske beliggenheder; (iv) forhandlinger imellem udenlandske virksomheder, kolonimagter og lokale regeringer definerede grænserne for, og de institutionelle forandringer inden i klyngen. Ved at anlægge et komparativt perspektiv på lignende klynger på forskellige beliggenheder (v) kan klyngen ses som en del af multinationale selskabers strategi og dermed (vi) tillade os at forstå en klynges succes, ikke alene på baggrund af det lokale handelsmiljø, men rettere i forhold til lokalitetens kvalitet i forhold til konkurrerende miljøer.

På baggrund af dette, foreslår jeg en ny konceptualisering af klynger som *medierende institutioner*, som faciliterer transformationen af lokale strukturer og organisationer til en manifestation af globale kræfter. Ved at studere palmeolieklungen i et historisk perspektiv var det muligt at dokumentere klyngens kompleksitet som en del af det bredere økonomiske system. På denne måde tilbyder afhandlingen et samspil imellem virksomhedshistorie og økonomisk geografi samt uddyber den multidisciplinære litteratur om klynger igennem indsigter fra udviklingsstudier og international handel.

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List of Abbreviations in the Thesis (including articles)

AVROS: Algemeene Vereeniging van Rubberplanters ter Oostkust van Sumatra

BC: Barlow Collection

CDC: Colonial Development Corporation

CPO: Crude Palm Oil

DEI: Dutch East Indies

EIC: East India Company

FDI: Foreign Direct Investment

FELDA: Federal Land Development Authority

FMS: Federated Malay States

GC: Guthrie's Collection

GCC: Global Commodity Chain

GVC: Global Value Chain

HAPM: Hollandsch-Amerikaansche Pantage Maatschappij

HI: Historical Institutionalism

HCB: Huileries de Congo Belge

HCO: High Commissioner Office

H&C: Harrisons and Crosfield

INEAC: Institute National pour l'Étude Agronomique du Congo Belge

ISP: Incorporated Society of Planters

IRSG: International Rubber Study Group

JSC: Joint Selling Committee

LMA: London Metropolitan Archives

MARDI: Malaysian Agricultural Research and Development Institute

MEOA: Malayan Estate Owners Association

MNE: Multinational Enterprise

MOF: Ministry of Food
MPOP: Malaysian Palm Oil Pool
MPOC: Malaysian Palm Oil Committee
NEP: New Economic Policy
OPN: Oil Palm News
OPS: Oil Palm Subcommittee
PAM: Planters Association of Malaya
PPO: Processes Palm Oil
RPC: Rubber Producers' Council
RGA: Rubber Growers' Association
RRIM: Rubber Research Institute Malaya
SOAS: School of Oriental and African Studies
SME: Small Medium-sized Enterprises
TNA: The National Archives of the United Kingdom
TPI: Tropical Product Institute
UAC: United Africa Company
UL: Unilever Archives
UMNO: United Malays National Organization
UMS: Unfederated Malay States
UP: United Plantations
UPAM: United Planting Association Malaya
VOC: Vereenigde Oost-Indische Compagnie
WAIOPR: West African Institute for Oil Palm Research
WWI: World War One
WWII: World War Two

1. Introduction

Palm oil is sourced primarily from two countries, Malaysia and Indonesia, where production is organized in the form of one of the largest agricultural clusters in the world. Specifically, the territories of the Malay Peninsula and the islands of Sumatra and Borneo together account for over 80% of global palm oil production and 90% of its exports (see Figure 1). It is because of this commodity that agricultural exports in Malaysia and Indonesia equaled the US in 2014 (FaoStat, 2016). The beneficial effects of the palm oil cluster for these two developing economies became very evident when palm oil emerged as the leading regional export crop in the early 1970s. This study focuses on the period leading up to the global dominance of the Southeast Asian cluster with the aim of explaining its roots and path to prosperity. From the 1970s to 2013, global production of vegetable oils grew from 39.4 to 197.4 million tonnes, and palm oil increased its share from 3.6% to 27% (Khera, 1976). Today, palm oil is found in a wide range of consumer products. As a component of packaged foods, detergents, soaps, and cosmetics, it impacts the everyday lives of a substantial portion of the global population.

The success of the palm oil cluster in Southeast Asia is the result of a century-long transformation of the regional planting activity. The cluster's roots lie in the extensive intervention of international traders in the local agricultural economy during colonial times. As with other crops, foreign traders imported the oil palm tree to the Eastern colonies from the native territories of West Africa in the late 19th century. The development of the palm oil cluster was catalyzed by several among the same actors and institutions that previously engaged in another important agricultural product: natural rubber. Rubber surfaced as a major regional cash crop in early 20th century, initially developed by research institutions and foreign planters already operating in the local plantation economy. During the interwar period, several major rubber producers domesticated the West African oil palm for use in the plantation system in an attempt to diversify away from natural rubber, which at the time

remained the dominant regional export commodity. Eventually, in the aftermath of World War II (WWII), when rubber profitability became increasingly threatened by the rise of the synthetic alternative and price volatility, palm oil re-surfaced. Rubber producer eventually considered it their best survival strategy when demand for rubber faltered. In the process of decolonization, the incumbent Malay(si)an Government observed this process and recognized palm oil's potential. It sought cooperation with foreign players to gain control over the plantation cluster. Although natural rubber remained (and still is) in the region's agricultural portfolio, in less than 30 years, oil palm plantations overtook natural rubber in terms of acreage, becoming the country's primary agricultural export. In the 1960s the Malaysian cluster established itself as the leading palm oil producer, outcompeting West African competitors. During the 1970s, palm oil remained crucial to the development of Malaysia, and eventually Indonesia, as it provided (i) employment in rural areas, (ii) tax revenue to be invested in the industrialization effort, and (iii) foreign currency (Barlow, Zen, & Gondowarsito, 2003). By 1980, when palm oil was seriously challenging the primacy of soybean oil in the vegetable oil markets, Malaysia was the major global supplier of the crop and Indonesia was emerging as the next promising player.

The thesis comprises three papers, which together trace the evolution of the palm oil cluster from the 1880s to the 1970s. The dissertation aims to illustrate how this particular cluster has contributed to the integration of Malaysia and Indonesia into the global economy in both colonial and post-colonial times. Further, it uses the case to ask more general questions about the nature and role of clusters in (i) the process of local growth in developing economies and (ii) the creation of the global economy. Throughout the 20th century, the palm oil cluster worked as a tool for international traders and helped spread capitalism in Southeast Asia. It shifted from being an outlet for colonial exploitation and heavy investment by foreign enterprises to an engine of development for modern Malaysia and Indonesia, with local companies cooperating with foreign actors. My thesis is based on empirical material primarily drawn from five different public and private UK archives, and

so it tells the story of the cluster primarily from the point of view of traders and foreign companies involved in the production of agricultural commodities in the region (see Section 5.1). The evolution of the cluster is therefore analyzed as being encapsulated within the broader history of international business between Europe and Southeast Asia and the process of globalization (see Section 4).

In the 1990s, Porter coined the term “cluster,” reinterpreting and popularizing Marshall’s century-old idea of industrial concentration based on localized agglomeration economies (Marshall Alfred, 1920). In Porter’s view, clusters are strategic tools with which to enhance the economic competitiveness of nations in international markets (M. E. Porter, 1998b). Besides a few exceptions (Schmitz & Nadvi, 1999), since then, research on clusters has primarily comprised case studies of specific clusters, most of which operate in the manufacturing or service sector of developed economies. Partially because of this rather narrow focus, cluster scholarship has focused on the exceptional nature of the regional/local environment, where positive externalities emerge due to proximity. Only the most recent contributions have started to acknowledge that clusters do interact with the external world and are influenced by and connected to distant locations. The relationship between clusters and the outside world is always explained from the local perspective, however. External forces gain significance from the way in which they are absorbed and repackaged within the cluster’s organizational structure at the local level. Thus, as discussed in Section 3, cluster theory has been criticized for suffering from “tunnel vision” and “self-containment” (MacKinnon, Cumbers, & Chapman, 2002). Due to its “obsession” with location specificity, it has failed to yield an innovative framework to integrate non-local influences and to provide a consistent approach to analyzing clusters as part of the broader economic system. Furthermore, location specificity creates two additional problems. First, stressing the dependence of clusters on local dynamics makes it difficult to study clusters from a comparative perspective when in fact clusters may specialize in similar or identical products and compete across different locations. Second, despite the attractiveness of Porter’s

framework (1998b), the fact that clusters are so context-dependent has raised doubts about the ontological foundation of the concept itself, hampering the development of a generally accepted cluster definition. As there is no generally accepted framework detailing how actors qualify as members of a cluster, the cluster definition proves fuzzy and difficult to operationalize. Finally, this criticism extends to research methods, as clusters are primarily analyzed through individual case studies, which some believe poses a further challenge to the compilation of a coherent theory (Eisenhardt & Graebner, 2007).

In this dissertation, I put forward a new conceptualization of the cluster based on historical sources, which provides a solution to the problem of addressing both clusters' external linkages and their location specificity. Studying the palm oil cluster in historical perspective allows me to document the complexity of the cluster as part of the broader global economic system and define it as an intermediary institutional form occupying a middle ground between the local and global dimensions (see Section 5.2). Unlike the majority of cluster scholarship, the palm oil case, being an agricultural cluster set in emerging economies, provides unusual contextual conditions, which are a suitable basis on which to challenge the dominant view of clusters. Initially, palm oil served colonial exploitation, but it subsequently developed into a platform for local growth and internationalization in the hands of native interests. The thesis shows that the history of the cluster has been inextricably intertwined with global trading activity since its emergence. The palm oil cluster is therefore interpreted as a vehicle of international business that can be moved to and replicated in different locations. In organizational terms, being part of the cluster drove local institutions to be transformed into spaces of globalization. Methodologically, I dismiss the typical skepticism towards the use of individual case studies and adopt the technique of "selective combining" based on abductive logic and back-and-forth movement between theory and sources (Dubois & Gadde, 2002). The historical case study sheds light on the cluster's contextual richness and its role in the global economy.

The purpose of this thesis is threefold. First, I provide a historical analysis of the cluster's development and its contribution to the integration of the Southeast Asian region into the international markets. The focus on the role of foreign actors in the evolution of the palm oil business highlights how the cluster bridged the local and global dimensions, deviating from the "tunnel vision" of cluster theory. My analysis shows that the cluster thrived in Southeast Asia under the influence of colonial government institutions and policies; through the direction of foreign business interests, and based on imported inputs (crops, capital, knowledge and labor). Moreover, once it had emerged into the colonial context, for a long time the cluster benefited the local environment less than distant locations, where, instead, important decisions were taken and the majority of the surplus was retained.

Second, my three papers position the cluster discussion within the realm of International Business and Development Studies by showing that the history of this cluster is intimately related to, firstly, the specialization of trading firms' activities and, secondly, the localization strategy of multinational enterprises (MNEs). This case sheds light on how clusters facilitated foreign investment in developing economies, in turn favoring MNEs in the construction of the global economy.

Third, this study highlights the benefits of cross-fertilization between Business History and Cluster Studies. It uses historical methods to provide a contextualized interpretation of clusters as channels of global interaction for less-developed countries, rather than uniquely as sources of localized growth. Unlike the bulk of cluster scholarship, by conceiving the cluster as historically and socially constructed, the thesis stresses individuals' and companies' contribution to its development. Different public and private, local and foreign institutions interacted and negotiated the boundaries of the cluster, producing institutional change via reflexive action. On the flipside, by exploring the domain of Economic Geography through historical lenses, the thesis innovatively contributes to Business History research. It expands the literature's usual focus on the company to other organizational forms and sharpens its temporal perspective on institutional change to more explicitly

include spatial and geographical definitions typical of Economic Geography, such as clusters or globalization.

Although the cluster included several different stakeholders (explored in more depth in section 2.5), in order to understand its global reach, the thesis concentrates on the foreign business interest at the time controlling large plantation estates and on the research and public institutions working closely with these businesses (See Tables 2 and 3). Specifically, the articles focus on selected agency houses, namely trading companies that integrated vertically into plantations in the early 20th century, either by buying shares in existing estates or by setting up new estates. The majority of these players started up with rubber, came to control the lion share of the plantation acreage in both Malaya and Sumatra, and eventually diversified into palm oil beginning in the 1920s.

The aforementioned papers address three major themes in cluster theory: (i) the emergence of the cluster, (ii) its governance and institutional change, and (iii) competition between two cluster locations: Southeast Asia and West Africa.

The first paper traces the introduction of the oil palm in the region and elaborates on its relationship with rubber during colonial times. At the outset, palm oil represented only a minor part of the broader agricultural activity in the cluster, which originally concentrated on natural rubber. As several rubber players introduced palm oil to diversify from rubber, much of the later palm oil success is related to the organizational structure it inherited from the pre-existing rubber cluster. Thus, the paper stresses the legacy of rubber in the development of the palm oil cluster. Further, it argues that the process of cluster emergence is intimately connected to the specialization of trading firms' activities.

The second paper focuses on the decades of decolonization following WWII, when palm oil gradually substituted rubber as the key source of income in the region. It investigates via institutional change within the cluster, looking at how the interaction the major palm oil companies and several British and Malay(si)an government institutions set the path for the

cluster's progression. The paper makes the case for a finer-grained analysis of governance in the study of clusters, introducing the concept of "institutional rounds" to explain shifts in cluster boundaries. It suggests that collaboration between government and foreign interest can be beneficial to cluster development, especially in times of political transition. To this end, it also shows how government can pair economic growth to social upgrading by extending the cluster boundaries to include local, more vulnerable, players.

Finally, the third paper examines the topic of competition between the two major palm oil clusters, in Southeast Asia and West Africa, from the beginning of the 20th century to the 1970s. The analysis explores the dynamics of knowledge sharing and institutional convergence across two distant, competing locations. It shows how clusters are included in the localization strategies of MNEs: once the most efficient organizational structure for the palm oil product was designed, the cluster could be moved or replicated, according to political risk in the host economy. This suggests that the quality of the cluster institutional framework, conditional upon political stability, acts as primary driver in the investment choices of MNEs such as Unilever. The paper makes a case for comparative analysis and for considering competitor locations when evaluating cluster success.

The frame that follows is intended to set the scene for the articles, elaborating more in detail on the major themes underlying the research project. Section 2 provides background information on the palm oil business: its supply chain, its current role in the global economy, a brief recap of its history, the cluster's major players, and some further details about the changing political geography of Southeast Asia in the period covered by this study. Section 3 begins with a detailed review of the different strands of literature on agglomeration economies and progressively zooms in on contributions on clusters, presenting the theoretical issues most relevant for this thesis, namely the problem of external linkages and cluster definition. Section 4 outlines the research design. It positions the study in relation to the Business History literature on international trade and globalization and specifies its temporal and geographical delimitations. Section 5 elaborates

on the major methodological issues in the thesis: it critically introduces the empirical sources, explains how I applied historical institutionalism as an epistemological strategy, and discusses the scope and aim of my case study approach. Section 6 concludes by showing how the palm oil case fits into cluster theory. It summarizes the papers' main findings and outlines avenues for future research.

2. Background

In this section, I provide an overview of the palm oil business. Section 2.1 describes the main components of the palm oil supply chain; in Section 2.2, I present the current positioning of palm oil in the international markets for vegetable oils and the major players since the reorganization of the cluster in the 1980s; Section 2.3 offers an historical overview of the development of the palm oil cluster in Southeast Asia, covering also the periods that have been only marginally addressed in the papers that make up the thesis. Section 2.4 discusses the changes that affected the political geography of the palm oil cluster during the period under study. Finally, Section 2.5 showcases a more detailed description of the main actors within the cluster, what mechanisms regulate their relationships and their respective interest in both rubber and palm oil.

2.1 The palm oil supply chain

Palm oil is extracted from the oil palm *Eleais guineensis*. While today the oil palm is grown mostly on Malaysian and Indonesian plantations, the tree was originally native to West Africa, and several oil palm varieties still grow wild in the tropical forests along the Palm Oil Belt running through the southern latitudes of Cameroon, Ghana, Liberia, Nigeria, and Sierra Leone and into the equatorial region of Angola and the Congo, where they have traditionally been a major source of food and construction material for farmers and villagers.

The tree. Unlike most vegetable oils, which are based on annual crops, palm oil is extracted from a perennial tree, the oil palm *Eleais guineensis*. The tree needs constant alternation of rain showers and sunshine and thus the strip between ten degrees of latitude north and south of the equator is the best area in which for the crop to thrive. See Figure 2 for an overview of the world territory suitable for oil palm cultivation. The palm takes three years to reach

maturity and bear fruit. Subsequently, the fruit can be harvested and the oil can be extracted from both the fruit (palm oil) and the kernels (palm kernel oil). Today, palm kernel oil and palm oil volumes are produced for international markets at a ratio of 1:10. Palm kernel oil, and its byproduct kernel cake, are considered high-end products used mostly for soap manufacturing. In contrast, the palm oil extracted from the fruit is used for eating. Because the palm kernel supply chain is more complex, this product is generally more expensive than palm oil from fruit, yet in the long term, palm oil prices tend to co-move with those of other vegetable oils (In & Inder, 1997). Since the focus of my analysis is at the plantation level and both palm oil and palm kernel oil share the same upstream value chain, my thesis will take a general view of the commodity and refer to both palm oil from fruit and kernels simply as “palm oil.”

Cultivation and harvesting. This thesis will refer to three types of production system for the cultivation of agricultural crops (e.g., rubber and palm oil): (i) wild groves, (ii) smallholdings, and (iii) plantations. Wild palm groves contain trees growing naturally in the native forests of Africa and harvested by local villagers. The smallholding, meanwhile, is a common form of agricultural organization in Southeast Asia, consisting of organized lots of planted trees cultivated by a family (P. B. Tinker & R. H. V. Corley, 2016 22). Since its establishment in 1956, the Federal Land Development Authority (FELDA) in Malaysia, a public agency managing the smallholding sector, has promoted standard smallholding schemes covering 1,800–2,600 ha for 400–600 families, namely approximately 4 ha per family including residential infrastructure. Finally, plantations are larger-scale holdings consisting of 1,000 or more ha (Shamsul Bahrin, 1988; Tate, 1996 1). By 1970, more than 65% of total oil palm acreage remained in private estates. The introduction of the FELDA schemes increased smallholders’ market share by 15 percentage points between 1970 and 1976 (Khera, 1976 127). While estates and smallholdings were typical systems of production in Southeast Asia, palm oil continued to be sourced from wild trees in West Africa, even after the introduction of the plantation system. Although all of the foregoing

types of production represented active parts of the clusters in both Southeast Asia and West Africa, my investigation mostly concentrates on big estates that were owned or controlled in their vast majority by foreign investors (agency houses) in the period under study who played a crucial role in the development and international expansion of the palm oil cluster.

Extraction (milling). Extracting oil from palm fruits has been practiced in Africa for centuries, and the oil produced, which is highly colored and strongly flavored, is an essential ingredient in much of traditional West African cuisine. While harvesting and some aspects of processing were normally conducted by men, women were responsible for transportation, as well as the time-consuming and tedious extraction process. The oil was extracted manually by boiling and pounding the fruits to remove the nuts from the fibers and squeezing the resulting compost repetitively (S. M. Martin, 1988 32-33).

Once palm oil had been introduced to international markets, mill facilities began to be used to extract the oils using a system of presses. Over the course of the 20th century the press technology was continuously updated, shifting from hydraulic (centrifugal) presses to increasingly refined adaptations of the screw presses used to process wine grapes (Clarence-Smith, 1998 123).

To obtain a marketable product (for which the extracted oil must contain a low percentage of fatty acids), the palm fruit bunches have to be processed within 48 hours of harvesting as this prevents the acidity level from rising and the quality of the oil to decline. As a consequence, the milling facilities had to be located in proximity to a sufficiently large number of trees and connected to the plantation by a reliable transport infrastructure. In 1926, investment in mills was only economical for estates of between 2,000 and 6,000 ha (BNA CO/96/670/4, 1928 32; Tate, 1996 432), while for modern mills the figure is around 4,000 ha (P. B. Tinker & R. H. V. Corley, 2016 23). The need for proximity to the trees,

combined with the time lag in the maturation of the tree, has influenced the organization of large-scale palm oil production since the 1920s.

As examined in my first and third papers, the existing organizational structure of the rubber cluster in Southeast Asia contributed to the rapid success of these palm oil plantations relative to those in native African locations. In Africa, palm oil production was based on sparse wild palm groves in rural areas with limited infrastructure (BNA CO/267/619, 1928). Together, these features limited the potential efficacy of milling ventures there. In Southeast Asia, by contrast, palm oil was initially established exclusively as an estate crop because of its more capital-intensive nature compared to other tropical crops such as sugar, tobacco, coffee, and rubber, which were more accessible to smallholders. Only in the 1960s were palm oil smallholdings established by FELDA, in cooperation with the estate companies. Today, the estate sector still represents 60% of the Malaysian and Indonesian cluster (Palm Oil Research, 2016).

Refining. The refining process occurs after milling and involves fractioning, or dividing, liquid and solid components in the oil, namely olein and stearine. This process involves melting and degumming in order to remove impurities and remaining acidity and filtering and bleaching to adjust smell and color. The refinery process introduces a new distinction in terms of product segment as the crude palm oil (CPO) just extracted from the mill is transformed into its refined form, processed palm oil (PPO). The difference between CPO and PPO is not particularly relevant for this study, because (i) refineries were generally located in Europe until the 1970s, so that the oil left the producing location mostly in crude form; and (ii) most of the advancements in the refinery process (e.g., bleaching) were introduced after the 1970s, when Malaysian producers started concentrating on the downstream stages of the supply chain. See Figures 3 and 4 for a visual representation of the supply chain.

2.2 Palm oil in modern times

“Palm oil is still the most desirable: cheapest, most productive, highest yield, readily available, not as damaging to the environment as the rest. It grows twenty-five years. What is the substitute? I don’t think anyone who has a free lot of land wants to plant something else, palm has just higher yields.”

(Interview with Adrian Suharto, NESTE OIL, 2014)

Half of all products on supermarket shelves contain palm oil (Buchanan, 2014), the most widely produced and traded vegetable oil in the world. In 2011, palm oil was the fourth most widely exported agricultural commodity by value (USD 40.5 billion) and the fifth by volume (37 million tonnes) (FaoStat, 2016). Further, palm oil’s share of the international vegetable oil market has increased from 4% in 1970 (Khera, 1976 168) to more than 32% in 2015 (Palm Oil Research, 2016). The primary features that explain this success are the oil’s versatility and land efficiency.

Palm oil has an extensive range of applications: in the edible segment, it can be used as a cooking oil and a key ingredient of processed foods like margarine, chips, and biscuits, while in the technical segment it can be applied in the form of an oleo-chemical component for cosmetics, detergents, and industrial lubricants. Moreover, palm oil by-products – palm kernel cake and biomass resulting from crushing and waste – can be employed as animal feed or biofuel (Berger, 1996; Kongsager & Reenberg, 2012) PORAM, 2014).

In terms of land productivity, the oil palm yields twice the tonnage per unit of land of its major vegetable oil competitors: palm oil yields amount on average to 3.2 tonnes/Ha/year, reaching 5–6 tonnes in the best climate and soil conditions, compared to only 2.27 for soybean, 1.19 for sunflower, 1.49 for rapeseed, and 0.8 for coconut (Basiron, 2007; P. B. Tinker & R. H. V. Corley, 2016). Hence, while current palm oil production amounts to 53.7

million tonnes, it occupies only 5.5% of the land deputed to oilseed production. Comparable figures for palm oil's major competitor, soybean oil, are 41.6 million tonnes and 40% of land, making palm oil markedly more land-efficient (Palm Oil Research, 2016).

Malaysia and Indonesia are the global leaders in palm oil. Production across these two countries is organized in a cluster and accounts for 85% of world production and 97% of world exports (FaoStat 2013). This region has an absolute geographical advantage in the cultivation of the oil palm due to the quality of the soil and climatic conditions there (Pletcher, 1990).

Historically, the palm oil value chain has been buyer-driven (Baldwin, 2012), as palm oil supplies were purchased by one major manufacturer, Unilever, or directly by state governments via large pre-arranged contracts. As discussed in the second paper of my thesis, this resulted in monopsonistic demand. However, there is also fierce competition in the vegetable oil markets, resulting from the high degree of substitution among oil products. These latter facts have contributed to the high concentration of ownership and the extensive cooperation in the palm oil industry, as producers sought to make gains from economies of scale and cartel-like behavior.

Since the 2000s, there has been a major wave of concentration at the trading level with a handful of global commodity traders (Wilmar, Golden Agri, Sime Darby, Cargill, and Archer & Daniels among others) controlling the bulk of the palm oil market; this has reshaped the global value chain (GVC) towards a more trader-driven design (Wakker, 2013).

In the 1960s, the cluster produced CPO from plantations alone, but then, in the 1970s, Malaysian palm oil players began increasingly to specialize in downstream development, investing in refinery and logistics. These investments established the Malaysian cluster as the absolute global leader by the end of the decade, and by that time it accounted for the

majority of global palm oil acreage and exports. The cluster comprised a few foreign companies in the large estate sector and FELDA as a representative of the smallholding system. In 1980, under the so-called Malaynization process, the Malaysian government proceeded to acquire the majority of the equity in all foreign (especially British) plantation companies, which in practice transferred ownership of the palm oil cluster from foreign to local hands. During the 1980s, these new outlets increasingly invested in palm oil development in Indonesia, leading to the revival of Sumatra's pre-war production and the extension of the cluster to the islands of Java and Borneo. Today, however, the ownership in the cluster remains rather concentrated. In Malaysia, palm oil acreage is divided between government-linked companies and subsidiaries of private (mostly ethnic Chinese) business groups, while in Indonesia private plantation companies (also of ethnic Chinese origin) or conglomerates prevail. Table 1 provides an overview of the major players in 2013.

2.3 History of palm oil in the context of the plantation economy

The thesis covers the period between 1880 and 1970. Each paper focuses on a specific time period that relates to its respective research question. For that reason, some periods have not been investigated in great detail in the overall analysis. This section thus provides a more comprehensive and linear account of the development of palm oil production.

Before surfacing as an export crop, until the early 19th century, palm oil was used as the major staple food on the slave ships sailing from West Africa to the Americas (Stilliard, 1938). When slavery was abolished in 1807, the network of foreign, and mostly British, trading houses that had specialized in the slave trade survived by switching to palm oil and creating a stable market for the commodity in Britain as a cheap raw material for lighting and industrial lubrication. At the end of the 1800s, advancements in oil processing techniques enabled the oil to be used to produce margarine and soap (Henderson & Osborne, 2000). Palm oil in particular contributed to the fortune of the British soap

manufacturer Lever Brothers as a major component in its most successful brand of soap, Sunlight Self-Washer. As illustrated in the papers below, Lever Brothers – which became Unilever in 1929 – was a critical player in the development of the palm oil industry in Africa and its later relocation to the East, and to this day the corporation retains its historical role as a major global buyer of the commodity (van Gelder, 2004).

As the first shipments of palm oil from Africa reached Europe in the 1830s, a few specimens of the tree were also introduced to the Botanical Gardens of Amsterdam. Some years later, in 1848, four seedlings from those trees and from others in Mauritius were planted in the Buitenzorg Botanic Gardens in Java, in the Dutch East Indies (DEI) (Tinker & Corley, 2016 6). Although reliable information on the introduction of the oil palm to the Malay Peninsula is scant, recent research suggests that the oil palm tree reached the Kew Botanic Gardens of Singapore from Java and was subsequently distributed to the surrounding areas (Tate, 1996 451). Where the first commercial plots of oil palm trees were established remains unclear, but sources indicate that the Deli province in Sumatra served as the first experimentation site (Pamin, 1998). In the 1870s a small experimental lot of oil palms was planted in the Botanic Gardens of Buitenzorg, but it was never exploited commercially.

Since the 19th century, agricultural production had been organized systematically in Southeast Asia. Before European powers achieved full control of the region, Chinese entrepreneurs had negotiated land concessions with local sultans to establish planting concerns in both the Malay Peninsula and Sumatra to grow sugar, tapioca, and coffee intended mostly for the surrounding regional markets (Barlow, 1985). In the second half of the 19th century, once the region had come under British and Dutch rule, European planters started launching planting ventures on a larger scale, focusing mostly on tobacco (LMA CLC/B/112/MS37394/004(1), Report on North Sumatra). Investment continued towards the end of the century, when the rubber tree, the *Hevea Brasiliensis*, was introduced to the

region for domestication from South America in 1876, partially as a supplement to the declining tobacco business (Thee, 1969). As explained in my first paper, the exceptional demand for rubber at the end of the 19th century coincided with the favorable business conditions in Southeast Asia, leading to the emergence of a cluster specialized in natural rubber. Due to the cluster's organization, in less than two decades, these territories went from suppliers of commodities for their respective imperial rulers to becoming major producers for the global economy.

The sudden success of rubber at the turn of the 20th century delayed the domestication of the oil palm, relegating it to being used for ornamental purposes up to the 1910s. Then, in 1911, the Belgian plantation entrepreneur Adrien Hallet launched the first commercial oil palm estates in the Deli province of Sumatra. Hallet ventured to the East on the back of extensive experience in Belgian Congo and noticed that the oil palm flourished very profitably in the tropical climate of Sumatra. In 1914, palm oil samples were successfully exhibited at the Agricultural and Horticultural Show in Kuala Lumpur (LMA CLC/B/112/MS37408, 1921). After encouraging results in Sumatra, Hallet supported the creation of the first estate in Malaysia's Selangor district in 1917, helping the French planter Henri Fauconnier and his business partner Franck Posth to float their company in Brussels (S. M. Martin, 2003; Tate, 1996).

While the first oil palm estates were launched in the East, the bulk of global palm oil production continued to be sourced largely from wild groves in the native territory of West Africa. See Figure 5 and 6 for an overview of both the Southeast Asian and African colonial territories in the 1910s. The competitive environment of the commodity started to change in the early 1920s. Due to their similar ecological features (Clarence-Smith, 2013; Tinker & Corley, 2016), the oil palm surfaced as the best alternative to natural rubber when the Southeast Asian estates faced price declines and competition from the smallholder sector (LMA CLC/B/112/MS37394/007, *the Planter* 1929). Unlike in Africa, where palm oil was

primarily used for domestic consumption by the local population, palm oil production in the Far East inherited its organizational structure from the existing rubber cluster and was cultivated exclusively for export. Similar to what happened with rubber in South America (Barham & Coomes, 1994), only a few years after the domestication of the oil palm tree, Southeast Asian palm oil supplies were already perceived as a “menace” for the native locations (BNA CO/879/122, 1932).

By the mid-1920s, palm oil was already among the top five cash crops grown in Southeast Asian plantations and its domestication was advancing rapidly. The bulk of palm oil acreage was concentrated in the Deli province in Sumatra, where a new variety of palm, the so-called *Deli dura*, had been developed by Hallet’s Company, Socfin, in cooperation with the local research station AVROS. As explained in the third paper below, Socfin took advantage of the synergies from the rubber business to expand palm oil cultivation especially in Sumatra. In 1924, it opened the first bulking facility for the shipping of palm oil in Belawan, close to Medan, and by 1939 it accounted for more the 15% of global exports (Clarence-Smith, 1998). In Malaya, the crop was developed by the major rubber players that owned vast estates in Sumatra. The British agency houses Guthrie and Harrisons and Crosfield (H&C) started producing palm oil on their Malayan estates in the 1920s. Among the smaller ventures specializing in the crop, one of the most successful was the Danish concern in Ulu Bernam, which was later absorbed into United Plantation (UP) (S. M. Martin, 2003 51). However, in the interwar period, Malayan production of palm oil was still very limited compared to that of neighboring Sumatra. By 1925, oil palm acreage was still only 3,400 ha in the Peninsula, while in Sumatra the reported figure was between 24,000 and 31,000 ha (BNA CO/96/670/4, 1928).

The Great Depression resulted in sluggish demand for agricultural commodities and declining prices for both rubber and palm oil. The immediate impact of this price slump varied considerably between smallholders and commercial estates. The former simply cut

back on their volumes in response to price developments; the latter were forced to maintain their output levels in order to cover for their high fixed costs, while attempting to introduce technical and organizational innovations to lighten the cost structure. Thus, the 1930s was a decade of reorganization in the view of recovery: estate owners implemented rubber replanting schemes and cost optimization measures such as the reduction of costly European staff while concentrating on new crops such as palm oil (Clarence-Smith, 1998; S. M. Martin, 2003).

As a result, at the dawn of WWII, British Malaya and the DEI had acquired increasing shares of the palm oil market and together came to account for about 45% of world exports (Hartley, 1967). In 1940, the Sumatran East Coast, the so-called Culture Zone, and Aceh province concentrated the largest amount of oil palm estates in the DEI (56 out of 64), accounting for over 108,000 ha. In the same year, a handful of rubber players – Guthrie, Socfin, Barlow, Cumberbatch, and the smaller UP – controlled the entire Malayan acreage of 35,000–65,000 ha (S. M. Martin, 2003 69; Tate, 1996 593; UL UNI/RM/OC/2/2/118, 1949). As mentioned above, compared to natural rubber, which could be easily cultivated by smallholders in limited plots, palm oil, because of the bigger upfront capital investment required by its biological features, was concentrated in the hands of fewer players from the outset (Thee, 1969 31).

According to Barlow's correspondence, in the 1930s, Malaysian palm oil producers operated jointly through an institutional arrangement known as the Pool Committee (BC TBB/830(1), Letter 2.11.1964). However, since sources are scant for the pre-war period and volumes were still quite limited compared to rubber, it is not clear whether the Pool had a formalized structure or operated merely on informal terms. According to Martin (2003 70), from 1936, Malayan producers joined their Sumatran counterparts in an international selling pool which held together until the 1940s. As described in a letter from Thomas B. Barlow to UP's chairman Commander Grut in 1937, "the palm oil market is very quiet (...). As you

know, this is a very limited market and the absence of few people on holiday, might virtually close negotiations for the time being” (BC TBB/870, letter 25.8.1937). After the war, the Malaysian Pool became more formalized as Malaysian Palm Oil Pool (MPOP), and rose to the status of a major player in global palm oil production (Khera, 1976 278; Tate, 1996 582).

The slow recovery of the plantation business in the late 1930s was abruptly halted by the outbreak of WWII. With the escalation of tensions in Europe in 1939, the UK Ministry of Food (MOF) started to absorb and stockpile all Malayan palm oil production at a fixed price, while the Dutch were no longer able to control their colonial territories after the Nazis occupied the Netherlands. In 1941, the Japanese army took control of the Malay Peninsula and continued its advance towards Singapore and the Indonesian Archipelago in 1942. For the next three years, estate agents and owners in Europe had very limited information about what was happening on their Southeast Asian estates (BC TBB/870, 1942). The Japanese occupation involved a complete reorganization of production: estates were seized and largely converted for food production or dismantled and abandoned. Following the unconditional Japanese surrender to the Allies on August 15th, 1945, the Malay Peninsula returned to British control, but in the newly independent Indonesia, nationalist forces embarked upon a painful struggle for liberation against the Dutch. Subsequently, Sukarno’s nationalization program further postponed the revival of the industry (White, 2012).

A preliminary report provided to the Colonial Office by the British Military Administration in November 1945 conveys a relatively distressing picture of the condition of rubber estates in the Peninsula after years of dilapidation during the war (BNA CO/852/670/12, 1945). Most of the estate machinery had been either “taken by the Japanese or stolen by the Asiatic staff” and the remaining estates had been simply abandoned, so that “old rubber is neglected and marked for felling and young rubber thrives untapped” (BNA CO/852/670/12, 1945). Local squatters and Malay soldiers returning from combat in the region had settled in the

proximity of several estates in remote areas and were using the land for their own production.

As illustrated in my second paper, the occupation of this land by the local squatters proved a major problem for the returning European companies and estate owners, not only because of the loss incurred by reorganizing their property and reallocating these labor resources, but also, and most importantly, because since the late 1940s these squatters had been the major suppliers of provisions to the guerrilla forces fighting the returning British colonial military during the Emergency, the Malayan Civil War, which lasted from 1948 to 1960 (Stubbs, 1989). The two decades following WWII, were marked by an increasing friction between the agency houses and the withdrawing British Government and by a perceived deterioration of overall business conditions. Downing Street seemed to prioritize a smooth takeover by the incumbent Malaysian Government over the rehabilitation of the expatriate business interests. Yet, while the profitability of rubber embarked on a longstanding decline (with the short-lived exception of the Korean War), the agency houses continued to invest in the region, diversifying their plantations into palm oil. Beginning in the early 1950s Unilever became a major player in the Malayan palm oil cluster and favored a growing exchange of knowledge with its African operations. By the 1960s, after modern Malaysia was created, palm oil had established itself as the major cash crop in the region.

2.4 Political geography of the palm oil cluster in Southeast Asia

As this thesis covers one of the most politically turbulent centuries in both Malaysian and Indonesian history, a brief overview of the developments taking place in these territories from colonial domination to independence will serve to disentangle the administrative intricacies mentioned in the articles that follow.

Since the 17th century, the region had been a field of confrontation between Britain and the Netherlands, where the British East India Company (EIC) and its Dutch counterpart

Vereenigde Oost-Indische Compagnie (VOC) had fought to dominate the Asian trade (Colli, 2016). The Anglo-Dutch treaty of 1824 definitively settled the territorial disputes between the two European powers and established their respective spheres of influence in the colonial territories of the Far East. Britain gained control of the Malay Peninsula and Singapore, while the Netherlands obtained the withdrawal of British interest from Sumatra and grouped its trading posts in Java and other islands, in the colony of the DEI.

As for the DEI, this thesis will primarily refer to the island of Sumatra. Indeed, during the period under study, almost the totality of palm oil and rubber plantations outside Malaysia were located in the provinces of Ache, Deli, Jambi, and the northern and eastern parts of the island, facing Singapore and Malaya. Although initially the Dutch had controlled only selected spots, in 1870 the whole island was annexed to the DEI and remained a colony up to 1945, when modern Indonesia was formed. Therefore, in this thesis, I will refer to the territory mostly as “Sumatra,” while when not referring directly to the island, “the DEI” will be used during colonial times and “Indonesia” after independence.

As for the Malay Peninsula, the official denomination of the territory has changed several times since it came under official British control. The following account is complemented by Figure 7. Prior to 1946, the territory was divided into three major administrative units: (i) the Federated Malay States (FMS), (ii) the Unfederated Malay States (UMS), and (iii) the Strait Settlements.

The FMS included the provinces of Negri Selambian, Pahang, Perak, and Selangor. In 1896, with the Treaty of Federation, the sultans of those territories gave up their political powers and agreed to centralized administration in the hands of the British, turning the territories into protectorates. In 1898, the British established a Federal Council to administer the FMS. This was under the direction of the High Commissioner (the General of Strait Settlements)

and included the Resident State General (also named Chief Secretary of the Federation), the Sultans, four State Residents, and four unofficial members.

The UMS included the provinces of Johor, Kedah, Kelantan, Perlis, and Terengganu, which were granted greater autonomy and administrative independence; they lacked common institutions and were in fact considered standalone British possessions.

The Strait Settlements comprised the trading posts of Malacca, Penang, and Singapore and later the island of Labuan. These territories differed from the Malay States as in 1867 they became Crown colonies directly administered by Britain through the Colonial Office. The Governor administered the Strait Settlements from the capital, Singapore, with the aid of an Executive Council and a Legislative Council; Penang and Malacca were also under the direct control of the Governor and were administered by resident councilors.

After 1946, the system of the sultans was gradually dismantled in order to pave the way for decolonization and independence. These three administrative units were merged in the Malayan Union in 1946 and reformed into the Federation of Malaya in 1948, excluding Singapore, which remained a colony until it obtained self-government in 1959. In 1957, the Federation of Malaya obtained independence (Merdeka) within the British Commonwealth and in 1963 it was renamed “Malaysia” with the annexation of the neighboring British-controlled territories of Sarawak and Sabah in Borneo. Singapore was temporarily annexed to Malaysia but seceded in 1965.

For the sake of simplicity, this thesis will refer to this territory as “British Malaya” during the colonial period prior to WWII, “Malaya” or “Federation of Malaya” between 1946 and 1963, and “Malaysia” or “modern Malaysia” thereafter.

2.5 The palm oil cluster ecosystem: stakeholders and institutional boundaries

In analyzing the different institutions of the cluster, this thesis departs from Porter's diamond model, a framework initially introduced to analyze countries' competitiveness (See Figure 8) and eventually developed into a tool to explain cluster ecosystems. According to Porter, national competitiveness depends on the degree of specialization in selected activities. Because clusters are spaces where specialized production is carried out, in Porter's terms the cluster is the "manifestation of the diamond at work" (Porter, 2000 21). Indeed, it comprises the bulk of continuous formal and informal relationships taking place in a specific business environment with regard to a specialized production. These relationships span cooperation and competition among actors involved in the cluster's core activity (see section 3 below). In this thesis the clusters' core activities are palm oil and to a lesser extent natural rubber production.

Porter's diamond includes: (i) basic and advanced factor conditions, or the resources available for production (i.e. geography, land, labor, and infrastructure); (ii) demand conditions, encompassing type of buyers and product requirements; (iii) firm strategy, structure and rivalry, namely the "players" on the supply side (companies and competitors); (iv) related and supporting industries, that is the companies along the supply chain that are involved in the execution of the cluster's core activity, but are not directly controlled by the producing firms (i.e. services, or upstream/downstream actors). Finally, Porter adds (v) government and (vi) chance, as additional elements impacting the cluster, but "external" to the four, aforementioned, diamond categories.

For the sake of clarity, it is useful to use the diamond model as a descriptive framework to categorize the different forces at play in the Southeast Asian plantation cluster. Looking at the actors operating in the cluster also sheds light on the relationship between rubber and palm oil over time. Table 2 and 3 include a categorization of the cluster's actors and

institutions during the period under study and their relative exposure to both rubber and palm oil.

First, while demand and factor conditions are accounted for in all of my articles, they are explicitly addressed when I explain the strategy of the cluster players. Factor conditions related to palm oil include the climatic and soil features necessary for the oil palm tree to thrive, the availability of labor, and the presence of transport and communication infrastructure. As detailed in the first and the third of my papers, while West Africa and Southeast Asia are very similar in terms of climate and to a lesser extent soil, they differed markedly in terms of labor supply, skills and market regulation as well as in terms of port facilities and transport infrastructure. West Africa retained a less skilled labor supply, a more regulated labor market, a much less developed infrastructure and native farming based on wild-palm grooves. Together these elements hindered the spread of the plantation system across the region. Conversely, Southeast Asia enjoyed a more abundant supply of skilled labor (migrant labor channeled to Singapore from South China, India and Java) and land regulations that were more accommodative of foreign investment, particularly in DEI. Concerning demand conditions, they are relevant to explain the switch from rubber to palm oil as major regional export. Demand for palm oil products experienced long-term growth since the 1920s, following the general expansion of the global vegetable oils market, in turn due to increasing world income and population, especially after WWII. Further, the volatility of natural rubber prices during the interwar period and subsequent decrease in demand for the commodity following the emergence of its synthetic alternative pushed several large rubber producers to seek for alternative crops, such as the oil palm.

Second, this thesis primarily focuses on the strategy, structure and rivalry of the firms that first introduced palm oil in Southeast Asia (presented across the whole thesis but discussed in depth in my first article); the related and supporting industries (such as research activity,

addressed in my third article); and the government institutions that managed the relationship with these major cluster players (analyzed in my second article).

In terms of stakeholders the Southeast Asian cluster comprised three main types of producers: (i) foreign large estate companies – in the thesis referred to as “agency houses” and/or “plantation companies”; (ii) independent planters (both foreign and local, primarily Chinese); and (iii) smallholders. Although I consider the actions of independent planters and smallholders in all of my three articles, my investigation concentrates on the role of large estate companies, due to their dominant position in terms of ownership, linkages with global markets and knowledge diffusion up to the 1960s.

This first category primarily included two groups of foreign players: agency houses and plantation companies. Agency houses were trading outlets in charge of brokering and organizing shipping of agricultural produce from the region to the advanced markets (Drabble and Drake, 1981). During the rubber boom of the 1900s these companies integrated vertically into plantations either by opening new estates or by consolidating controlling shares in existing, privately-owned, estates. Examples of these actors are Guthrie, H&C, Barlow – the focus of my archival analysis – and others like Boustead and Cumberbatch. Plantation companies were private entities that started out as smaller concerns and eventually came to control large shares of the cluster’s acreage (5%-10% and above); examples are Socfin, Sime Darby and United Plantation. Over the period these two groups increasingly overlapped as the “estate departments” of the agency houses became increasingly “core” to the agencies’ overall regional operations. After WWI, these two categories of players controlled the bulk of the rubber estates in both Malay Peninsula and Sumatra and were the first to introduce palm oil in the region – either by converting their existing rubber acreage or by opening up new estates – and maintained their leadership in both rubber and palm oil up to the 1970s.

In terms of institutions, these large companies’ interests in rubber were represented by the Rubber Growers’ Association (RGA) beginning in 1907 in London and including

representatives of all major agency houses and large plantation companies such as Guthrie, H&C, Barlow, Edward Boustead, Boustead Brothers, Harper Gilfillian, Socfin, HAP among others. The palm oil interest in Malaysia was represented by the Palm Oil Pool (POP) since the 1930s and there was also a Sumatran Pool that lasted until the 1940s. In the post-colonial period rubber players in Malaya operated through the Rubber Producers' Council (RPC), which included representatives of big estates, foreign and Chinese planters as well as the smallholders. As for palm oil, after WWII the Malaysian Pool took the name of MPOP, added a Joint Selling Committee (JSC) and eventually developed into Malaysia Palm Oil Committee (MPOC), as explained in papers two and three. In 1968, the Oil Palm Growers' Council was formed to represent the whole palm oil interest – big estates, planters and smallholders – similar to the RPC (White, 2004, 11).

In total, while palm oil and rubber business interests relied on separate institutions, there was substantial crossover in the composition of the board members of these same institutions, especially as far as large estate companies were concerned. This, along with the extensive investment in palm oil by rubber companies, shows the close-knit relationship of the two clusters.

A major turning point for the palm oil cluster was Unilever's entrance in Malaya in 1947 through the acquisition of plantation acreage in Kluang for oil palm development. Unilever represented a new type of actor within the cluster because it was a large MNE accounting for a major share of global demand for palm oil products and also holding prominent palm oil interest in West Africa. As detailed in paper two and three, Unilever had no prior relationship to the Southeast Asian cluster, but heavily impacted the development of palm oil in the region during decolonization, acting as a "lead firm" for the global development of the industry and connecting the two clusters in Southeast Asia and West Africa.

As for the independent planters, for most of the 19th century both Western and Chinese players had launched small planting ventures experimenting with different crops in

Southeast Asia. Tate (1996) provides a comprehensive description of the dynamic and ethnically heterogeneous community of entrepreneurs at the roots of the regional planting activity.

The structure of the industry changed deeply when rubber was introduced and domesticated in the region and its demand boomed following the emergence of the automotive industry in the US. Between 1905 and 1910, profits surged for the planters that committed to rubber at the turn of the century. Yet, while initially most plantations were owned by the fragmented planting community, in the long-run only a small share of the newly emerged rubber cluster remained under its direct control. Between 1910 and 1917 rubber prices flat-lined and the cluster underwent a phase of concentration in the hands of the major agency houses, which absorbed the bulk of the European acreage, often retaining planters as managers and estate administrators on the field. As trading concerns, agency houses had long provided planters with a variety of specialized services, developing a knowledge advantage in terms of corporate law, organization and marketing techniques to manage large businesses. During the boom, they leveraged this know-how and their strong connections with colonial officers and with the banking and maritime interest in London, to secure the funding (and ownership) for the expansion of several client estates. As a result, a handful of these trading concerns (Guthrie, H&C, Barlow, Boustead Brothers and Eduard Boustead) came to control two-fifths of the estate companies and a similar percentage of the total rubber area (Tate, 1996 251).

Since the 1880s, the fragmented interests of the planting community were organized in changing associations, mostly representing European estate managers and a minority of Chinese planters. During the 20th century, there were several secessions and mergers among these entities reflecting different interests within this diverse group. My articles briefly referred to the most important among these: the Planting Association of Malaya (PAM) which included most groups of planters beginning in 1908 and eventually contributed to the creation of the Incorporated Society of Planters (ISP) in 1919; the United Planting Association of Malaya (UPAM) established in 1943 and represented mostly European

rubber planters after the secession of several groups within the PAM, such as the Malayan Estate Owners Association (MEOA) which grouped European and Chinese owners of all crops. Eventually, the Chinese Rubber Estate Owners Association was formed. Finally, the AVROS included rubber planters in East Sumatra.

Finally, parallel to the development of large estates, the smallholding sector emerged in the Malay Peninsula and Sumatra, due to the linkages between Chinese traders and the former indentured labor or native small farmers (Huff, 1993). The expansion of smallholdings occurred mostly in DEI during the 1920s, as a response to the Stevenson Scheme – which placed quotas on rubber production, in the attempt to constrain price volatility. The possibility to sell at a lower price than the estates led smallholders to expand their acreage, nullifying the purpose of the restriction plan and eventually yielding the opposite of its intended effect. This way, at the outset of the Great Depression smallholders surfaced as the major competitor of the estate sector, accounting for around 48% of the rubber volumes produced in Malaya and DEI (Bauer, 1948 3-7). This increasing competition from smallholders during the interwar period further contributed to the introduction and subsequent success of palm oil. Because of the larger capital and research requirements compared to rubber (see section 2.1) smallholders were excluded from oil palm cultivation until the 1960s, when FELDA introduced oil palm schemes, providing local farmers with services and incentives to enter the cultivation of the crop (Shamsul Bahrin, 1988). In total, the palm oil cluster can be considered as a “spin-off” of the rubber cluster or a differentiation of the rubber planting activity ignited mostly by changes in demand (rubber price volatility and introduction of synthetic rubber) and rivalry conditions (rise of smallholders).

With regard to the related and supporting industries, the development of both the rubber and the palm oil cluster was bolstered by strong linkages between the plantation players and major European service providers as well as close relationships with leading research

institutions. While acknowledging the crucial role of financial and maritime services in the expansion of the cluster (briefly touched in the first paper in relation to Singapore), in my third paper I concentrate on research as a major supporting activity, to analyze how knowledge generation and exchange (Maskell, 2001; Bathelt, Malmberg, & Maskell, 2004) impacted the dynamics of cluster competition. Hence, the thesis focuses on the research institutions related to palm oil production mostly in Southeast Asia and to a lesser extent in London and West Africa. Prior to WWII colonial institutions such as the Botanic Gardens in Singapore and in Bogor (DEI) and the Malaysian Agricultural Department carried out agricultural research on a variety of crops in cooperation with industry associations such as the ISP and company-funded research stations in both Malaya and DEI - Guthrie's Chemara, Barlow's Elmina, H&C's Prang Basar estates, Socfin's and HAPM's facilities. With the advent of rubber, specialized research institutions such as the AVROS' station and the Rubber Research Institute of Malaya (RRIM) were absorbed in the rubber cluster. Particularly, the extensive range of initiatives organized around rubber by the ISP – the specialized publications *the Planter*, scientific conferences and international fairs – contributed to make Southeast Asia a highly cohesive space for the sharing of agricultural knowledge. In addition to this, the framework of the empire facilitated the contact and flow of experts between different research poles, such as Ceylon, London and West Africa. In West Africa the major outlets for agricultural research included the Agricultural Departments of the Gold Coast and Nigeria as well as the Eala Botanic Gardens and the Institute National pour l'Étude Agronomique du Congo Belge (INEAC) in Mongana and Yangambi in Congo. While in West Africa there was a more extensive focus on oil palm, the contact between different scientific institutions remained scant until the 1940s, while some initial relationship was established with the Southeast Asian stations with regard to palm oil during the 1920s.

Post WWII, palm oil research was carried out in three major locations: (i) Southeast Asia; (ii) West Africa; and (iii) London. In Southeast Asia, private companies increasingly

brought research “in-house”, as existing public institutions underwent substantial defunding following decolonization. Although private stations, such as Guthrie’s Chemara and H&C’s Dusun Durian estates, continued to work on oil palms, the bulk of research funding remained devoted to improve rubber efficiency to counter the advent of the synthetic until the early 1960s.

Conversely, in West Africa, during WWII the linkages between public and private research (mostly funded by Unilever and the UAC) had intensified. During the 1940s and 1950s West African leadership in oil palm research further strengthened through the establishment of the Oil Palm Research Station (WAIPOR) in Benin in 1938 and the related Oil Palm Conference in 1949. The 1960s saw new private research initiatives and public institutions joining the Malaysian cluster. In 1963 Guthrie, H&C and Dunlop and Unilever promoted the formation of the Oil Palm Genetic Consortium (Martin, 2003 151); in 1966 the RGA changed its regulation to address crops other the rubber; in 1967 and 1968 the IPS hosted the Malaysian Palm Oil Conference in Kuala Lumpur and finally in 1969 the Malaysian government established the MARDI, a new institution for agricultural research.

Simultaneously in London, the Tropical Production Institute (TPI) and the Botanical Gardens increased their interest in palm oil. In the late 1950s, the TPI established a special unit, the Oil Palm Subcommittee (OPS); in 1964 and 1965 it hosted the international Palm Oil Conference in London; and from 1966 it sponsored the specialized publication Oil Palm News (OPN).

Finally, with regard to the government dimension, several public institutions are included as cluster stakeholders across all of my articles. As discussed in my second article, this represents a novelty as most cluster literature considers the government as an external actor to the cluster (Porter, 2000 26-27). In my first article, the British government remains in the background as generally supportive of the rubber players during the colonial period. My second article addresses the novel interplay between the aforementioned plantation companies, the outgoing British colonial government and the emerging Malayan interest in

the complex time of decolonization. As for the British colonial institutions, the analysis engages only with the entities that are involved with the rubber and/or the palm oil players in the sources. Due to their multifaceted scope, it is assumed that only some departments within them were directly involved in rubber and palm oil affairs. The analysis considers the following institutions: the colonial governments of Singapore, Gold Coast and Nigeria; the High Commissioner's Office at King's House in Kuala Lumpur; the Secretary of State for the Colonies and Colonial Office, the Ministry of Food and the Treasury in London. In 1948, the British Government created a public agency, the Colonial Development Corporation (CDC), which focused on oil palm and non-rubber crops in its estates and was among the first to cooperate with FELDA for development of smallholding schemes (White, 2004, 274).

As for the Malay(si)an Government, the paper mostly focuses on the FELDA, the land agency designed by first Malayan Deputy Prime Minister Tun Razak (1957-1970) for the coordination of Malaysia's smallholding interest. As *ad-interim* Minister of Natural Resources and head of the National Land Committee, Razak *de facto* directly controlled FELDA for all the period under study (Shamsul Bahrin, 1988 14). Similar to CDC, as a semi-public entity, FELDA represented an ambiguous player within the cluster. It was comparable to a major estate company in size and scope and acted like a private player, but was subject to the government's budget and auspices. From this ambiguity FELDA derived also its power: in my second article I explain how the agency managed to break the foreign ring in the palm oil cluster and carved out a place for the smallholding sector, by combining collaboration with private estate companies on the field and stern governance at the cluster's institutional level.

3. Literature review on clusters

This section traces the evolution of the literature on industrial concentration, reviewing the major contributions at the core of cluster theory, and pinpoints the theoretical discussions most relevant for this study. It concludes by arguing that this historical analysis delivers a multidisciplinary – or, as explained below, “transdisciplinary” – perspective as a means of addressing some of the puzzles and lacunas raised in the cluster debate in a comprehensive fashion.

3.1 Industrial concentration as a foundation of cluster theory

The topic of industrial concentration in a specific location is an established area of research in the social sciences. The standard reference for this literature is Alfred Marshall, who is credited as the first to discuss the advantages of localization for economic activity in his *Principles of Economics* (1920). Marshall coined the expression “industrial districts” after observing the high density of small and medium-sized enterprises (SMEs) specializing in the same product in specific regions of the UK, such as Lancashire cotton, Staffordshire pottery, and Sheffield cutlery. Companies operating in these industrial areas could benefit from cost savings (such as lower input prices) and higher specialization resulting from co-location. These benefits were understood as being exogenous to each individual firm in the area but endogenous to the group of companies there. Marshall identified a triad of factors, later named “agglomeration economies,” as the sources of these externalities: (i) a skilled labor pool, (ii) local non-traded inputs; and (iii) information spillovers due to proximity (McCann, 2006).

From the 1950s, the concept of industrial districts was revamped to explain new organizational forms emerging in Europe as alternatives to the declining Fordist model (Trigilia, 2002 197-210). Faced with increasing consumer demand for differentiated products, higher commodity prices, and new competition in labor-intensive production from

newly emerging countries, the structure of massive, vertically integrated companies proved to be overly rigid. This resulted in the shift of productive models towards more flexible systems, which in turn led a variety of new organizational forms to flourish. In particular, Marshall's theory was initially extended to analyze the successful performance of regionally concentrated systems of production based on family-owned and highly specialized SMEs.

3.2 Following Marshall: industrial districts, innovative spaces, and clusters

Since the 1980s, Marshall's ideas have inspired several seminal works in different fields of the social sciences that have defined the phenomenon in different ways: (neo-Marshallian) industrial districts (Bellandi, Becattini, & De Propiis, 2009), learning regions or *milieux innovateurs* (Aydalot, 1986; Scott, 1985), and clusters (Karlsson, 2008; M. E. Porter, 1998a).

The neo-Marshallian industrial district tradition emerged from the work of economic sociologists and historians (Becattini, 2004; Brusco, 1990; Piore & Sabel, 1984) seeking to account for the successful performance of sectoral groups of SMEs in the northeastern and central part of the Italian Peninsula – the so-called “Third Italy” – after the 1970s. This literature then expanded to encompass the variation of production systems across other advanced economies in Western Europe, North America, and Japan. In the neo-Marshallian districts, production occurs in dense industrial networks via an “extended division of labor between small and medium-sized firms specialized in distinct phases or complementary activities within a common industrial sector” (Zeitlin, 2008 223). The superior flexibility of this organizational design arises from cooperative relations based on trust, which in turn allow for the rapid circulation of knowledge in non-codified (tacit) forms through informal, often face-to-face, exchange. This new type of district complements the traditional Marshallian model by positioning social and cultural factors at the root of the production system. In light of this, the literature is indebted to Granovetter's (1985) concept of social

embeddedness, which conceives institutions as socially constructed and dependent on dyadic relationships as well as actors' positions within larger social networks.

At the same time, other scholars in the field of Economic Geography have provided their own interpretation of the phenomenon of industrial concentration, introducing the concepts of “new industrial spaces” (Scott, 1985; Storper & Walker, 1989), “innovative milieu” (Crevoisier, 2004; Maillat, 1998), and “learning regions” (Lundvall, 1995). In its different national variations (Californian, French, and Scandinavian schools respectively), this scholarship, generally dubbed “New Economic Geography,” presents aspects of both a continuation of and departure from the new industrial districts literature. Endogenous effects related to local capabilities, path dependency, and the embeddedness of local institutions in shaping industrial development remain a major influence in this approach. However, New Economic Geography deviates from the industrial districts approach in terms of its level of analysis, core questions, and methods. First, these studies take as their point of departure larger territories rather than local communities and companies, and explore the regional factors informing sustained growth patterns among localized groups of firms. Second, dynamics of knowledge formation play a much larger role in regions' performance in the Economic Geography literature than in the industrial district tradition. In fact, economic localization and Marshall's “information spillovers” are interpreted as learning dynamics and technological trajectories within a specific space, region, or milieu. From this perspective, the local dimension works as a buffer between markets and organizations (MacKinnon et al., 2002), which reduces risk for companies and provides sources of competitive advantage.

Finally, in terms of methods, the two traditions seem to suffer from opposing problems. The empirical focus of the studies on industrial districts uncovers different versions of the original neo-Marshallian type. Yet, including all possible variations in a multiplicity of similar cases endangers the analytical power of the industrial district concept (Zeitlin,

2008). In contrast, the abundance of theoretical contributions within the geography camp does not coalesce into an equally relevant body of empirical investigation (MacKinnon et al., 2002). As such, Saxenian's (2000) comparative study of technology firms in the two different tech regions of Silicon Valley and Route 128 in Boston represents both an exception and a *trait-d'union* between the two traditions. In this study, questions typical of the New Economic Geography approach are investigated through ethnographic methods from a historical and comparative perspective. By controlling for product type and analyzing the social interplay in both locations for more than a decade, Saxenian is able to identify the impact of different institutional structures on the organizational design of both locations as the major discriminant of regional performance. However, Saxenian's study faces two major limitations that affect both the industrial districts and the Economic Geography literatures: (i) it does not fully explain the relationship between regional and national regulatory frameworks, and (ii) it does not account for the connection between these industrial complexes and international markets.

Both points have been partially addressed by Porter and Krugman in their highly debated and influential contributions on the topic of industrial agglomeration. Krugman (1998) focuses on the endogenous effects of industrial concentration, applying the methods and vocabulary of mainstream economics to provide a new reading of the role of geography in growth dynamics (Fujita, Krugman, & Venables, 1999). Specifically, Krugman interprets Marshall's economic agglomerations as the result of increasing returns to scale generated by proximity. This perspective partially overcomes location specificity and enhances the role of trade in industrial development, stressing the fact that (several) inputs for production can be imported to a specific location from elsewhere. This point will be discussed further below.

As for the relationship between regional and national geographies, a major contribution comes from Porter (1998b), who revisits the Marshallian idea of economic concentration in the domain of business strategy. Porter overcomes the industrial district model largely based

on systems of small and medium enterprises and coins the concept of a “cluster.” In Porter’s definition, a cluster is “a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities” (2000 16); hence, clusters can include organizations of different sizes and types (M. Porter & Ketels, 2009). In light of this, industrial districts can be considered a type of cluster as they comprise companies of small and medium size that are normally specialized in light manufacturing (Declercq, 15; M. Porter & Ketels, 2009 181). Further, Porter interprets the existence of specialized industrial locations as competitive tools or strategic weapons available to nations as a means of succeeding in the international markets. Particularly, he departs from the concept of comparative advantage, according to which countries should specialize in what they do best, and instead creates a framework that allows countries to identify their unique sources of competitiveness. In light of this, clusters are conceived as the result of the interplay of different environmental factors, the so-called “diamond,” (see section 2.5 above), but are also policy tools as they can contribute to the performance of nations as a whole.

3.3 Cluster: an appealing concept with “fuzzy” boundaries

The appeal of the cluster concept triggered further theoretical developments brought about by geographers and sociologists, who integrated elements of New Economic Geography and district research into the cluster agenda. The result was the emergence of “knowledge-based” cluster theory (Maskell, 2001; Maskell & Kebir, 2005) and the “evolutionary approach” to clusters (Bresnahan, Gambardella, & Saxenian, 2001; Trippel & Todtling, 2008). While departing from different epistemological assumptions, by adopting the “cluster” nomenclature, these approaches accept Porter’s conceptual framework and take for granted key aspects of the “diamond,” especially with regard to the dynamics of rivalry and cooperation that result from co-location (Wolfe & Gertler, 2004 1077).

Porter's work extended the research agenda on economic agglomeration to include the effects of increasing globalization on local production systems and sparked a policy discussion on the relevance of industrial concentration (M. E. Porter, 2004). However, cluster research has been criticized for lacking a robust theoretical underpinning, to the extent of resembling a "brand rather than an intellectual product" (Markusen, 1999; R. Martin & Sunley, 2003), and for leaving several foundational aspects, such as the social interaction and the internal organization of the firms in the cluster, largely understudied. In similar fashion, both industrial districts and new economic spaces have been accused of using constructs whose explanatory power is weak (MacKinnon et al., 2002; Zeitlin, 2008) as they do not clearly define "industrial districts" and "regions." If clusters are difficult to define *per se*, it may be advisable to examine them as part of broader structures or in relation to other organizational forms. In fact, before advancing hypotheses on the ontological nature of clusters, it is necessary to consider another widely acknowledged and problematic aspect of this literature: the relationship between the cluster as a localized organizational form and regional, national, and even global systems of production.

3.4 Clusters beyond location: the problem of the cluster in context

The issue of "self-containment" in the study of clusters has been raised separately for each of the three theoretical approaches presented above. While Martin and Sunley argue that clusters are "self-contained entities abstract from the rest of the economic landscape" (2003 17), Zeitlin observes that "the self-contained character of the districts has been overstated," calling for more research on the "relationship between districts and the wider world" (2008 219). Finally, in the domain of Economic Geography, MacKinnon et al. point out that the literature on regions tends to "underemphasize the importance of wider extra-local networks and structures" (2002 293).

The common core assumption of all the streams of literature on industrial agglomeration is that location and interaction at a local level are especially critical to industrial performance. This idea is famously distilled in Porter's "location paradox," according to which in an increasingly globalized economy competitive advantage lies in local things. On the one hand, Porter assumes that globalization leads to a reduction in transport and communication costs, helping regions to specialize according to the principle of comparative advantage. On the other hand, much of the Economic Geography literature argues that innovation within a cluster is highly dependent on the quality of the local regulatory and institutional environment, and therefore helps cluster members succeed in the global economy. Nevertheless, the greater efficiency produced by globalization can also explain the emergence of more complex, decentralized systems of production, allowing producers to be closer to the customers and adapt to local requirements easily. This is the case of major consumer goods multinationals and global car manufacturers (Palepu, 2011; Sturgeon, Van Biesebroek & Gereffi, 2005). Further, as Saxenian's case of Route 128 and Porter's case of Nokia in Finland (M. E. Porter & Solvell, 2011) show, the same institutional environment that allows clusters to succeed in the global markets at one time can be the very cause of their decline at another, eventually leading them to become inadequate or unable to adapt sufficiently to changes in demand – the problem of so-called "institutional lock-in."

In sum, much of the available scholarship on industrial agglomeration suffers from "tunnel vision" (Declercq, 2017: 11), as it focuses disproportionately on local sources of competitiveness and the relationship between cluster and location, without giving the same attention to the influence of (i) distant/non-local sources of growth (dispersed sources of knowledge; national vs regional regulatory frameworks; market-based standards and requirements) and (ii) other organizational forms (e.g., similar clusters, business groups, and GVCs).

Two major lines of research have so far attempted to solve the problem of linkages in cluster theory looking at each of the abovementioned dimensions: (i) the knowledge-based

cluster approach, through the model of “local buzz” and “global pipelines,” in Economic Geography and the (ii) GVC approach in Political Economy and Development Economics. While both perspectives address the problem of the impact of external factors in cluster progression, they differ in their conceptualization of the mechanisms enabling coordination between the local and global levels, focusing on knowledge flows and governance respectively.

Knowledge-based cluster theory argues that cluster advancement is based on knowledge creation through balanced access to and exchange of both tacit and codified knowledge at the global and local levels (Bathelt, Malmberg, & Maskell, 2004). While the “local buzz” identifies the externalities resulting from proximity, “global pipelines” are an element of novelty, representing a tool to integrate the knowledge pool of the cluster with sources of knowledge available elsewhere. Global pipelines have the advantage of combining “multiple selection environments that open different potentialities and feed local interpretation and usage of knowledge residing elsewhere” (Bathelt et al., 2004, 42) and are defined broadly as “channels of communication to selected providers outside the local milieu,” or “bodies of knowledge” used in distant interaction (Maskell, Bathelt, & Malmberg, 2006, 14-17), so they can encompass several organizational forms, from social networks which are not defined geographically to formal institutions (universities, research centers) and eventually other clusters. In order to intertwine the two, buzz and pipelines require a *shared institutional structure*, but, while co-location makes firms’ participation in the local buzz readily available via constant comparison and monitoring, global pipelines must be carefully constructed “developing a share institutional context which enables joint problem solving, learning and knowledge creation” (Bathelt et al., 2004 43) with properly selected partners. This triggers a deeper assessment of the role of the institutional framework in (i) enabling knowledge creation and transmission and (ii) regulating mechanisms of inclusion and exclusion to/from buzz and pipelines. Finally, although succeeding in integrating external sources of knowledge in cluster development, this

approach does not completely overcome the problem of location specificity, as global pipelines channel knowledge that is then repackaged locally, without considering that cluster upgrading might be the result of external pressures alone.

3.5 Clustering in less-developed countries and the GVC approach

A second response to the problem of “self-containment” or “locational obsession” comes from the fields of International Political Economy and Development Economics. The issue of external linkages became critical when scholars started examining the phenomenon of clustering in less developed countries and observed that sources of growth were rarely only location-specific and more frequently depended on factors imported from other locations or even located far away from where production took place. Despite the wide range of literature on the topic, the majority of studies on economic agglomeration, starting with that of Marshall, have indeed covered a rather homogenous pool of cases in terms of contextual conditions, namely clusters (or districts or regions) in industrialized economies, characterized by free trade and political stability. According to Porter, “poor countries lack well-developed clusters” (M. E. Porter, 1998a, 86), mostly because of structural deficiencies in their business environment. In less developed economies, industrial activity tends to be concentrated around capital cities because of the “lack of infrastructure, institutions, and suppliers” in the periphery or because of intrusive government that centralizes economic activity close to the centers of power. In light of this, clusters are a direct product of liberal, capitalist economies and, in Porter’s words, “an especially controlling factor for countries moving from a middle-income to an advanced economy” (M. E. Porter, 1998a 86).

Several studies focusing on the developing world recognize the importance of clustering for economic development, especially in the first stage of growth of small and medium-sized enterprises (Dijk & Rabellotti, 1997; Schmitz & Nadvi, 1999). Schmitz and Navi compiled several contributions in a special issue of *World Development* on clusters in developing

countries and found that successful clusters are part of an international trading nexus and leverage on local institutional frameworks, ensuring mechanisms of trust and sanction among local actors. As a consequence, the development of these clusters is often related to their insertion into broader production structures, also theorized as global commodity or value chains (Bair & Gereffi, 2001). Unlike cluster theory that mostly focuses on institutional recipes for cluster success, the GVC literature suggests that developing nations lacking a supportive institutional framework can still advance by joining these transnational spaces of production. More specifically, cluster upgrading can be externally enforced by “lead” firms - core actors in cross-border business networks. Lead firms represent “powerful nodes” that control the chain across different locations, through coordination mechanisms that do not involve any direct ownership of the firms (Gereffi 1999; Ponte & Sturgeon, 2014). This control is exercised via diverse types of governance, namely the “coordination of economic activities through [inter-firm] non-market relationships” (Humphrey & Schmitz, 2002). Indeed, the GVC framework identifies four types of network coordination to explain the (vertical) linkages between different value chain activities; governance is conceptualized as modularity, relation, captivity (Gereffi, Humphrey & Sturgeon, 2005), and normalization (Gibbon and Ponte, 2005).

By showing that cluster upgrading can result from factors independent from the cluster location, the GVC approach overcomes the problem of location specificity and conceptualizes the cluster as part of the broader global economic system. With regard to the integration between GVCs and clusters in less-developed countries, however, there remain a series of unresolved issues in the literature. The GVC framework has been criticized for overlooking the often-challenging regulatory and institutional framework of the developing world in the construction of chain-based relationships at the cluster level. As illustrated through the case of Vietnam, Thomsen (2007) stresses how key local political figures influence the process of supplier selection, calling for a more balanced analysis of the relationship between lead firms in the chain and political and institutional environment in less developed countries. Further, although the GVC approach has its origin in the

dependency theory (Trigilia, 2002), it excessively concentrates on export-oriented clusters and presents firms of host economies largely as suppliers to MNEs from developed countries. As a result, in discussing how GVC integration can help less developed countries to upgrade their clusters, this scholarship conveys a “passive” image of local firms. As an exception on this matter, Pananond (2015; 2011) explores how companies from emerging economies can leverage on GVCs as springboards for becoming champions of globalization and participating actively in the making of the global economy. Finally, while the potential benefits of the assimilation between cluster and GVCs are widely recognized in theory, research focusing on how this process unfolds in practice is still in its infancy. As the scholarship on clusters and CSR has pointed out (Lund-Thomsen, Lindgreen & Vanhamme, 2016; Gereffi & Lee, 2016), in developing countries the inclusion of small and medium-sized businesses represents a major challenge, as lead firms often foster upgrading only to the advantage of selected cluster players. Further, cluster-GVC relations may bring about dysfunctional outcomes for social, environmental and political conditions in emerging economies (Lund-Thomsen & Pyke, 2016). In a nutshell, economic upgrading does not necessarily pair with social upgrading when clusters are included in GVCs in less-developed countries. In light of this, clusters are spaces of interaction between local government institutions, civil society and foreign companies, where, if appropriately designed, (horizontal) governance can ensure joint social and economic upgrading of the host location. To this end, Gereffi & Lee (2016) provide a preliminary model for combining vertical chain-like and horizontal cluster-like governance types that offers a more granular set of solutions for balanced growth within clusters and broader-reach spillovers at the local level.

In general, since its inception in the 1990s the GVC framework has sought to balance the need for comprehensive theorization of chain governance and the risk to overlook the diversity of mechanisms linking different nodes in the value chain. However, by placing emphasis on lead firms whose choices are largely determined by the type of chain where they belong to, the approach tends to favor structure over agency and contingency. Critics

within the field call for a more open approach that overcomes this perceived duality between local and global to embrace the growing organizational complexity of the global economy, accommodating the full range of forces, actors and spatial scales at work (Sturgeon, Van Biesebroek & Gereffi, 2008). A recent contribution by Ponte and Sturgeon (2014) introduces a multi-scalar model that explains how micro and meso-level dynamics are embedded at the macro level of the chain through different modalities of governance. This analysis also attempts to move away from unipolar chains – where only one set of actors have the power of shaping the chain, such as buyer-driven, supplier driven chains – to embrace more complex multipolar designs (Ponte & Daugbjerg, 2015).

3.6 Clusters in historical perspective

The literature seems to have come full circle. Undoubtedly, locality does matter, but the question of how much it matters is still up for debate. Both knowledge-based and GVC theory have acknowledged the need to overcome the local-global dichotomy through a meso-level view that is able to include more amorphous and complex structures. Since cluster development seems to be the result of a constant interplay and trade-off between external and internal pressures, looking at the phenomenon of clustering in historical perspective can provide the type of longitudinal analysis needed to examine this tension between local and non-local factors. Further, the historical approach allows us to explore this topic at the level of individuals and companies, bridging a widespread lacuna in existing accounts on clusters, which have generally been characterized by a lack of historical focus.

Two very recent contributions are notable exceptions to this in that they tackle the issue of external linkages by integrating actors into the above-mentioned frameworks of GVCs and global pipelines respectively. In his study of the fur district in Saxony during the 19th century, Declercq (2015) reconciles the global and the local level, building a framework to synthesize the GVC and the industrial district approach through the analysis of the transborder interaction of actors. Moreover, the study stresses the centrality of lead firms in

triggering dynamic responses to external pressures in the form of collaboration and collective action at the local level. Similarly, Henn's analyses of the diamond district in Antwerp (Henn & Laureys, 2010; Henn, 2012) point out the relevance of transnational entrepreneurs and their strategic action in constructing global pipelines between India and Belgium. The relevance of these studies goes beyond their respective theoretical contributions to GVC and knowledge-based cluster theory, as they show the value of historical methodology to other disciplines.

The proliferation of studies generated from each stream of research presented above has been so intense as to inform the compilation of several meta-studies (Cruz & Teixeira, 2010; Hervás-Oliver, Gonzalez, Caja, & Sempere-Ripoll, 2015; Lazzeretti, Sedita, & Caloffi, 2014) that apply bibliometric techniques to provide a categorization of the literary production on the topic. Although this research proves the multidisciplinary appeal of the topic and acknowledges some degree of "contamination" among different fields, it also shows how these streams of scholarship have remained largely segregated, with similar discussions and lines of inquiry developing in parallel within the boundaries of different disciplines. Wolfe and Gertler (2004) identified three major cross-disciplinary themes in the cluster literature that need further research: (i) path dependency and cluster formation, (ii) the nature of knowledge and learning in clusters, and (iii) the integration of the cluster at the broader regional, national, and global levels. These themes are in line with those proposed by Schmitz and Nadvi (1999): (i) external linkages, (ii) knowledge systems, and (iii) cluster comparisons.

In this study, I address the above-mentioned themes through historical lenses and argue that researching past events may be a preferred strategy for looking at complex phenomena such as industrial concentration, development, and globalization. Examining the role of actors' decisions and contingency on these phenomena helps disentangle trade-offs and bridge otherwise isolated levels of analysis. In the papers composing the thesis, history offers the

preferred means to achieve a coherent view of the evolution of the palm oil cluster and its relationship with the local and global economy, addressing themes such as: cluster emergence, governance, and competition; the investment and localization strategies of MNEs; and the integration of emerging economies into the global economy. These are relevant to numerous disciplines, including Development Economics, International Business, and Economic Geography. In this regard, my goal is to adopt a “transdisciplinary” rather than a multidisciplinary approach, embracing the specificities of and differences within the field as distinct ways of tackling the same themes (Leblebici, 2013).

4. Research design

What does the multidisciplinary scholarship on clusters teach us about their role in the global economy? Are clusters products of local exceptionalism, or do they rather result from the increasing mobility of capital and knowledge – in other words, globalization? The understanding of clusters that we have gained from the above-mentioned debates suggests that the interaction between the local and global levels of analysis remains a contentious issue. There is agreement on the fact that clusters are agglomerations of firms of different kinds and that they are normally concentrated in one geographical location. We also know that their location accounts for part of their success, but often other sources of competitiveness can derive from a cluster's relationship with the outside world. The issue has so far been framed as a problem of linkages: how do clusters connect a specific location to the outer world? However, framing the problem around linkages lets us fall in the “locality trap,” as it assumes that clusters are “hooked” to a specific environment.

In emerging economies, clusters can be the result of external investment; when they host global companies, they are often included in broader structures of production or international trading networks. In the attempt to overcome self-containment, clusters have been presented as tools for “upgrading,” that is to say necessary infrastructure enabling developing countries to absorb the upside (and downside) of globalization. On this point, cluster theory interrelates with Development Studies and International Business. Historically, in the developing world, clustering effects have straddled the thin line between local development and global exploitation.

In short, moving the focus of cluster studies to the realm of developing economies sharpens the above-mentioned tension between local and global, extending the problematization to how clusters respond and adapt to individuals' motives and decisions. Consequently, this new focus allows us to ask *how* clusters connect a specific location to the outer world and

why they come to do it. These questions are the key drivers of this thesis. The choice of the palm oil cluster in this specific time frame (1880s–1970s) and geographical setting (Malaysia and Sumatra) is instrumental in providing a comprehensive discussion of these two trade-offs on clusters: (i) local vs global determinants and (ii) local development vs global exploitation. In order to marry these dimensions, this thesis adopts an historical approach and positions the phenomenon of clustering in the broader context of international business and globalization.

4.1 Temporal scope

Business and economic historians have contributed enormously to the study of globalization, showing that actors and companies are at the center of this process (Bayly, 2007; Fitzgerald, 2015; G. Jones, 2008). These scholars have also shown how elements of global economic systems have existed for centuries, although initially constrained by the enormous distances involved. The process of globalization, that is to say the economic integration of distant locations, indeed became more visible with the acceleration of transborder commercial exchange (trade and foreign direct investments (FDIs)) made possible by technological advances in transport and communication in the 1880s, which Jones defines as the First Global Economy (2008 143).

According to Jones, the First Global Economy started to slow down with the outbreak of World War I (WWI) in 1914 and collapsed in 1929 with the Great Depression, the period of so-called deglobalization. In between the two wars, cross-border integration continued, but was in decline. The Second Global Economy started to emerge when trade flows began to return to their Victorian levels in the 1950s, but this occurred mostly in the US, Japan, and Western Europe. This new global integration eventually accelerated when developing countries, most notably China and India, began participating in international trade from the late 1970s.

Despite the undeniable impact of international trade and investment in the developing world, globalization has always been and remains primarily a “Western phenomenon,” largely involving the triad of North America, Europe, and East Asia. Initially, the First Global Economy affected the territories of the global South only selectively, especially if they were parts of colonial empires and mostly in the areas surrounding ports and trading locations, where cosmopolitan traders operated in dense networks (Barton, 2014; C. A. Jones, 1987). During the First Global Economy, developing countries were primarily suppliers of raw materials and firms from rich countries in the global North endowed the global South with transport infrastructure and utilities, while in the Second Global Economy some of these locations were transformed into low-value-added manufacturing centers for the advanced economies. Thus, the legacy of the First Global Economy is reflected in the massive investment in infrastructure, which laid the basis for the present design of GVCs, often highly dispersed but locally clustered. Jones’ periodization is indeed accepted almost *à la lettre* by the GVC perspective, recognizing two major phases: the “first global unbundling”, between 1870 and 1913, and the “second global unbundling”, from 1951 (Baldwin, 2012).

Taking a longitudinal view of the process of globalization, Business History helps to position the emergence and evolution of clusters in developing countries not only as local phenomena but also as elements of a continuous non-linear (and often unequal) exchange between local and global that has continued since the First Global Economy. In order to understand how the organizational form of the cluster was involved in this exchange, this study will focus on the development of the plantation activity in Southeast Asia between 1880 and 1970. Thus, taken together, the papers cover the peak and gradual decline of the First Global Economy and conclude just before the beginning of Second Global Economy in Southeast Asia.

Three reasons justify the decision to begin in the 1880s. First, from the economic point of view, this is when Jones identifies the beginning of the First Global Economy. Second, in the case of this cluster, the First Global Economy dovetails almost completely with the stabilization of colonial rule in the region. At the end of the 19th century, Britain strengthened its formal control of the FMS and the Straits Settlements shifted from the EIC's supervision to become Crown Colonies. Similarly, the Dutch launched the open-door policy to foreign investors in the DEI and, despite local resistance, obtained full control over Sumatra. Finally, in the 1880s, the rubber seedlings of *Hevea brasiliensis* reached the Singapore Botanical Gardens via London and Ceylon. In 1888, Henry Ridley became director of the Gardens in Singapore and undertook a relentless effort to domesticate and promote the crop among foreign planters (*The Strait Times*, 1983). The introduction of the Hevea has been preferred over that of the oil palm because of the centrality of rubber for the development of the cluster and the subsequent evolution of the palm oil industry. The emergence of the rubber cluster expanded the existing regional planting activity from a colonial to a global scope, transforming the Malay Peninsula and Sumatra into key suppliers of the growing automotive industry and hence integral parts of the global economic system. In this regard, my first article analyzes the process of cluster emergence in this specific period.

From 1914 to the outbreak of WWII, the history of the palm oil cluster lags behind Jones' periodization of cross-border investment, because neither Malaya nor Indonesia were affected by the Great War and remained colonial possessions for the entire interwar period. Further, despite dramatic price volatility, the cluster maintained a crucial role in the arms race forestalling WWII. Indeed Southeast Asia was the primary global supplier of rubber, providing 75% of volumes to the primary global buyer, the US, which in turn accounted for 75% of demand (LMA CLC/B/112/MS37394/003, 1924 25(11)). Hence, while 1914 generally marked the unraveling of international trade, the Great War meant increased profits for the rubber cluster, while agency houses continued expanding their acreage until

1919 and built substantial pecuniary reserves. Although in the early 1920s rubber producers were faced with sluggish demand, price volatility, and increasing competition from smallholders, capital investment continued to flow to the region during this decade. The cluster managed to survive by exploiting its monopolistic position and curtailing rubber production under the Stevenson Restriction Plan (1922-1928), resolutely supported by Winston Churchill, who at the time was Secretary of State for the Colonies. Simultaneously, rubber producers invested in research and diversification on other crops, especially oil palm. These players had a longer-term attitude towards their foreign ventures, so oil palm acreage expansion proceeded in both Malaya and Sumatra throughout the interwar period, until the region was hit by the Great Depression in the early 1930s. In total, the “disintegration phase” for this cluster was shorter than in the rest of the world, but characterized by high volatility in investment flows.

The overall analysis partially overlooks the developments of the cluster between 1929 and 1945. These years saw a temporary contraction of international trade compared to the pre-1914 levels, marking the end of the First Global Economy. After the slow-down of the 1930s in the region, plantation activity almost halted following the Japanese invasion of Southeast Asia between 1941 and August 1945. For the purposes of this thesis, those 15 years are considered outliers: they are not terribly informative about the dynamics of cluster evolution, and they offer only unsatisfactory explanations of how and why the cluster helped the countries under study to integrate into the global economy. However, the period does hold some relevance as a crucial watershed in the history of the cluster and of the region more broadly. It defines the end of the full colonial influence in both British Malaya and the DEI, the beginning of the process of decolonization leading to the formation of modern Malaysia and Indonesia, and, consequently, the provisional divergence in the cluster development between the Malay Peninsula and Sumatra.

The analysis concludes in the early 1970s, when, in my view, Malaysia had only recently joined the Second Global Economy. While Indonesia follows Jones' model for developing economies as it entered the global economy only in the 1980s, with Suharto's liberalization program, Malaysia is an exception, as it spearheaded the trend for developing countries while still lagging slightly behind the advanced economies. The country started to participate in the global economic system from the very beginning, that is to say in the 1950s, as foreign investment and trade recovered in the late 1940s and continued for the whole decolonization process. However, global integration cannot be deemed to have been completely effective for the country until the formation of modern Malaysia in the 1960s because of the political difficulties posed by decolonization and the related civil conflict, the Emergency (1948-1960), and the fact that most exports were still channeled primarily to Britain. Subsequently, the Malaysian government did impose restrictions on foreign investment during the 1970s, but at that time the country had established itself as a global agricultural exporter and was moving its export specialization to the processing and manufacturing sector. Moreover, my study ends in the 1970s because, by that time, the cluster had reached a level of global leadership not dissimilar to its modern-day role – at least in Malaysia. First, in the early 1970s, palm oil overtook rubber as the core regional agricultural product and became the major crop in terms of acreage in the Malay Peninsula (Khera, 1976; Shamsul Bahrin, 1988). In the same period, the Southeast Asian palm oil cluster became “global,” that is to say that it surpassed the competing African locations for good, becoming the only hub for palm oil production in the world. Finally, as explained in the second article below, by the 1970s decolonization can be said to have concluded, at least with regard to the cluster, as the Malaysian Government started taking concrete steps to reduce foreign ownership and to take control of the plantation economy.

4.2 Geographical scope

Although today palm oil cultivation has massively extended to the islands of Borneo and Java, and even to Papua New Guinea, this study focuses on the geographical core of the cluster, where the first rubber and palm oil estates were launched prior to WWII: the Malay Peninsula, including Singapore, and, to a lesser extent, the island of Sumatra.

The decision to focus specifically on these two locations was based on the fact that these are the two core areas where the organizational structure of the cluster emerged prior to the introduction of the oil palm. In contrast, plantations were launched in the surrounding islands only later, in the late 1950s, mostly to extend the acreage of existing players; these, therefore, will not be included in the scope of this study despite now being integral parts of the cluster.

The Malay Peninsula and Sumatra were very homogenous in terms of ethnicity of the population, climatic and geographical features, and level of infrastructure. Further, especially during colonial times, their respective plantation activity benefited from proximity to Singapore and the linkages between the Western, Chinese, and Indian trading communities, involving a continuous exchange of know-how and technology (Chiang, 1970; Huff, 1993).

Because of the dominant role of Malaysia in the establishment of the cluster, however, the analysis focuses largely on the developments in the Malay Peninsula; meanwhile, Sumatra will remain mostly in the background as a reference point. Although the DEI remained a major international player in rubber and palm oil and a source of important agricultural knowledge during the whole colonial period, and especially in the 1920s (Joseph, 2008), the constitution of the cluster ended up being primarily a Malaysian affair, because the ownership and the centers of decision-making power lay in the British Empire more than on the Dutch colonial side. Although rubber had been domesticated almost simultaneously in

Malaya and Sumatra, foreign (and mostly British) rubber players based in Malaya quickly became dominant, controlling not only the majority of acreage in the Peninsula but also vast proportions of the estates in North and East Sumatra. Whether or to what extent this is dependent on the two different colonial systems is beyond the scope of the present study and would require a more detailed analysis. Nevertheless, colonial regulation undoubtedly did matter in this regard: from the end of the cultivation system in 1870, the Dutch colonial authorities introduced an open policy towards foreign investment and land grants for natural resource exploitation which continued through the rubber boom in the 1910s. In contrast, British administration across all colonies became increasingly reluctant to grant land concessions to foreign firms. While generally more supportive to European plantation developers than its African counterparts (Johnson, 2007), the British colonial administration in Malaya became increasingly conservative from the 1910s on, placing restrictions on land alienation in a “romantic anti-capitalism” mood, aiming to “protect” Malay rural society and culture (Yacob, 2008). Therefore, when British agency houses such as H&C or Guthrie with large interests in British Malaya flocked into land-abundant Sumatra, the same did not happen for Dutch players in the Peninsula. As early as 1911, British agency houses controlled more than 60% of the plantation acreage in Sumatra (Swart, 1911). Once palm oil started to be developed in the Indonesian island, these rubber players could easily transfer the crop to their Malayan estates.

Finally, besides local factors, the role of Britain as the dominant colonial power and the influence of the City of London as the primary global financial center and major funder of rubber ventures in the region also helped to make rubber a largely British endeavor. In 1910, Malaysia alone accounted for 1.6% of British FDI stock, and in terms of sectoral distribution plantations it represented 2.6% of global FDIs (Fitzgerald, 2015 53-55).

As for palm oil, the cluster as it is today owes much more to the Malaysian side than to the Indonesian one. Although the early development of the crop remained primarily in the

hands of planters in Sumatra, after WWII the industry shifted to British Malaya, as Indonesia gained independence and took over foreign invested properties, leading to the rapid decline of the industry under President Sukarno (White, 2012). British companies in Malaya developed palm oil as a major alternative to rubber in the post-colonial period and the new Malayan government handled the process of decolonization well enough to involve foreign companies in the development of smallholding schemes for the crop. Finally, it was Malaysian capital and knowledge that, from the 1980s, revived the Indonesian palm oil industry, of which it still owns a large share (Varkkey, 2013).

One final reason for prioritizing the Malaysian over the Indonesian angle in this analysis of the cluster is that Malaysia managed to use the existing cluster's organizational structure as a means of simultaneously upgrading the local economy and integrating it into global markets. Despite the continuous frictions between different stakeholders of the plantation activity during decolonization, in Malaysia the cluster functioned as a channel of development and went from being a bastion of colonial exploitation to a driver of local growth, which later spread across the whole region and continues today. Without a doubt, Malaysia represents an exceptional case among most similar middle-sized developing economies, where the departure of colonial powers opened civil and ethnic conflicts, put in power corrupt and dysfunctional governments, and often led to long periods of economic stagnation and poverty before they could embark upon industrialization and access global trade networks.

As explained in the second and third articles below, although between 1945 and 1970 Malaysia was never entirely safe from ethnic and civil tension, political crises, or more or less explicit hostility towards the former colonial power, decolonization in the country involved a gradual shift from British to native rule in both the political and economic spheres. Although foreign investors never stopped expressing constant preoccupation during the nation-building process, in Malaysia foreign business activity continued its expansion

and foreign investors were allowed to retain large shares of the surplus produced in the three post-war decades up to the 1970s, when the Malaysian government took the first steps to reduce foreign ownership. The massive British interest in the Malayan economy and the UK's prolonged military presence in the country, even after independence, undoubtedly played a role in the direction that new Malaysia chose for its own development. However, the incumbent Malaysian Government did not necessarily espouse the development strategies inspired by the Washington consensus or World Bank and IMF propositions, and nor did it side with the communist powers and their anti-capitalist crusade as soon as British control waned. Rather, Malaysia embraced its own development formula, in line with the agenda of the Bandung Conference of 1955.

4.3 Research question

Overall, because of its narrow geographical focus and its longstanding connection with foreign interests, the palm oil cluster in Southeast Asia constitutes a good case through which to study clusters not only as champions of localization but also as active actors in the global economic system.

Business History has shown that globalization is not a new phenomenon; rather, it is rooted in the transnational activity of entrepreneurs and companies. According to Fitzgerald, “the decisions of multinationals have affected the welfare of nations and national economies have affected the emergence and location of international business” (2015 17). In turn, this has provided the necessary conditions for internationally competitive clusters to take shape and for global companies to thrive within them. Positioning clusters in the larger perspective of historical international business relations can therefore help answer two questions, which are relevant for both Economic Geography and Development Studies:

How do clusters manage to be global and local at the same time?

How did the palm oil cluster manage to be an actor of globalization and help Malaysia and Indonesia integrate into the global economy?

My focus on this region, and especially on Malaysia between 1880 and 1970, is particularly useful for answering these questions, as this cluster underwent, and survived, a number of different economic phases and political shifts. Reconstructing the history of this cluster from colonial times sheds light on how the interplay and exchange between multinationals and host economies evolved from the First to the Second Global Economy.

Further, because Malaysia anticipated its accession to the Second Global Economy by more than a decade as compared with other developing countries, it represents a useful model to look at when evaluating the role of clusters in the integration of less advanced economies into the global market. Finally, using an agricultural cluster has been instrumental in introducing a comparative perspective of different sectoral clusters, covering a major lacuna in the cluster scholarship. Palm oil is a product with few possibilities for diversification; hence, once the right organizational structure for its production had been identified, it could be recomposed in other locations, allowing multinationals such as Unilever to diversify for political risk when the imperial shield fell through. The comparative analysis of the Southeast Asian palm oil cluster and its West African counterpart offered in my third paper highlights the contextual conditions for the local/global integration mechanism to work. At the same time, it provides a useful link between cluster theory and International Business, presenting cluster locations as the determinants of MNEs' location strategies.

5. Empirical sources and research strategy

In this section, I introduce the sources used and major methodological issues faced in this research. This thesis is positioned between Business History and Organizational Studies. It uses an historical case study to make a theoretical contribution, namely by introducing the case of the palm oil cluster with the aim of extending cluster theory (Yates & Orlikowski, 1992). The analysis is based on empirical material drawn from different archives and adopts an historical approach to institutional change (Suddaby, Foster, & Mills, 2013). Section 5.1 provides an overview of the sources and a critical review of the archives used, as well as a brief discussion of my triangulation strategy and hermeneutic perspective, following the methodological framework outlined by Kipping, Wadhvani, and Bucheli (2013). Section 5.2 presents historical institutionalism as a primary research strategy, leading to the definition of clusters as intermediary institutions. Finally, Section 5.3 discusses the case study method and elaborates on the specifications I used to investigate the palm oil cluster.

5.1 Source presentation and analysis

This study is based on empirical material on agency houses and the colonial plantation economy consulted in five major archives in the UK: The National Archives of the United Kingdom in Kew Gardens, London (TNA), the H&C Collection at the London Metropolitan Archives (LMA), the Guthrie Collection at School of Oriental and African Studies (SOAS) Archives in London (GC), the Barlow Collection at Cambridge University Library (BC), and the Unilever Archives in Port Sunlight (UL). I visited these archives several times during my PhD period to research the empirical foundation for the study. The material consulted covers the time frame running from the 1880s to the 1970s and includes the following.

The British National Archives. This archive is public and reflects the internal perspective of British Government institutions. The material available includes: letters and reports on the early development of palm oil and rubber in Southeast Asia and West Africa; internal (mostly confidential) correspondence between key colonial administrative units in Britain and overseas such as Commonwealth Office, Colonial Offices in different locations, and the High Commissioner's Office (HCO) in Kuala Lumpur; correspondence between British Government officials and representatives of the rubber and palm oil industry; reports on the rubber and palm oil industry at different times, including statistics and technical data; and legal and official documents on the creation of public institutions and industry associations and related discussions (again, often confidential) between key personalities involved.

London Metropolitan Archives. My main focus in consulting this public archive was on Rubber Growers' Association (RGA) accounts and the H&C Collection. The RGA accounts mostly include official documents of the institution. The H&C Collection comprises a vast range of material which can be grouped in three categories: (i) qualitative sources such as reports, minutes of the agency house's board meetings, correspondence, memoranda, as well as quantitative material such as accounts, price quotations, and statistics on acreage and production strictly related to the daily operations of the company in different countries; (ii) general documents, newspapers, reports, and promotional material on both the rubber and the palm oil business; and (iii) recollections, notes, and interviews with planters and company employees on the rubber and palm oil industry. The last two groups were the result of Guy Nickalls' work when writing the company's history in the 1980s (Nickalls, 1990). Further, the archive includes several external records on the foundation and development of the RGA and related rubber and palm oil industry associations.

Barlow's Collection. This archive includes an extremely rich collection of material on the activity of the Barlow agency house from its inception in the late 19th century up to the late 1980s. The records are grouped by family member and then organized in sub-groups

according to the theme of the document (business, finance, estates, legal, political, family papers, etc.). Given my focus on Barlow's business activities in Malaya, I used primarily the most extensive group of records about Thomas B. Barlow, who took care of the Asian operations from the 1920s until the end of his career in the 1980s and was chairman of Highlands and Lowlands, the company's most prestigious estate in Malaya. The primary sources consist of correspondence between family members and other industry stakeholders (business partners and government officials) and employees, chairmen's reports, and reports from visits to Malaysia. Particularly relevant for my study is the correspondence between Thomas Barlow and the Danish Grut family (first with Commander William O. Grut and later with his son Olof), who were major shareholders of the Danish plantation company UP. The correspondence is a fascinating record spanning a period of almost 40 years and tracking the business and personal relationships of these two families across two generations. The correspondence is mostly centered on the palm oil business and the tone of the conversations is quite confidential, which provides noteworthy insights into the non-market mechanisms behind the network of palm oil entrepreneurs operating in Europe and Malaya, cluster governance mechanisms, and the management of both Barlow's and UP's plantation businesses.

Guthrie's Collection. The Guthrie collection at SOAS includes correspondence at the executive level and different kinds of technical material related to the daily management of the firm in Singapore and Malaya, such as accounts, minutes of board meetings, balance sheets, and legal papers concerning the establishment and listing of plantation companies and land ownership contracts. The archive contains a set of sources on the very early period of the agency house at the turn of the 20th century that is richer than more recent material from the interwar period and decolonization. In spite of this disparity, these sources were quite useful for the purposes of triangulation with the other archives and for identifying the community of planters in the pre-rubber boom.

Unilever Archives. The Unilever archives are an extremely rich source of insights into the history of the palm oil business. Traditionally, the company has been the major driver for the development of the industry, being the primary buyer of the commodity at a global level and a major player in the plantation business up to the 1990s. I obtained access to the archives quite late in the writing process, and so I consulted only part of the vast array of available records on palm oil production in Africa, but I did consult the majority of the more limited material on palm oil development in Malaysia and Southeast Asia. The most relevant collections were the Overseas Committee and the UAC Directorate for the period between 1920 and 1970, with a major focus on the three decades or so of decolonization between 1940 and the 1970s. This material was produced for internal use and is mostly concerned with strategic issues related to the business. The records include industry reports on the general political and economic outlook on the different markets in which Unilever was operating, comparative reports on the plantation business in different countries following visits by managers and executives, minutes of meetings between the Overseas Committee and the Plantation Executive (later Plantation Group), conversations and correspondence between the plantation executives, and reports of visits to both Southeast Asia and West Africa.

Other material. The study was complemented with brief visits to the National Archives of Malaysia and Singapore during my fieldwork in the region in 2014, and correspondence with the archives of the Botanical Gardens in Singapore, Kew (London), and Amsterdam. During the fieldwork, I conducted several semi-structured interviews with important individuals within the palm oil cluster. Although the content of the interviews has not been directly applied to this thesis, these conversations contributed significantly to my understanding of the past and present relevance of palm oil in the region. Finally, I briefly visited the British Library to access the magazine *The Planter*, also partially available at LMA, and regularly consulted the online archive of *The Straits Times*, founded in 1845 and based in Singapore, which represented the major source of official news in English in the

region during colonial times. Because of its generalist orientation, *The Straits Times* provided a broad view of economic issues in the region and major personalities of the time. In contrast, *The Planter* was published by the Incorporated Society of Planters in Kuala Lumpur and centered on specialized knowledge of the plantation business addressing for experts in the planting community across the cluster (and eventually in other planting locations). As for accessibility, while both Unilever and Barlow's granted me access to their full collections, including the most recent material requiring special permission, certain non-British companies showed a different attitude to transparency. Socfin never answered to my requests to visit its archives in Brussels, while UP explicitly refused to grant me access to the company's archives in Copenhagen.

Source criticism. One major limitation in the selection of archival records is its one-sidedness. It does not cover (i) the local perspective of developing countries, such as ethnic Chinese traders, the Malaysian Government, FELDA, or Malaysian smallholders and African farmers; (ii) the first hand perspective of non-British companies involved in the plantation industry such as Socfin, Dutch producers in the DEI, and UP; (iii) or the perspective of non-plantation businesses, such as banking and shipping companies operating in close contact with the agency houses. However, concentrating on British sources and more specifically on the plantation agency houses was a conscious decision based on my aim of exploring the long-term effect of continuous Western investment on the process of integration of this cluster into the global economy. These companies were often specialists in operating under risky conditions in a variety of foreign markets, where they had maintained profitable business activities for more than a century. Nevertheless, the study can still be attacked for presenting the story of British companies through Western eyes. In fact, this is an issue relating to the availability and accessibility of historical material, which is widespread in the historical literature of this kind (Tate, 1996) and can be partially explained in terms of cultural attitudes towards maintaining traces of the past or making them available for public use (White, 2004 18). As for the availability of primary sources on

indigenous business, the Asian business context poses several challenges to historical work due to the widespread secrecy surrounding company information as well as the lack of any tradition of storing historical material (G. Jones, 2008 151).

In order to balance this bias at least partially, the research has been complemented with a thorough analysis of the secondary literature on the evolution of merchant firms, the plantation economy in tropical areas during the 19th century, and the palm oil and natural rubber industry. The company history of agency houses such as Nickhalls' history of H&C (1990), Jones' (2005), Wilson's (1968), and Fieldhouse's (1978; 1994) accounts on Unilever, Clarence-Smith's (1998) work on Socfin, and Martin's (2003) study of UP have been used mostly to check background information and quantitative data, and in triangulation with archival material. In terms of historical perspective, this study is immensely indebted to the work of Charles Tate (1996) on the evolution of the RGA and its role in the Malayan plantation industry and to Shakila Yacob's (2008) Malayan perspective on foreign investment trajectories. The primary influence, though, was Nick White's rich academic output on agency houses in Malaysia (1996; 2004; 2008; 2012), which offers a fine counterargument to the idea that British companies were privileged in Malaya during decolonization and a novel interpretation of a more active and strategic attitude of the Malaysian Government in this period. Other relevant contributions on the rubber and palm oil industry from which this study has benefited greatly in terms of background analysis are the classics on the rubber and palm oil industry, which offer qualitative and quantitative material to verify contemporary archival sources: Bauer (1948), Barlow (1985), and Drabble (1973) on rubber; Jackson (1967) and Khera (1976) on palm oil in Southeast Asia, and Usoro (1974) and Martin (1988) on palm oil in Nigeria and West Africa.

A further complexity related to the use of archival material is the "selection bias": the analysis resulting from the consultation of archival material is the result of at least two (and sometimes more) rounds of selection and interpretation. On the one hand, the evidence

available within the archives has been chosen and selected by the organization itself and people managing the archives, and therefore conveys a specific interpretation of the past in line with what the organization could or wanted to remember and to reveal (Decker, 2013; Schwarzkopf, 2013). On the other hand, the broadness and richness of the archival material and its diversity across five different archives required that I select and interpret the material also (Suddaby et al., 2013). As a researcher, I was continuously forced to make choices about the material to consult and how to select and order events in my analysis in order to convey a fair representation of reality. For instance, as opposed to most agency house correspondence, which is often characterized by a more familial and confidential tone even when exchanging messages with company outsiders, Unilever records tend to convey a more detached and professional attitude towards the topic discussed. First, this difference contributed to the richness and strength of the analysis through increased opportunity for triangulation. Second, and most relevant for this discussion, the comparison of these two sources on the same topics shed light on informal and strategic issues that were omitted from Unilever's records, while allowing me to disentangle the private and business motives that are often interlaced in the agency houses' accounts. Of the records analyzed, some spoke directly in my text, while others participated only by silently influencing my progressive understanding and interpretation of past events. Hence, the historian and his/her readers have to be at ease with the fact that the empirical material available would most likely tell only a portion of the past reality.

Triangulation. Accessing various archives several times increased the opportunities for triangulation, which sharpened and reinforced the reliability of my statements. Despite being mediated by my interpretation, the comparison of often-conflicting points of view led to a more fine-grained and balanced reconstruction of the historical progression of the cluster. To illustrate how I proceeded in practice, I include below some examples of the variation in the degree of reliability of sources and of how I extricated myself from the interpretation "dilemma" through triangulation.

The first example is the straightforward comparison between palm oil production in Southeast Asia and West Africa. In all archives, mention was made of the superior business terms encountered by foreign entrepreneurs in Southeast Asia as opposed to Africa, especially with regard to the labor market. Since this impression was aired by both experts and entrepreneurs venturing from Africa to Southeast Asia and entrepreneurs from Southeast Asia investing in Africa, I deemed it to be a fact. In addition to this, several secondary sources and background material from archives on the institutional structure of both locations corroborated this finding.

The second example illustrates a case of greater uncertainty in historical work and shows how multiple archives can help solve the problem of “selection bias” through triangulation. Between 1946 and 1952, the MOF bought all Malaysian supplies of palm oil at a fixed price (S. M. Martin, 2003 102), in order to secure food production (of margarine) in the UK during post-war recovery and to help the cluster members with the rehabilitation of the estates after Japanese occupation. However, during the period under study, the plantation companies continued to struggle. At first glance, it seemed reasonable to assume that the poor performance of the Malaysian palm oil cluster in that period was primarily due to the burden of post-war rehabilitation, but a closer look at how different actors addressed the MOF pricing of palm oil teased out the complexity behind the companies’ results. According to the MOF sources, the price of 400 USD a ton granted to Malayan producers in 1947 did not satisfy their expectations as “the industry had claims for generous treatment to enable them to charge rehabilitation expenditure to capital account and amortize it over the period” (BNA MAF/83/2178, 1953). Since the MOF was also buying all Nigerian production at a fixed price, it was difficult to understand whether the price was actually too low or producers were masking their desire for extra profits with claims of higher costs due to the post-war rehabilitation.

The internal correspondence of the MOF suggests a clear tendency to maintain prices as low as possible and to act and communicate in a way that minimized the room for negotiation with both Malayan and West African producers. While in other confidential correspondence between the MOF and the Colonial Office the price asked for by the industry (specifically by the agency house Boustead) is defined as “exorbitant” (BNA MAF/83/2178, 1953), in 1947 the Ministry granted an increase to 600 USD to the Malayan producers. Although never explicitly stated, the conversation between government officials and the MOF included in TNA sources hints at the fact that there was room for concessions to the industry. Referring to the latter’s requests for price increases, Mr. D. Smith at the MOF informs Mr. J.T.S. Lewis at the Colonial Office that “the producers themselves have not been allowed to expect any increase in the prices this year [1947]” and when eventually a rise is granted to the West African producers too, the MOF representative A.C. Jones, writing to the Colonial Office, concludes that “I regard this new arrangement as a truce only and not necessarily as a final settlement of the price dispute for the whole balance of this year” (BNA MAF/83/2178, 1947). All this led me to believe, despite the lack of richer evidence, that producers might have had a point in their favor as against the likely conservative attitude of the Ministry.

Eventually, I gained a more balanced understanding only by accessing the perspective of a third party: Unilever. By the late 1940s Unilever was completing the negotiation for the establishment of its first estate in Malaya, therefore the company was an interested party, but still an outsider with regard to the pricing issue. In 1949, the company’s plantation executive Mr. Martin reported his impressions on palm oil pricing from informal conversations with government officials and members of the plantation industry during his visit to Malaya in 1948. Martin stated: “I met [the High Commissioner] Sir Edward Gent (...) and I also found in attendance Mr. Brunnett, Director of Agriculture, and Mr. Pike, Economic Adviser. (...) During the conversation Sir Edward Gent complained bitterly of the low price the Ministry of Food are paying for Palm Oil (...). With the present very high

rehabilitation costs the Ministry of Food price is only showing a small profit at the moment and Sir Edward was of the opinion that a price somewhat nearer to the world market price should be paid” (UL UNI/RM/OC/2/2/118, 1949). The fact that Mr. Martin wrote this report for internal use of the company precisely when it was judging the potential of investing in palm oil in Malaya made this source appear to be more reliable in its analysis of the pricing issue. Moreover, High Commissioner Gent was elsewhere described as a “man of liberal outlook,” often finding himself at odds with the industry for his mild positions (Tate, 1996 519-524). Further, other government sources support the view that the colonial administration in Malaya was not backing the plantation interest. In those years, the HCO in Malaya was generally in disagreement and in contentious relationships with the plantation companies, especially with regard to the issue of rehabilitation (BNA CO/537/7265, 1951). Finally, the fact that the price was too low was also plausible in light of the British domestic agenda at that time, as the priority of Attlee’s Labour administration was to support the population after the hardships of war, beginning with food prices.

In sum, because I could not find any document that explicitly argued for a fair MOF price and because of a general increase in prices of palm oil substitutes before the 1950s, I considered the agency houses a sufficiently reliable source for corroborating the argument that the conservative attitude of the MOF hampered palm oil businesses’ profitability in the post-war years. More broadly, this episode worked as a building block for my general understanding of the post-war relationship between the cluster and the British government, which was no longer as smooth and neo-imperialistic in nature as is often suggested by the literature.

Hermeneutic approach and constitutive history. Temporal distance is a double-edged sword in historical investigation. On the one hand, as discussed above, the partial, subjective, and incomplete nature of the surviving material on the palm oil cluster was a challenge when striving for a coherent and objective account of cluster development and constrained my

freedom in selecting themes and questions. On the other hand, temporal distance is a powerful tool of historical methodology, as allows for an articulate account of a longstanding phenomenon that connects different levels of analysis. The triangulation of different sources and the ex-post reorganization of events through periodization are useful to create a structure for analyzing the trends at the macro level from a longitudinal perspective. However, this exercise involves the risk of delivering an ahistorical product, and in particular of anachronistically imposing present-day categories and conceptualizations when reconstructing the sequential developments of the past. Fortunately, the historical approach inherently provides a solution to this problem in the form of the hermeneutic interpretation of the primary sources. In a nutshell, the actions and motives of individuals emerging in the empirical material need to be considered as “temporally” embedded and constrained – thus, the historian’s job is to “pretend” to be in the actors’ shoes, as if the future had never happened. In light of this, as opposed to other qualitative methods, historical analysis presents the possibility of complementing and enriching the ex-post evaluations and categorizations with actors’ impressions and bounded rationality.

Temporal distance thus allows the researcher to create a framework in which information about the past is reorganized in a *top-down* fashion, while the hermeneutical interpretation of the sources offers a proper vehicle to fill this structure *bottom-up*, introducing the micro perspective of the actors and their practices as constrained by their spatial, social, cultural, or temporal context and influenced by their personal expectations about the future.

This type of approach requires an awareness of the continuous shift in perspectives and purposes throughout the analysis. The process involves a relentless movement back and forth from the most objective and balanced historical reconstruction, through the triangulation of different material, to the subjective view and practices of actors and companies who explain their choices at specific moments in time. A fitting example of the constitutive power of historical sources stems from the accounts of guerrilla attacks on the

estates during the Emergency. Chronicles either of specific episodes of violence or of the general atmosphere of insecurity during the Emergency were found in all of the archives in different forms: personal memoirs and narratives, private, confidential correspondence, business correspondence, minutes of meetings, and public reports and newspapers. In terms of their content and tone, these recollections are strikingly homogenous: they all share a rather tragic air and convey a deep sense of anxiety and alarm among the expatriate community. Although the sources tended to present this rather coherent perspective on those historical events, here triangulation with secondary sources and ex-post analyses showed that the usual selection bias was clearly reinforced by Western bias. Since all of the archives are derived from Western entities, they likely do not provide a balanced description of episodes of violence and oppression towards the foreign community. In fact, the effects of the Emergency were probably – at least in part – overplayed if one considers that (i) the number of murders and physical and economic damage can hardly be compared with other contemporary civil conflicts (Tate, 1996 532); (ii) investment continued throughout the following decade; (iii) and Unilever entered the market at the turn of the 1950s, when the Emergency allegedly reached its most critical peak, and expanded its palm oil operations after that (UL UAC/1/1/1/12/865, 1949).

The above discussion shows how triangulation, ex-post reconstruction, and periodization dovetail with hermeneutical interpretation to establish a broader context for the analysis of the primary sources. However, shifting to the actors' perspective in context through the hermeneutic interpretation of primary sources provides a richer understanding of the period than that which would emerge from a bare ex-post evaluation of historical facts and analysis of quantitative data on murders, attacks, and damage. The homogeneity in agency houses' accounts allows us to elucidate their investment choices at that time, such as reinforcing (in the case of Unilever) or starting (in the case of Barlow) the investment in Africa despite the poorer conditions in its business environment. Similarly, these accounts offer an explanation for the cautious attitude of agency houses towards expanding palm oil ventures in Malaya,

despite the increasing demand for the commodity in the international markets during the 1950s.

5.2 Historical institutionalism

As highlighted above, the study of cluster development involved trade-offs between different levels of analysis. Section 3 on theories has highlighted the tension between the endogenous and exogenous factors and local and global linkages in the evaluation of clusters' progression and success. The discussion on source interpretation (see Section 5.1) introduced the tension between agency and structure: temporal distance can be helpful in reorganizing information in hindsight according to specific categories and structures, while a hermeneutic perspective incorporates the contextual actions of individuals. Yet, in order to understand how these top-down and bottom-up approaches can work together in the case of clusters, it is useful to look more closely at the relationships between individuals and structure, and more specifically at the role of institutions. As with cluster theory, scholarly debates on the role, function, and nature of institutions have emerged from different fields in the social sciences. While contributing to institutional theory is not a primary objective of this thesis, this section will attempt to position the study of clusters within the broader discussion on institutions.

From the end of the 1970s, institutions came to play an increasingly important role in the study of the social realm, marking an "institutional turn" in the social sciences, also labelled "New Institutionalism." This new field saw a proliferation of contributions concerning the nature of institutions, their role in society, and, most importantly, their relationship with individual behavior in relation to change. Extrapolating from the many nuances in these contributions, they can be divided in three major streams: rational institutionalism, historical institutionalism (HI), and social institutionalism (Hall & Taylor, 1996). These approaches mostly differ in their conception of the nature and motives of individuals related to

institutions and how institutions create paths influencing subsequent development – so-called path dependency (Steinmo, 2008). Nobel Prize winner Douglass North, one of the doyens of New Institutional Economics (1991; 1999), applied an historical perspective to the study of the social realm and interpreted economic change as being determined by the interplay between demography, the stock of knowledge, and institutional structure. However, his perspective was criticized for being asocial and ahistorical, and thus too close to rational institutionalism in its view of the relationship between individuals and institutions (Ankarloo, 2002; Milonakis & Fine, 2007). Indeed, the rational approach follows neoclassical economics in seeing individuals as rational beings, always acting strategically in the attempt to maximize their pay-off within the frame or constraints posed by institutions. Meanwhile, the social approach derives from sociology and interprets institutions as governing everyday life and social interaction, while individuals are performing socially constructed roles within the institutional framework, primarily led by habits and routines. In different ways, both approaches tend to underplay the role of actors' behavior in determining the structure around them.

In contrast, the third approach (preferred in this thesis), namely HI, stands in between the rational and social perspectives. It recognizes individuals as the primary drivers of institutional change and as influenced both by culture and strategic calculus in their actions within and towards the surrounding institutional structure. HI emerged primarily in the domain of Political Science to specifically focus on power distribution within society. It is significant for my research in that it sees the State as being constituted by multiple institutions and institutions themselves as “complex embeddings of schemas into resources and networks” (Clemens & Cook, 1999). Besides its role in the Political Science literature, HI was also embraced in the realm of Organizational Studies as a social constructivist alternative to the positivistic-oriented New Institutionalism (here “rational institutionalism”). While Political Science mostly used HI as a device to conceptualize power dynamics, Organizational Studies particularly stressed the “historical” content of the

approach, that is to say the use of history as a method of conceptualizing institutions. Suddaby and al. (2013) in particular view HI as being based on the threefold assumption that (i) institutions are to be conceived as historical processes, namely outcomes of past events and interpretations of those events; (ii) these historical processes are rooted in the interaction of individuals; and (iii) the interpretation of those interactions (and hence of institutions themselves) changes over time.

First, by considering individuals as active in their determination of institutions rather than products of the institutional framework, HI is very close to Granovetter's (1985) mixed social embeddedness: individuals are embedded in social structures; their actions are to be understood as outcomes of their social relationships and in relation to their position in the society; and hence institutions are socially constructed. In light of this, my thesis applies Hodgson's definition of institutions envisaged in his critique of – or complement to – North's work (2006 13): “institutions are durable systems of established and embedded social rules that structure social interaction.”

Second, institutions are durable and established but not monolithic. They are embedded and thus influence social interaction but do not determine it completely. Studying institutions in historical perspective helps close the gap between individuals and structure. In the process of understanding institutional change the unitary causality typical of natural science is replaced with a system of complex causality. Indeed, by studying the development of institutions over long periods of time we can conceive variables as interdependent or mutually determined and “actors and structure, although distinct, as connected through a circle of interaction and interdependence” (Hodgson, 2006 8). On this specific issue, however, the eclecticism of HI proved to be a disadvantage, in that the scholarship was criticized for being unable to “aggregate their findings into systematic theories about the general processes involved in institutional change” (Hall & Taylor, 1996 955). Initially, HI explained change through the concept of “punctuated equilibrium,” that is, the idea that

institutions are durable and stable until they are hit by an external shock (Steinmo, Thelen, & Longstreth, 1992). By failing to incorporate agency, this explanation inherently contradicted the foundation of the HI approach as a device for explaining political actions.

How can actors identify possibilities of institutional change if they are embedded in the institutions that they help to reproduce? To what extent is their action subject to and constrained by the unspoken influence of institutions? This tension and reciprocity between agency and structure has been exemplified by the “embedded agency paradox”, a recognized theoretical puzzle in Organizational Studies (Dacin, Goodstein, & Scott, 2002; Garud, Hardy, & Maguire, 2007). In light of this, Bathlet and Glücker’s (2014) theorization of institutional change for Economic Geography offers interesting insights to complement more recent solutions proposed by the HI approach (discussed below). The institutional contributions of Economic Geography take an intermediary position between agency and structure, drawing explicitly on Giddens’ structuration theory (1985). As opposed to the broad concept of “complex causality” theorized by HI, this perspective proposes the combination of downward and upward causality to explain institutional change. Thus, although applying a relational approach – economic action is socially embedded and highly contextual in nature –, institutions are conceived as “mediators between micro and macro level” and “stabilizations of mutual expectations and correlated interaction,” distinguishing them from organizations, regularities, or rules, that is to say from the vocabulary of New Institutionalism (Bathelt & Glückler, 2014 2-3). Overall, when compared with HI, Economic Geography gives context a slightly more prominent role than actors in institutional change. Bathlet and Glückler acknowledge that: “Economic action as social action is not unconditional. It is guided by, enabled through and constrained by ‘institutions’ in the sense of accepted, existing patterns of interaction – be they related to some sort of rules and regulations or to conventions of social and economic life (...). This does not mean that structure determines agency and vice versa, creating a vicious cycle without any explanatory significance. Rather, interdependence between institutions and agency results in

progressive development where institutions mediate between individuals and wider societal structures” (2014 1, 14).

However, this brings us back to square one: in order to solve the tension between individuals and structure, Economic Geography broadens again the scope of the discussion from endogenous to exogenous institutional change. Yet, instead of being conceptualized as “shocks,” exogenous factors are interpreted as the collective understanding of institutions, shaped by both individuals and the broader contextual environment. More recent HI contributions provide a similar justification for institutional change. Steimno (2008 169) reflects upon the role of ideas in influencing the individual and collective actions in political struggles. Over time, a collective conscience forms about the nature and the role of institutions within society. This conscience helps to define institutions as much as embedded dynamics do endogenously. In this way, institutions are also defined by their interaction with external elements. As a consequence of this, institutional change can be informed by the shift in ideas and collective understanding of institutions over time.

In technical terms, both approaches have recourse to individual “reflexivity,” or awareness of the impact and role of institutions to overcome embedded agency (Bathelt & Glückler, 2014 13; Suddaby et al., 2013 117). As such, the combined application of reflexivity in HI and Economic Geography offers insights in institutional change in both space and time. While the shared understanding that the nature of reality changes over time is a core assumption of HI, in Economic Geography the temporal dimension is only implicitly included when defining institutions as “stabilizers of mutual *expectations*.” On the other hand, while HI is not explicit in specifying the participation of actors “external” to the institutions in constructing this collective understanding, the geographical perspective incorporates exogenous elements by indicating that these expectations are mutual and hence involve an interaction, which can reach beyond the boundary of the institution itself, hinting at the role of institutions in a broader societal context.

In light of this discussion, my work is indebted to HI as it focuses on explaining the processes and rationales by which institutions such as clusters are produced. Further, it conceives institutionalization as a process and institutions as historically constructed. Although institutions remain over time, however, they are not static: they can be modified through time. In line with the Economic Geography approach, I interpret institutions as collective bodies that cannot be easily and fully reduced to the individuals operating within them but can be changed by the interplay of individuals and groups as a result of their modified understanding of the roles of institutions and their own roles within them. On this point, I am indebted to both HI and Economic Geography for incorporating reflexivity into the conceptualization of institutional change.

In sum, this thesis interprets clusters as *intermediary institutional forms* and *open systems*, placed on a middle level between local and global geographies and between individuals and structures, hence mediating the pressures coming from both dimensions. In my case, the palm oil cluster is a durable institution, comprising different entities with various institutional forms, from companies to government bodies and industry associations, and embedded in different societal networks, both in London and in Southeast Asia. As explained in my second paper, institutions may constrain or influence the scope and the form of individual choices by imposing patterns and procedures. However, individuals are never considered direct products of institutions. They operate within the institutional structure but are also able to shape it, producing institutional change endogenously, but incorporating exogenous influences via changes in their cognition.

It is also important to note that the individuals and groups that compose society find themselves in different positions regarding the contextual environment and institutions. Some of them have the power to modify the social space in which they operate and to shape the institutions according to their goals. Others – often the majority – do not have this possibility and hence are more subjected to the external context. In the attempt to interpret

historical facts and the behaviors of individuals, the hierarchy between them and the dynamics it generates should not be overlooked. Within this hierarchy, the paradox of embedded agency is solved through reflexivity: the surrounding environment tacitly impacts on the development of collective ideas, motives, and actions. Individuals in turn internalize these exogenous influences reflexively, in different and unexpected ways, and use them according to their ability to change. The modification of the collective perception of institutions and individuals' own roles within them is what eventually brings about institutional change.

5.3 Beyond cluster specificity: the case study method

The analysis of the palm oil cluster is framed in this thesis as an historical case study. To date, the case study approach has been the preferred method of investigation for the study of clusters: its in-depth character combines well with the uniqueness of clusters in terms of local environment and industrial features. However, in such studies, the cluster concept has mostly been taken for granted, taking Porter's classical definition, introduced in Section 3.2 above, as the standard "measurable construct," despite its fuzzy nature (Markusen, 1999). As is discussed in depth in the conclusions below, this thesis will apply the cluster concept in its broad sense, using the operational definition of "sectoral and geographical concentration of specialized producers" (Schmitz & Nadvi, 1999 1504), and will extend it by systematically including the crucial features of institutions discussed above, i.e. *durability* and *embeddedness*. While in academic debates "clusters" are theoretical constructs close to "ideal types," when it comes to empirical investigation, they are difficult to define as standard organizational forms. Because of their "local specificity," namely their high degree of specialization and local embeddedness, their specific institutional structure is hard to compare and to reproduce.

Traditionally, the use of the case study method had been disregarded in social sciences for not displaying a clear procedure, for being difficult to replicate and generalize, and for being suitable only for exploratory studies and the pilot research phase (Babbie, 1989; Campbell & Stanley, 1966). Since the 1980s, a whole stream of scholarship has emerged providing a systematic treatise and epistemological foundation for this research strategy. A central purpose of this literature has been to argue in favor of the contingency and depth of the qualitative approach as opposed to the breadth and uniformity of the quantitative method. The latter claims generalizability on the basis of statistical sampling, but operates on the implicit assumption that each observation point within a sample is not impinged by its specific context and hence is comparable with the others. In contrast, replicability appears to be more difficult with case studies, as they focus on unique aspects of world phenomena. In fact, case studies enhance the richness of reality and aim to shed light on its contextual complexity.

Yin defines a case study as “an empirical enquiry about a contemporary phenomenon (e.g., a “case”) set within its real-world context, especially when the boundaries between phenomenon and context are not clearly evident” (2009 18). In light of this, case study research is particularly relevant for answering “what” and “how” type of questions and it is suitable for extending theory because of its proximity to context, which makes the results independent from past research. Together with that of Eisenhardt (1989), Yin’s contribution (2009) represents a standard reference on the case study method, which has subsequently been defined as a “modernist” approach. Because it initially developed as a “defense” of the qualitative method and was mostly directed to a quantitative-oriented audience, the modernist approach devised a relatively positivistic strategy for case study research, focusing specifically on building rigorous procedures and practices to carry out generalizable findings. Further, in this view, the selection of the case(s) should be a linear process with clearly identifiable phases: preferably based on multiple “polar” empirical cases, in order to allow for replicability, the analysis should depart from a specific theory

and follow a deductive process (Piekkari, Plakoyiannaki, & Welch, 2010). Finally, selected case studies should respond to four quality criteria: (i) construct identification and validation, or the definition of measurable operational variables, matching theoretical concepts; (ii) internal validity, namely the case should showcase patterns of causality that reflect predicted ones; (iii) external validity, namely patterns that can be extended to other case studies, laying the foundation for similar investigation; and (iv) reliability, or transparency in operations, which would make it possible to replicate the study with the same data. Importantly for this approach, the replicability of the singular case into multiple cases eventually emerged as a requirement to obtain generalization. Eisenhardt and Yin's criteria remain the dominant guidelines for case study research published in top-ranking organization and management journals (Gibbert, Ruigrok, & Wicki, 2008).

However, although it is acknowledged to have made the case study method legitimate, the modernist approach was more recently attacked for dissociating from the traditional claims and strategies of case research and for showing little concern for "time-span, historical depth, richness of data, access to personal meanings" (Platt, 1992 45). Further, by achieving generalization only through multiple cases, this approach seems to undermine the very purpose that originally leads to the use of case studies. Particularly, Yin's practical framework was accused of adapting the case study method to the mainstream instead of designing a new methodological strategy to enhance the advantages of unique cases. This emergent scholarship departs from the Kuhnian insight that large and thorough case studies are the foundation of an effective scientific discipline and can act as exemplars of new paradigms (Kuhn, 1986). This constructivist interpretation overcomes the recognized misconceptions about case studies and provides novel analytical tools to support the effectiveness of the method (Dyer & Wilkins, 1991; Flyvbjerg, 2006). In this view, the case is applauded for its uniqueness and simultaneously considered as an instance of a broader phenomenon. Generalization is achieved by means of detailed narration and the thorough reconstruction of the social context, which enables "typicality", that is to say the immediate

identification of typical, recurring, elements and relationships connected with or common to other situations. Typicality emerges from the context naturally because it comprises fundamental traits of the human experience, which individuals immersed in the specific case context would easily recognize (Delmar, 2010).

Eisenhardt's constructs can therefore be substituted by well-crafted stories (Dyer & Wilkins, 1991). On this specific point, historical methodology becomes an extremely relevant and eclectic alternative to the positivistic/modernist approach. By compiling narratives or reconstructing routines and recurring patterns, historical analysis acts as bridge between specific cases and universal phenomena. In short, the case enriches theoretical discussion with insights from empirical material by highlighting typicality more than singularity (Rowlinson, 2004). The idea that historians seek to illuminate the general by focusing on the specific in a systematic way surfaces when Bucheli and Wadhvani state that "historical knowledge posits that generalizations are context-bound and subject to 'scope conditions' based on time, place and perspective of actors" (2014 10-11). In light of this, the case study itself constitutes the analysis; as briefly introduced above, this outcome is achieved through a continuous movement back and forth between theories, primary sources, triangulation with contemporary publications, and secondary sources. This process allows new ideas to be nurtured and the analysis to be sharpened in the process. Dubois and Gadde recognize this as an abductive process and label it as "systematic combining," that is to say the "non-linear path-dependent process of combining efforts with the ultimate objective of matching theory and reality" (2002 555). In this way, the mechanisms involved in the embedded generalization and often hidden in historical work are made explicit: the reconstruction of the case provides a tight and emerging framework that is gradually sharpened by the continuous contact between constructs and empirical observations (Dubois & Gadde, 2014; Suddaby, 2006). A further recommendation, which also constitutes a good alternative for the identification of measurable constructs, is that "concepts should be used in a sensible way to create a reference and to function as a guideline when entering the empirical world"

(Dubois & Gadde, 2002 558). Constructs are thus no more than a “frame” or a blurred guideline orienting the researcher in his contact with reality; once constructs meet the empirical world, they can lose their stiffness and instead acquire malleability.

These constructivist positions repurpose the so-called “induction problem,” that is to say whether it is possible to provide a sound foundation for beliefs or expectations concerning the future on the basis of past experience, where that experience is made up of space- and time-dependent knowledge acquired in unique situations. Hume (1739) elaborated a precise solution to the issue: he argued that a case study, and the specific propositions describing it, is not sufficient to give foundation to a theory, since the theory is by definition a universal statement that concerns not only all the past events but also future ones that we have not yet experienced. Therefore, the case study method alone does not lead to the creation of a theory, transcending the specificity of historical investigations; rather, it can help (i) to refute theories that are not able to explain the cases already investigated to a satisfactory extent and (ii) to formulate new and more promising explanations, by highlighting typicality.

6. Concluding discussion

The palm oil cluster has been key for the transformation of the emerging economies of Southeast Asia from colonial times to the present day. During the 20th century, the local plantation cluster specialized increasingly, allowing both Malaysia and Indonesia to become key providers of agricultural products for the global economy. How did this integration happen and what lessons can be learned from it about the development of clusters in the process of globalization? The above discussion pointed out the trade-offs encountered during the research process between (i) exogenous and endogenous factors in the study of cluster development, (ii) agency and structure in understanding institutional change within clusters, and (iii) specificity/depth and replicability/breadth in the research design. The existing cluster scholarship was identified as being overly focused on local, endogenous dynamics, and as underestimating the role of agents in cluster development. Furthermore, since this literature primarily comprises case studies, it was criticized for its inability to devise a shared definition of clusters and to study them in comparative perspective.

By examining the case of palm oil, I provide a new, transdisciplinary conceptualization of clusters as *open systems* in the context of International Business. I analyze them as *intermediary institutions* mediating local and global pressures. Within the British Empire, the palm oil cluster served the interests of foreign agency houses and later developed into a growth engine for modern Malaysia and, eventually, Indonesia. Thus, in this dissertation I show how an (export) cluster, which was first established in developing countries as a means of better exploiting resources in the context of colonialism, turned into a platform for global economic integration and social upgrading at the local level. However, my analysis also shows that this process is anything but inevitable, and it is highly context-dependent: in the case of palm oil, cluster success depended on the collaboration of local government élites, their relationship with foreign investors, and overall political stability relative to competitor locations. In exploring these dynamics at the regional, national, and global

levels, my thesis offers a new, historically founded solution to the problem of “self-containment” and “external linkages” in cluster theory while simultaneously integrating issues of geographical concentration and cluster governance, which are normally tackled in the field of Economic Geography and Political Economy, into the literature on trading houses and multinational enterprises.

Section 6.1 presents a new conceptualization of clusters from the empirical case of palm oil. Section 6.2 elaborates on the main finding of all the three papers, namely that clusters are themselves linkages or intermediary institutions between the local and global environments. Finally, Section 6.3 reflects on the cross-fertilization between Business History and cluster theory and proposes directions for future research.

6.1 The cluster concept in context

Are clusters purely theoretical constructs created for analytical purposes or is it possible to identify them empirically according to recognizable dimensions such as key actors, product specialization, company size, target customers, and the like? Porter’s definition, which is cited in several of his works, is of limited use in this regard, as it explicitly aims to remain as broad as possible. In more recent contributions, Porter has even added that “there is no model for clusters, but a multitude of configurations reflecting the particular circumstances of a location and a set of industries” (M. Porter & Ketels, 2009, 174). And yet Porter does point at three major dimensions that can be used to identify specific clusters: (i) the geographical focus, or the spatial scope of externalities produced by proximity; (ii) the business environment, namely the conditions created by the actions of companies or governments and by the existing institutional sphere; and (iii) specific activities, namely the product specialization or the market of reference common to the companies constituting the cluster.

The case of palm oil shows how this definition is at once called into question and enriched when it is applied to a specific context. First, rather surprisingly, the rubber or palm oil businesses are almost never conceptualized as clusters (or other forms of industrial concentration) either in historical sources and historiography of the industry or in the cluster literature. The notable exceptions to this are a technical contribution on palm oil in Indonesia in the last decade (Pahan, Gumbira-Sa'id, & Tambunan, 2012) and a market report on palm oil in Malaysia (Belai, Boakye, Vrakas, & Wasswa, 2011). However, the two countries are never considered as part of a single cluster. Second, when Porter's categories are applied to the palm oil cluster, they immediately reveal some operational limitations.

Identifying Porter's first dimension, namely the geography of the cluster, is a relatively easy task in the case of palm oil, because the crop can be grown only at specific latitudes and in special climatic and soil conditions (see Figure 2). This means that the geographical scope of the cluster can be defined by the locations where the crop can be grown, that is to say in the territories lying between ten degrees of latitude north and south of the equator. The thesis identifies two major cluster locations: Southeast Asia and West Africa. In both regions, externalities due to proximity can be found for the production of palm oil, as Porter's cluster theory would predict.

However, both clusters are located across different countries: the Southeast Asian cluster includes territories belonging to the Malay Peninsula and DEI, subsequently Malaysia, Singapore, and Indonesia. The West African cluster is even more diverse, comprising several former British colonial possessions in West Africa, such as Nigeria, Cameroon, and Sierra Leone, as well as the former Belgian colony of Congo. This makes it potentially difficult to identify the business environment (in Porter's terms) as these locations were under different colonial administrations and differed in their institutional structure. At least from a formal perspective, within each territory, companies faced different labor markets, land regulation, and administrative arrangements.

Nevertheless, my sources indicate that foreign investors *perceived* the business environments as homogenous within each of the two cluster locations. At the same time, they recognized the differences between the two set-ups: wild palm groves in Africa versus plantations in Southeast Asia, the sticky labor markets in Africa versus the availability of cheap labor, and the complex African farmers' land tenure system versus easier access to land grants in Asia. As mentioned above, the correspondence between different palm oil stakeholders (researchers, government officials, and businessmen) and the reports on the industry always refer to the two major macro locations of West Africa and Southeast Asia, each stretching across several neighboring countries. Hence, the cluster structure and related business environment created a perceived institutional homogeneity that spanned different colonial institutional frameworks.

Finally, the palm oil cluster problematizes Porter's activity dimension. While this study explicitly focuses on foreign companies producing palm oil, in Southeast Asia all palm oil players started off as rubber plantation companies before introducing palm oil to their estates and continued to produce rubber even when palm oil became increasingly dominant. The same is true of the smallholding sector, which developed out of rubber production and adopted palm oil only after the crop had established itself in the estate sector. As a consequence, the palm oil cluster can be considered either a subsection of the larger plantation cluster, involving companies and smallholders devoted to growing agricultural commodities for the international market, or, from a narrower perspective, a "spin-off" of the dominant rubber cluster, which accrued its own rationales separate from the rubber business. My analysis shows that both conceptualizations are valid but that they refer to different moments in time. The former, interpreting the palm oil cluster as a subsection of the plantation cluster, is generally applicable to the first period of development during colonial times, as agency houses and plantation companies normally had only a minor interest in palm oil. The second interpretation of palm oil, according to which it is a spin-off, better describes the cluster from the 1940s on and, to an even greater extent, beginning

in the 1950s, when the crop became an increasingly important player in the vegetable oil market and the agency houses started to invest significantly in its production, financing bulking facilities and research programs and organizing their interest through formal institutions such as the Palm Oil Selling Pool.

Therefore, while remaining deeply connected and often influenced by the developments of the rubber business, especially in Southeast Asia, increased specialization implied the emergence of a distinct cluster with its own logic and internal dynamics. As illustrated in particular in my third paper, a comparison with the African palm oil production strengthens the conception of palm oil as being autonomous from rubber. First, the rivalry with competing West African locations fostered a shift in perception towards palm oil as an independent cluster. The fact that, during the interwar period, West African experts identified the Eastern colonies as a threat to the profitability of the local producers, sending their own experts to study the plantation model, contributed to the idea of palm oil as a promising new line of business in the minds of the agency houses. Second, the development of palm oil was characterized by a continuous interaction with its native location (Africa) for research purposes, which did not happen as extensively in the case of rubber. Finally, there is good reason to see palm oil and natural rubber productions conceptually as two different clusters because they belonged to two differently shaped global value chains. While the rubber value chain was more fragmented at the buyer level and hence more producer-driven, the palm oil cluster was dominated by one major buyer: the multinational Unilever.

6.2 Clusters as vehicles of global integration

Looking at the process of clustering from a longitudinal perspective allows us to engage in a discussion of the mechanisms and motives behind the process of integrating Malaysia and Indonesia into the global economy. This offers us the opportunity to (i) harmonize the focus

on the local with a better understanding of the global dimensions in the study of cluster progression; and (ii) assess how these two countries managed to overcome global exploitation and substitute it with local growth and empowerment of new actors during decolonization. Specifically, the analysis of the cluster in the transition from colonial to post-colonial times stresses how this integration took place through increasing economic growth and inclusion of local actors (smallholders and eventually local players) within the cluster boundaries. In this process, the cluster itself dealt with changing political environments, adapting to historical developments. In sum, it went from being an institution serving the colonial exploitation of the local environment to being a platform to ignite social and economic upgrading. Particularly in the second article, the case of palm oil shows how developing economies can become active contributors in the global markets. It highlights the unconventional role of the British and Malay(si)an governments in cluster governance and it explains the mechanisms through which cluster boundaries shift to include new institutional forms and (previously excluded) local actors.

Porter conceives clusters as “vehicles for leveraging the business environment to achieve higher economic performance” (2009 175). Therefore, clusters can support economic development and industrialization by upgrading the local business environment. The function of clusters goes beyond the local dimension, however: by producing for distant locations, they also participate in the global economy. As the case of palm oil shows, several clusters would not even exist without substantial investment from foreign actors and imported input factors. Thus, clusters, and especially export clusters, can be thought of as the product of market economies in the context of globalization rather than products of specific locations.

While the creation of the world system was driven primarily by the advanced economies of the global North, this study embraces the view that globalization cannot be explained by looking exclusively at the West (Bayly, 2007). Rather, for centuries, and most markedly

since the beginning of the First Global Economy at the end of 19th century, there have been *mutual exchanges* between developed and developing economies, which have evolved from imperialism towards decolonization as part of the creation of the modern world, and these exchanges are still ongoing today. What mechanisms typically govern them?

In my thesis, I argue that the palm oil cluster has worked as a primary channel of integration between the developing world and the advanced economies. The colonial territories of Malaya and Sumatra were essential to the global economic system from its very inception. Malaya received 1.6% of global British investment and gained specific relevance when Britain was highly indebted after both World Wars, granting a monopolistic position with rubber as a strategic commodity (Fitzgerald, 2015 53). Therefore, the cluster acted as a tool for globalization: an increasingly polarized structure not only connecting producer and consumer locations but also contributing to the strengthening of the global economic space through the provision of a standardized product, distributed across the developed world. While initially the cluster mediated an uneven and exploitative relationship between advanced economies and developing locations, in the long run the fates of the two parties seem to have at least partially reversed. In the case of rubber, this process started as early as the interwar period, when the native smallholding sector came to account for an increasing share of total exports. In the postwar period, the collaboration between the Government-controlled FELDA and the foreign estate companies resulted in the integration of the smallholding sector within the palm oil cluster, ensuring that economic and social upgrading went hand in hand.

The literature has provided several views on clusters, seeing them either as combining different types of organizations (firms, research facilities, public agencies, and to a lesser extent government units, etc.) or as part of broader systems, such as nodes of GVCs or networks comprising external suppliers or customers. These explanations attempt either to

reduce clusters to a smaller level (companies or individuals) or to include them in bigger structures (global networks or value chains).

Throughout my three papers, I build the argument that the problem of clusters' external linkages can be overcome by interpreting clusters as specific *intermediary institutions*. Clusters are durable and stable social systems, providing the organizational infrastructure for entrepreneurs and companies to operate at a "middle level" between individuals and markets, and combining inputs received from both the local and global dimensions. Borrowing concepts from Economic Geography, clusters are channels transforming "locality" into "globality." Although recent studies within GVC theory attempt to overcome this duality (Porter and Sturgeon, 2014; Gereffi and Lee; 2016), a brief detour into Economic Geography may be of use for clarifying the relationship between the local and the global. According to Sassen (2003), globalization comprises two sets of dynamics: (i) the formation of explicitly global institutions and processes (such as the World Trade Organization or the global financial markets) and (ii) the manifestations of the global sited or embedded in what are normally thought of as national institutions. The cluster is another example of this last type of globalization. By activating processes and practices within the local territory and connecting them to transnational networks, institutional formations, or recurring events in multiple locations, clusters enact new global spaces within the local environment. In Economic Geography, scholars have highlighted these as "new scales" of the global positioned at the local level (Brenner, 1999 42). Clusters appear as those places where the local environment interlocks and interacts with international markets and external sources of competitiveness.

The first paper makes the argument that clusters are places of interaction between local environments and global markets while focusing on the emergence of the palm oil cluster between the 1880s and 1930s. It traces the process of cluster emergence by first reconstructing the birth of the Southeast Asian rubber cluster and then explaining its

diversification into palm oil. The paper links the cluster's emergence to the literature on trading companies and argues that the emergence of the cluster followed the pattern of trading houses' product specialization described by Casson (1998) in his theory of the trading firm. As a consequence, clusters do not need to be related to indigenous elements to emerge and be successful. Factors of production can also be imported from locations with similar characteristics. For this to happen, the location needs to be connected with external markets, but there also has to be a group of actors, in this case former trading (then agency-) houses, that are able to move inputs from one location to another, and this has featured less prominently in the literature to date. In this regard, my argument is in line with cluster scholarship that sees entrepreneurs with a global outlook as well as multinational firms playing a crucial role in the process of cluster emergence and advancement. The Malay Peninsula and Sumatra were without doubt superior settings compared to other candidate locations, as they provided suitable climatic and geographical conditions for growing the crops as well as for fostering the political stability required to run capitalist enterprise. In spite of this, both the rubber and palm oil clusters first emerged largely out of non-local factors: an established planting tradition by Chinese and Western growers, interaction among foreign traders, imported crops, non-native migrant labor, foreign capital, and colonial institutions.

Besides stressing the role of agency and imported factors in the discussion on clusters, the paper provides a closer analysis of Porter's paradox that "the most enduring competitive advantages in a global economy seem to be local" (M. Porter, 2000 32). If globalization is conceived as a process of increasing internationalization, liberalization, and universalization (Scholte, 2008), there is no contradiction with production being increasingly local, because when capital, goods, and people are free to move, they are likely to choose the place where higher information and better support for the production activity are available. This is also the main argument underlying the vast literature on global cities (Brenner, 1998; Child Hill & Kim, 2000; Olds & Yeung, 2004; Sassen, 2005), whose role is largely neglected by

cluster scholarship with the notable exception of two recent studies (Bathelt & Li, 2014; Maskell, 2014). By identifying the important role played by Singapore in the development of the rubber cluster, the paper innovatively calls attention to the role of global cities as “service hubs” in facilitating the emergence of export clusters.

To better understand the interaction between local environments and global markets, it is necessary to focus on the process by which people and organizations within the cluster mediate the pressures from both the local and global levels. The development of the palm oil cluster was clearly influenced by contextual conditions and the conflicting agendas of various external stakeholders, in addition to rationales internal to the cluster. In my second paper, I focus on the process of decolonization to show how this historical situation is instrumental for understanding cluster progression. First, I describe how the interaction between the major cluster companies and different British and Malaysian government bodies continuously shifted cluster boundaries. Cluster development arose from agendas not directly related to cluster activity and from decisions and discussions that were unfolding well away from the cluster’s location. Second, the paper stresses the institutional nature of the cluster, departing from HI’s interpretation of institutions as being durable and socially constructed. It sets out to understand (i) who are the actors composing the cluster – a topic still debated in the literature; (ii) who are the actors shaping the boundaries of the cluster and how they do it. On the first point, the paper challenges the mainstream idea that the government should remain external to the cluster by showing that both British and Malaysian government differently impacted the cluster organizational structure and extended its boundaries to include new actors and institutions. Furthermore, the paper sketches a preliminary model, speculating that institutional change within the cluster depends on the type of government intervention (indirect and direct) and the degree of goal alignment between government and cluster companies.

Central to the paper is the concept of “institutional rounds” – negotiated modifications, creations, or disruptions in the institutional framework composing the cluster – which

redefine its boundaries and the scope of its main players. In line with HI, the cluster shifts from rubber to palm oil and evolves in its organizational structure through a “series of consecutive transformations of institutionalized mechanisms of exchange” (Leblebici, Salancik, Copay, & King, 1991 357). As explained in Section 5.2, the concept of “institutional rounds” is inspired by that of “punctuated equilibrium,” introduced by HI in Political Science, which interprets institutional change as the result of “punctuated” external shocks (Steinmo & Thelen, 1992). However, a recognized shortcoming of punctuated equilibrium is that it fails to incorporate agency and thus ends up being at odds with the very foundation of the HI approach, which considers political actors to be the driver of institutional change. In contrast, institutional rounds differ from punctuated equilibrium, because the gap between agency and structure is “filled” by reflexivity, i.e. external influences impact individuals’ understanding of institutions, informing change within the cluster organizations. According to their position within their organization, individuals have the power to enact change; the motives behind their actions depend on their understanding of the surrounding institutional framework. Individual perspectives are in turn shaped by both internal and external factors. The paper shows how actors in both government and business camps were led by their own perception of (i) the cluster as an organizational form (in the sources referred to as “industry”) and (ii) their role within it. In post-WWII Malaya, agency houses’ view of the rubber cluster, and of the plantation business more generally, deviated from that of the British government officials. The historical narration pinpoints that institutional reflexivity emerged from the change in the political *status quo*, driving the actors in both government and business to form contrasting views and expectations of the cluster. As a consequence of their frictions, each actor took steps to reinforce its own position against the other, producing incremental changes in the institutional structure, otherwise defined as institutional rounds.

Third, unlike mainstream cluster theory, by narrating cluster advancement during the shift from British rule to Malay control, I stress how indirect government intervention can be a

threat to the cluster while more direct intervention can be beneficial for it, urging a more careful investigation of its historical development when assessing government–cluster relationships. In the case of palm oil, I show how the British Government’s detachment from plantation activity was detrimental to the interest of cluster companies as opposed to the positive effect of the Malay Government’s more direct intervention in support of the smallholding sector. The paper thus extends the literature on clusters in developing countries, highlighting that international trade and foreign companies linked cluster locations with transnational business networks and provided organizational and governance legacies that the incumbent local government could eventually leverage to foster economic growth.

Finally, the third article focuses on the intermediary role of clusters in the context of the global palm oil market. It explores the under-researched topic of cluster competition, presenting the two palm oil clusters, in Southeast Asia and West Africa, as interacting elements of the broader global economic system. The cluster literature has not yet engaged deeply with the issue of competition because location specificity, in terms of actors and institutional frameworks, may present an obstacle to the comparison of different production systems, even when specializing in similar products. However, the example of palm oil shows that clusters, with similar key actors operating in the same market, do compete under certain conditions. The two palm oil clusters were both under colonial control and as an agricultural commodity the product offered only limited potential for differentiation.

The paper shows that knowledge continued to be exchanged between the two locations through the 1920s, informing the convergence of the African cluster towards the Asian model. Once producers figured out the most efficient way to deliver palm oil (through estates and smallholders growing the domesticated crops), they attempted to adapt this organizational and institutional structure to rival locations as well. The ultimate reason why Unilever decided to invest in Malaysia was to spread the risk of its standing African

investment, but in doing this it not only invested in Asia but also simultaneously triggered the upgrading of the African cluster, which competed with the Asian locations. Therefore, the presence and the quality of clusters' institutional frameworks – namely their system of production, infrastructure, companies, industrial associations, and regulations – was an integral part of multinationals' location decisions.

However, the developments occurring in the two clusters during decolonization led to refine the previous finding that the cluster's organizational structure functioned as an important driver of MNEs' location strategies, as only conditional upon the political stability of the host economy. In addition to the workings of the clusters, political stability was thus an additional factor to be considered in MNEs' location choices and one that is important to recognize when analyzing cluster competition. In fact, attributing cluster success exclusively to local dynamics or to the existence of “external linkages” fails to explain how the African cluster survived for more than 50 years after the emergence of its Southeast Asian counterpart. In the case of palm oil, Indonesia was seriously threatening African producers prior to World War II, but the sudden political crises in Southeast Asia favored renewed investment in West Africa despite its less efficient organizational structure. Similarly, the difficulties of West Africa have to be factored in when evaluating the success of the Malaysian palm oil cluster during the 1960s. If political crisis had hit Malaysia harder rather than Nigeria or Belgian Congo, palm oil production might have been strengthened and concentrated in Africa following the Malaysian model. This suggests that cluster success is not uniquely dependent on local dynamics and hence should not be evaluated in absolute terms. Rather, it should be assessed on the basis of (i) the extent to which its organizational structure can be replicated and (ii) the contextual conditions in other competing locations, making a case for comparative analyses and relative comparative advantages.

6.3 Reflections on future research

Studying the palm oil cluster from an historical perspective allowed me to trace the process by which the cluster adapted to changing environments and to reflect on the general nature of institutions as durable but malleable structures as opposed to fixed sets of rules and constraints. The case of palm oil is an example of profitable cross-fertilization between Business History and Economic Geography, Development Studies, and International Business. In my analysis, I have taken some initial steps to illuminate the historical role of clusters in the building of the global economy and in creating environments that facilitate the positive inclusion of foreign investment. Further research based on archival material is now required to sharpen some of the ideas presented in this thesis. In the case of palm oil, historical methods have offered valuable tools to the study of clusters as geographical phenomena. By placing the cluster in temporal perspective, the analysis overcame the narrow focus on the specific location of the cluster to embrace the more complex global contingency, involving diverse political and economic settings, often distant from the cluster but nevertheless relevant to its development. Following my case study, more examples of the global reach of clusters are undoubtedly needed. On the other hand, Economic Geography can enrich historical research in a transdisciplinary fashion, by lending specialized notions and shedding further light on spatial issues that are often taken for granted in the Business History literature, such as globalization, clusters, service hubs, and global cities.

Through the case of palm oil, I addressed several lacunas in cluster theory, but further research will be needed along the same lines. First, the topic of cluster competition has so far been ignored in the cluster literature due to the narrow focus on location specificity; the fact that clusters are generally extremely specialized and highly contingent has hampered comparative analyses. A notable exception is Saxenian's (2000) study of the Silicon Valley and Boston's Route 128, though this still concentrates on regional differences within the

same nation state and is not intended to explore the linkages between these two locations and the broader global economy. In contrast, as my thesis shows, competing locations in distant countries can also cooperate and exchange knowledge, especially if they share key actors. More research is needed on the relationships between clusters producing the same product: how do they interact? What are the potential effects in terms of institutional structure and competitiveness? My third paper suggests that the African cluster converged towards the Southeast Asian model; future studies should investigate the potential for institutional isomorphism across clusters and mechanisms of mutual influence between clusters in different locations, making explicit use of institutional theory.

Second, in the Business History literature, interesting research might emerge from a closer analysis of colonial legacies in developing countries and their relationships with existing export clusters. In my second paper, I showed that the Malaysian Government adopted the governance practices in use under colonial rule, but unlike the withdrawing British Government, it was able to intervene directly to foster local growth through cooperation with the cluster players. Thus, future research might concentrate on different configurations of cluster governance and government intervention in clusters, depending on the type of political regime being dealt with.

Third, more studies are needed to understand the conditions leading to the establishment of “global clusters”, that is to say those peculiar clusters that are major world providers of a specific good. By supplying the majority of global demand, these clusters are particularly insightful cases for designing solutions that overcome the duality between locality and globality. This is especially interesting for, but not limited to, agribusiness clusters. Given that agriculture is more climate – and geography – dependent than other sectors, the number of locations suitable for production might be more limited. My first paper suggests that a mix of factors led to the successful emergence of this export cluster, such as a network of internationally oriented traders and the existence of a service hub; further analysis of these

specific elements might provide new insights into the role of globally acting clusters and in the process of globalization.

My study could and should be expanded on in several ways. Although this might be empirically challenging, it would be particularly relevant for future research to focus in more detail on palm oil smallholders under the FELDA schemes and the related outcomes in terms of social upgrading. A focused study on the (primarily) ethnic Chinese entrepreneurs that entered the industry after the decline of agency houses will also provide new insights on shifting representation within clusters and complement the results of my dissertation on this topic. Further, the study of the development of the cluster from the 1970s onward could yield additional findings on the role of clusters as drivers of local development. In the 1980s, Malaysian companies started opening up estates in Indonesia, obtaining land grants in exchange for participating in World Bank-sponsored smallholding programs. Thus, an interesting question would be whether the regional expansion of the palm oil cluster during the 1980s produced institutional convergence from Malaysia towards Indonesia, not just within the cluster but also at the government level, through the creation of liaison institutions between the public and private spheres following the Malay model.

For International Business, a promising line of inquiry emerging from my thesis concerns the role of anchor firms within the cluster. A closer look at the role of Unilever in the emergence, survival, and revival of palm oil as a major vegetable oil and its relationship with other corporate actors within the cluster may lead to new findings on the mechanisms of cluster integration and polarity within broader GVCs.

Finally, a variation on the theme of cluster competition could involve examining the case of clusters specialized in different competing product segments within the same market. A very interesting history paper could emerge from the analysis of archival sources on the “battle of oils,” which took place in the US when palm oil and soybean oil were vying for

primacy in the world market for vegetable oils. During the 1980s, Southeast Asian palm oil became the target of a boycott campaign, supported primarily by the powerful American Soybean Association, according to which the palm oil contained in certain foodstuffs was a major cause of heart disease. Such research may serve as a relevant historical case for evaluating cluster resilience in the face of political smear campaigns, and may also have current policy implications given that palm oil was recently attacked as a threat to biodiversity and sustainability.

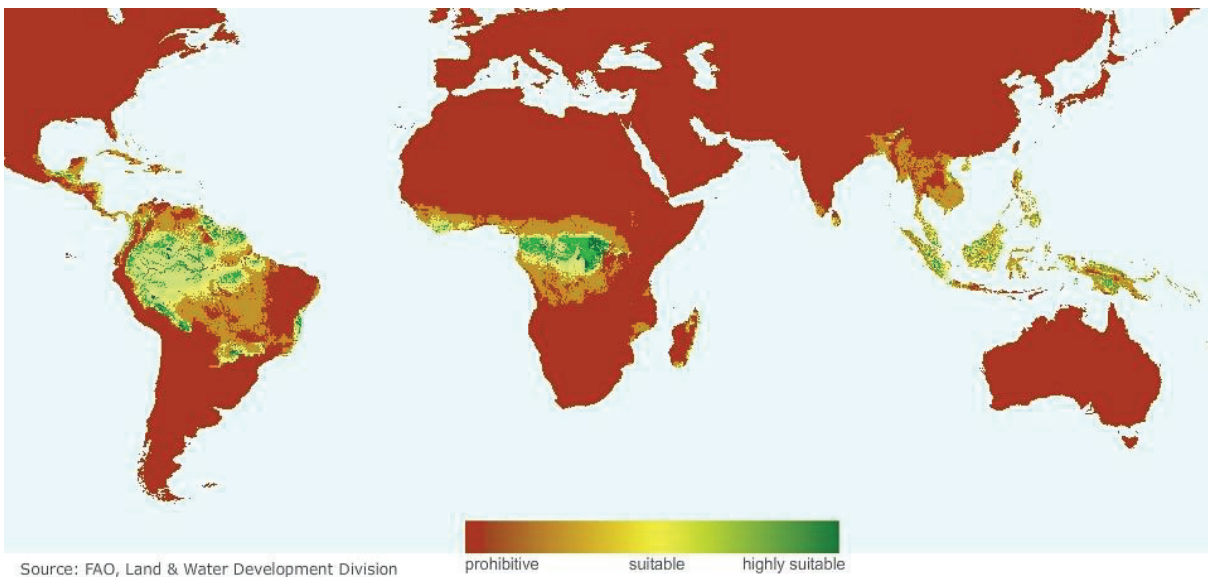
In conclusion, clusters are durable institutions that adapt to changing contextual conditions. This thesis presented them as median spaces between global pressures and local specificity, both of which contribute to their development. Clusters are more complex phenomena than has often been assumed, and if we are to understand them fully we must undoubtedly approach them from a comparative perspective.

Tables and Figures

Figure 1. Map of Malaysia and Indonesia today



Figure 2. Map of world territory suitable for oil palm cultivation



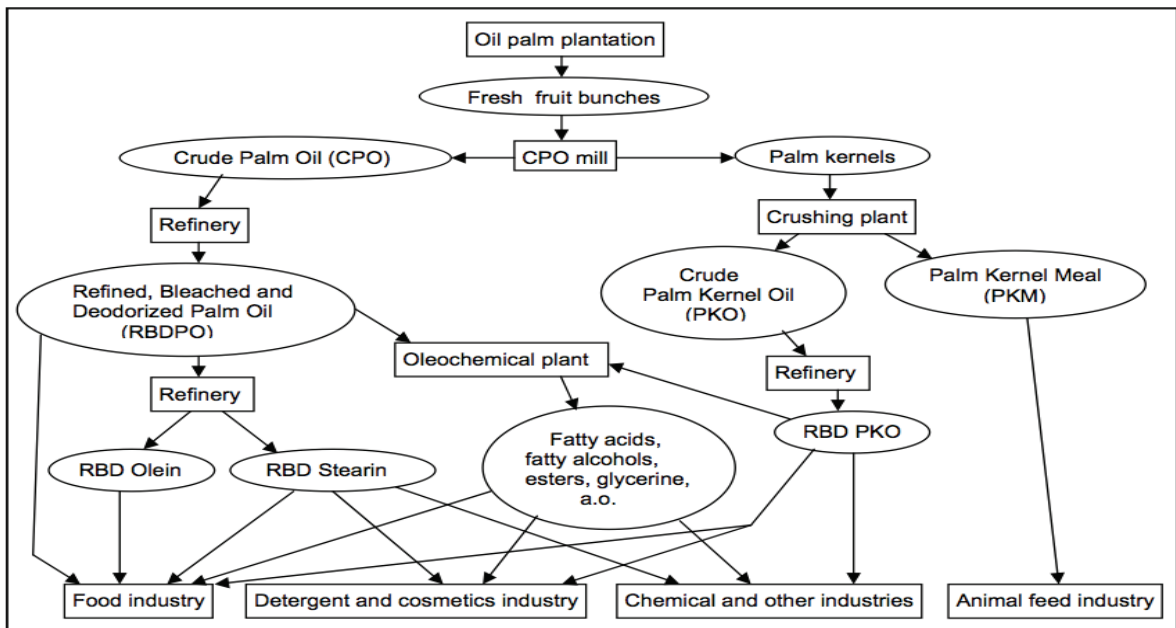
Source: Fao Statistics. Retrieved From: <http://www.fao.org/nr/nr-home/en/>

Figure 3. Palm Oil in five steps



Source: PORAM Presentation, (2014)

Figure 4. Palm oil supply chain flowchart



Source: van Gelder, *Greasy Palms Report*, Friends of Earth, (2004)

Figure 5. Map of colonial Southeast Asia during 1910s

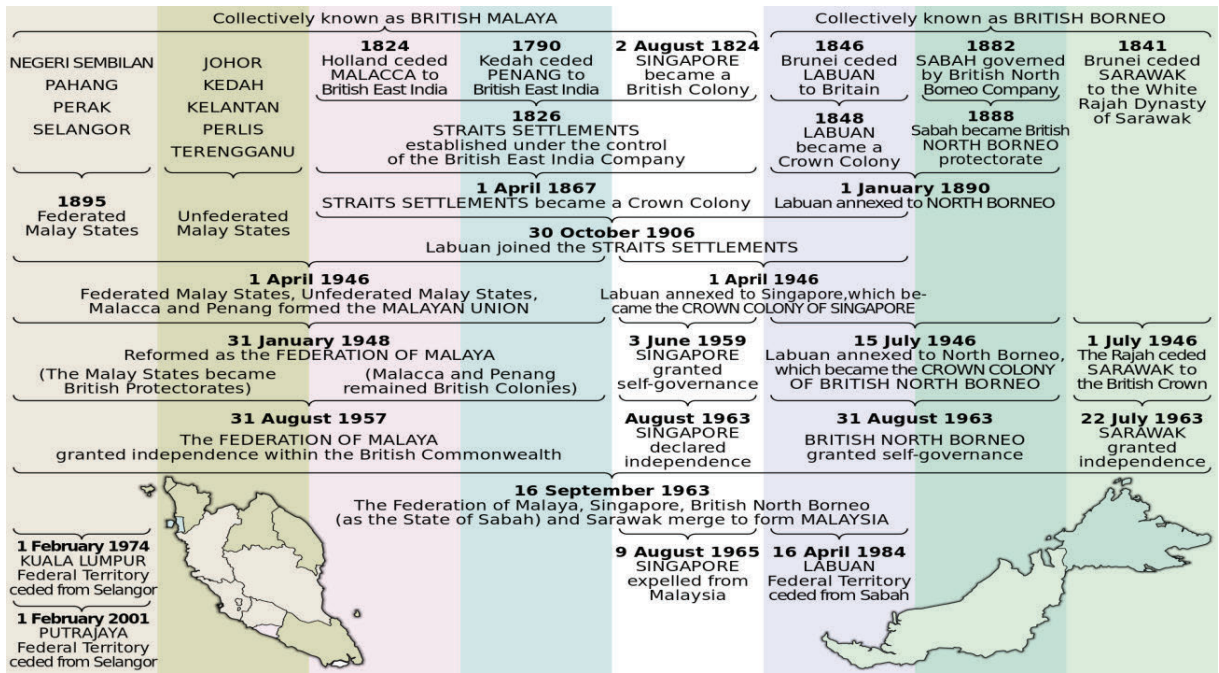


Figure 6. Map of colonial West Africa during the 1910s. (British possessions in red)



Source: Image: New World Encyclopedia

Figure 7. Timeline of Malaysia's political history

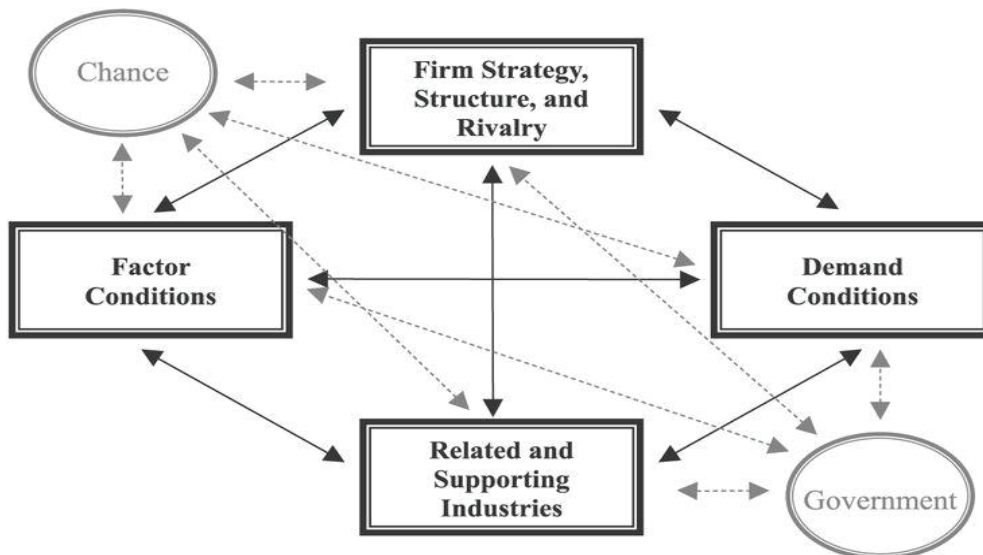


Source: Uwe Dederling. Retrieved from:

http://commons.wikimedia.org/wiki/File:Malaysia_Tree_Diagram.png and

http://commons.wikimedia.org/wiki/File:Malaysia_location_map.svg

Figure 8. Porter Diamond Model



Source: Porter (1990)

Table 1. Main palm oil players in the Southeast Asian cluster in modern times (2013)

Name	Country Listing	Corporate Type*	Plantation Ha in SEA	Ownership (top 3 shareholders)	Ethnic Chinese	Key Personalities	Vertically Integrated
SimeDarby Berhad	Malaysia	government linked conglomerate	525,000	PNB; ASTB; EPFB - government institutions	no	n/a	yes
Golden Agri Resources Holdings Berhad - FELDA	Singapore	public company	467,000	Fianbo International - Suna Mas Group	yes	Widjaja Family	yes
Genting Plantations Berhad	Malaysia	government linked company	430,000	FELDA agency; EPFB; PNB	no	n/a	yes
Wilmar	Malaysia	listed subsidiary	288,000	Genting Group Berhad: 40% by Kien Hwat Realty Sdn Bhd (family)	yes	Lim Goh Tong and Lim Kok Thay	no - R&D division
Astra Agro Lestari TBK PT	Singapore	public company	280,000	Kaok Brothers; Kraft Food; Archer Daniels; Astra International PT: 50% by Jardine Matheson (HK)	yes	Marua Sirous & Khoon Hong Kuok	yes
Kuala Lumpur Kepong Berhad (KLK)	Indonesia	listed subsidiary - public company - government linked	273,000	Batu Kawan Berhad; EPFB; FELDA	yes	Soeryadajaya Family Lee Oi Hian and Lee Hau Hian	no
IOI Corporation Berhad	Malaysia	public company - government linked	250,000	Vertical Capacity Berhad; EPFB	yes	Lee Shin Cheng	yes
Louisa Sumatra TBK PT	Indonesia	listed subsidiary - subsidiary of government linked group	229,000	Indofood Agri Resources Ltd: 50% Salim Group	yes	Sodono Salim; Hendra Widjaja	yes
Kulim Plantation Berhad	Malaysia	subsidiary of conglomerate group	184,000	Johor Corporation	no	n/a	yes
Raja Garuda - Asian Agri Ltd and Apical Group Ltd	Indonesia	listed subsidiary - government linked company	160,000	Raja Garuda Group	yes	Sukanto Tanoto	yes
First Resources	Singapore	government linked company	146,500	Eight Capital (India)	yes**	Cilandra Fangiono	no
Tradevinds Plantation Berhad	Malaysia	listed subsidiary - government linked company	126,000	State Pledged Security Account; Southern Agricultural Group Project; EPFB	n/a	n/a	no - R&D division
Sampoerna Agro TBK PT	Indonesia	listed subsidiary	115,000	Sampoerna Agri Resources; Emba Holding; Prudential plc; Alcatel Bell Pension funds	yes	Sampoerna Family	no
Rea Holding PT	Indonesia	listed subsidiary	102,000	PT Bakrie & Brothers Tbk.	no	n/a	no
Bakrie Sumatera Plantations	Indonesia	listed subsidiary - subsidiary of palm oil group	100,000	Musim Mas Group	no	Nirwan D. Bakrie and Indra U. Bakrie	no
Musim Mas PT	Indonesia	government linked company	100,000	Lembaga Tabung Haji; EPFB	yes	Karim Family	yes
Tabung Haji Plantations (THP) Berhad	Malaysia	listed subsidiary - subsidiary of government linked group	97,500	BW Investindo; Matacuna Group; JPM Chase	no	n/a	no
BW Plantation TBK PT	Indonesia	public company - government linked	89,500	Boustead Holdings Berhad; LTAT	yes	Buidiono Widodo	no
Boustead Plantations	Malaysia	private government linked company	88,000	Maximum Vista Sdn; EPFB	no	n/a	no
United Plantations Berhad	Malaysia	government linked	50,000	n/a	no	Bek-Nielsen Brothers	yes
JC Chang Carotino	Malaysia	government linked company	40,000	IIM Corporation Berhad; EPFB; Desa Plus	n/a	n/a	no
IIM Plantations Berhad	Malaysia	government linked company	30,000		no	n/a	yes

Source: Companies' Websites.

*Public Company: listed whose core business is palm oil. Subsidiary: part of a diversified conglomerate, i.e. palm oil business is only one of the group's activities. ** CEO

Table 2. Main cluster players (rubber and palm oil) during the colonial period (1880-1945 ca.)

MAIN CLUSTER STAKEHOLDERS DURING COLONIAL TIMES					
FUNCTION	INSTITUTIONS	HEADQUARTER	RUBBER	PALM OIL	ACTORS
Producers	RGA	London	x		Agency houses and plantation companies
	RTA	London	x		Rubber traders
	PAM	Kuala Lumpur	x		Planters in British Malaya (European and Chinese)
	ISP	Kuala Lumpur	x	x	Planters and estate managers
	UPAM	Kuala Lumpur	x		European rubber planters
	MEOA	Kuala Lumpur			European and Chinese non-rubber planters
	AVROS	Medan	x		rubber planters in East Sumatra
	Palm Oil Pool	London		x	Palm oil estates in Malaya
	Sumatran Palm Oil Pool	N/A		x	Palm oil estates in Sumatra
Research	ISP	Kuala Lumpur	x	x	dissemination activities on behalf of planters in Malaya
	RRIM	Kuala Lumpur	x		British colonial government; RGA members and PAM
	Malaya Agricultural Department	Sedang	x		British colonial government
	AVROS' station	Medan, DEI	x	x	East Sumatran plantation companies
	Bogor Botanic Gardens	Bogor, DEI			Dutch colonial government
	Kew Botanic Gardens	Singapore	x		British colonial government
	Ceylon Botanic Gardens	Ceylon	x		British colonial government
	Gold Coast Agricultural Department	Accra		x	British colonial government
	Nigeria Agricultural Department	Ibadan		x	British colonial government
	Eala Botanic Gardens	Belgian Congo		x	Belgian colonial government
	INEAC	Belgian Congo		x	Unilever and Belgian colonial government
	Socfin research stations	Sumatra and Malaya	x	x	Socfin
	HAP research stations	Sumatra and Malaya	x	x	Hollandaise&American Plantation Company
	Dusun Durian Estates	Malaya	x		H&C
	Tennamaram Estates	Malaya	x	x	United Plantations
Chemara Estates	Malaya	x	x	Guthries	
Elmina Estates	Malaya	x		Barlows	
Government	Colonial Office	Singapore	x	x	
	High Commissioner's Office	Kuala Lumpur	x	x	

Source: Compilation of archival material (TNA, LMA, BC, UL) and secondary sources (Tate 1996; Martin 2003; White 2004)

Table 3. Main cluster players (rubber and palm oil) after WWII (1945-1970 ca.)

MAJOR CLUSTER STAKEHOLDERS AFTER WWII						
FUNCTION	INSTITUTIONS	YEAR FOUNDED	HEADQUARTER	RUBBER	PALM OIL	ACTORS
Producers	RGA	1912	London	x	x after 1965	agency houses and large plantation companies
	RPC	1951	Kuala Lumpur	x		RGA; UPAM; MEOA; smallholders
	MPOP	1952	Kuala Lumpur		x	Guthrie; H&C; Barlow; UP; Socfin
	JSC	1952	London		x	MPOP members controlling bulking facilities (Guthrie; H&C; UP; Socfin)
	MPOC	1969	Kuala Lumpur		x	FELDA and MPOP
	UPAM	1943	Kuala Lumpur	x		Foreign planters and smaller estates
	MEOA	N/A	Kuala Lumpur	x		European and Asian estate owners
	CREOA	N/A	Kuala Lumpur	x		Chinese rubber estate owners
	OPGC	1968	Kuala Lumpur		x	Big estates; planters; FELDA
	CDC	1948	London		x	British colonial government
Government	FELDA	1956	Kuala Lumpur	x	x	Malaysian Smallholders
	Unilever	1929	Port Sunlight		x	
	Ministry of Food		London		x	British Government
	Colonial Office & Secretary of States for Colonies		London	x	x	British Government
	Commonwealth Relations Office		London	x	x	British Government
	Treasury		London	x		British Government
	High Commissioner Office		Kuala Lumpur	x	x	British Colonial Government
	Malay(sian) Prime Minister Office		Kuala Lumpur	x	x	Malay(sian) Government
Research	Malaysian Ministry of Natural Resources		Kuala Lumpur	x	x	Malay(sian) Government
	Malaysian National Land Committee		Kuala Lumpur	x	x	Malay(sian) Government
	ISP	1919	Kuala Lumpur	x	x	dissemination activities on behalf of planters in Malaya
	RRIM	1926	Kuala Lumpur	x		British colonial government; RGA members and PAM
	Agricultural Department of Malaya		Serdang	x	x	British colonial government
	Gold Coast Agricultural Department		Accra	x	x	British colonial government
	Nigeria Agricultural Department		Ibadan	x	x	British colonial government
	WAIPOR	1938	Benin		x	British colonial government
	INEAC		Belgian Congo		x	Belgian colonial government
	Chemara Estates		Malaya	x	x	Guthrie
	Elmina Estates		Malaya	x		Barlows
	Tennamaram Estates		Malaya	x	x	United Plantations
	Dusun Durian Estate		Malaya	x	x	H&C
	OP Genetic consortium	1963-1973	Kuala Lumpur		x	Dunlop, Guthrie, H&C and Unilever
HCB		Belgian Congo		x	Unilever	
TPI	1955	London	x	x	British Government	
Royal Botanic Gardens		London	x	x	British Government	
OPS	N/A	London		x	British Government	
MARDI	1969	Kuala Lumpur	x	x	Malaysian Ministry of Agriculture	

Source: Compilation of archival material (TNA, LMA, BC, UL) and secondary sources (Tate 1996; Martin 2003; White 2004)

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The Emergence of an Export Cluster:

Traders and Palm Oil in Early 20th Century Southeast Asia

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Abstract

Malaysia and Indonesia account for 90 percent of global exports of palm oil, forming one of the largest agricultural clusters in the world. This paper uses archival sources to trace how this cluster emerged from the rubber business in the era of British and Dutch colonialism. Specifically the rise of palm oil in this region was due to three interrelated factors: (i) the institutional environment of the existing rubber cluster; (ii) an established community of foreign traders; and (iii) a trading hub in Singapore that offered a multitude of advanced services. This analysis stresses the historical dimension of clusters, which has been neglected in the previous management and strategy works, by connecting cluster emergence to the business history of trading firms. The paper also extends the current literature on cluster emergence by showing that the rise of this cluster occurred in parallel, and was intimately related, to the product specialization within international trading houses.

Keywords: cluster emergence; palm oil; trading houses; colonialism.

Introduction

Elaeis guineensis is the scientific name for the African oil palm, which is the highest-yielding crop in the world¹ and produces the most widely traded vegetable oil, palm oil.² Today, a single cluster located in Malaysia and Indonesia produces the majority of global palm oil supplies; in 2014, these two developing economies accounted for 86 percent of global palm oil volumes and over 90 percent of its exports.³

Yet the oil palm was not always the leading crop in the cluster and only in the mid-20th century did palm oil rise to become Southeast Asia's major export commodity. Palm oil owes its modern-day success to the organizational structure that it inherited from the closely related natural rubber business. The rubber cluster emerged in Southeast Asia between 1890 and 1930, and was concentrated largely in the territory of the Malay Peninsula and on the island of Sumatra, which at the time were under British and Dutch colonial rule respectively. Once the profitability of natural rubber had started declining after World War I (WWI), palm oil became the major rubber players' best option for diversification.⁴ The palm oil cluster thus emerged as a "spin-off" from this successful regional cluster. To trace how the adaptation of the cluster's organizational structure unfolded in the context of the colonial plantation economy, this paper sheds light on the pivotal role of rubber trading houses in the emergence of the palm oil cluster.

Theoretical contributions on the role of agricultural commodities in integrating former peripheral territories into the global economy have so far investigated the spatial developments and the mechanisms and structures governing transnational systems of production.⁵ Studies on imperialism have largely concentrated on the outcomes of the foreign presence on the national development of colonial territories and have triggered much debate⁶ relating to the long-term impact of foreign trade on countries' abilities to access and integrate into global markets. In contrast, economic geography and business studies have pointed out the relevance of clusters as products of local singularity for enhancing national competitiveness.⁷

The theoretical discussion on clusters is inextricably linked to the concept of space in economics. This scholarship revives Marshall's argument of external (or location) economies: in a situation of accessible and unrelenting demand, the geographical concentration of production in one specific location reduces costs through increased specialization.⁸ Since the early 1990s, numerous scholarly publications in different fields of the social sciences, from economic geography to sociology, business history, and geographical economics, have revisited the study of regional or local systems of production, labeling the phenomenon in different ways: industrial districts,⁹ *innovative milieux*,¹⁰ and new economic spaces¹¹. In his analysis of nations' competitiveness, Michael Porter distills the concept of the "cluster," defined as a "geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities."¹² Despite the diversity of approaches and purposes, these different traditions share the underlying assumption that geographical concentration favors economic growth.¹³ Introducing clusters as competitive tools by which nations can succeed in international markets, Porter was credited for positioning the discussion on location-related advantages in a comparative international perspective. However, some critics have argued that a major shortcoming of Porter's model was to underestimate the role of global linkages in explaining clusters' development.¹⁴ Looking at the work on industrial districts and economic regions respectively, Zetlin and MacKinnon et al. second this observation by pointing out that both lines of research suffer from "self-containment."¹⁵ As a partial correction of this, the global commodity chain (GCC) framework identifies transnational systems of production as relevant sources of cluster existence and upgrade, especially in developing countries.¹⁶ Interestingly for this study, the GCC literature points out that extensive foreign investment can be at the root of the geographical concentration of industrial activity in peripheral economies.¹⁷ However, the GCC model firmly favors structure over agency and, focusing on non-market relationships among firms, it obscures the impact of local contingency and the dynamics of interaction among key individuals within the cluster.¹⁸ Similarly, while accepting the significance of social dynamics within

clusters, Porter's analysis does not engage in a deeper understanding of how actors' interactions affect cluster evolution.

On the topic of cluster emergence, besides occasional exceptions,¹⁹ the existing scholarship is largely centered on the secondary and, to a lesser extent, tertiary sectors in developed economies.²⁰ An edited volume by Fornahl et al.²¹ reviews several contributions on cluster emergence, categorizing them into three main approaches: clusters can emerge from (i) accidents or specific attributes of the local context, successively informing path-dependent trajectories, (ii) endogenous collaboration within a smaller concentration of firms, developing a specific capability or asset either contextually or after the birth of the cluster, and (iii) as spin-offs from industries or firms that have developed exceptional competences. The volume concludes that there is no single explanation for clusters' emergence and makes a case for the existence of different phases in the process of industrial concentration.²² Despite the general agreement that clusters follow a life-cycle from emergence to growth, stabilization, and, finally, decline,²³ most contributions that explicitly address clusters come from management studies and do not engage in longitudinal or historical analyses.²⁴ In fact, studies on clusters frequently mention the role of "historical roots"²⁵ or find that "random historical effects"²⁶ contribute to geographical concentration. Porter mentions "historical circumstances" among other sources of cluster emergence (unusual and sophisticated demand, prior existence of supplier industries and isolated innovative companies).²⁷ However, most scholars consider history to be an exogenous variable rather than the result of actors' interaction and decisions.

The key problem with the literature is that it insists on the separation between (institutional) factors leading to cluster emergence and factors allowing the cluster to function, thus assuming in practice that cluster development is independent from its historical context.²⁸ In contrast, if emergence is conceived as a process rather than as an outcome,²⁹ it becomes easier to accept that several of the reasons allowing the cluster to function (namely interfirm cooperation, access to specific resources, or demand) can also be at the root of its very emergence.

Overall, cluster scholarship has so far underplayed the role of non-local linkages and individual actors in cluster development. Moreover, the more specific studies on cluster emergence overlook the time factor and dwell on static analysis of clusters' structural elements in different phases of their life-cycle. Meanwhile, the few cluster studies based on historical sources find that individual action and continuous interaction at the micro level are crucial elements accompanying the cluster through its evolution.³⁰ This makes the case for linking business history with cluster research and for using historical archives in studies of industrial emergence.³¹

A central claim of this paper is that interaction among foreign (non-native) traders and trading houses' product specialization propelled the emergence of one of the most enduring regional clusters serving the global economy. I apply theory and methods from business and colonial history to analyze the process leading to the birth of the palm oil cluster.

Several business historians have focused on the roots of international trade, investigating merchants' activities in different corners of the world during colonial times (for an overview of the trading house literature, see Table 2).³² Casson's theory of the trading firm provides a formalized framework, which helps connecting business history with cluster research.³³ Although the theory offers only a partial elaboration of the geographical and spatial dimension of these firms, it identifies successive phases in the activities of trading companies, starting with concentration of ownership and increased specialization via dynamics of horizontal and vertical integration, followed by diversification and, eventually, decline.

According to Casson, trading houses decline when their core commercial activity becomes routine, product requirements grow in sophistication, volumes approach mass production, and diversification opportunities shrink, implying a loss of flexibility in the company's organizational design.³⁴ In light of this, I examine the relationship between the activities of the trading firm described by Casson's theory and the process of cluster emergence. Showing that the palm oil (previously rubber) cluster in colonial Southeast Asia followed

this same path in its evolution, I argue that the decline of the trading firm occurred in parallel to, and is inextricably interrelated with, the emergence of the palm oil cluster.

This makes the present study one of the few contributions to the literature on cluster emergence that explicitly addresses the primary sector and less developed economies through historical methods.³⁵

The historical analysis sheds light on the role of agents within the trading houses, describing the formation of network effects and agglomeration economies at a micro level as outcomes of continuous interaction among traders and planters. Furthermore, the palm oil case illustrates how a foreign-invested agricultural cluster helped bridge the institutional gaps of “less developed economies” and favored their integration into global markets. Given that the merchants were themselves expatriates within a global network, through their activity they connected the cluster location with the international markets.

The paper is based on primary sources on agency houses and the colonial plantation economy in the period between the late 19th century and the 1930s. I consulted sources in five different archives: The National Archives in Kew Gardens, London (TNA), the Harrison & Crosfield (H&C) collection at the London Metropolitan Archives (LMA), the Guthrie Collection at the SOAS Archives in London (GC), the Barlow Collection at Cambridge University Library (BC), and the Unilever Archives in Port Sunlight (UL). I also accessed additional material in the Malaysia and Singapore National Archives. Moreover, the analysis draws on the secondary literature on the evolution of merchant firms, plantation economy in tropical areas, and the early development of palm oil and natural rubber production in Southeast Asia.

Section 2 focuses on the traders and trading houses operating in Malaya and Dutch East Indies (DEI) and shows that their activities set the scene for the emergence of both the rubber and the palm oil clusters. Section 3 explains the formation of the rubber cluster in the decades prior to the Great War. Section 4 analyzes the shift to palm oil as a response to changing demand patterns in the interwar period. Finally, Section 5 presents the findings and concludes.

Traders' Interaction at the Root of the Rubber and Palm Oil Cluster

Traders were crucial actors in the expansion of the plantation-based economy in colonial territories. British trading houses first introduced palm and palm kernel oil from West Africa to European markets in the early 19th century.³⁶ Following the price increases and numerous scientific achievements that occurred in the first half of the century,³⁷ palm oil products started being used as industrial lubricants and components for the production of candles, soap, and, eventually, margarine. In the 1850s, when palm oil prices experienced a downward trend,³⁸ the oil palm seeds had just reached the fertile soils of Southeast Asia thanks to the activity of Dutch and British traders and the support of agricultural institutions in the colonial territories, such as the Botanic Gardens.³⁹ However, the oil palm domestication was postponed due to the emergence of another imported crop: natural rubber. In 1880, the Botanic Gardens of Singapore received the first seedlings of what was alleged to be the best rubber variety, *Hevea Brasiliensis*, which had been smuggled from the Amazon region around Manaus by the British adventurer Henry Wickham.⁴⁰

Despite the lack of coherent imperial policies, between 1870 and 1900, Britain's formal empire significantly broadened. Simultaneously, its economic influence — the highly debated informal empire⁴¹ — expanded even further through commercial relationships and the financing of infrastructure, strengthening several centers for the exporting of primary production, set around port or river facilities. These locations gradually emerged as hubs for global trade⁴² due to interaction, often reaching the level of intermarriage, between Western merchants and native elites. Although sources on individual countries reveal a complex patchwork of situations across different regions, the general outlook suggests that international trade was in the hands of this ethnically heterogeneous and thick network of families, which Charles Jones⁴³ labeled “cosmopolitan bourgeoisie.” According to Jones, these businessmen shared a common mentality, featuring a strong faith in the free market and prioritizing business conduct over matters of nationality and ethnicity.⁴⁴ Thanks to their transnational reach and global outlook, they transferred inputs, such as crops and labor, to more politically stable business environments with better institutions. After the abolition of

the East India Company's monopoly in 1813, a vast array of unincorporated individual or partnership concerns grew out from family and friendship connections among this cosmopolitan bourgeoisie (See Table 2 for an overview of the trading house literature).⁴⁵ Although the core of their operations took place abroad, these merchant houses were headquartered in major European ports such as London, Liverpool, Hamburg, and Le Havre. Leveraging their acquaintances in banks and shipping companies in the homeland,⁴⁶ these merchant houses could access the means and funds to expand their operations while providing high-return opportunities abroad. Second, they could access highly skilled staff, such as aspiring young traders and agriculture graduates, who were willing to relocate to exotic locations. Third, European ports were the source of privileged information on Western demand in terms of volumes and product specifications.⁴⁷

On the other hand, in the Eastern colonies, non-local Asian (often Chinese and, to a lesser extent, Indian and Hadharami Arab) traders controlled the regional trading routes from the major Southeast Asian ports, and especially Singapore. The presence of a large community of Chinese merchants operating in both British Malaya and DEI was a critical factor in Southeast Asia's dominance in the export of tropical produce vis-à-vis other competitor locations. Unlike Brazil or West Africa, where indigenous middlemen were in control of local trade, outsiders had been managing a structure for the commercial exploitation of local production in Southeast Asia since the 14th century. Chinese merchants were "middlemen in Singapore's middleman economy."⁴⁸ As such, they connected Southeast Asia's markets with China's, became involved in credit activities, and subsequently integrated vertically into production in remote areas supporting the rapid development of the tin industry and the cultivation of crops such as gambier, tapioca, and pepper in the early 19th century. When Western traders established themselves in the Strait Settlements — Singapore, Dinding, Penang, and Malacca (see Figure 1) — these Chinese merchants represented their first natural interlocutors.⁴⁹ Due to their access to regional markets, the Chinese merchants operated on credit as distributors of Western manufactured products in the region in exchange for raw material in bulk. Thus, establishing sound contacts with the Chinese

community was considered a priority for anyone who intended to run a business in the Eastern colonies, so much so that Western merchants competed (and often bankrupted themselves) to offer them the best credit terms.⁵⁰ Furthermore, Chinese traders were dominant in the “coolie trade,” which involved providing indentured labor from South China, and later from Java, to the foreign-owned plantations of Malaya and Sumatra.⁵¹ Although labor shortages remained a *leitmotiv* of the agricultural sector in this region too, the greater availability of labor resources relative to other tropical areas such as Africa or South America was a major factor attracting European investors and planters to Southeast Asia.⁵² After 1877, the British established three colonial Protectorates of Chinese Immigrants in Singapore, Penang, and Malacca with the purpose of regulating the increasing flow of migrants.⁵³ At the turn of the century, the rubber boom boosted demand for unskilled labor so much that between 1881 and 1932 more than 100,000 coolies per year reached Singapore from China and were directed to the plantations in the surrounding areas.⁵⁴

As bulk buyers and labor brokers across the region, Chinese merchants contributed to the early expansion of plantations by integrating vertically in production themselves and by distributing seeds and supporting smallholders’ activity in East Sumatra. The most powerful Chinese businessmen in Singapore at the turn of the century were two Malacca-born men, Tat Chin Seng (who was active in shipping and tropical planting) and Lee Keng Liat (who had a large interest in tapioca), the Singaporean Tat Tock Seng, and two self-made men from China, Yap Ah Loy and Loke Yew, who had built huge fortunes through tin and tapioca.⁵⁵

The fact that these traders’ activities stretched across the Straits brought together two formally distinct colonial territories, British Malaya and DEI, defining the geographical reach of the emerging cluster. It also helped to sustain Singapore’s role as a service hub.⁵⁶ During the rubber boom up to the mid-1910s, Chinese traders continued channeling Indonesian smallholders’ production via the city, while Western producers were increasingly shipping from other locations.

Western traders supplied capital inputs (seeds, machinery, and finance) and educated human resources (estate managers and engineers), while Chinese brokers controlled the inflow of low-skilled tappers and harvesters from the surrounding territories. This extensive partnership, which almost became a mutual dependency, between the two communities of foreign merchants was vital for the emergence of the rubber — and later palm oil — cluster. It also led the two trading communities to specialize further: the Chinese operated as retailers and controlled trade flows from rural areas, while the Westerners were primarily wholesalers to European markets.⁵⁷ Linking Asian locations with European demand, Western traders scaled up the existing Chinese trade activity from a regional to a global scale. Furthermore, being outsiders, Chinese and Western merchants performed the function of transnational “linkers,” integrating British Malaya and DEI with both regional and global markets.

World demand for natural rubber more than doubled from 20,000 tons in 1890 to 52,500 in 1900, and it subsequently grew at a rate of 5.5 percent per year until 1908, followed by double-digit increases averaging over 16 percent per year until 1917.⁵⁸ As early as the late 1890s, foreign planters that had previously specialized in coffee were switching to rubber and the Eastern colonies were gaining momentum as a “hot” destination for the global network of tropical planters, particularly from Ceylon, where the rubber tree, *Hevea*, had first been domesticated. Among them were a young Eric MacFadyen and Herbert Brett, who would later become key figures in the leading firm H&C, and other British and Scottish owners of large estates, such as H.C. Rendle, T.W. Bailey and E.V. Carey, E.B. Skinnier, who would be the future chairman of the Rubber Growers’ Association (RGA) in the 1920s, and the Kindersley Brothers, who allegedly planted the very first rubber lot in their Selangor estates.⁵⁹ Thanks to the support of colonial institutions and some rubber enthusiasts, such as the director of the Singapore Botanical Gardens, Henry Ridley,⁶⁰ in less than 15 years British Malaya and the Deli region of Sumatra had surpassed Ceylon in developing planting, tapping, processing, packing, and shipping techniques for rubber plantations.⁶¹ As much as this rubber mania fueled the emergence of the cluster, it also hindered the potential

expansion of alternative crops, such as the oil palm, which until the mid-1910s continued to be used only as an ornamental plant.

Agency Houses Funding the Rubber Cluster:

Vertical Integration between 1905 and the 1920s

In 1900, Brazil and West Africa were satisfying almost the entire world's demand for rubber, which amounted to over 50,000 tons. Although Malaya and DEI increasingly attracted resources with which to develop rubber estates, production was slow to take off, as the *Hevea* tree takes six or seven years to mature for tapping.⁶² This explains why in 1907 the region still accounted for only 5 percent of global output.⁶³

Between 1903 and 1907, moderate price increases triggered a rather confused and disorganized speculative expansion of rubber estates, which in turn sparked a process of backward integration of existing trading activity.⁶⁴

Simultaneously, Chinese brokers were encouraging the development of indigenous smallholdings in both Malaya and DEI, which would reach half the region's agricultural acreage in the 1920s.⁶⁵ Taking advantage of the infrastructure available to the estates, Chinese merchants distributed rubber seedlings to ethnic Chinese farmers or former indentured labor occupying peripheral land and provided them with logistics and marketing services via Singapore.⁶⁶ This spillover effect furnished the industry with regional cohesion, and this bolstered the emergence of the cluster.

Until 1905, large portions of investment in rubber had come from colonial planters operating in Ceylon or in the region. Since the turn of the century, merchant houses trading in the commodity started to finance acreage expansion through both the acquisition of equity shares and direct estate management. The trading firms that could obtain agency from the major rubber planters were the ones destined for longstanding success: Jim Allison of Barlow Brothers had links with the planter Tom Bailey; Guthrie's John Anderson used the firm's reputation in Singapore and its contacts with powerful Chinese such as Loke Yew to consolidate agency in and control of the rubber estates. Boustead Brothers, under the

leadership of Edgar Money, one of the first to convert tea to rubber in Ceylon, quickly expanded in Malaya, employing the planter Eric MacFadyen as director.⁶⁷ Finally, H&C, one of the major tea traders in Ceylon, entered the Malayan scene due to the director, Arthur Lampard's enthusiasm for rubber and the advice of the experienced planter Herbert Brett.⁶⁸ The process of gradual integration into production marked the transformation of these trading concerns from private partnership, where they had been termed "merchant houses," into joint-stock companies,⁶⁹ also called "agency houses" and more similar to multinational, diversified concerns.⁷⁰ From 1904, the abovementioned Guthrie, H&C, Thomas Barlow & Brothers, Boustead Brothers, and others, such as Edward Boustead and Cumberbatch & Co., were frontrunners in this field (see Table 1). Due to their liaisons within the UK banking and shipping industry, these companies were in a strong position financially and logistically to support the expansion of acreage needed to match the growing Western demand⁷¹. Moreover, by acquiring stakes in the plantations, these companies could monitor the mechanism of price formation, stemming profit volatility through cost control. External financing went hand in hand with vertical integration, as traders were even better able to leverage their reputations to secure creditors when they showed a commitment to the direct management of the estates. As reported in the financial press: "The fact that firms of repute such as Harrison & Crosfield were prepared to assume the responsibility of effectively controlling the management of the estates created a feeling of confidence that has not been misplaced."⁷²

In 1903 H&C participated in the flotation of Anglo-Malay Rubber & Co., and of Petaling Rubber Estates Syndicate shortly after. In the same year, H&C's major rival, Guthrie, financed the acquisition of Linggi Plantations and Selangor Rubber Company in the Malay Peninsula.⁷³

At this point, Eastern rubber was listed as a distinct variety compared to the Brazilian "Pará" type in the international markets and rubber had become the major crop in terms of acreage in Southeast Asia. In 1908, Dunlop's introduction of the motor car tire came alongside the expansion of automotive production in the US, which accounted for more than

40 percent of global demand for rubber.⁷⁴ Price increases fueled plantation mania, widely known as the “rubber boom,” through 1909 and 1910, when prices reached 12/9 USD/lb., almost doubling the 1905 level. Over the subsequent decade, the plantation system underwent significant reorganization, which transformed the region into the world’s foremost rubber supplier and brought about the formation of the export cluster.

H&C’s Petaling dividend had a 165 percent growth in 1909 and twice that in 1910. Rubber returns were even higher for Guthrie’s ventures with Linggi and Selangor, yielding returns of 165 percent and 287.5 percent respectively in 1909 and almost doubling those figures in the following year.⁷⁵

This boom continued to attract planters to the region from all over the world. Yet, once the speculative sprout abated, barriers decreased for planters, but smaller trading players found themselves unable to cope with the severe price declines starting in 1911 and the industry was consolidated in the hands of the biggest agency houses. Despite the presence of a limited number of hardened competitors rushing to Singapore such as Japanese traders,⁷⁶ the US Rubber Company,⁷⁷ and giant manufacturers such as Dunlop, Goodyear, and Firestone, by the early 1920s a few large British agency houses were in control of the lion’s share of the industry. According to Tate: “Of the 18 agencies with five or more client sterling companies in 1917, the big five merchant houses (...) controlled 2/5 of all the companies concerned, along with similar percentages for the total area owned and the capital investment in them.”⁷⁸ Above all, H&C and Guthrie established themselves as dominant players, partially as a consequence of their mutual hatred, yielding a rivalry that endured for more than 50 years and resulted in an investment arms race.⁷⁹

Despite these internal frictions, during this phase of consolidation, the cluster players also grouped several of their interests in natural resource exploitation in the form of investment trusts,⁸⁰ which had the effect of funneling the industry even further into the hands of a restricted nexus of businessmen (and colonial officers) through a maze of interlocked and interlinked financial ties. The second decade of the century saw these companies expanding further, especially towards Sumatra and, eventually, Borneo. H&C had opened a branch in

Medan (Sumatra) already in 1906 and in Java in 1911, while Guthrie opened in Medan in 1913.⁸¹ By 1911, Sumatra already boasted almost 200 rubber companies; 44 percent of them were registered in London under these major agencies and accounted for 70 percent of the estate land.⁸² By the end of WWI, both H&C and Guthrie were involved in more than 40 plantation companies, while smaller players such as Barlow or Boustead Brothers controlled between 10 and 20 companies each.⁸³

The ongoing concentration triggered the creation of industrial associations. In 1907, a preliminary meeting of 30 rubber agencies operating in Southeast Asia took place in London, and this, in practice, sealed the foundation of the RGA.⁸⁴ Among those present were Herbert Brett for H&C, L.T. Boustead of Boustead Brothers, and several other representatives of the most prominent rubber interest in Ceylon and Malaya.⁸⁵ The formation of the RGA represented a watershed moment in cluster emergence, whereby key participants formalized the existence of an interest group, outlined a long-term business strategy, and started collective negotiation with external stakeholders, such as the government. In 1913, the RGA agreed to maintain a presence equaling one third of the board at the Rubber Trade Association, the newly formed association of brokers and dealers in London. The same year, Arthur Lampard supported the creation of the International Association for Rubber Cultivation in DEI to integrate the RGA with the combined rubber interest outside of Malaya.⁸⁶ Although the RGA was widely considered the voice of British agents and failed to represent a substantial part of the industry — namely non-British Western players and the large Asian interest⁸⁷ — its main advantage was that it offered an institutional umbrella to the inherently fragmented plantation industry. The RGA also held close connections with colonial officers, for example with the first two resident-general officers of the Federated Malay States, Frank Swettenham and William Treacher, who had obtained positions in the industry after serving for the colonial administration.⁸⁸ Thanks to these, the RGA became the main interlocutor with different industry stakeholders, to the extent that matters of marketing, promotion, pricing, and taxation became the bread and butter of its daily operations.⁸⁹ The RGA was also the prime driver for joint research efforts,

which took off only slightly later, during the interwar period, with the formation of the Rubber Research Institute in 1926.

The RGA in London represented the core of the cluster's global institutional linkages, with Singapore acting as a detached geographical pivot connecting production and services through a formal institutional apparatus. Through the creation of industry associations like the RGA, agency houses helped construct the international profile for the cluster vis-à-vis outsiders, namely global (mostly American) buyers. At the same time, the RGA lobbied for a smoother connection between different parts of the value chain. It provided the plantation economy with a service platform, which allowed the cluster to stretch from Singapore towards the plantations in the surrounding areas.

By 1920 the total rubber acreage for Malaya and DEI combined amounted to about 3.5 million acres, representing 80 percent of world supplies,⁹⁰ a quarter of which were auctioned through Singapore. As a consequence of the increasing volumes traded,⁹¹ the number of Indian, Chinese, and Western merchant houses more than doubled in Singapore, and between 1870 and 1915, the entrepôt city overtook the other two commercial centers of the region, Malacca and Penang,⁹² establishing itself as the major regional transshipment port for rubber.

Once trading firms had become more involved in production activities, Singapore gradually became the main reference site for the cluster players, attracting increasingly specialized services and highly skilled specialists. Simultaneously, as happened in the case of Ceylon, the fact that similar players were attracted to the Eastern colonies diminished the competitiveness of other rubber locations, where the remaining agents struggled to access the specialized knowledge and services needed to maintain a foothold in the international markets.

Palm Oil and Portfolio Diversification from the 1920s onward

From the 1920s, agency houses' diversification strategies initiated the gradual transformation of the rubber cluster into palm oil, whose production would escalate only after World War II (WWII). The introduction of palm oil as an alternative to rubber and its rapid development as a global export commodity threw into relief the trading firms' transformation from diversified, short-term-oriented concerns into specialized providers of agricultural commodities.

In the early 1920s, global demand for rubber was sluggish, prices had plummeted, and the rapid expansion had wiped out most of the other crops that had made the region its fortune before the turn of the century. Major price fluctuations stoked massive speculation around rubber, reinforcing its volatility through the 1920s.⁹³ Rubber production by smallholders⁹⁴ in both Malaya and DEI buttressed the downward trend in rubber prices, pushing Britain to support the introduction of a restriction plan, the Stevenson Scheme, to stabilize prices between 1924 and 1928.⁹⁵ The policy aimed to improve Britain's debt position after WWI, but it seriously concerned US buyers, who represented about 75 percent of global demand at the time.⁹⁶ Given Britain's stubbornness in defending its quasi-monopoly, the need to manufacture a synthetic version of rubber had become a pressing one for Russia and the US, which together represented the majority of world demand.⁹⁷

On the producer side, the organizational structure resulted from the vertical integration and acreage expansion of the 1910s turned into a challenge against a backdrop of depressed demand. This was especially true for Malaya, where rubber occupied the majority of cultivated land. Overdependence on one source of revenue urged the industry to start looking for diversification strategies.⁹⁸ However, agency houses' agricultural activity had become so specialized around rubber that the existing practices, agronomic knowledge, and coordinating institutions could be adapted only to a restricted range of crops. The perennial problem of price volatility initially triggered the need to make production more efficient and resulted in the increasing application of scientific methods to solve problems connected to growing and manufacturing rubber. Since the end of the boom, research efforts had been

carried out by European experts employed by private companies, different industry associations, and colonial institutions such as the Agricultural Department of Malaya, the Botanical Gardens in Singapore and Buitenzorg, and the HAPM and AVROS⁹⁹ research stations in East Sumatra. In particular, the RGA was lobbying for the introduction of publicly funded research stations and the amalgamation of existing research projects across London, Ceylon, and Malaya as well as stronger coordination of research units.¹⁰⁰ Until the 1920s, most research activity had been focused on rubber, but during the post-WWI slump, advances in the edible oil market and several technological breakthroughs in oil processing¹⁰¹ made the production of edible oils increasingly attractive. The oil palm tree proved to be a suitable biological alternative and marketable solution, as it even showcased a series of advantages over the *Hevea*. First, it flourished well in the local volcanic soil and was easier to develop because it took only three years to mature. Second, it could grow only in a much narrower latitude span, which would reinforce the region's comparative advantage, reducing the number of competitor locations. Third, unlike rubber, the oil palm was introduced directly as an estate (and European) crop since the need to locate plantations close to mill facilities posed high overhead costs, favoring large-scale production over (Asian) smallholding, which by the mid-1920s was perceived as a rising threat.¹⁰² Finally, as a key advantage, palm oil producers could benefit from the well-established maritime industry, which had experience of shipping liquid latex – an expertise which could then be shifted into carrying palm oil.¹⁰³

In 1911, following some investments in rubber estates, the Belgian agronomist and plantation entrepreneur Adrian Hallet had launched pioneer oil palm estates in the Deli region of Sumatra.¹⁰⁴ In the same period, Hallet supported two French planters, Henry Facounnier and Franck Posth, floating a company for their coconut estate in Selangor, where the first Malaysian commercial cultivation of the oil palm began in 1917.¹⁰⁵ During the 1910s, the Hallet Group, which merged with Société Financière des Coutchoux (Socfin) in 1919, was at the forefront of oil palm expansion, especially in Sumatra.¹⁰⁶ Thanks to its expertise in rubber and knowledge of oil palms acquired in Belgian Congo, the group, under

the leadership of Hallet and later his nephew Robert Michaux, managed to lead a quick expansion of the new crop in both Malaya and East Sumatra. In the 1920s, Socfin set up the first palm oil bulk shipping station in Belawan. By the early 1930s, the company controlled more than one third of oil palm acreage and by 1939 it accounted for an estimated 16 percent of global exports of palm oil products. Of the agency houses based in Malaya, Guthrie was the first to plant oil palms in a group of estates around Kluang in Johor (Linggi Plantations, United Sua Betong Rubber Estates, and Malacca Rubber Plantations). In 1930, these three companies merged their interests in oil palms by creating Oil Palms of Malaya¹⁰⁷ and in 1933 Guthrie organized its own palm oil bulk shipping facility in Singapore.¹⁰⁸

By the end of the decade, Socfin and Guthrie together controlled more than 70 percent of the nascent Malayan industry, which had expanded from only 10,000 Ha in 1922 to about 50,000 Ha in 1940.¹⁰⁹ In the wake of WWII, Southeast Asia had overcome West Africa as first global producer of palm oil, accounting for 55 percent of supplies.

With the exception of small niche producers such as the Danish company United Plantation (UP), operating in palm oil since the early 1920s,¹¹⁰ rubber players were initially wary of entering the business on a large scale. First, as an export commodity, palm oil competed with several substitute oils, which meant tough price competition. Second, a major cause of concern was the monopsonistic character of demand, as the soap manufacturer Lever Brothers accounted for the majority of global purchases.¹¹¹ This was the main reason for H&C's delayed entry to the market. The firm's chairman Eric Miller's skepticism about palm oil was well known: he considered it foolish to invest in vegetable oils while Unilever dominated the market.¹¹² Thus, on palm oil, the company initially lagged behind its arch rival Guthrie, as it opened experimental lots only in 1925 and maintained a small exposure in the crop for the whole interwar period and right up to the end of WWII.¹¹³

Lever Brothers (later Unilever) had built its major soap brands on palm oil and had been the major driver behind the survival of its production in Africa during the rubber boom. In 1911, the company obtained a license to open the first processing factory to exploit wild palm groves in Belgian Congo.¹¹⁴ A decade later, while palm oil was gaining a place of its

own in the East, Unilever was already struggling to match production with mill capacity in both the Gold Coast and Sierra Leone.¹¹⁵ Local governments in West Africa resisted granting land concessions to European producers as it could interfere with the local farming system.¹¹⁶ As it emerges from the correspondence between Governor Sir Ransford Slater and the Colonial Secretary in the Gold Coast W.E.F. Jackson: “The cultivation of the oil palm in the hands of the natives and factors governing the ownership of land form serious obstacles to the introduction of the plantation system.”¹¹⁷

The fact that Unilever held strong interests in these facilities and concessions in nearby Belgian Congo explains why the industry remained divided between West Africa and Southeast Asia for a long time instead of shifting to the latter location more quickly during the first phase of palm oil domestication. Nevertheless, the correspondence between the representatives of Unilever and the Nigerian colonial officers clearly points at the paucity of the African business environment in terms of labor, infrastructure, regulation, and the state of research, which required the company to seek the reiterated support of the colonial administration.¹¹⁸

Therefore, through the 1920s and up to the mid-1930s, palm oil’s fate was still uncertain. Rubber remained the dominant crop in Malaya and DEI¹¹⁹ and even the most enthusiastic investors still considered palm oil a quite risky bet. In a 1928 letter to Lady Anderson, a major shareholder of Guthrie, the firm’s director John Hay explained: “we cannot afford to lock up our own capital in that direction [palm oil production] as it necessitates the provision of a very large sum. (...) [W]e are however practically the pioneers in Malaya of the cultivation of this crop on a large scale. (...) [W]e have realized for some time back the weakness of depending too much on one product and we are therefore carrying on investigations in all sorts of alternatives.”¹

However, the beneficial influence of the cluster organization on palm oil production in the East was already evident to West African producers in the mid-1920s and, similarly to what

¹ GC/01/03/11: Correspondence General Private Matters No.14, 8th May 1928.

had happened with the South American rubber industry before the decline of Manaus,² palm oil production in the East was perceived as a very serious threat.³

In 1925, the colonial governments of Nigeria and the Gold Coast financed an expedition to Sumatra, sending two agronomists, William Waters and Christopher Auchinleck, to investigate the alleged superiority of palm oil production techniques in Sumatra.⁴ In his report on the condition of oil palm estates in the Far East, Auchinleck's was struck by four major aspects: (i) the rigor in the organization of the estates, (ii) the scientific methods applied to cultivation, (iii) the comparatively superior infrastructure, and (vi) the availability of more disciplined labor. His report was rather skeptical towards the possibility for African colonies to catch up with agricultural efficiency in the Far East: "Owing to the very large European planting population in the Netherlands East Indies and the Federated Malay States, very great strides have been made in agricultural research, far more than can be hoped for many years in West Africa. (...) The real danger to the West African oil-palm industry is probably not the disappearance of its cultivation there (...) [A] more likely danger is the loss of export trade, which means a loss of wealth and a loss of revenue."⁵ Indirectly, Auchinleck described the impact of the cluster organization on the quick development of palm oil in the East as opposed to Western Africa. This suggests the cluster's key role in supporting the increasing dominance of Asian locations as producers of palm oil in the subsequent years. Indeed, in 1936, Sumatran palm oil production surpassed the industry leader Nigeria and by 1939 the plantation cluster of Malaysia and Sumatra accounted for 50 percent of global exports.⁶

² TNA/FCO/141/16148: Singapore: scheme for preserving the rubber industry in the Amazon valley, 1913; Barham and Coomes, 38.

³ TNA/CO/879/122: Palm Oil Industry in West Africa: 11-15; TNA/CO/85/61/12: Oil Palm Research in Nigeria.

⁴ TNA/CO/554/71/2: Palm Oil Expedition to Sumatra, 1925.

⁵ TNA/CO/96/670/4: Notes on Sumatra Expedition by Auchinleck, 1926: 7, 35.

⁶ Usoro, *Nigerian Oil Palm Industry*.

Conclusion

Clusters involve the concentration of economic activities related to a product group in a specific location. This paper illustrated how an export cluster emerged from the specialization of trading activity in a colonial setting. Despite the abundance of studies on clusters, few deal with their emergence in relation to their historical context and even fewer do so accounting for (i) the micro-level interaction of actors and (ii) the clusters' integration in the global economy. Therefore, by tracing the evolution of the palm oil, and previously rubber, cluster in Southeast Asia, this paper provides solutions to two acknowledged lacunas in cluster scholarship: the role of agents and non-local linkages in cluster development.

While generally agreeing with Brenner and Muhlig⁷ that clusters can emerge because of the new combination and complementarities between elements already existing in a specific location (namely specialized infrastructure, culture and knowledge on planting, and a platform of services for commercial activity), through the case of palm oil, I also suggest that they can be grouped into agency supply, demand, and geographic factors. More specifically, the formation of the cluster was triggered by the interrelation of (i) the presence of rubber traders and planters, (ii) a conducive business environment which could be efficiently repurposed to palm oil in the form of the rubber institutions, organizational structure, and specialized services in the regional trading hub of Singapore, (iii) shocks in demand for specific products (in this case positive for palm oil and negative for rubber), and (vi) climatic and soil conditions allowing both imported crops to thrive more productively than in their native environments.

First, behind the emergence of the palm oil cluster lays a strong agency element, via a community of foreign traders embedded in the local business environment and serving as “global linkages.” In Southeast Asia, the cosmopolitan bourgeoisie of European traders liaised with the major foreign community of ethnic Chinese merchants and entrepreneurs thriving mostly in Singapore. This continuous interaction between these two communities of

⁷ Brenner and Muhlig, “Factors and Mechanisms”.

traders led their respective activities to become specialized, resulting in the birth of the cluster. Initially, the former provided access to Western demand, capital, shipping services, and specialized inputs, while the latter facilitated the integration of low-skilled migrant labor in the plantations. This supports the argument that imported inputs can be a major trigger of cluster emergence, in addition to the “local” factors so heavily emphasized in the cluster literature.⁸

Second, the historical analysis provides insights into the mechanisms behind the process of cluster emergence and stresses how the interrelation of the abovementioned factors occurred through time, helping this territory to integrate into the global economy. In particular, the paper argues that the emergence of this export cluster followed the same steps that lead to the decline of trading houses, namely that the cluster originated from the stabilization, concentration, and product specialization of trading firms’ activities; this tallies with Casson’s theory of the trading firm. Through horizontal integration, a number of merchant houses gradually transformed into agency houses, a small crew of big players controlling a prominent share of the plantation industry and providing the whole set of specialized services supporting the related export flows. In addition to this, cluster specialization progressed through the development of traders’ core activities, including (i) linking supply with advanced markets, (ii) supporting the expansion of capacity by importing inputs from other locations and by vertically integrating and injecting financial resources, and (iii) diversifying their product portfolio to reduce risk. The drawback of this gradual growth in complexity was a decrease in flexibility, which marked the decline of the trading firm and the simultaneous birth of the export cluster. The idea that investment in plantations was no longer a speculative venture but rather a core activity for most of these firms became evident in the early 1920s. When the rise of local smallholders and plans to introduce synthetic rubber threatened the profitability of the estates, agency houses preferred to invest in agronomic research rather than reduce their exposure in plantations. Furthermore, at that

⁸ Krugman, “Increasing Returns,” 48. Krugman argues that “in economic geography, however, the supply of factors to any one region or location will typically be very elastic, because they can come from someplace else.”

time, specialization was so advanced that palm oil was one of the very few cost-efficient diversification options.

Third, according to cluster scholarship, the singularity of local factor endowment is crucial for cluster success. However, for some clusters, the interconnectedness of stakeholders and the organizational structure supporting production may be equally, if not more, important. This case allows to advance the hypothesis that the existence of an interaction pole or hub where actors can interact and access information is a precondition for the emergence of successful export clusters.¹²⁰ Foreign trading houses initially settled around Singapore, the port that shipped most agricultural produce. Subsequently, the increasing specialization of their activity led to a twofold development. The cluster expanded geographically through vertical integration as production radiated in the areas around Singapore. Eventually, supporting activities, such as research, marketing, shipping, financing, or legal consulting, increasingly located in Singapore, which gradually transformed into the cluster's service hub. In the initial stages of cluster development, this service hub acted as a magnet attracting new planters and traders from competitor locations. In light of this, the palm oil case confirms Casson's notion that geographical concentration has historically occurred in competitive environments because trading companies did not want to remain cut out from crucial information knots and because they could potentially move existing agricultural clusters to places with superior institutional environments.¹²¹

Finally, although the rubber cluster created unparalleled investment conditions, the strong focus on the commodity had shrunk the diversification opportunities for the trading firms, so much so that palm oil constituted the only viable alternative that could be quickly applied to the existing organizational structure. This shows that the risk involved in concentrating in a specific location increases together with the degree of space dependency of the cluster activity. Since geographical features (like soil and climatic conditions) play a more central role in agriculture than in other sectors, clustering can involve heavier costs when export volumes decrease but larger gains when demand surges. Palm oil proved a lucky crop, biologically similar to rubber and highly versatile, with a large range of applications. The

fact that the oil palm can be grown only in an even narrower latitude span than rubber reinforced the competitive advantage of Southeast Asia vis-à-vis competitor locations. The climatic preconditions and available organizational set-up allowed for the birth of an export cluster with remarkable long-term success, shaping the region's economy to this day.

Figure 1: Map of the Malay Peninsula (1913)



Source: LMA/CLC/B/112/MS37394/007: Great Merchant Adventurers

Table 1: Major Foreign Players in the Emergence of the Rubber and Palm Oil Clusters

Major Foreign Players in the Emergence of Rubber and Palm Oil Cluster (1880-1930)*						Share of the Cluster in 1972**
Company	Company Type in origin	Nationality (Ownership)	Foundation Year	Plantation Investment	Sources	
Guthrie	Agency House	British	1823	1905 - Linggi Plantations and Selangor Rubber Company	School of Oriental & African Studies Archives London; British National Archives	
Harrison & Crosfield	Agency House	British	1844	1903 - Petaling Rubber Estate and 1905 Anglo-Malay Rubber & Co	London Metropolitan Archives	26%; 14%
Thomas Barlow & Brothers	Agency House	British	1891	1906 - Highlands and Lowlands Para Rubber Estates	Barlow Archives in Cambridge	15%; 24.1%
United Plantation	Plantation Company	Danish	1917 United Plantations Ltd. Formed through merger of sister companies; 1918- Commander W.O.Gruth established Bernam Oil Plantations	1906 - Aage Westermholz established Jenderata Rubber Estates	Correspondence from Barlow Archives	11.1%; 8.3%
Unilever	Soap Manufacturer	Anglo-Dutch	1880 Lever Brothers; 1929 Unilever	1911 - Enters into Plantations in Belgian Congo; 1947 first investment Pamol Malaysia in Kuala Lumpur	Unilever Archives PortSunlight	
SocFin	Plantation Company	Franco-Belgian	1909 the "Société Financière des Caoutchoucs" (SocFin) and "Plantations Fauconnier & Postel" with Henri Fauconnier	1906 - Adrien Hallet founds Compagnie du Selangor	British National Archives; London Metropolitan Archives	
Sime Darby	Plantation Company	British	1910	NA	London Metropolitan Archives	
Cumberbatch & Co	Agency House	British	1884	NA	London Metropolitan Archives	

* Pye, O. & Bhattacharya, J., (2013). *The Palm Oil Controversy. A transnational perspective*. Singapore: Institute of Southeast Asian Studies:25-26; Tate, D.J.M., (1996). *The RGA History of the Plantation Industry in Malay Peninsula*. Oxford University Press: 205-220. LMA CLC/B/112/MSS37071; GCC GC/17: Linggi, BC JEB1285.

** Share of acres and capital in Malaysia and Indonesia - LMA CLCBMS37394/004

Table 2: Business History Literature on Trading Firms

Major Business History Contributions on Trading Houses	
Topics	Selected Contributions (alphabetical order)
Theoretical and seminal contributions	<ul style="list-style-type: none"> • Carlos, A., and Nicholas, S., (1988). Giants of an earlier capitalism: The chartered trading companies as modern multinationals. <i>Business History Review</i>, 62(3): 398-419. • Casson, M., (1998). The Economic Analysis of Multinational Trading Companies, in G. Jones (ed.), <i>The Multinational Traders</i>, 22-47. Routledge. • Chalmers, P., (1987). The rise of international trading companies in Europe in the nineteenth century, in S. Yonokawa and H. Yoshitara (eds.), <i>Business History of General Trading Companies</i>, 273-291, Tokyo: Tokyo University Press. • Dejung, C., and Pettersson, N.P., (2013). <i>Foundations of World-Wide Economic Integration. Power, Institutions and Global Markets, 1850-1930</i>. Cambridge: Cambridge University Press. • Dejung, C., (2013). Worldwide ties: the Role of Family Business in Global Trade in the Nineteenth and Twentieth Centuries, <i>Business History</i>, 55(6):1001-1018. • Jones, C.A., (1987). <i>International Business in the Nineteenth Century: the rise and fall of a Cosmopolitan Bourgeoisie</i>. New York: New York University Press. • Jones, G., (1998). <i>The Multinational Traders</i>, Abingdon, Oxon: Routledge. • Jones, G. (2000). <i>Merchants to Multinationals</i>. Oxford: Oxford University Press. • Lee, R., (2011). Commerce and Culture a critical Assessment of the Role of Cultural Factors in Commerce and Trade from c. 1750 to the early Twentieth century, in R. Lee (ed.), <i>Commerce and Culture in Nineteenth Century Business Elites</i>, 1-35. Abingdon, Oxon: Routledge. • Biersteker, T.J., (1987). <i>Multinationals, the State, and Control of the Nigerian Economy</i>. Princeton, NJ: Princeton University Press. • Davies, P.N., (1973). <i>The Trade Makers: Elder Dempster in West Africa, 1852-1972</i>. London: Allen and Unwin. • Lynn, M., (1981). Change and continuity in the British palm oil trade with West Africa, 1830-55. <i>Journal of African History</i>, 22, 331-48. • Lynn, M., (1997). <i>Commerce and Economic Change in West Africa: The Palm Oil Trade in the Nineteenth Century</i>. Cambridge: Cambridge University Press.
West African trade	<ul style="list-style-type: none"> • Eakin, M.C., (1989). <i>British Enterprise in Brazil</i>. Durham, NC: Duke University Press. • Finch, M.H.L., (1985). British Imperialism in Uruguay: The Public Utility Companies and the British State, 1900-1939, in C. Abel and C.M. Lewis (eds.), <i>Latin America, Economic Imperialism and the State</i>, 250-266. London: Athlone Press. • Greenhill, R., and Miller, R., (1998). British trading companies in South America after 1914, in G. Jones (ed.), <i>The Multinational Traders</i>, 102-127, London: Routledge. • Lane-kotti, N.S., and Luech, A., (2009). Tinning of entry and business activities of foreign companies (1860-1950). <i>Entreprises et Histoire</i>, 54(1), 37-66. • Delbos, A., and Henisz W. I., (2000). Japanese firms' investment strategies in emerging economies. <i>Academy of Management Journal</i>, 43(3), 305-23. • Kojima, K., and Ozawa, T., (1984). <i>Japan's General Trading Companies: Merchants of Economic Development</i>. Paris: OECD. • Yonekawa, S., (1993). <i>General Trading Companies: A Comparative and Historical Study</i>. Tokyo University Press. • Allen, G.C., and Donahome, A.G., (1957). <i>Western Enterprise in Indonesia and Malaysia</i>. London: Routledge. • Blake, R., (2000). <i>Jardine Matheson: Traders of the Far East</i>. London: Orion Press. • Cox, H. H.Biao, and S. Metcalfe, (2003). Compradors, Firm Architecture and the Remvention of British Trading Companies: John Swire ad Sons' Operations in Early Twentieth-century China. <i>Business History</i>, 45(2): 15-34. • Dejung, C., (2011). Swiss Bridges to the East: European Merchants and Business Practices in India and China, in Robert Lee (ed.), <i>Commerce and Culture, Nineteenth-Century Business Elites</i>, 93-116. Abingdon, Oxon: Routledge. • Drabble, J.H. & Drake P.J., (1981). The British agency houses in Malaysia: Survival in a changing world. <i>Journal of Southeast Asian Studies</i>, 12, 297-328. • Falkus, M., (1989). Early British Business in Thailand, in R.P.T. Davenport Hines and G. Jones (eds.), <i>British Business in Asia since 1860</i>, 117-155, Cambridge: Cambridge University Press. • Jones, G. & Wakes, J., (1999). Diversification strategies of British trading companies: Harrison's & Crossfield, c.1900-1980. <i>Business History</i>, 41(2), 69-101. • Osterhammel, J., (1989). British Business in China 1860s-1950s, in R.P.T. Davenport Hines and G. Jones (eds.), <i>British Business in Asia since 1860</i>, 189-216, Cambridge: Cambridge University Press. • White, N.J., (2004). <i>British Business in Post-Colonial Malaysia, 1957-1970: Neo-colonialism or disengagement</i>. London and New York: Routledge Curzon.
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LMA: London Metropolitan Archives, London.

TNA: The National Archives of the United Kingdom, Kew, London.

UL: Unilever Archives, Port Sunlight, Liverpool.

¹ Corley and Tinker, *Oil Palm*.

² The oil palm tree produces oil in the form of palm and palm kernel oil, for simplicity this article will refer to both products as “palm oil”.

³ Fao Statistics, 2014.

⁴ White, *Business, Government*; White, “Survival, Revival and Decline”; Yacob, “Model of Welfare Capitalism?”; Jones G. and Wales, “Diversification strategies”.

⁵ Clarence-Smith and Topik, *Global Coffee Economy*; Innis, *Fur Trade*; Cramer, “Can Africa Industrialize?”.

⁶ Fitzgerald, *Rise of the Global Company*; Bayly, *Birth of the Modern World*; Ferguson, *Civilization*; Fieldhouse, *West and the Third World*; Jones, G., *Multinationals and Global Capitalism*.

⁷ Porter, *Competitive Advantage*.

⁸ Marshall, *Principles of Economics*.

⁹ Beccattini, *Industrial Districts*; Bellandi, Becattini, and Propiis, *Handbook of Industrial Districts*.

¹⁰ Crevoisier, “The Innovative Milieux Approach”; Aydalot, *Milieux innovateurs en Europe*.

¹¹ Storper and Walker, *Capitalist Imperative*; Scott, “Location Processes”.

¹² Porter, “Location,” 16; Porter, “Clusters”; Porter, “Microeconomic Foundation”.

¹³ Maskell and Kebir, “What Qualifies?,” 30.

¹⁴ Humphrey and Schmitz, *Governance and Upgrading*; Humphrey and Schmitz, “How Does Insertion Affect Upgrading?”.

¹⁵ Zeitlin, “Industrial Districts,” in *Handbook*, ed. Jones and Zeitlin; MacKinnon, Cumbers, and Chapman, “Learning, innovation and regional development”.

¹⁶ Gereffi and Korzeniewicz, *Commodity Chains*; Pananond, “Breakout Multinationals,” in *Handbook of Emerging Market Multinational Corporations*, eds. Demirbag and Yaprak.

¹⁷ Weijland, “Microenterprise Clusters”.

¹⁸ Reinert, *Princeton Encyclopedia*, 180; Hunter, “Commodity Chains,” 278.

¹⁹ Perez-Aleman, “Cluster Formation”; Burger, Kameo and Sandee, “Clustering”.

²⁰ Brenner and Muhlig, “Factors and Mechanisms”.

²¹ Fornhal, Henn, and Menzel, *Emerging Clusters*.

²² Otto and Fornahl, “Origins of Human Capital”; Boshma and Ledder, “Evolution of the Banking Cluster,” in *Emerging Clusters*, eds. Fornhal, Henn, and Menzel.

²³ Menzel and Fornahl, “Cluster Life Cycles”; Bergman, “Cluster Life Cycles,” in *Handbook of Research*, ed. Karlsson.

²⁴ Bucheli and Wadhvani, *Organizations in Time*.

²⁵ Giuliani, Pietrobelli, and Rabellotti, “Upgrading”.

²⁶ Fujita and Mori, “The role of Ports in the making of major cities,” 49.

²⁷ Porter, “Clusters,” 84.

²⁸ Fornhal et al., *Emerging Clusters*, 2; Brenner and Muhlig, “Factors and Mechanisms”; Orsenigo, “(Failed) Development”; Bresnahan, Gambardella, and Saxenian, “‘Old Economy’ Inputs”.

²⁹ Suddaby, Foster, and Mills, “Historical Institutionalism,” in *Organizations in Time*, eds. Bucheli and Wadhvani.

³⁰ Henn, “Transnational Entrepreneurs”; Zucker, Darby, and Brewer, “Intellectual Capital”.

³¹ Forbes and Kirsch, “Study of emerging industries”; Kirsch, Moeen and Wadhvani, “Historicism and Industry Emergence,” in *Organizations in Time*, eds. Bucheli and Wadhvani.

³² Recent contributions are: Aldous, “Avoiding Negligence and Profusion”; Fitzgerald, *Rise of the Global Company*.

³³ Casson, “Economic Analysis,” in *Multinational Traders*, ed. Jones.

³⁴ Casson, 45.

³⁵ In this, paper the expression “less developed countries” is very broad and aims at encompassing all the territories which are not on the UN list of fully developed countries, namely Japan in Asia, Canada and the United States in North America, Australia and New Zealand in Oceania, and most economies in Europe; Retrieved from:

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³⁶ Lynn, “Change and Continuity”; Lynn, *Commerce and Economic Change*; Hartley, *Oil Palm*.

³⁷ Henderson and Osborne, “Oil Palm”.

³⁸ The price plummeted after 1854 because of structural changes on both the supply (introduction of the steam ship and opening of the Suez Canal) and demand side (availability of substitute oils).

³⁹ Brockway, “Science and Colonial Expansion”.

⁴⁰ Jackson, *Thief*.

⁴¹ Barton, *Informal Empire*; Gallagher and Robinson, “Imperialism of Free Trade”; Cain and Hopkins, *British Imperialism*.

⁴² Jones, G., *Merchants to Multinationals*.

⁴³ Jones, C.A., *International Business*.

⁴⁴ Jones, C.A., 28, 66-69.

⁴⁵ Jones, C.A., 79-86; Chapman, “British-Based Investment Groups,” 232, 239, 244-247; Drabble and Drake, “British Agency Houses,” 300-302.

⁴⁶ Falkus, *Blue Funnel Legend*; Wilson, *British Business History*.

⁴⁷ Miller, *Europe and the Maritime World*, 23-35.

⁴⁸ Chiang, “Sino-British Mercantile Relations,” in *Social History of China*, eds. Ch’en and Tarling, 255.

⁴⁹ Huff, “Development of the Rubber Market”; Ken, “Singapore”.

⁵⁰ Tate, *RGA History*.

⁵¹ Irick, *Ch’ing Policy*; Meagher, *Coolie Trade*; McKeown, “Chinese Emigration”.

⁵² Barham and Coomes, “Wild Rubber”.

⁵³ TNA/CO/277/30-78: Singapore Blue Books 1890-1925; Yoong, “Chinese Protectorate in Singapore”.

⁵⁴ Reid, “Early Chinese Migration,” in *Social History of China*, eds. Ch’en and Tarling; McKeown, “Chinese Emigration”, 113: includes quantitative data on Chinese migration. Statistics show that annual flows of Chinese coolies into the Federate Malay States fell below 100,000 only in 1918-1919 between 1880 and 1932.

⁵⁵ LMA CLC/B/112/MS37390 Recollections from Employees; LMA LMA/CLCB/112/37394/006: H&C Compradore Division, Henry Beng 1987; Tate, *RGA History*, 102-103.

⁵⁶ Drabble and Drake, “British Agency Houses”; Huff, “Development of the Rubber Market,” 286.

⁵⁷ GC/01/04/26: Miscellaneous Agreements include the list of Chinese produce dealers dealing with the company in August 1908, GC/01/04/32: Accounts and Agreements with Chinese. Huff, “Development of the Rubber Market,” 249; Drabble and Drake, “British Agency Houses,” 298.

⁵⁸ Tate, *RGA History*, 218, note 9. World demand is computed as sum of world exports.

⁵⁹ LMA/CLCB/112/37394/005 MacFadyen recollection on planters 1936; Tate, *RGA History*, 193-194

⁶⁰ “Mad Ridley Brought Us Rubber,” *The Straits Times*, Nov 6th 1983: 18.

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⁶¹ Tate, *RGA History*: 199; Accounts of Malaya being superior than Ceylon in rubber production can be found also in “Rubber in Tropical Asia,” *The Straits Times*, Feb 8th 1910: 8; LMA/CLC/B/112/MS37397 - Supplement to the China Express and Telegraph 03/02/1927: 24.

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⁶² Webster and Baulkwill, *Rubber*; Drabble, *Rubber*, Appendix VI: 219; Rubber acreage increased from Ha 6.000 1900 to 255.000 in 1908 and 1.168 in 1914 in Malaya and from Ha 1.000 in 1903 to 101.000 in 1908 and 606.000 in 1914 in DEI.

⁶³ Drabble, *Rubber*, Appendix VII, 220; Barlow, "Agricultural Development," 84.

⁶⁴ Bauer, *Rubber Industry*.

⁶⁵ Bauer, *Rubber Industry*, 91, 95, 100-102.

⁶⁶ Huff, "Development of the Rubber Market," 299-300.

⁶⁷ Tate, *RGA History*, 239-243.

⁶⁸ LMA/CLCB/112/MS37394/002: Arthur Lampard and Excerpts from "One hundred years of Ceylon tea" 1867-1967 by D.M. Forrest; LMA CLC/B/112/MS37389 Historical Notes: A World-Wide Business, 3-4.

⁶⁹ LMA/CLC/B/112/MS37391: H&C turned into a limited liability company in 1908; GC/01/01/01: Guthrie in 1903; BC/JEB/199: Business Papers and Correspondence 1908-1930.

⁷⁰ Although in the literature the term "agency house" is interchangeable with "merchant" or "trading" house, in this paper these trading companies will be defined as "agency houses" only after their incorporation as joint-stock companies and "merchant houses" beforehand.

⁷¹ van Helten, and Jones G., "British Business," in *British Business in Asia*, ed. Davenport-Hines and G. Jones.

⁷² LMA CLC/B/112/MS37828 Circulars to Shareholders, 1912.

⁷³ Tate, *RGA History*, 226.

⁷⁴ LMA/CLC/B/112/MS37407: Rubber and Tropical Produce; Drabble, *Rubber*, 58-60.

⁷⁵ LMA/CLC/B/112/MS37828: Notices containing circulars to shareholders; GC/01/02: Accounts; GC/17: Linggi Plantations.

⁷⁶ Leng, "Japanese Rubber".

⁷⁷ Yacob, "Model of Welfare Capitalism?"; Yacob, *United States*; Babcock, *United States Rubber Company*; Tate, *RGA History*, 256 note 13.

⁷⁸ Tate, *RGA History*, 251.

⁷⁹ LMA/CLCB/112/MS37394/002: Arthur Lampard's correspondence as Chair of Rubber Plantation Trust; White, *End of the Empire*, 34.

⁸⁰ GC/01/03/09-10: Correspondence, General Private Matters; LMA/CLC/B/112/MS37389 - Historical Notes, 1911: 5.

⁸¹ GC/01/03/01: Correspondence 1912-1914; LMA/CLC/B/112/MS37391: history of the company, prepared by Cleveland Stevens: 3.

⁸² Swart, *Rubber Companies*.

⁸³ BC/TBB/1185: Deeds and Related Documents 1909-30.

⁸⁴ LMA/CLC/B/194: RGA was founded in 1907 and incorporated in 1912.

⁸⁵ LMA/RGA Council Meetings Minute Books, 1907-1922; Tate, *RGA History*, 258; Drabble, *Rubber*, 53-54.

⁸⁶ LMA/CLC/B/112/MS37045: Dutch Rubber Growers Association.

⁸⁷ Jackson, "Oil Palm"; Barlow, "Agricultural Development".

⁸⁸ White, *End of Empire*.

⁸⁹ LMA/CLC/B/112/MS37418: Plantation Management in Transition, 1970.

⁹⁰ LMA/CLC/B/112/MS37407: Rubber, Tea and other Tropical Produce, (1922): 16-21.

⁹¹ TNA/CO/277: Colonial Office: Straits Settlements Miscellanea, 1867-1939.

⁹² Drabble and Drake, "British Agency Houses"; Huff, "Development of the Rubber Market," 290.

⁹³ Keynes, "The Policy of Government Storage".

- ⁹⁴ According to Bauer's seminal work, smallholders were more efficient rubber producers, due to their far lower overhead costs and higher worker-acreage ratio, compared to the high-fix cost, cumbersome estates. A competing argument presented by Khera (1976, 135-1940), and supported by Thee, (1969, 109-110) is that the smallholders' lower cost structure did not necessarily mean higher efficiency. Smallholders were indeed able to take advantage of their family structure, as their workers did not receive the same level of social amenities and often worked longer hours. Also smallholdings generally employed quite rudimentary techniques and low-standard maintenance, which negatively impacted on yield per acre and long term productivity of the trees.
- ⁹⁵ TNA/FCO/141/15966: Rubber Restriction Scheme; LMA/CLC/B/112/MS37394/006.
- ⁹⁶ LMA/CLCB/112/MS37394/003 25(11), 1924; Whitford, "The Crude Rubber Supply"; Viner, "National Monopolies of raw materials".
- ⁹⁷ Barron, *Modern Synthetic Rubbers*.
- ⁹⁸ GC/01/04/09: Development and State of the Business 1924-1936, John Hay's notes about the business situation in the Eastern branch in the last decade.
- ⁹⁹ HAPM is Hollandsch-Amerikaansche Pantage Maatschappij and AVROS is Algemeene Vereeniging van Rubberplanters ter Oostkust van Sumatra.
- ¹⁰⁰ TNA/DSIR/36/1495: Rubber Research in Malaya, report on the state of research by 1918-1919.
- ¹⁰¹ Henderson and Osborne.
- ¹⁰² LMA/CLC/B/112/MS37394/007: Great Merchant Adventurers, 87-89. Hartley, *Oil Palm*, 35-36; Martin, *Up Saga*, 46, 52; Corley and Tinker, *Oil Palm*, 1-6.
- ¹⁰³ Falkus, *Blue Funnel Legend*.
- ¹⁰⁴ Clarence-Smith, "Rivaud Hallet," in *Private Enterprises*, ed. Lanthier.
- ¹⁰⁵ Fauconnier, *Malaisie*; Martin, *Up Saga*, 49-51; Tan, *Land to Till*.
- ¹⁰⁶ Clarence-Smith, "Rubber cultivation," in *Colonial Exploitation*, eds. Frankema and Buelens, 206. Martin, *Up Saga*, 46-49; Hartley, *Oil Palm*, 21-22. Leplae, *Palmier à huile*.
- ¹⁰⁷ GC/04/03: Elæis Plantation, Ledger No. 1; GC GC/20/06: Oil palms of Malaya, Journal No.1.
- ¹⁰⁸ GC/01/04/09: Memorandum for James Robertson Esq., 1936.
- ¹⁰⁹ GC/20/08: Oil Palms of Malaya, Ledger No.1. By 1942 the oil palm interests of Guthrie in Malaya amounted to nearly 8,000 Ha. UL/UNI/RM/OC/2/2/64/12: 32,000 Ha and 14,000 in bearing in 1940
- ¹¹⁰ Martin, *Up Saga*, 54-69; Tate, *RGA History*, 466, note 24.
- ¹¹¹ Fieldhouse, *Unilever Overseas*.
- ¹¹² LMA/CLC/B/112/MS37331/001: Sir Eric Miller: papers concerning his career; Tate, *RGA History*, 466 note 23.
- ¹¹³ Martin, *Up Saga*, 53; Nickalls, *Great Enterprise*, 94-96.
- ¹¹⁴ Kindela, "Etudes," 57.
- ¹¹⁵ TNA/CO/879/122: Palm Oil Industry in West Africa 1924-1932: 65, note 21.
- ¹¹⁶ Johnson, "Sowing the Seeds".
- ¹¹⁷ TNA/CO/96/690/15: Mill Development in Golden Coast, 06.09.1929: 5.
- ¹¹⁸ TNA/CO/879/122: Palm Oil Industry in West Africa 1924-1932: 40-59.
- ¹¹⁹ Khera, *Oil Palm Industry*.
- ¹²⁰ Menzel and Fornhal, "Cluster Life Cycles," 213.
- ¹²¹ Casson, "Economic Analysis," 35-36.



Negotiating cluster boundaries: governance shifts in the palm oil cluster of the Malay Peninsula (1945-1970 ca.)

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Palm oil was introduced to the Malay Peninsula as an alternative to natural rubber, inheriting its cluster organizational structure. In the 1960s, palm oil became the region's largest export commodity. Based on archival material from British colonial institutions and agency houses, this paper focuses on the governance dynamics that drove institutional change within this cluster during decolonization. The analysis presents three main findings: (i) cluster boundaries are defined by continuous tug-of-war style negotiations between public and private actors; (ii) this interaction produces institutional change within the cluster, in the form of cumulative 'institutional rounds' – the correction or disruption of existing institutions or the creation of new ones; and (iii) this process leads to the formalization of the cluster's organizational structure. The paper challenges the prevalent argument in the literature that minimal, indirect government influence is preferable for cluster development and explores the impact of different political regimes on cluster evolution.

Keywords: cluster governance; institutional change; agency houses; palm oil; decolonization; political risk; Southeast Asia.

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1. Introduction

The oil palm was introduced as an alternative to the rubber crop in the Malayan and Indonesian (Sumatran) plantation cluster in the early 1920s, but the crop established itself as an important export commodity in the region only after World War II (WWII), when natural rubber production was increasingly affected by the rise of a synthetic rival (Yacob 2006). The pioneer palm oil ventures launched between the 1920s and 1940s had inherited their organizational structure from the natural rubber cluster, which had emerged quickly at the turn of the twentieth century and enriched the region in a few decades. After WWII, the restoration and development of the palm oil cluster took much longer than its rubber equivalent and Malaysia became a leading exporter of this commodity only in the late 1960s.

This slow ascent was due to a mix of external and internal factors. On international markets, the main reasons for the slow development were the post-war ‘de-globalization’ of trade flows, tough competition from other vegetable oils, and parallel developments in competing locations producing palm oil. At the national level, the situation was complicated by the social unrest following Japanese domination and the political turmoil of the nation-building process.

This analysis focuses on the developments occurring in the Malay Peninsula in the post-colonial period between the late 1940s and the early 1970s (see Figure 1). While acknowledging the influence of the international context on these developments, in this paper I investigate the effect of governance dynamics and the changing relationship between cluster members and first the British and then the Malay(si)an governments on cluster evolution. Table 1 includes an overview of the different actors and institutions addressed in the paper, detailing their function and involvement in the rubber and palm oil cluster. Noting that both public and private spheres are not monolithic camps but rather comprise a multiplicity of mixed voices, I attempt to sketch the prevailing trajectories of the interrelation between public and private interests with regard to the palm oil and rubber

affairs. Particularly, when referring to the British government the article concentrates on the opinions of directors and high-level officials at the Colonial Government in Singapore; the High Commissioner's office at King House in Kuala Lumpur; the Treasury, and the Secretary of State for the Colonies and Colonial Office in London. As for the Malaysian Government, the analysis mostly focuses on the Federal Land Development Authority (FELDA), a public agency, which was under direct control of the first Malaysian Deputy Prime Minister Tun Razak during the whole period under study. In the business camp, primary attention is given to the opinion of agency houses' representatives, composing the Rubber Growers' Association (RGA) and the Malaysian Palm Oil Pool (MPOP). Due to their representation in both rubber and palm oil, they were the ones *de facto* negotiating with both British and Malayan government officials on a regular basis. Finally, when referring to governance dynamics, I apply Humphrey and Schmitz' definition of 'governance' developed specifically to analyze clusters in developing economies: namely the practices of non-market coordination of economic activity, which determine the cluster organization and the room of action of each stakeholder within it (Humphrey and Schmitz 2000, 4).

Traditionally cluster scholarship assumed that clusters thrive only under free trade regimes in politically stable environments characterized by limited government involvement in the business domain. Yet, recent scholarship focusing on CSR practices within clusters in emerging economies shows that, along with economic upgrading, clusters can also produce defective social, environmental and/or political outcomes (Lund-Thomsen, Lindgreen and Vanhamme 2016; Lund-Thomsen and Pillay 2012). This in turn highlights the importance of government-cluster coordination for ensuring a more widespread economic growth in countries receiving foreign investment via clusters. My analysis departs from this line of thought, calling for a more articulate assessment of the effect of contextual conditions and stakeholder interaction, on clusters' responses to political instability.

A shift from colonial to indigenous control presents an unusual context for investigation, and the decolonization period offers a special window onto our area of

research. Unlike other countries, including Indonesia (Lindblad 2008; White 2012), in Malaysia the period of ‘interregnum’ between the colonial administration and that which followed was a lengthy one, soliciting a finer-grained evaluation of the role of the government in cluster development. Before the Malayan Federation gained independence in 1957, Britain was still the colonial power in the country (Yacob 2008; White 2004) and it continued to assist the local government in military terms until the end of the civil conflict, the Emergency, between 1948 and 1960. Thereafter, it offered administrative support for the creation of modern Malaysia and maintained a military presence on Malaysian soil until the 1970s (see Table 2 for the detailed chronology of the Malaysian nation-building process). In this extraordinary situation, the cluster established itself as the major palm oil supplier to the world, transforming this commodity into the leading product on the global vegetable oil market (Jackson 1967).

In this paper, I argue that both the British and Malay(si)an governments played a central role in the evolution of this cluster through their involvement in governance dynamics. Specifically, I use this case to advance the hypothesis that cluster boundaries are defined by continuous negotiation between the government and companies aiming to redefine their representation, scope of action, and legitimacy within the cluster. This relentless interaction resembles a tug of war between these stakeholders that unfolds in institutional change through ‘institutional rounds’. These rounds involve the formal modification of existing institutions constituting the cluster, or the creation of new institutions from scratch. Although institutional rounds mark distinct moments of disruption, institutional change does not happen overnight, but is the result of the shared history between the actors, and their reflexive understanding of the institutions they are part of, following the model of ‘historical institutionalism’ (Suddaby, Foster and Mills, 2013).

Finally, the shift from colonial to native government sheds light on the path-dependent progression of the cluster. The accumulation of these institutional rounds produced an increasing formalization of practices of negotiation within the cluster. The governance dynamics set by the interaction between British colonial officials and agency

houses immediately after WWII implied a pattern of action, a way of changing institutions, which the incumbent Malay(si)an Government had to adapt to. However, following these same governance practices the Malay(si)an Government established a foothold within the palm oil cluster. Indeed, through FELDA, it extended the cluster boundaries to include the large mass of local smallholders and eventually gained control over the cluster.

This paper is based on archival material drawn from the major agency houses trading both rubber and palm oil in Southeast Asia at the time: Harrisons and Crosfield's (H&C), Guthrie's and Barlow's (BC) Collections, Unilever archives (UL) and public records of the RGA and Colonial Office and other government institutions held in The National Archives of the United Kingdom (TNA) and the London Metropolitan Archives (LMA) in London. For both the public and private sectors, the sources include mostly internal and external correspondence as well as industry reports and minutes of meetings of businessmen, government officials, and members of industry associations. Although partially suffering from a Western bias, the empirical material has been chosen with the aim of unveiling the dynamics among different actors involved in the Malayan plantation business, with a focus on the mechanisms governing the relationship between the foreign players and government officials.

Section 2 reviews the current stance of cluster theory with regard to governance and elaborates on the contribution of this research. Section 3 sets the scene of the aftermath of WWII and examines how the new relationship between government and cluster companies shaped the governance of the cluster. Section 4 describes how cluster boundaries were negotiated between the companies and British government before the formation of modern Malaysia in 1963. Section 5 analyzes how governance dynamics changed when the baton was passed on to the Malaysian Government. Finally, Section 6 summarizes the findings of the paper and outlines potential avenues for future research.

2. Government and governance in cluster scholarship

Since the publication of Marshall's *Principles of Economics* (1920), the topic of economic agglomeration in a specific location has been investigated in a vast range of fields of the social sciences, from development economics to economic geography and business studies. The resulting discussions gave birth to prominent seminal works, such as Piore and Sabel's *Second Industrial Divide* (1984), Aydalot's *Milieux innovateurs en Europe* (1986) and Porter's *Competitive Advantage of Nations* (1998), each generating new streams of scholarship and labeling the phenomenon in different ways: 'neo-industrial districts', 'innovative *milieux*', and 'clusters', respectively.

Clusters are 'geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities' (Porter 2000, 16). A defining feature of clusters is the coexistence of cooperation and competition dynamics among their members (Atherton and Johnston 2008; Porter 2000). On the one hand, as they progress, clusters define and influence the business environment in which they emerge; on the other, cluster evolution can be shaped and directed by changes in the institutional frameworks in which they operate (Wolfe and Gertler 2004). Once they have emerged, clusters are therefore theorized as powerful policy tools in the hands of public institutions. However, identifying the actors that comprise the cluster and shape its boundaries is a major challenge for empirical research and thus rendering the cluster concept 'fuzzy' and difficult to operationalize (Markusen 1999; Cumbers and McKinnon 2004). In his diamond model, Porter identifies the 'core' cluster firms that specialize in production and that support various activities along the value chain. Yet the government remains an external force that facilitates cluster emergence and upgrading by ensuring general macro and micro-economic stability in the business environment (Porter 2000, 26-27).

As suggested in a recent taxonomy compiled by Cruz and Teixeira (2010), in the last 50 years the diverse scholarship on clusters (and economic agglomeration in a broader

sense) has both specialized and expanded, moving from the analyses of intra-cluster dynamics (Bergman 2008; Menzel and Fornahl 2010) to more contextualized discussions about how they can evolve with external support (Fligstein 2005; Humphrey and Schmitz 2002; Markusen 1999). Between 1990 and the late 2000s, governments' role in cluster development has been discussed with reference to regional innovation systems (Lundvall 1995; Cooke, Gomez Uranga, and Etxebarria 1997), industrial and regional development policies (Porter 1998; Maskell and Malmberg 1999), and, to a lesser extent, institutional approaches to clustering (Etzkowitz 2003). Despite its recognized relevance and diversity, this area of the cluster literature mostly comprises policy-oriented contributions, directing governments to integrate clusters in their development strategies. As a partial exception, sociologists and historians studying industrial districts have asked how national institutions and public policy impact these organizational forms, providing a vast array of case studies encompassing rather mixed results (Zeitlin 2008, 223-225). Yet, their focus has mostly been on the effects of regulatory frameworks such as fiscal and merger and credit policies, and only a few studies delve into the motives guiding the interaction between companies and governmental bodies; the case of Japan is particularly relevant in this regard (Whittaker 1999; Sawai and Odaka 1999). In total, while it is widely agreed that public-sector decisions can impinge on cluster performance in unpredictable and unintended ways (Wolfe and Gertler 2004, 1075), cluster contributions in different disciplines have not yet produced a meticulous analysis of the practices and motives behind governments' interactions with cluster companies, nor have they focused on how cluster boundaries can include government institutions.

A potential explanation for this deficit is offered by Martin and Sunley's criticism of Porter for leaving the social dimension of cluster dynamics widely unstudied in his cluster theory (2003, 17). A further impediment to a deeper understanding of government impact on cluster development is related to the narrow focus of the existing contributions on cluster policies. In terms of both theoretical elaboration and empirical testing, the available studies are based mostly on a limited selection of contextual conditions, namely on the Western

democracies (and controlled territories when applicable) during peaceful times and under free trade regimes. One implication of this is that cluster scholarship has expressed a general consensus (Porter 2000, 26; Maskell and Kebir 2006; Maskell 2001) on the idea that government intervention is preferable only when it is ‘supportive but not intrusive’, namely when it is directed at enhancing the quality of the local business environment, for example through reforms of the fiscal and legal system, the upgrading of infrastructure, and the strengthening of education and research institutions. A second implication, related to the first, is that these studies assume that the interests of government and cluster companies are aligned, when in fact they may not necessarily be. Further, although Porter (2000, 16) states that clusters welcome foreign investors, the literature neglects how firms’ nationality exerts an impact within clusters. Especially in former colonial territories, clusters might largely comprise foreign rather than indigenous actors and this can result in conflicting goals and more ‘intrusive’ action by the government when targeting the cluster for development purposes.

A promising strand of cluster scholarship that focuses on CSR within clusters in developing countries offers a partial response to these lacunas. Recent studies within this field have highlighted the potential harm connected to (especially foreign-invested) clusters, among others, if (i) economic gains remain concentrated in the hands of an handful of (large) players; (ii) positive spillovers resulting from clustering are not paralleled by social upgrading in the host economy (Gereffi and Lee 2016; Lund-Thomsen and Nadvi 2010).

Unlike most cluster scholarship, this line of research recognizes a stronger role of government institutions and civil society in negotiating solutions that include small medium-sized and/or more vulnerable players within the cluster’s boundaries. Yet while striving to build universal models for cluster governance, these analyses have the tendency to overlook the degree of volatility and risk involved in the political and regulatory structure of developing countries.

The case of the palm oil cluster in Malaysia, a foreign-invested cluster in a developing economy during decolonization, offers several advantages for addressing some

of the described gaps in the literature. Because the transition between colonialism and independence includes different political and economic scenarios, this becomes a test case to deconstruct the social mechanics of the cluster and evaluate how practices of non-market coordination among private and public stakeholders determine institutional change and boundaries shift within the cluster.

To this end, historical research can assist cluster theory in three ways: (i) it contributes to the still under-researched topic of governance within clusters (Zeitlin 2008); (ii) it shows the path-dependency of government action in impacting dynamics of cluster inclusion/exclusion; and (iii) it expands the empirical spectrum of cluster studies using archival material.

In this specific case, my historical narration supports the hypothesis that cluster governance can lead to different outcomes depending on the interrelation of two dimensions, illustrated in Figure 2: (i) the alignment between deputed government institutions and cluster members' objectives and (ii) the direction of government action either towards the companies in the cluster (direct) or the business environment (indirect).

3. Increasing detachment between the government and cluster during rehabilitation (1945-1951)

During colonial times, plantation companies, mainly guided by the major agency houses through the powerful RGA had started to diversify their rubber exposure, opening up palm oil estates, under the control of a generally benevolent government. As the chair of the Association of British Malaya, grouping the major foreign companies in the Peninsula, put it in 1930, the colonial administration had traditionally granted 'adequate protection with the least amount of interference with the business activity of the community' (BC JEB/199 1930). This long-standing agreement had allowed the Southeast Asian cluster to dominate the international market for rubber for almost half a century and to emerge in less than 20

years as a promising producer of palm oil, in direct competition with the native cluster of West Africa.

The Japanese occupation between 1941 and 1945 and the political and social turmoil of the first phase of decolonization brought about a misalignment between companies' and British Government objectives, leading to several episodes of confrontation over the governance of the cluster. Although maintaining nominal control of her colonies, postwar Britain found itself deeply indebted to the US and in need of US dollar exchange to pay for its imports and reconstruction (LMA CLC/B/112/MS37331/001 1957; Rudner 1994, 8). As had already occurred after World War I (WWI), tax revenues from Malayan rubber exports could serve this purpose, but European planters and staff returning to the estates in late 1945 found themselves operating in a much dangerous environment than the one they had left (LMA CLC/B/112/MS37394/004(2) 1945).

Towards the late 1940s, episodes of guerrilla warfare led by the Malaysian Communist Party against the colonial regime broke out first in the states of Malacca and Johore and later intensified across the Peninsula. Being identified as symbols of colonial oppression, rubber estates and tin mines became the targets of attacks by groups of bandits hiding in the jungle (Tate 1996, 515). As a further problem, during the occupation local squatters had seized a significant percentage of foreign-owned estates and converted them into food crops, supplying a steady flow of provisions to the rebels. As planters found themselves squeezed between the plummeting price of rubber and the increased costs for security measures in the estates, the RGA engaged in a restless lobbying effort to obtain financial and military support from the British Government (TNA CO/537/7265 1951).

After the murder of three European planters, the state of Emergency was finally declared in June 1948 (TNA DO/35/9901 1957; LMA CLC/B/112/MS37391 1943, 213) and the colonial government agreed to partially cover the cluster companies' security expenses in addition to the already-promised compensation for war damages (TNA CO/537/7265 1951; BC JDB/1202 1951) – See Table 2. Finally, under the constant pressure

of agency houses and banks involved mostly in rubber and tin, London sent special police forces from Palestine to organize and train Malay troops in 1949 (BC JDB/1198 1950).

Despite these conciliatory measures, with the escalation of the Emergency, the squabbling became increasingly common and the friction between cluster members and colonial institutions more explicit. This detachment progressed through the construction of conflicting perspectives on how the cluster should be governed, which in turned shaped the communication between the two parties in the years ahead. While before the war plantation companies considered the colonial administration an ally, during decolonization the industry portrayed itself as a hero that had been mistreated by an ungrateful government (TNA CO/537/7265 1951).

On the one hand, the RGA in London continued to solicit a more relaxed fiscal policy, describing the industry as one oppressed by an excessive tax burden. On the other hand, planters in Malaya accused colonial institutions of apathy with regard to the belated payment of war damages and the increasing threat posed by synthetic rubber (TNA DO/35/9901 1957). The position of the companies towards the colonial government is well expressed by Thomas Barlow's annual chairman statement:

Banditry continues throughout Malaya and it is most necessary that the Government should realize the fundamental fact that its job is to Govern. A year ago the Government had before it the two urgent tasks of suppressing disorder and settling War Damage claims. Little progress has been made with either. (...) It would be vastly more helpful to companies such as this which pay enormous sums in taxation (...) if the Government would attend to these matters rather than producing an ill-considered and extravagant new Labour Code. (...).(BC JDB/1202 1951).

Discontent peaked in 1951. In an attempt to win the locals' hearts and minds, the colonial government encouraged the creation of moderate trade unions (White 2008, 429-449), and in the early 1950s it adopted an increasingly pro-smallholder attitude in financing

the replanting schemes via a cess from export duties (Tate 1996, 576; White 1996, 213). Yet, the business establishment interpreted these policies as outrageous rather than as essential parts of the anti-guerrilla campaign. At the same time, close correspondence between the upper echelons of the colonial administration – the High Commissioner’s Office, the Colonial Office in London, the Treasury, and the Secretary of State for the Colonies – discussed how to respond to the persistent anxiety of the RGA about the long-term strategy of the British in Malaysia (TNA CO/537/7265 1951). Firstly, a broadcast from the government-owned channel had suggested the possibility of nationalization, infuriating Dunlop’s RGA representative F. D. Ascoli and compelling the government to publicly deny this option. An additional worry was represented by the increasing favor granted to the emerging Malayan politician Dato Onn’s new multi-racial political party, the Independence Malaya Party (the heir of the nationalist party United Malays National Organization (UMNO)), whose program included the Malayanization of the Civil Service, the deposition of the Sultans and the attainment of independence in seven years (UL UNI/RM/OC/2/2/64/20 1952). Further alarming the industry, there was the long-standing issue of government transfers for labor regrouping (TNA CO/537/7265 1951). Since squatters supplying food to the bandits impaired a quick resolution of the crisis, the last government measure, the Briggs plan, envisaged the costly regrouping of the estates’ labor forces under the supervision of the European planting community, in a time when the industry was also taking a long-term risk by replanting old trees.

With decolonization, government officials had been reshuffled, British priorities had shifted away from the former empire, and the traditional prestige of rubber was vanishing with decreasing rubber prices. While acknowledging the hardship experienced by the rubber companies, government officials hardly concealed their irritation at the increasing anxiety and pressing requests of the agency houses, which were perceived as out of place in a situation of political unrest.

These claims were based on precise expectations as to how the colonial administration should behave. They were rooted in the RGA’s own understanding of the

central role played by rubber in the previous half-century: ‘the building up of a great industry (...) has meant not only employment for many Eastern workers of different nationalities, but good business for many British and some foreign manufacturers, bankers, ship-owners, insurance companies and others’ (LMA CLC/B/112/MS37394/004(2) 1945). Yet, as noted by the High Commissioner Sir Henry Gurney:

The complaints have come mainly from the agency houses and Board of directors who have a less immediate sense of the difference between the special protection required by their properties and the general protection which it is feasible for the security forces to provide (TNA CO/537/7265 1951).

The RGA was perceived as the bastion of a vested interest unable to adjust to the recent political developments and the new trajectories of post-colonial Malaya. He continued referring to RGA representatives as ‘rubber barons (...) [who] are living in some different world and (...) constitute a greater danger to the political future of this country [Malaya] than almost anything else’ (Ibid). Concerning the issue of reimbursement for security expenses from the State, he pointed out that the government expenditure for the campaign against the bandits had amounted to over 20 million dollars by 1951 and:

If the Government were to reimburse private citizens for all financial loss incurred on account of measures taken in the interest of public security the bill would be prohibitive and could only be met by generally increased taxation which might in any case have to fall mainly on the (tin and) rubber industry. (...) Those who claim that the whole responsibility [to take security measures] rests on the State are incidentally the loudest critics of the volume of public expenditure (Ibid).

4. Governance shifts: cluster and British government towards the palm oil boom (1951-1963)

In the immediate post-war period, the continuous confrontation between cluster companies and colonial administration had shaped their scope of action and negotiating position but left the cluster organization largely unchanged. In the subsequent decade, the relationship between agency houses and government institutions resembled a tug of war, impacting the cluster in its evolution and institutional design. As a result of this process of restless negotiation, actors introduced incremental adjustments to the organizational framework of the cluster by creating new institutions or modifying existing ones. Each of these successive steps can be seen as a 'round' of institutional change, redefining the boundaries of the cluster and marking its temporal progression and its shift of focus from rubber to palm oil.

In the process of handing over to the Malayan authorities, the British colonial government adopted a carrot-and-stick approach towards its dealings with the plantation companies. On the one hand, it took direct steps to diminish the agency houses' influence over rubber. For instance, in 1951 it grouped the different interests composing the Malayan rubber industry in a unified body, the Rubber Producers Council (RPC). The RPC was constituted by sixteen members distributed on the basis of controlled acreage: four from the RGA, three from the United Planting Association of Malaya (UPAM) (European estates), three from the Malayan Estate Owners Association (mostly Chinese owners) and six from the smallholders, hence the European interest (RGA and UPAM) accounted for six members out of sixteen. Officially, the government justified the establishment of the RPC as a way to facilitate its interaction with all actors involved in rubber production, but *de facto* this action enabled the colonial administration to overstep the RGA, weakening the latter's influence while increasing the voice of the domestic players. The creation of a formal institution, where different interests were represented proportionally to their acreage, widened the boundaries of the cluster, bringing in new actors, and simultaneously marked a first 'round' in the negotiation between the Government and the RGA after several years of

attrition. On the other hand, after 1951, the government took advantage of the general economic recovery to introduce conciliatory measures to temper the industry's anxiety. Specifically, the appointment of Sir Gerald Templar, as High Commissioner for the Federation in 1952, who made the resolution of the banditry problem the priority on his agenda (TNA FO/371/105161 1953; UL UNI/RM/OC/2/2/64/22 1953), marked one of the last shows of active British support for the industry. Moreover, the central government demonstrated a more cooperative attitude with regard to the industry's effort towards diversification, which mostly focused on oil palm development. Since 1939, the purchase of food staples produced in the colonies had been centralized under the Ministry of Food (MOF), which after the end of WWII 'was exploring very actively any possible additional sources of [palm oil] supply, particularly looking at Solomon Islands, Malaya, New Guinea and Papua' because of the superior quality of their oil, more suitable for edible purposes compared to the African output (TNA MAF/83/2178 1953a).

In 1945, the major rubber companies that had invested in palm oil prior WWII resumed the pre-war Malayan Palm Oil Pool (MPOP), 'representing about 40.000 ha or 95% of the Oil Palm Industry in Malaya' (Ibid), to negotiate a price deal for the years to follow (Martin 2003, 102). The cluster members could thus benefit from the deep pockets of the MOF while they were struggling in the rubber segment.

However, in the early 1950s, the fates of the two commodities reversed temporarily. As for rubber, the outlook for the cluster improved as a consequence of the escalation of the Korean War, which drove prices up to heights unseen since the rubber boom back in the 1910s (LMA CLC/B/112/MS37394/002 1951). While rubber was experiencing its swansong, palm oil production was confronted with new challenges. The contract with the MOF elapsed in 1952 and the Ministry's decision to refuse a further extension was felt as a serious blow by the agency houses, which were waiting to be rewarded after the MOF had benefited from favorable price differentials with the market for several years (BC TBB/870 1948; UL UNI/RM/OC/2/2/118 1949). To further infuriate the MPOP, the MOF had signed a purchase agreement for palm oil products with the former West African colonies in the

previous year. Acting as Pool representative, Guthrie's blamed the MOF for succumbing to pressure from Unilever to support the Nigerian industry (TNA MAF/83/2178 1953b; UL UAC/1/2/4/19/5 1929) while failing to safeguard the Malaysian interest in the international markets.

By 1953, the main producers of palm oil outside British Colonial territories fell into two major groups: Indonesia and the Belgian Congo (together with the British West African countries), each counting on established spheres of selling. The former included some British agency houses and gave priority to Holland, Germany, and Italy, the latter to the USA, Canada, and Belgium via Unilever, which was also the biggest private buyer of palm oil products. Since this set-up granted the Malayan group privileged access to the UK and Indian markets, losing the UK preference would force it to enter into direct competition with both West Africa and Indonesia, at the time still almost twice the Malayan tonnage (LMA CLC/B/112/MS37394/002 1951; TNA MAF/83/2178 1953b).

The MOF's decision and the consequent sudden drop in the palm oil price urged the Pool companies to devise a joint response to secure their international market share and to show the government their legitimacy within the cluster. In 1954, the major Malayan producers updated the previous MPOP agreements and created a new outlet, the Joint Selling Committee (JSC) with the explicit purpose of 'ship[ping] palm oil in bulk (...) and exercis[ing] on prices a control similar to that enjoyed by the consumers, thus counteracting their domination' (BC HSB/1085 1954). The JSC was organized around the four major bulking installations in the Malay Peninsula: Guthrie's in Singapore, UP's in Penang and H&C's and Socfin's in Port Swettenham. The JSC included one representative for each bulking facility and regulated the MPOP's palm oil selling price. Demand for the commodity was highly concentrated, which meant that contracts were too large to be fulfilled by individual companies. Further, competition from substitute vegetable oils was strong, providing an additional advantage to buyers. Thus, the strengthening of the MPOP and the creation of JSC worked as a second institutional 'round', formalizing the agency houses' control over the palm oil market. Simultaneously, the colonial government

redefined the cluster's scope with a focus on palm oil, precisely when the price of rubber returned on a secular downward trend as a result of the end of the Korean conflict and the subsequent embargo on China's rubber imports (Rudner 1994, 121). In 1948, the central government regrouped several of its commercial assets in former colonial territories under the Colonial Development Corporation (CDC). This company was a government-owned entity in charge of facilitating the handover of British interests to local management. In Malaya, the CDC allocated the totality of its plantation acreage to the development of non-rubber crops, especially oil palms (TNA DO/35/9993 1957-1960; White 2004, 274).

An additional reason for the British government's rigidity towards rubber and for the growing industry's interest in palm oil was the importance of indigenous smallholding in national rubber production (LMA CLC/B/112/MS37394/007 1955). The role of the smallholding sector became even more crucial after the Malayan Federation obtained self-government in 1955, and the newly elected Chief Minister Tunku Abdul Rahman targeted the rural sector as the major channel through which to achieve fast economic and social growth. In 1956, the Malayan administration formed FELDA, a public-sponsored agency with the major goal of opening up and redistributing available land (Shamsul Bahrin 1988). The establishment of FELDA can be considered a third 'round', as it opened the way for the Malayan administration to join the cluster and its governance dynamics. After *Merdeka*, full independence, in 1957, FELDA came under the direct control of the Deputy Prime Minister (Ibid, 14-20). Initially, the agency concentrated on developing new smallholding schemes in rubber, while its focus shifted to palm oil only in the mid-1960s.

In the process of handover to the Malayan Government, the outgoing colonial administration demonstrated a more valuable ally to Tunku's government than to the industry. The first confrontation occurred in 1958 on the occasion of the industry's annual meeting with rubber manufacturers, the International Rubber Study Group (IRSG). In an attempt to diminish the massive influence of the RGA on the downstream stages of rubber production (marketing, distribution, and financing), the Malayan Government informed the RPC that 'it [was] no longer appropriate for the Independent Federation of Malaya to be

represented at International conferences by (...) non-residents of the Federation' (TNA DO/35/9901 1957), *de facto* excluding future participation of the RGA members in IRSG meetings. This way, Tunku's administration proved their understanding of the governance practices in the plantation industry and their desire to extend the cluster boundaries and benefits to the larger Malay(si)an interest. Although, as noted by E.N. Larmour at the Colonial Office, 'this was the kind of subject about which in the old days the Colonial Office would have brought pressure to the Federation' (Ibid), this time the British administration preferred to side with its Malay(si)an counterpart. As suggested by A.W. Snelling, at the Commonwealth Relations Office, the matter was 'drop[ped] (...) like a hot brick' with the RGA, while the government stressed 'the need of training Malaysian people for positions of authority and (...) for British commercial interests to adapt themselves gradually to the political change by Malayanising their management where feasible and being forthcoming in various ways' (Ibid). The correspondence among British officials conveys the idea that: 'the loss suffered by the RGA (...) is mainly one of face' and that the agency houses had 'to accept that their influence at the Colonial Office was a wasting asset and their ability to dictate terms to Malaya was growing less every day' (Ibid), which reiterates the patterns of the long-standing friction between the agency houses and the government.

In this situation, cluster companies responded by intensifying research collaboration in order to strengthen their advantage in the palm oil segment. The creation of a 'closed block' of interest in the form of the JSC not only favored internal cooperation among its members but also, and most importantly, pushed outsiders to find strategies to 'sign up to the club'. Since 1947, when its local subsidiary Pamol was established, Unilever had been operating oil palm estates in Kluang, Johore reaching a total of over 10,000 ha in 1964 (UL UAC/1/2/4/19/11 1957; UL UNI/RM/OC/2/2/64/58 1964). During the 1950s, the company expanded its presence in the Peninsula and acquired new land in Sabah, and by 1960 its oil palm acreage was around 10% of the total acreage in Malaysia (Martin 2003, 161). Given the difficulties of the rubber business, Unilever took advantage of its extensive research

infrastructure and network of experts within the oil palm in West Africa (Martin 2003, 187), bringing together the scattered R&D efforts of the MPOP members. Cooperation on the oil palm escalated in 1963 and was formally sealed by a new ‘round’: the constitution of the Oil Palm Genetic Consortium, a joint initiative funded together with Guthrie, H&C and Dunlop, aiming at improving the Malaysian planting material (Ibid, 151). The initiative remained privately sponsored until 1973, when it was absorbed by the newly created Malaysian Research and Development Institute (MARDI).

5. FELDA, the Trojan horse shifting cluster control to Kuala Lumpur (1959-1970)

The 1960s saw a ‘palm oil boom’. Thanks to the surge in palm oil prices, government policies such as lower export duties, and the extension of rubber replanting grants to oil palm estates (Pletcher 1990), in 1966 Malaysia became the first world producer and exporter of palm oil, accounting for 45% of global supplies (LMA CLC/B/112/MS37394/004(2) 1968). Simultaneously, the influence of the British Government progressively faded to yield ground to its Malaysian counterpart. This was reflected in a change of the governance configuration within the cluster along the lines established in the previous decades. The process of adjustment through institutional rounds ongoing since the 1940s had led to an increasing formalization of the cluster organizational form. As occurred with the establishment of FELDA, once in charge, the new administration adapted its strategies to the existing governance practices, resolving to ‘institutional rounds’ to strengthen its grip on the cluster, in the same fashion as its predecessor.

As for the companies, the initial cooperation that informed the shift from rubber to palm oil came to an end towards the 1970s with the shakeout of the Pool agreement. In the process of re-appropriation of control over agriculture, FELDA worked like a Trojan horse:

while transforming itself into an agribusiness giant in its own right, it contributed to break the foreign ring and weaken the power of the agency houses within the cluster.

Since *Merdeka*, the Malayan Government had realized the need to design oil palm schemes for smallholders in collaboration with agency houses, as crop development had been dominated by and still rested on their large-scale plantations (TNA AY/4/2572 1959; Shamsul Bahrin 1988). Since 1959, Tunku's administration had relied on the support of the British government, which entered a joint program with FELDA for the creation of the first palm oil smallholding in the CDC' Kulai estates, setting the good example for cluster companies to cooperate (TNA DO/35/9995 1959; TNA CO/1022/436 1959; BC JDB/1198(3) 1966). According to Unilever's report on palm oil in Malaysia, in 1961:

the [Malaysian] Government were pressing ahead with smallholders schemes and were thinking in terms of about 130.000 acres (...). The first at Kulai (...) had already 2500 acres and was planned to go up to 20.000. (...) The CDC had helped to lay down the nurseries and Europeans were supervising getting the plantation started, but the Malaysians would probably try to operate these schemes independently in which case they were likely to run in a lot of difficulties. (UL UNI/BD/SC/1/461 1961).

In the following years, Tunku's administration negotiated several cooperative programs between FELDA and the major foreign palm oil players. For instance, H&C's and Guthrie had their own palm oil experts, B.S. Gray and P.T. Gunton, sitting on the agency's board and acting as advisors. Moreover, the estate companies were running regular training courses for FELDA staff (LMA CLC/B/112/MS37394/004(1) 1969). Finally, the Government offered new land grants contingent upon private-sector participation in joint smallholding schemes. The typical set-up was described in a 1961 memorandum between Unilever and FELDA:

The basic concept was simultaneous development of a 5000 acres estate for Unilever and an ‘estate’ of a similar size for the FELDA, who would ultimately allot shares in it to individual settlers and the erection of a mill (...) to be jointly owned by the two parties through a separate processing company (UL UNI/BD/SC/1/461 1962).

Similarly, in 1961, Socfin ran a 1500-ha scheme in Perak and in 1965, Barlow cooperated on smallholding schemes on newly opened land in Sabah (BC JDB/1198(3) 1965).

In light of the agency houses’ exposure in palm oil, in 1966, the RGA officially extended the scope of its activities, inviting growers of crops other than rubber to join the association (BC TBB/830(2); Tate 1996, 582) and formally reviving its influence over the cluster. In the same year, FELDA followed suit, scaling up its palm oil acreage and integrating vertically through processing and marketing subsidiaries to provide smallholders with an umbrella of specialized services. Thanks to its newly acquired scope and size, the agency obtained a seat in the MPOP, but since it still did not yet operate any bulking facility, it remained a non-voting member of the JSC until 1969 (Sutton 1989; Khera 1976). Meanwhile, new institutional rounds were taking place in the cluster: in 1969 the Malaysian Government formed the MARDI under the Ministry of Agriculture (Tate 1996, 589), the man of the industry, former Police Inspector General Sir Claude Fenner, managed to secure the inclusion of four representatives of the newly formed Oil Palm Growers Council in the MARDI committee for oil palm research (White 2004, 11, 172).

While the (foreign) private sector seemed to safeguard its grip on the cluster by means of these arrangements, two major circumstances precipitated the disruption of the existing governance equilibrium. Firstly, simmering friction emerged within the Pool itself, as the smaller Danish player United Plantations (UP) was suffering the excessive power of its biggest counterparts Guthrie and H&C (BC TBB/830(2) 1968). In particular, UP

lamented the creation of a selling agreement (among the major producers H&C, Pamol, and CDC) detached from the MPOP for the sale of palm oil produced in the Sabah region, which excluded the Danish player (BC TBB/830(2), Letters 28.10.1964, 2.11.1966).

Secondly, in 1968, the UK Government introduced the Trade Restrictive Practices Act, banning any collective voluntary price-fixing agreement among UK-registered companies (BC HSB/1085 1970; Khera 1976, 279). Since 90% of the estate companies in the cluster were headquartered in the UK, the new bill made the MPOP illegal. While the London interest still squabbled on how to fix the problem, the Malaysian Government seized the moment to increase its radius of action in the cluster (BC HSB/1085, Minutes 13-24.7.1970).

At first, in 1969, FELDA had the MPOP enforce the creation of a new Malaysian Palm Oil Committee (MPOC), operating from Kuala Lumpur in connection with the London-based JSC. The goal was to increase the Malaysian representation in the marketing and price setting of palm oil (Khera 1976, 280). Moreover, as acknowledged in Unilever's later internal correspondence, 'Malay officials have proved adept at playing foreigners off against each other, in some cases inspired by foreign "wide boys", with their own axes to grind' (UL UNI/RM/OC/1/3/61 1975). Specifically, FELDA crafted a stronger alliance with UP and indirectly supported the company in the dissolution of the Pool (BC HSB/1085, Minutes 13-24.7.1970). Partially in retaliation to the Sabah Pool issue (Ibid), partially because of the possibility of selling independently in India (Martin 2003, 240), UP resigned from the Pool in October 1971, *de facto* depriving the organization of its price fixing function (Khera 1976, 281). The fact that the Danish company backed the transfer of the stock exchange to Kuala Lumpur and was the only foreign player, together with the much influential Unilever, to maintain large stakes of interest during the process of Malaysianization, represent further elements in support to the hypothesis of collusion between UP and the Malayan Government.

Although the launch of the New Economic Policy (NEP) in 1971 is often portrayed as the cornerstone of Malaysianization, the extent of government engagement in FELDA

shows that control was already shifting into local hands through the 1960s (White 2004; Shamsul 1997). Eventually, Malaysianization did become more aggressive during the NEP (Yacob and Md Khalid 2012; Yacob and White 2010), with the transfer of the Palm Oil Stock Exchange from London to Kuala Lumpur (BC TBB/860, 18.4.1972; Jones 2005, 200; Martin 2003, 328-330) and the acquisition of all the major cluster players by government-linked companies at the turn of the 1980s (Yacob and White 2010).

6. Conclusion

The evolution of the palm oil cluster in Malaysia helps craft a more nuanced view of the government's role in cluster development. Studies on clusters agree on the desirability of supportive but not intrusive government action for the smooth functioning and thriving of a cluster. Yet, these studies have at least two major limitations. Firstly, they are mostly policy-oriented and consider the government as an actor external to the cluster. Secondly, they concern clusters operating in politically stable settings, normally under free-market regimes and dominated by indigenous companies, implying the strong alignment of goals and interests between the government and the cluster companies.

The Malaysian palm oil case, an agricultural cluster in a developing country during the delicate process of nation building, helps operationalize the concept of cluster. The analysis of the archival material identifies the central actors and institutions within the cluster (see Table 1) and examines the governance dynamics shaping these boundaries. Indeed, this paper provides a very different view on (i) how governance is negotiated between deputed government bodies and companies in the cluster and on (ii) the impact of this interaction on the progression of the cluster as an organizational form. It gives evidence for the argument that greater contextualization is needed to understand different types of governance in clusters, counteracting the bias towards Western and advanced economies in the literature.

Firstly, the palm oil case challenges the idea that the government is a force external to the cluster. My archival research shows that both the British and the Malay(si)an Governments actively participated in the decisions impacting the cluster's institutional structure and eventually created semi-public actors such as the CDC and the FELDA to extend the cluster boundaries to the smallholding sector.

Secondly, the analysis focuses on the governance dynamics among the aforementioned actors, intended as practices of non-market coordination, within the cluster. It suggests that this cluster evolved through continuous negotiation between business representatives and government officials, resembling a tug-of-war. At the micro level, the boundaries of the cluster were relentlessly contested and redefined by the ongoing conversation between public and private players, striving to modify their respective scope of action and influence. Letters and minutes are particularly insightful in illustrating how actors' reflexive understanding of the cluster and of their role within it led to conflicting perspectives, in turn framing the trajectories of their subsequent decisions and interactions.

Thirdly, governance dynamics produced institutional change in the cluster. At the macro level, the abovementioned tug-of-war between the government officials and business representatives took the shape of 'institutional rounds'. At times of major friction, stakeholders adjusted the scope of the cluster through the cumulative creation of new, or modification or disruption of old institutional forms, questioning the legitimacy or effectiveness of the existing ones. By correcting and redefining the role of actors within the cluster, these 'adjustments' came to represent successive steps in the cluster's progression, each time marking the boundaries of the cluster. This process of continuous re-definition of the cluster boundaries is reminiscent of a 'pop-up doll' whose limbs become loose and collapse when their base is pushed and are recomposed differently every time the base is released. Although institutional rounds differ from pop-up dolls in that they can add more pieces to the new cluster organizational structure, the metaphor illustrates the manner in which the interaction between stakeholders is marked by major turning points, defining the cluster's advancement over time. The formation of the RPC to mitigate the power of the

RGA, the establishment of the JSC within the MPOP to deal with the palm oil buyers, the creation of FELDA, and, finally, the introduction of MARDI and MPOC to move the power balance from London to Kuala Lumpur are only some outcomes of the described dynamics between the (British and later Malay(si)an) Government and the foreign agency houses to influence the advancement of the business. (See the complete list of institutional rounds in Table 3).

Finally, governance dynamics within the cluster brought about an increasing formalization in its organizational structure, which became evident when governance shifted from British to Malay(si)an hands. Despite the intrinsic difference in goals between the two administrations, Tunku's government adapted his strategy to the 'rules of the game' already governing the cluster. The Malay(si)an Government integrated itself into the governance dynamics, resorting to institutional rounds to curtail the influence of foreign companies, just as the British used to do. Further, in order to incorporate the smallholding sector, FELDA assumed the shape and size of the major cluster players. Hence, the case of Malaysia during decolonization suggests that the government's role within the cluster needs to be assessed in relation to the surrounding political economy. Specifically, both broader conditions external to the cluster activity (i.e. the Cold War or decolonization) and relations between the private and public sectors impacted cluster evolution, leading to different governance configurations.

On the basis of these insights, future research may aim to develop a deeper understanding of governance dynamics within a cluster. Below I sketch a tentative model, outlining different 'ideal types' of cluster governance, which may be used as a building block. Ideal types are chosen for generalization purposes in the knowledge that meta-level aggregations such as 'government' and 'industry' include a multiplicity of individual, mixed perspectives and interests. In Figure 2, I advance the idea that governance can change according to the interrelation of two dimensions: (i) the alignment between deputed government institutions and cluster members' objectives and (ii) the direction of

government action either towards the companies in the cluster (direct) or the business environment (indirect).

Q1 of the matrix shows that when interests are aligned, the Government's intervention can favor specific companies, as occurred during the colonial period, with agency houses operating in an institutional and legal framework that reduced the risk to FDI (Yacob 2008, 8-10). Alternatively, as described by Porter and summarized in Q4, public policies can target the cluster's organizational structure (indirect intervention) to improve the business environment where cluster players operate (Porter and Bond 2008). However, decolonization provides examples of clear deviations from Porter's model in terms of goal alignment. Q2 describes the first phase of decolonization, when the British colonial government's action was directed to plantation companies, but their interests were misaligned, as the major objective of the administration was to reduce the RGA's influence in the rubber business and ease the process of handover to the Malayan Government. The fact that the British became increasingly detached from and unsupportive of the agency houses triggered their cooperation in palm oil development but significantly reduced their control of the rubber segment. Finally, as in Q3, the incumbent Malaysian Government was interested in preserving and developing the cluster business environment, but not necessarily in the way that cluster companies envisaged. The creation of FELDA disrupted the internal cohesion among cluster members but enabled social upgrading, as the smallholding sector was able to join in and rip the benefits related to palm oil production.

The interaction between foreign players and the Government in the complex decades of decolonization in Southeast Asia transformed the palm oil cluster in a major pillar of the country's development strategy for the next three decades, achieving remarkable long-term success and shaping the region's economy to this day. The palm oil story invites a more attentive consideration of the modalities of interplay between public and private actors within clusters, still relevant in the contemporary context of globalization, where foreign actors – today also Malaysian – continue to engage in countries characterized by transitional political regimes and volatile economic environments.

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Table 1. Major cluster players (rubber and palm oil) between 1945 and 1970.

MAJOR CLUSTER STAKEHOLDERS AFTER WWII						
FUNCTION	INSTITUTIONS	YEAR FOUNDED	HEADQUARTER	RUBBER	PALM OIL	ACTORS
Producers	RGA	1912	London	x	x after 1965	agency houses and large plantation companies
	RPC	1951	Kuala Lumpur	x		RGA; UPAM; MEOA; smallholders
	MPOP	1952	Kuala Lumpur		x	Guthrie; H&C; Barlow; UP; Socfin
	JSC	1952	London		x	MPOP members controlling bulking facilities (Guthrie; H&C; UP; Socfin)
	MPOC	1969	Kuala Lumpur		x	FELDA and MPOP
	UPAM	1943	Kuala Lumpur	x		Foreign planters and smaller estates
	MEOA	N/A	Kuala Lumpur	x		European and Asian estate owners
	CREOA	N/A	Kuala Lumpur	x		Chinese rubber estate owners
	OPGC	1968	Kuala Lumpur		x	Big estates; planters; FELDA
	CDC	1948	London		x	British colonial government
FELDA	1956	Kuala Lumpur	x	x	Malaysian Smallholders	
	Unilever	1929	Port Sunlight		x	
Government	Ministry of Food		London		x	British Government
	Colonial Office & Secretary of States for Colonies		London	x	x	British Government
	Commonwealth Relations Office		London	x	x	British Government
	Treasury		London	x		British Government
	High Commissioner Office		Kuala Lumpur	x	x	British Colonial Government
	Malay(sian) Prime Minister Office		Kuala Lumpur	x	x	Malay(sian) Government
	Malaysian Ministry of Natural Resources		Kuala Lumpur	x	x	Malay(sian) Government
Malaysian National Land Committee		Kuala Lumpur	x	x	Malay(sian) Government	
Research	ISP	1919	Kuala Lumpur	x	x	dissemination activities on behalf of planters in Malaya
	RRIM	1926	Kuala Lumpur	x		British colonial government; RGA members and PAM
	Agricultural Department of Malaya		Serdang	x	x	British colonial government
	Gold Coast Agricultural Department		Accra	x	x	British colonial government
	Nigeria Agricultural Department		Ibadan	x	x	British colonial government
	WAIPOR	1938	Benin		x	British colonial government
	INEAC		Belgian Congo		x	Belgian colonial government
	Chemara Estates		Malaya	x	x	Guthrie
	Elmina Estates		Malaya	x		Barlows
	Tennamaram Estates		Malaya	x	x	United Plantations
	Dusun Durian Estate		Malaya	x	x	H&C
	OP Genetic consortium	1963-1973	Kuala Lumpur		x	Dunlop, Guthrie, H&C and Unilever
	HCB		Belgian Congo		x	Unilever
	TPI	1955	London	x	x	British Government
	Royal Botanic Gardens		London	x	x	British Government
OPS	N/A	London		x	British Government	
MARDI	1969	Kuala Lumpur	x	x	Malaysian Ministry of Agriculture	

Source: Compilation of archival material (TNA, LMA, BC, UL) and secondary sources (Tate 1996; Martin 2003; White 2004)

Table 2. Chronology of the Malaysian decolonization process

Chronology of Malaysian Decolonization		
Year	Historical Milestone	Political leader
1941-1945	Japanese Occupation	
1945	Japanese surrender. British returned and established a military administration (BMA) in the Straits Settlements and all Malay States.	
1946	The MALAYAN UNION is created combining i) Federated Malay States; ii) Unfederated Malay States; iii) Malacca and Penang	Governor of the Malayan Union Sir Edward Gent
1948	reformed as FEDERATION OF MALAYA i) Malay States become British protectorates; ii) Malacca and Penang remain British Colonies	High Commissioner Sir Edward Gent
1948	Start of the Emergency	High Commissioner Sir Henry Gurney
1952-1954	British Government tackles the Emergency	High Commissioner General Sir Gerald W.R. Templer
1955	First elections	High Commissioner Sir Donald C. MacGillivray - Chief Minister of Malaya Tunku Abdul Rahman
1956	Creation of FLDA	
1957	MERDEKA , the Federation of Malaya is granted Independence within the British Commonwealth	
1960	End of the Emergency	Prime Minister Tunku Abdul Rahman
1963	MALAYSIA is created from the merge of i) Federation of Malaya; ii) Singapore; iii) British North Borneo - Sabah; iv) Sarawak	(British High Commissioner Sir Geofroy Tory, 1957-1963)
1963-1966	Konfrontasi with Indonesia	
1965	Singapore was expelled from Malaysia and gained Independence	
1971	New Economic Policy	

Sources: BRITISH AMBASSADORS AND HIGH COMMISSIONERS: 1880-2010; White, N.J., (2004). *British Business in Post-Colonial Malaysia, 1957-1970: Neo-colonialism or disengagement*. Routledge Curzon; Cheah, B.K. (2002). *Malaysia: The Making of a Nation*. Institute of Southeast Asian Studies.

Source: Compilation of archival material (TNA, LMA, BC, UL) and secondary sources (Tate 1996; Martin 2003; White 2004)

Table 3. Institutional rounds in the rubber/palm oil cluster (1945-1970)

Institutional “Rounds”			
Year	Institution	Created by	Purpose
1951	RPC - Rubber Producers Council	British Government	reallocate power within Malayan Rubber cluster
1954	JSC - Joint Selling Committee	Malaysian Palm Oil Producers (MPOP)	group agency houses operating in Malay Peninsula for the pricing of palm oil
1955	FLDA	Malayan Government	land redistribution for indigenous smallholders
1958	Malaysian Representatives at the IRSG	Malayan Government	recognition of the country’s independent status and role in the rubber industry
1959	Kulai Program CDC and FLDA	British and Malayan Government	cooperation on palm oil smallholdings
1963	Oil Palm Genetic Consortium	Unilever, Guthrie, Dunlop, H&C	combine resources for R&D in oil palm development
1966	FLDA enters the MPOP	Malaysian Government	include the smallholding sector in the negotiation of palm oil price
1967	RGA expands its focus	RGA	include new crops under the RGA umbrella
1968	OPGC- Oil Palm Growers Consortium	Palm Oil Estate Companies	combined the interest of major palm oil growers (similar to the RGA)
1969	MPOC - Malaysia Palm Oil Committee	Malaysian Government	move the administration of the cluster from London to Kuala Lumpur
1969	MARDI- Malaysian Agricultural Research & Development Institute	Malaysian Ministry of Agriculture	control agricultural research output / form and employ indigenous researchers
1971	Disruption of MPOP	UP and Cluster Companies	possibility of setting the price outside the Pool agreement

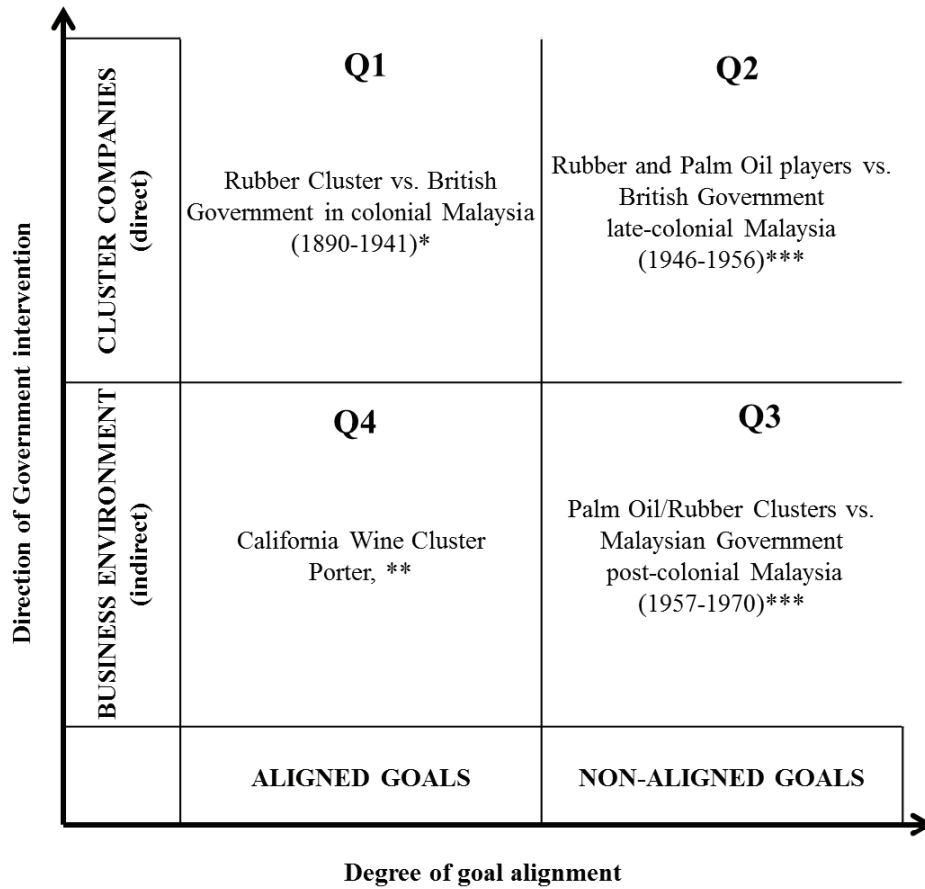
Source: Compilation of archival material (TNA, LMA, BC, UL) and secondary sources (Tate 1996; Martin 2003; White 2004)

Figure 1. Map of Malay Peninsula 1951



Source: UL UNI/RM/OC/2/2/64/20

Figure 2. Cluster governance matrix



Source: Author; *Giacomin, V. “The emergence of an export cluster: Traders and palm oil in 20th-century Southeast Asia” (Paper one); **Porter, Michael E., and Gregory C., Bond. 2008. “The California Wine Cluster”, HBS Case Study. ***Results from the above analysis.

Winner Takes All:
Palm Oil and Cluster Competition (1900-1970 ca.)

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Abstract

Historically, agricultural crops have been transferred from their native locations to climatically similar ones. In the case of palm oil, the new location (Southeast Asia) outcompeted the native one (West Africa), thanks to a superior cluster organizational structure inherited from rubber. This paper analyses archival material from public and private institutions operating in both regions to explore the often neglected topic of competition between different cluster locations specializing in homogenous products. The case extends the knowledge-based approach to cluster theory, traditionally focusing on collaboration across distant production sites, to the dynamics of competition. The analysis concludes that: (i) clusters interact and advance through the exchange of knowledge on a shared institutional platform; (ii) competition emerges when players from one location increase their influence over the institutional platform to gain control over knowledge generation and transmission; and (iii) the comparative evaluation of business environments and their political risk complements location specificity in assessing cluster competitiveness.

Keywords: Cluster competition; palm oil; Unilever; Southeast Asia; West Africa.

Introduction

Historically, the transfer of agricultural crops from one location to a climatically similar one with a more favourable business environment has been a common strategy for foreign traders to counter the risk attached to distant, politically unstable territories. The introduction of the rubber tree and the oil palm, from the forests of the Amazon and West Africa to the plantations of Southeast Asia supported the rise of the automotive industry in early twentieth century and of several mass-produced oil-based products after the Second World War. Due to its superior organizational structure and more conducive business environment, when demand for these commodities boomed, the Southeast Asian cluster established itself as the leading global supplier over these crops' native locations.

While the bulk of cluster scholarship conceives clusters as self-contained organizational forms characterized by a high degree of product specialization and a location-specific institutional setting,¹ I propose a more contextualized view of clusters, in which a specific location gains relevance not just for its absolute features, but rather in relation to alternative, competing production sites. The fact that agricultural crops provide fewer options for product differentiation but at the same time often grow only in selected geographical contexts allows us to compare the performance of different cluster locations producing the

¹ Danny MacKinnon, Andrew Cumbers, and Keith Chapman, 'Learning, Innovation and Regional Development: A Critical Appraisal of Recent Debates,' *Progress in Human Geography*, 26, 3, 2002, pp. 293-311; Jonathan Zeitlin, 'Industrial districts and regional clusters,' in Geoffrey Jones and Jonathan Zeitlin eds., *The Oxford Handbook of Business History*, Oxford: Oxford University Press, 2008, pp. 219-43; Anders Malmberg and Peter Maskell, 'The Elusive Concept of Localization Economies: Towards a Knowledge-Based Theory of Spatial Clustering,' *Environment and Planning A*, 34, 3, 2002, pp. 429-449.

same commodity. In light of this, the common phenomenon of the transfer of agricultural commodities can be interpreted as clusters being replicated or ‘moving’ from one location to another, more successful one.

I will depart from current contributions on knowledge formation and transmission in cluster theory² to investigate the topic of competition between similar clusters, which represents an under-researched area in current cluster scholarship. The analysis of a diverse set of public and private archival material allows the dynamics of cluster competition to be thought of as the result of the relationship and knowledge exchange between different locations over time. First, I find that clusters interact and advance through the exchange of knowledge with distant locations via a shared institutional platform, in line with the existing cluster literature.³ Further, I contend that this creates institutional convergence across the different clusters. Second, the paper claims that this knowledge exchange can lead to the emergence of competition across locations; these competitive dynamics then trigger the modification of the platform in order to reflect the dominance of one location in the process of knowledge generation and transmission. Finally, I argue that the cluster institutional quality and political stability in the host economy in relation to existing alternatives acts as a major driver behind the localization decisions of multinational enterprises as well as specialized

² Peter Maskell, Harald Bathelt and Anders Malmberg, ‘Building Global Knowledge Pipelines: The Role of Temporary Clusters,’ *European Planning Studies*, 14, 8, 2006, pp. 997-1013; Peter Maskell, ‘Accessing Remote Knowledge—the Roles of Trade Fairs, Pipelines, Crowdsourcing and Listening Posts,’ *Journal of Economic Geography*, 14, 5, 2014, pp. 883-902.

³ Harald Bathelt and Johannes Glückler, ‘Institutional Change in Economic Geography,’ *Progress in Human Geography*, 38, 3, 2014, pp. 340-363; Harald Bathelt, Anders Malmberg and Peter Maskell, ‘Clusters and Knowledge: Local Buzz, Global Pipelines and the Process of Knowledge Creation,’ *Progress in Human Geography*, 28, 1, 2004, pp. 31-56.

professionals, or the ‘community of practice’, forming around cluster activity. This in turn supports the use of comparative evaluations, as a complement to location specificity, in assessing cluster competitiveness.

The analysis departs at the turn of the twentieth century, when massive demand for rubber by the automotive industry yielded a vast organizational structure taking the form of a plantation cluster. The cluster was initially based on estates and in the 1910s was concentrated in the hands of a few large foreign players. When, in the interwar period rubber demand stagnated and native smallholders rose as new competition, the oil palm from West Africa surfaced as the most promising diversification option. The crop shared several cultivable properties with rubber, but was more capital intensive; thus, switching to palm oil sheltered large players from smallholder competition. Leveraging the existing organization of the rubber cluster, the multinational Unilever and a handful of rubber players made palm oil the major agricultural export of the region. These companies represented the major actors in the cluster, together with several research institutions. Eventually, two semi-public entities, the British Colonial Development Corporation (CDC) and the Federal Land Development Authority (FELDA) joined the cluster to represent oil palm smallholdings (see the cluster’s major actors in Table 1). By the 1970s the Southeast Asian cluster overtook the crops’ native West African locations to become the world’s leading palm oil supplier (see Table 2). Local political stability and cluster quality were key drivers of these changes.

In this paper I aim to use historical methods and sources to extend scholarship on clusters. The empirical data was drawn from five major public and private archives in the UK. Part of the material concerns the primary cluster members involved in palm oil production at the time: Harrisons and Crosfield (H&C)'s Collection at London Metropolitan Archives (LMA), Guthrie's Collection at The School of Oriental & African Studies, Barlow's Collection at Cambridge University Library and Unilever archives in Port Sunlight. In addition, public records were retrieved from the Rubber Growers' Association (RGA) and Colonial Office held at The National Archives of the United Kingdom (TNA) and LMA in London.

The second section reviews the current stance of cluster theory with regard to knowledge creation and cluster competition and illustrates the contribution of this research. The third section sets the scene in the colonial period, when the Southeast Asian palm oil cluster emerged to threaten West African leadership in the export markets. The fourth section describes the dynamics of cluster cooperation between Southeast Asia and West Africa in the aftermath of the Second World War. The fifth section examines the shift from cooperation to competition between the two locations. The concluding section summarizes the findings and concludes.

Knowledge Creation and Cluster Competition in Theory

The phenomenon of clustering, namely the sectoral and spatial concentration of specialized firms,⁴ is an established line of research in different disciplines of social sciences. Since Marshall's⁵ seminal work on industrial agglomerations, clustering has been identified as a primary mechanism behind the economic growth of selected regions, introducing a strong geographical element into economic analyses of industrial performance. In order to explain the external economies occurring in a particular industrial location—the so-called 'industrial district'—Marshall famously coined the notion of 'industrial atmosphere', which refers to the sum of advantages available to firms in the specific location as opposed to elsewhere.⁶ Michael Porter departed from Marshall's work to investigate the effects of local economic agglomeration on the competitiveness of nations.⁷ According to Porter, the superior economic performance of spatial concentrations of connected firms, called 'clusters', is determined by a combination of conducive local elements, which he grouped in the famous 'diamond model'.

Before Porter, the benefits and mechanics of geographical clustering had already been studied by economic geographers, sociologists and historians, dubbing similar

⁴ Hubert Schmitz and Khalid Nadvi, 'Clustering and Industrialization: Introduction,' *World Development*, 27, 9, 1999, p. 1503.

⁵ Alfred Marshall, *Principles of Economics*, 8th ed., Basingstoke: Palgrave Macmillan, 1920.

⁶ Marshall, *Principles*, pp. 280-284.

⁷ Michael E. Porter, *The Competitive Advantage of Nations*, 2nd ed., London: MacMillan, 1998.

organizational forms in variously ‘neo-Marshallian industrial districts’,⁸ ‘*milieux innovateurs*’,⁹ ‘learning regions’,¹⁰ and ‘new economic spaces’.¹¹ While Porter was criticized for failing to explain the nature of social interaction leading to innovation within clusters,¹² these works specifically investigated the collective mechanisms at the root of these systems of production.

Although they departed from different theoretical assumptions, these approaches did manage to integrate the Granovetterian dimension of social embeddedness¹³ into Marshall’s framework. The result was a general emphasis on location specificity: social, cultural or territorial factors shape the local institutional setting, which in turn enables the fluid circulation of specialized knowledge. However, a recognized common problem with this scholarship was its focus on successful case studies of individual clusters. As a partial exception in this tradition, AnnaLee Saxenian analysed the institutional and social structure of two tech regions, namely Silicon Valley in California and the Route 128 district in Boston, through a comparative ethnography.¹⁴ The study concluded that competitiveness resides primarily on the location’s organizational and institutional framework, that is to say

⁸ Sebastiano Brusco, ‘The Idea of the Industrial District: Its Genesis,’ in Frank Pyke, Giacomo Becattini and Werner Sengenberger eds., *Industrial Districts and Inter-Firm Co-Operation in Italy*, Geneva: International Institute for Labour Studies, 1990, pp. 10-19; Giacomo Becattini, *Industrial districts*, Cheltenham: Edward Elgar Publishing, 2004.

⁹ Philippe Aydalot, *Milieux Innovateurs En Europe*. Paris: GREMI, 1986; Olivier Crevoisier, ‘The Innovative Milieus Approach: Toward a Territorialized Understanding of the Economy?’ *Economic Geography*, 80, 4, 2004, pp. 367-379.

¹⁰ Philip Cooke, Mikel Gomez Uranga and Goio Etxebarria, ‘Regional Innovation Systems: Institutional and Organisational Dimensions,’ *Research Policy*, 26 4, 1997, pp. 475-491; Bengt-Åke Lundvall, *National Systems of Innovation*, London: Pinter, 1995.

¹¹ Michael Storper and Richard Walker, *The Capitalist Imperative*, Oxford: Blackwell, 1989

¹² Ron Martin and Peter Sunley, ‘Deconstructing Clusters: Chaotic Concept or Policy Panacea?’ *Journal of Economic Geography*, 3, 1, 2003, pp. 5-35.

¹³ Mark Granovetter, ‘Economic Action and Social Structure: The Problem of Embeddedness,’ *American Journal of Sociology*, 91, 3, 1985, pp. 481-510.

¹⁴ AnnaLee Saxenian, *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*, Cambridge Ma: Harvard University Press, 1996.

on how skills, technologies and rules have historically become embedded in the regional economy.

Because of this general emphasis on local dynamics, all these contributions on localized industrial concentration were accused of ‘tunnel vision’: underplaying the role of locations’ external links and excessively ‘self-contained’ in their approach.¹⁵ At the turn of the century, Peter Maskell and colleagues attempted to address this deficit within the framework of the knowledge-based approach to spatial clustering.¹⁶ This perspective aims to overcome the problem of ‘global linkages in cluster development’, showing that clusters can advance by acquiring knowledge both on a local and global level.¹⁷ Therefore, knowledge flows smoothly through the unique Marshallian local atmosphere, dubbed ‘local buzz’, thanks to positive externalities produced by proximity and co-location. Simultaneously, knowledge can also be drawn from distant locations via the creation of ‘global pipelines’, which are defined as ‘channels of communication to selected providers outside the local milieu’ and used in distant interaction with external ‘bodies of knowledge’.¹⁸ Thus, global pipelines can encompass several organizational forms, from social networks which are not defined geographically such as communities of practice¹⁹

¹⁵ MacKinnon, Cumbers and Chapman, ‘Learning, Innovation and Regional Development,’ pp. 293-311; Zeitlin, ‘Industrial districts and regional clusters,’ pp. 219-43; John Humphrey and Hubert Schmitz, ‘Governance and Upgrading: Linking Industrial Cluster and Global Value Chain Research,’ vol. 120, Brighton: Institute of Development Studies, 2000.

¹⁶ Peter Maskell, ‘Towards a Knowledge-Based Theory of the Geographical Cluster,’ *Industrial and Corporate Change*, 10, 4, 2001, pp. 921-943.

¹⁷ Bathelt, Malmberg, and Maskell, ‘Clusters and Knowledge,’ pp. 31-56.

¹⁸ Maskell, Bathelt, and Malmberg, ‘Building Global Knowledge Pipelines,’ p. 998.

¹⁹ Etienne C. Wenger and William M. Snyder, ‘Communities of practice: the organisational frontier,’ *Harvard Business Review*, 78, 1, 2000, pp. 139-145; Patrick Cohendet, David Grandadam, Laurent Simon and Ignasi Capdevila,

operating in the same domain—using the same cultural categories, framing memories and meaning in similar ways—to formal institutions stretching across different locations, such as universities, research stations and companies.

In order to access knowledge across locations, a *shared institutional structure* is required, but, while co-location makes firms' participation in local buzz readily available via constant comparison and monitoring, global pipelines must be carefully constructed through 'intense efforts to develop joint problem solving, learning and knowledge creation' with properly selected partners across locations.²⁰ This solicits a deeper assessment of the role of institutions in enabling knowledge creation and transmission. The knowledge-based school identifies the local institutional framework as a major source of cluster distinction, explaining location-specific features in the cluster organizational form and enabling knowledge exchange within the cluster. Yet, this same institutional setting can also turn into a potential barrier to the creation of solid external links, presenting substantial risks of lock-in.²¹ In the last decade, this scholarship has focused on institutional forms integrating clusters in the global economy. Bathelt has been among the most prolific authors in this regard, developing a tentative conceptualization of 'positive' institutional change, which can guide technological transfer while minimizing the risk of institutional lock-in.²² Elsewhere a

'Epistemic Communities, Localization and the Dynamics of Knowledge Creation,' *Journal of Economic Geography*, 14, 5, 2014, pp. 929-954.

²⁰ Bathelt, Malmberg, and Maskell, 'Clusters and Knowledge,' 31-56.

²¹ Meric S. Gertler, 'Tacit Knowledge and the Economic Geography of Context, Or the Undefinable Tacitness of being (there),' *Journal of Economic Geography*, 3, 1, 2003, pp.75-99; David Wolfe and Meric Gertler, 'Clusters from the Inside and Out: Local Dynamics and Global Linkages,' *Urban Studies* 41, 5-6, 2004, pp. 1071-1093.

²² Harald Bathelt and Johannes Glückler, 'Institutional Change in Economic Geography,' *Progress in Human Geography*, 38, 3, 2014, pp. 340-363.

categorization of forms of external inter-firm relationships, such as trade fairs, conventions and conferences, was introduced to theorize non-durable trans-local relationships among cluster members, as channels of horizontal interaction to identifying potential partners for knowledge exchange.²³ Finally, in a recent study, Bathelt and Li analyse the role of foreign direct investment in generating longstanding links between clusters and global cities, taking the form of unique cross-cluster patterns referred to as ‘global cluster networks’.²⁴

Nevertheless, these contributions do not as yet solve the problem of ‘tunnel vision’ in cluster scholarship. In fact, this perspective still appears ‘cluster-obsessed’, failing to overcome location specificity. On the one hand, even at the local level, scholarly research tends to prioritize clusters over the contextual setting in which they are located. There is no explicit consideration of economic or political institutions, or external shocks, which can impact the cluster in its working and/or evolution, while not being directly related to it. In this way, so-called ‘location specificity’ is in fact ‘cluster specificity’.

Yet, analyses of competitiveness based on case studies of individual clusters are still prioritized over comparative analyses, measuring clusters against a wider spectrum of organizational forms. Clusters are still considered as unique and very peculiar entities that are only barely reproducible in the broad competitive system. Consequently, when accessing distant knowledge, the focus remains on individual clusters and on the way in which new information is reprocessed and repackaged at the local level.

²³ Peter Maskell, ‘Accessing Remote Knowledge--the Roles of Trade Fairs, Pipelines, Crowdsourcing and Listening Posts,’ *Journal of Economic Geography*, 14, 5, 2014, pp. 883-902.

²⁴ Harald Bathelt and Peng-Fei Li, ‘Global Cluster Networks--Foreign Direct Investment Flows from Canada to China,’ *Journal of Economic Geography*, 14, 1, 2014, pp. 45-71.

In total, despite the plentiful contributions on how information is transferred across different locations, there is no account of whether, how or why this knowledge flow can subsequently lead cross-cluster competition. This study contributes to cluster scholarship by explicitly suggesting that these ‘distant bodies of knowledge’ may also be other clusters specializing in similar or homogenous products.

In this paper I extend the aforementioned literature using the palm oil case, and find that the same distant interactions favouring knowledge flow across distant locations can successively lead clusters to compete among the same locations. Moreover, a comparative analysis of clusters questions the idea that clusters can thrive in unique locations and solely on the basis of local factors. While local factors are surely critical determinants of cluster competitiveness, the definitive success of one location needs to be measured against all the available options as well as other contingencies, such as the decisions of governments and companies involved in the cluster. Especially when cluster players are multinational enterprises, competition among cluster locations may intertwine with corporate localization strategies.

Historical research can provide a useful contribution through its focus on actors in context. By identifying the communities of actors and by analysing their channels of communication, this paper suggests that collaborative exchange and institutional convergence can develop into competitive dynamics over time. Furthermore, the comparison of two different cluster locations specialized in the same product sheds light on

the non-local determinants of cluster competitiveness and on the need for a more contextualized view of cluster development.

Moving Clusters in Colonial times: *Elæis guineensis* between Africa and Asia

The Second Industrial Revolution fostered an increasing appetite for resources, which became a vital objective of the colonial powers' strategic and political agendas. As a consequence, the second half of the nineteenth century saw a steep increase in the transfer of crops across oceans. The removal of tea plants and seedlings from China to India by Robert Fortune in 1852 and the two major acquisitions from South America—the cinchona crop from the Andean forests by Robert Cross and Richard Spruce in 1860 and the famous smuggling of what was allegedly the best rubber variety *Hevea brasiliensis* from the Amazon by Henry Wickham in 1876—are all early episodes of what was later controversially named 'biopiracy'.²⁵

These expeditions allowed Europe, and especially Britain, to expand the cultivation of these commodities in colonial territories with similar climatic features, establishing agricultural clusters in direct competition with the native locations.

²⁵ Biopiracy is currently defined as the unethical or unlawful appropriation or commercial exploitation of biological materials (such as medicinal plant extracts) that are native to a particular country or territory without providing fair financial compensation to the people or government of that country or territory. See Vandana Shiva, *Biopiracy: The Plunder of Nature and Knowledge*, Brooklyn: South End Press, 1999.

In Southeast Asia, a major plantation cluster emerged following the domestication of the *Hevea* rubber seedlings from the Amazon at the end of the nineteenth century.²⁶ In less than two decades, thanks to their superior organizational structure, the British-controlled Federated Malay States (FMS) and Sumatra in the Dutch East Indies (DEI) came to account for more than 50% of global rubber exports. By the end of the First World War the Eastern cluster had whittled the market share of the native location, Brazil, down to less than 10%.²⁷ Such rapid success had been possible thanks to: (i) the extremely favourable climatic and soil features in both FMS and DEI; (ii) the existing physical and cultural infrastructure, facilitating the domestication of exotic crops for use in plantations; (iii) the presence of the regional trading hub, Singapore, where a thick network of Western, Chinese, Indian and Hadharami Arab traders provided specialized services and inputs for production, connecting the international markets with the surrounding areas; and (iv) the presence of colonial research institutions such as the Singapore Botanical Gardens, the Malayan Agricultural Department and the AVROS²⁸ research station in Sumatra, supporting the sharing and development of agricultural knowledge. The organization and institutional environment of the rubber cluster was then employed for the domestication of the oil palm in the 1920s, when it revealed the most suitable diversification option for rubber producers.

²⁶ P. R. Wycherley, 'Introduction of the Hevea to the Orient,' *The Planter*, 4, 1968, pp. 1-11; 'Mad Ridley brought us rubber', *The Straits Times*, Nov 6th 1983, p. 18:

<http://eresources.nlb.gov.sg/newspapers/Digitised/Article.aspx?articleid=straitstimes19831106>

²⁷ Randolph R. Resor, 'Rubber in Brazil: Dominance and Collapse, 1876-1945,' *The Business History Review*, 51, 3, 1977, pp. 356, 361.

²⁸ General Association of Rubber Planters on the East Coast of Sumatra in Dutch: Algemeene Vereeniging van Rubberplanters ter Oostkust van Sumatra (AVROS).

Native to the ‘Palm Belt’ region in West Africa,²⁹ the oil palm (*Elæis guineensis*) represented a traditional food and income staple for the local population. During the nineteenth century, palm oil products sourced from wild groves had established themselves as the major export of the African region, destined mostly for the production of margarine, candles and soap in Britain.³⁰ Although the oil palm had reached Southeast Asia earlier than the *Hevea* via official colonial channels,³¹ the crop remained long relegated to ornamental uses due to the prevalence of rubber in the East and to the established leadership of Africa as an exporting location.

The Belgian entrepreneur Adrien Hallet was the first to spot the potential of oil palm as an estate crop. The founder of the Hallet Group and later the majority shareholder in the plantation company Socfin,³² Hallet had made a fortune with rubber in the Congo Free State since 1885.³³ At the turn of the century, on the wave of ‘rubber mania’, he ventured to Southeast Asia in order to launch rubber estates in Sumatra and Malaya. Reckoning that oil palms thrived very well in the region, by 1911 Hallet launched the first oil palm commercial estate in the Sumatran province of Deli, and made contact with two French planters, Franck

²⁹ The area corresponds to today’s Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin, Congo, Cameroons, Nigeria, and, to a minor extent, Gambia and Angola.

³⁰ Martin Lynn, *Commerce and Economic Change in West Africa*, African Studies Series, vol. 93, Cambridge: Cambridge University Press, 1997.

³¹ The *Eleais guineensis* reached the Amsterdam Botanical Gardens from Africa in the 1830s. Then the Dutch introduced the first four specimens of the palm in the Botanic Gardens in Buitzentorg (Bogor) Java in 1848, from seedlings held in Amsterdam and Mauritius. According to the official records, the first oil palm arrived in British Malaya at the Kew Gardens of Singapore in 1875, but it is unclear whether the seedlings were sent from London via Ceylon or came from the Sumatran progeny (Amsterdam Botanic Gardens Archives).

³² William G. Clarence-Smith, ‘The Rivaud Hallet Plantation Group in the Economic Crises of the Interwar Years,’ in Pierre Lanthier and Hubert Watelet eds., *Private Enterprises during Economic Crises: Tactics and Strategies*, Ottawa: Legas, 1998, pp. 117-132.

³³ The Congo Free State became Belgian Congo when it obtained official recognition as colonial territory in 1908.

Posth and Henri Faconnier, supporting the floating of the company that owned the oil palm lot in Selangor (FMS), which started bearing fruit in 1917.³⁴

Due to the Dutch ‘open door policy’ to foreign investment in Sumatra³⁵ and the organizational structure of rubber, Hallet could advance domestication faster in the East and bypass the major deficiencies of the African business environment. The West African palm oil locations lagged behind in terms of labour recruitment and access to land and transport facilities³⁶ as they inherited their infrastructure from the slave trade, a system which had therefore not been designed for transporting agricultural produce in bulk.³⁷ Indeed, the territory lacked an extensive road network to transport the produce to mills. Further, the private recruitment of ‘coolies’ needed to harvest palm oil from the plantations was difficult as the locals associated this work with slave labour. Finally, especially in British West Africa, colonial officials were sceptical of giving land to foreign developers as this would create tension within the local farmers’ land tenure system.

The British soap manufacturer William Lever encountered similar problems when he opened his palm oil subsidiary in the Congo, Huileries du Congo Belge (HCB) in 1911,

³⁴ Charles W.S. Hartley, *The Oil Palm*. London: Longmans Green, 1967, pp.21-22; Susan M. Martin, *The UP Saga*, vol. 94, Copenhagen: Nordic Institute of Asian Studies, 2003, pp. 46-49; E. Leplae, *Le palmier à huile en Afrique: son exploitation au Congo Belge et en Extrême-Orient*, Bruxelles: Librairie Falk Fils, 1939.

³⁵ Anne Booth, ‘Varieties of Exploitation in Colonial Setting,’ in Ewout Frankema and Frans Buelens eds., *Colonial Exploitation and Economic Development: The Belgian Congo and the Netherlands Indies Compared*, vol. 64, Hoboken: Routledge, 2013, pp. 60-87.

³⁶ D. J. M. Tate, *The RGA History of the Plantation Industry in the Malay Peninsula*. Kuala Lumpur: Oxford University Press, 1996, p. 453.

³⁷ N. H. Stilliard, *The Rise and Development of Legitimate Trade in Palm Oil with West Africa*, MA Thesis, Birmingham, 1938.

after obtaining a vast concession by the Belgian Government.³⁸ Although by 1930 the colony had become the third global supplier of palm oil products, HCB's constraint to rely only on natural palm groves required a disproportionate amount of capital, making their investment quite unprofitable.³⁹ The lack of wage labour and the lower quality of production system also constrained the expansion plans of Socfin in Africa, to the extent that local operations were deemed 'less of an asset' compared to Southeast Asia.⁴⁰ The company's subsidiary, *Palmeraies Congolaises*, struggled to hire a workforce for their large concessions in Upper Congo, as skilled harvesters, when available, 'preferred to work their own crops to being employed for low wage'.⁴¹ The British colonies of Nigeria, Gold Coast (Ghana), Cameroons and Sierra Leone revealed no more suitable an environment in which to develop estates. The colonial government had a pro-peasant attitude and no definite development plan for these territories. Since the local farmers were already capable of producing surplus quantities of oil, there was explicit aversion towards supporting European plantation schemes.⁴²

³⁸ F. Kindela, *Etudes des Filières Huile de palme et Caoutchouc*, Rapport d'Etape I - Groupement AGRER – EARTH Gedif, 2005; David K Fieldhouse, *Unilever Overseas: The Anatomy of a Multinational 1895-1965*, Hoover Institution Publication 205, Stanford, Ca: Croom Helm, 1978; Unilever Archives, Port Sunlight, UK, (henceforth UL) UAC/2/36/1/7/2 HCB Convention, 1966; UL UAC/2/36/6/1/1, History of Huilever, 1960.

³⁹ Fieldhouse, *Unilever Overseas*, pp. 503-509.

⁴⁰ Clarence-Smith, 'The Rivaud Hallet,' p. 127.

⁴¹ Clarence-Smith, 'The Rivaud Hallet,' p. 122.

⁴² Eno J. Usoro, *The Nigerian Oil Palm Industry (Government Policy and Export Production, 1906 - 1965)*, Ibadan Social Science Series, Ibadan: University Press, 1974, pp. 36-40; Valerie Johnson, 'Sowing the Seeds of Nationalism: Empire, Culture and British Business,' *XIV International Economic History Congress*, Session 94, Helsinki, 2006, pp. 1-29; Lord Lugard, 'British Policy in Nigeria,' *Africa: Journal of the International African Institute*, 10, 4, 1937, pp. 377-400: 395.

In contrast, in the East, oil palm development could benefit from the synergies offered by the rubber cluster, which allowed for a more scientific and quality-oriented domestication.⁴³

In 1924 the major US rubber buyers switched from the African to higher-quality Sumatran oil products⁴⁴ and by the mid-1920s the progress of the Southeast Asian production was already framed as ‘the Eastern menace’ in the discourse among British government officials in West Africa.⁴⁵

In 1926, C. G. Auchinleck and H. B. Waters, officers of the Agricultural Departments of Gold Coast and Nigeria respectively, were sent to visit Sumatra, Java and FMS with the explicit purpose of studying the methods of oil palm domestication. Coordination at the institutional level across the colonies facilitated easy access to information in both FMS and DEI. As mentioned in a dispatch to the Foreign Office from the Consul in East Sumatra: ‘Both Officers spoke highly of the courteous assistance offered to them by the Dutch Officials and the technical experts, with whom they came in contact.’⁴⁶ Moreover, in his report of the visit, Auchkinleck highlights a very inclusive business environment in Southeast Asia, where circulation of knowledge was fluid among scientists across British and Dutch territories.⁴⁷ Through this visit, the experts from Africa were able to join the transnational community of practice operating on the oil palm, liaising with the Southeast Asian network of planters, such as the leading AVROS researchers Dr A. W. K. de Jong and Dr A. L. Rutgers, and Socfin’s chief researcher M. Ferrand.

⁴³ British National Archives, London, UK (henceforth TNA), CO/96/670/4, Auchinleck’s Notes on Sumatra, 1928.

⁴⁴ Usoro, *The Nigerian Oil Palm*, p. 41, note 35; Clarence-Smith, ‘The Rivaud Hallet,’ p. 122.

⁴⁵ TNA CO/879/122, Palm Oil Industry in West Africa, 1932.

⁴⁶ TNA CO/554/71/2, Palm Oil Expedition to Sumatra, 1926.

⁴⁷ TNA CO/96/670/4, Auchinleck’s Notes on Sumatra, 1928.

In both British West Africa and Belgian Congo, state-sponsored research centres such as the Agricultural Departments of Nigeria and Gold Coast, the Institute National pour l'Étude Agronomique du Congo Belge (INEAC) in Mongana and Yangambi, and the local botanic gardens, had been working on palm progeny and seed selection since the early 1920s. Yet, the fact that their results were not systematically connected to a shared organizational structure for large-scale exploitation made it difficult to build on this knowledge and create a community of practice, cooperating across these different institutions. In West Africa, the Agricultural Department started carrying out 'serious research' only in 1928 and 'the scale of operations was negligible until 1937',⁴⁸ while direct cooperation between scientists of British territories and Belgian Congo only started in the early 1940s.⁴⁹

In contrast, Socfin in DEI, together with the agency house Guthrie and the small Danish estate company United Plantations (UP) in FMS, were using the existing rubber plantation infrastructure to pioneer research projects on palm seed selection and processing techniques. Moreover, they could leverage the support and informal coordination of the two leading agricultural research centres: the AVROS in DEI and the Serdang Agricultural Department in FMS.⁵⁰ The results of this research activity were then collected, codified and made widely available by the Incorporated Society of Planters (ISP), located in Kuala Lumpur, through the publication of books and of its journal *The Planter*, which became the preferred outlet for the dissemination of specialized knowledge on the oil palm crop from 1923.

⁴⁸ TNA CO/852/601/11, Report on palm oil commercial agriculture in Africa, 1945.

⁴⁹ TNA CO/852/601/12, Report on oil palm research in Africa - Letter to INEAC chemist Oswald Roels 1945.

⁵⁰ Tate, *The RGA History*, pp. 454-457.

During the 1920s, the ISP organized its first conference, inviting the leading agronomists in the East; among the major contributors were the agriculturalists C. D. V. Georgi and B. Bunting, members of the Serdang team.⁵¹ This system of public institutions was instrumental in providing a cohesive community of practice at the regional level, which was also open to establishing links with more distant locations such as Africa.

Indeed, despite their direct competition, during the interwar period the development of palm oil production was carried out in both locations thanks to continuous contact and knowledge exchange, laying the foundations for a shared platform involving both private and public organizations. Information travelled both ways as Eastern advances in plantations could be enriched by African knowledge on palm varieties and experience in downstream phases of the supply chain. In the early 1920s, AVROS ran several propagation programmes based on seeds of *Tenera* palms obtained from the Eala Botanic Gardens in Congo.⁵² On the other hand, being a major player in both regions, Socfin could act as a global pipeline.⁵³ In his report, Auchinleck mentions that Socfin ‘has kindly undertaken to forward 200 seeds, from selected [Sumatran] bunches (...) for trial in the Gold Coast’⁵⁴ and that it imported selected seed for small-scale planting in the Ivory Coast.⁵⁵ In the 1920s, the Franco-Belgian company was the first to open a bulking facility for shipment to Europe in Belawan (Sumatra), introducing a tank system for palm oil storage in the East, modelled on the one

⁵¹ London Metropolitan Archives, London, UK (henceforth LMA), CLC/B/112/MS37394/004(2), Nickalls’ Papers, notes on post-war rehabilitation - 1989.

⁵² Martin, *The UP Saga*, pp. 53, 143

⁵³ Clarence-Smith, ‘The Rivaud Hallet,’ p. 123.

⁵⁴ TNA CO/96/670/4, Auchinleck’s Notes on Sumatra, 1928, p. 16.

⁵⁵ Clarence-Smith, ‘The Rivaud Hallet,’ pp. 117-132.

devised by Unilever for its Congo operations.⁵⁶ Headed up by Guthrie, Malaysian producers followed suit, financing a joint bulking facility in Singapore in 1932.

Faced with increasing Sumatran and Malayan export volumes and falling commodities prices following the Great Depression in 1929, Unilever's African trading subsidiary—the United Africa Company (UAC)—repeatedly pressured the colonial administration in West Africa to support plantation schemes.⁵⁷ Yet the attitude of the government remained largely unchanged and before the Second World War UAC managed to gain control over some plantation acreage only accidentally.⁵⁸ In Congo, meanwhile, when HCB shifted under nominal control of UAC in 1933, the company was already taking steps to develop commercial estates.⁵⁹ Although by 1931 HCB's 'were not real plantations yet',⁶⁰ the company could leverage the large scope of action of UAC in the region and the cutting-edge research on breeding methods developed by doyens of the field, Dr A. Beirnaert and R. Vanderweyen at the INEAC in Yangambi.⁶¹ In 1937, HCB revised its convention with the government, enabling the company to open more than 100,000 acres of oil palm estates before the mid-1950s.

⁵⁶ TNA CO/96/670/4, Auchinleck's Notes on Sumatra, 1928, p. 32; Martin, *The UP Saga*, p. 68; 'Shipment in Palm Oil in Bulk,' *The Planter*, 11-12, 1931, pp. 353-354.

⁵⁷ TNA CO/267/619, Oil palm in Sierra Leone, 1928; TNA CO/96/690/15, Mill development in the Gold Coast, 1929; TNA CO/879/122, Palm oil industry in West Africa, 1932, pp. 56-57, 84, 97; UL UAC/1/2/3/4/1, Report on palm oil improvement in Africa, 1936.

⁵⁸ David K., Fieldhouse, *Merchant Capital and Economic Decolonization*, Oxford: Clarendon Press, 1994 - UAC obtained the former German 'Ndian oil estate (2,300 ha) in the Cameroons as auctioned enemy property in 1924; Sapele and Calabar oil palm estates (4,800 ha in total) were added to existing (rubber) plantations in Nigeria in the early 1930s.

⁵⁹ Fieldhouse, *Merchant Capital*, p. 222; Fieldhouse, *Unilever Overseas*, p. 494.

⁶⁰ Fieldhouse, *Merchant Capital*, p. 206.

⁶¹ Martin, *The Up Saga*, p. 143.

In 1936, Sumatra had already surpassed Nigeria in palm oil exports and in 1939 Sumatra and Malaysia together accounted for half of global exports.⁶² This could have marked the end of the African industry, but two major factors contributed to the prolonged coexistence of the two palm oil locations. First, the Japanese occupation of Southeast Asia and the subsequent decolonization process in Indonesia downsized Sumatran (and only temporarily) Malaysian capacity and their recent leadership in global exports of palm oil. Second, the fact that Unilever had had a major presence in Africa since the end of the nineteenth century helped the native location to keep a foothold in international markets. After pouring substantial resources into research on natural palms, UAC had just launched plantations and was willing to scale up its operation.⁶³ In the two decades following the Great Depression, the corporation was indeed the major engine of transformation of the native palm oil production into a proper cluster organization.

⁶² Usoro, *The Nigerian Oil Palm*, p. 48.

⁶³ UL UAC/1/2/3/4/1, Report on palm oil improvement in Africa, 1936.

Dynamics of Cluster Competition: The Uncertain Fate of Palm Oil between West Africa and Southeast Asia

The Second World War worked as a watershed in the competitive dynamics of palm oil production. Prior to the War, colonial institutions and Singapore played a major role in channelling agricultural knowledge from West Africa to Southeast Asia and vice versa. Although research institutions supporting agriculture were also present in West Africa, in the East, colonial institutions interlocked with the organizational structure of rubber plantations. This in turn favoured the creation of a cohesive community of experts across the region and superior performance in international markets. Then, in the post-War period, knowledge spread primarily through private actors and independent research stations, mostly via Kuala Lumpur. Colonial institutions lost influence as European powers defunded them following the War. Independently, Singapore lost ground to Kuala Lumpur as a central trading hub due to (i) a contraction in global trade; (ii) increasing nationalism in the region; and (iii) decreased volumes from the city's strategic source of trading—Sumatran smallholders—following political turmoil in Indonesia.

The Japanese army occupied both FMS and DEI between 1941 and 1945 and dismantled most of the plantation system. In the aftermath of the War in Indonesia, President Sukarno's quite radical economic policies posed several challenges to the activity of foreign

companies and led to a gradual decline of the prosperous Sumatran plantation economy.⁶⁴ In contrast, Malaya, which by 1938 accounted for only 10% of global palm oil exports, found itself in a middle-ground position. Between 1946 and 1952, the British Ministry of Food committed to buying all palm oil supplies from its controlled territories, favouring those few rubber producers that had started diversifying into palm oil before the War, grouped into the Malaysian Palm Oil Pool. On the downside, resumption of economic activity was impaired by the outburst of the local civil conflict, the Emergency, and up to the late 1950s Western estates became the central target of guerrilla attacks from communist forces. As a consequence the region temporarily lost its newly acquired leadership in palm oil exports, leaving room for African plantations to catch up.

During the 1940s, Nigeria regained its primary role in palm oil export markets. Due to the changing attitudes of local government officials, foreign ventures established new oil palm plantations and thus restructured the West African production to resemble the Eastern cluster model. In 1938, the Oil Palm Research Station (WAIPOR) was established in Benin to complement the work of the Nigerian Agricultural Department in Ibadan.⁶⁵ In 1949 the station hosted the first Oil Palm Conference, reuniting leading scientists and palm oil experts employed in UAC facilities and public research centres in both West Africa and

⁶⁴ LMA CLC/B/112/MS37394/004(2), Nickalls' Papers, notes on post-war rehabilitation - 1989; Nicholas J. White 'Surviving Sukarno: British Business in Post-Colonial Indonesia, 1950-1967,' *Modern Asian Studies* 46, 5, 2012, pp. 222-242; J. Thomas Lindblad, *Bridges to New Business: The Economic Decolonization of Indonesia*, Verhandelingen Van Het Koninklijk Instituut Voor Taal, Land En Volkenkunde, Leiden: BRILL, 2008.

⁶⁵ TNA CO/852/601/12, Report on oil palm Research in Africa, 1947.

Congo.⁶⁶ Among the representatives from other countries, the only ones invited were B. S. Gray, a palm oil expert at Guthrie's Chemara estates, and two Dutch researchers.

Overseas, the Malay Agricultural Department, directed by the energetic Erik Rosenquist, launched a promising breeding programme based on West African planting material and distributed seeds among his personal network of foreign planters. Yet, due to the political instability and the declining means available to the Department since the early 1950s, Rosenquist resigned to join Guthrie's independent station in 1954.⁶⁷ Furthermore, in this period palm oil producers in Malaya could not yet count on an institution comparable to the Rubber Research Institute of Malaya (RRIM), and neither could they hope for research coverage from the RRIM itself as it was focusing on finding ways to counter the threat from synthetic rubber.

Thus, between the 1940s and the mid-1950s, while West Africa regained ground as a stronghold of palm oil production, in Malaya the fate of the commodity was still uncertain. At this stage, the two locations seemed to be competing on equal terms. Despite the Emergency, Malaya could leverage a superior organizational structure and better yields,⁶⁸ but was still a novice in palm oil production. In Africa, the oil palm was the traditional crop, but the business environment left a lot to be desired, especially in the eyes of investors used to operating in the East.

⁶⁶ TNA CO/852/1156/6, Oil palm research International Conference in Benin, 1949.

⁶⁷ Martin, *The UP Saga*.

⁶⁸ UL UAC/1/1/12/865, Report on Kluang extension, 1949.

Nonetheless, British agency houses with extensive experience in the East started looking for new investment opportunities in Africa. For instance, in the early 1950s, Barlow invested in rubber estates in Nigeria, but soon found out the disadvantages of the native cluster. In a letter to J. H. Tovey, the director of Barlow's estates in Malaya, John Barlow compared the two locations: 'we do not know how lucky we are in Malaya (...) the thing that impressed me the most was the tremendous advantages of planting in Malaya where you have good labor and excellent subordinate staff'. In contrast he lamented that in Nigeria:

I was disappointed to note the general lack of faith in the country. Interest rates for long-term development seem to me to be prohibitive (...) The territory has been promised independence in 1956 and, so far, the local politicians show no signs of being competent to accept this responsibility (...) The corruption and bribery which goes on throughout the country is most disturbing.⁶⁹

As an alternative strategy, the palm oil producers in Malaya took steps to resume research activity on oil palms and the pre-War links with African institutions. Since the end of the War, Guthrie and UP had established informal communication with HCB in Congo.⁷⁰ In the early 1950s, H&C was the first to convert its coastal estate rubber plantations to oil palm and in 1955 created an oil palm research station in Dusun Durian estate in Selangor, an independent research station focusing on development of non-rubber crops, working in

⁶⁹ Barlow Collection, Cambridge University Library, UK (henceforth BC), JDB/1198, Correspondence with Malayan Estates, Letter 5th March 1953.

⁷⁰ Martin, *The UP Saga*, p. 150.

close contact with H&C's surviving Sumatran estates, which were being rehabilitated by the planter Tom Fleming.⁷¹

The arrival of Unilever on the Malay Peninsula provided a further push to the research dynamism of the 1950s. In 1947, the corporation acquired 4,000 acres in Kluang in Johore State.⁷² Unilever expanded its presence over the decade, acquiring an additional 6,000 acres and cultivating new land in Sabah so that, by 1960, its oil palm estates covered 11,400 acres, around 10% of the total acreage on the Peninsula, but less than 10% of its combined (wild) acreage in Congo (140,000) and Nigeria (34,000).⁷³ Beginning in the mid-1940s, the multinational had scaled up its investment in research in its African locations, focusing on all stages of oil palm growth and fruit processing under the guidance of chief researcher, Dr S. de Blank, who was then responsible for exploiting the group's expertise to develop the Eastern estates.⁷⁴ As reported in the minutes from meetings of Unilever's special committee:

Mr. de Blank had come away with the impression that neither the Dutch nor the British in Malaya were in advance of our research and technical practice in the Congo and Nigeria with the exception of the money being spent on fertilizing. (...)

⁷¹ LMA CLC/B/112/MS37394/004(1), Nickalls' Papers, notes on post-war rehabilitation - 1953. Tate, *The RGA History*, p. 594.

⁷² Fieldhouse, *Merchant Capital*, p. 220; Martin, *The UP Saga*, p. 160.

⁷³ UL UAC/1/2/4/19/11, Report on research in Africa, 1957, p. 551; UL UNI/RM/OC/2/2/64/58, Kluang investment, 1964: In 1957, the total acreage in Malaya was already 7,000 acres (3,000 ha), 15% of the company's total world acreage, and in 1964 12,000 acres.

⁷⁴ Martin, *The UP Saga*, p. 188.

[W]hile this was satisfactory from one point of view it was disappointing to the extent that we had hoped to learn something from them.⁷⁵

Meanwhile, according to John Barlow, UAC was ‘very secretive’⁷⁶ about the condition of their estates in Nigeria, once in the East the company traded its know-how to establish a foothold in the country.⁷⁷ For starters, thanks to its *liaison* with B. S. Gray, the corporation employed the major palm oil producer in Malaya, Guthrie, as managing agent and as consultant at its research facilities at Chemara. The transfer of knowledge across locations further improved after 1955, when Unilever aggregated all its plantation investments under the umbrella of a single executive, the Plantation Group, managed by D. L. Martin.⁷⁸

From Inter-cluster Cooperation to Competition: Unilever and the Palm Oil Boom

While in the immediate post-War period Africa led the development of palm oil production, after Malaysia’s independence in 1957, the leadership inexorably shifted to the Asian cluster, with Malaysia emerging as the leading location for palm oil exports. Although the 1960s saw mounting rivalry between Malaysia and its neighbours, leading to the confrontation with Indonesia (1963–66) and the separation of Singapore from the Malay

⁷⁵ UL UNI/BD/SC/1/460, Minutes of the Special Committee with the Plantation Executive, 1957, p. 5.

⁷⁶ BC TBB/1198, Correspondence with Malayan Estates, 1953.

⁷⁷ Martin, *The UP Saga*, p. 187; For instance, Unilever shared the results of research on production and storage of palm oil in the Mongana Report. See Mongana Report, Cooperative des Producteurs et Exportateurs d’Huile de Palme du Congo Belge, IRSIA, 1952.

⁷⁸ Fieldhouse, *Merchant Capital*, p. 216.

Union (1965), the new government remained supportive of foreign investment. Simultaneously, the political situation in Congo and Nigeria quickly deteriorated leading to a sharp decline in plantation output. Unilever served as a pipeline, channelling knowledge and resources from Africa to Asia, but Malaysia's relative political stability and institutional environment were the key factors that contributed to its eventual global dominance of the palm oil sector.

By 1958 all the big rubber producers on the Malay Peninsula had realized the potential of opening up oil palm estates on a large scale in the region and were converting their rubber acreage.⁷⁹ Moreover, in 1959, the British-sponsored CDC launched a pilot program with the newly established Malayan Government for the development of oil palm smallholding schemes⁸⁰. This collaboration was intended to set the pace for increasing interaction between the foreign estate companies and FELDA with regard to palm oil. FELDA was founded in 1956 and worked as a link between the privately controlled estate system and the indigenous farmers. The agency was in charge of the distribution of available land to Malaysian farmers, the subsequent development of farmers' schemes for different crops and of the provision of specialized services to connect smallholders with international markets.

The growing appeal of palm oil also triggered increased interest in the crop among leading research institutions, such as Kew Botanical Gardens and the Tropical Production Institute (TPI)⁸¹ in London, complementing the existing platform and the sharing of knowledge

⁷⁹ LMA CLC/B/112/MS37394/004(1), Nickalls' Papers, notes on post-war rehabilitation - 1958.

⁸⁰ TNA DO/35/9993, Kulai Oil Palm Estates, 1957-1960.

⁸¹ The TPI was established in 1955 changing the name and premises of the Colonial Products Laboratory in London. See *Nature Publishing*, 180, 4599, 1957.

between the two cluster locations.⁸² In the late 1950s the TPI established a special unit, The Oil Palm Subcommittee (OPS), carrying out comparative research on Nigerian and Malaysian plantations;⁸³ in 1964 and 1965 it hosted the international Palm Oil Conference in London;⁸⁴ and from 1966 it sponsored the Oil Palm News (OPN), a specialized publication intended to compile all updates on the crop and make them available to a global audience.

Furthermore, the increasing competitiveness of palm oil against other vegetable oils proved a decisive incentive for cluster companies to cooperate towards improving its quality. As reported in the minutes of the special committee of Unilever Plantation Executive in 1958:

[O]wing to the length of time taken in plantation development for theories to be tested and knowledge to be gained, it could only be to the advantage of all concerned for a close relationship to be fostered and the results of research to be made mutually available. He [Mr. de Blank] suggested that it might be worthwhile to have some central direction for research programmes into oil palm development. Mr. Martin said that he had had some such thought in mind for some time, and it might be possible for the members of Rubber Research Institute to extend their activities to include oil palms.⁸⁵

Initially, Unilever had started cooperating with Guthrie on pollination techniques, importing the rare *Pisifera* pollen from Africa, while depending on the agency house for brokering

⁸² TNA AY/4/2972, Oil Palm News minutes, 1969.

⁸³ TNA AY/4/2570, Notes on commercial aspect of palm oil, 1959.

⁸⁴ TNA AY/4/2972, Oil Palm News minutes, 1966-1970.

⁸⁵ UL UNI/BD/SC/1/460, Minutes of the Special Committee with the Plantation Executive, 1958, p. 5.

services and research on fertilizers.⁸⁶ Towards the 1960s, keen to expand its acreage in the East, Unilever hired an increasing number of engineers with experience in Africa to carry out multiple collaborative projects. The company was negotiating with the government the terms of cooperation with the FELDA for the development of palm oil smallholdings. Furthermore, its representatives were exchanging information with Dunlop, H&C and RRIM.⁸⁷ In 1963, the Plantation Executive instigated the formation of the Oil Palm Genetic Consortium,⁸⁸ a joint initiative funded together with Guthrie, H&C and Dunlop to improve the Malaysian planting material. The project was under the direction of the geneticist J. J. Hardon, who reached Malaysia in 1964 after an extensive tour of UAC plantations in Africa.⁸⁹ Eventually, by the end of the 1960s, the results of Unilever's collaboration with Congo government stations on extraction techniques, the Mongana Report, became available on the Peninsula. In 1963 these findings were supplemented by the Belgian scientist Wolversperges' article in *The Planter* on the application of wine screw presses to the process of palm oil extraction,⁹⁰ leading to the diffusion of this new technology across all Asian estates during the 1960s.⁹¹

Unilever's engagement in the East grew as political stability in Malaysia improved relative to African locations, where independence was generally accompanied by a rapid

⁸⁶ Ibid, 1955, p. 4.

⁸⁷ Ibid, 1960, p. 3.

⁸⁸ Martin, *The UP Saga*, p. 151 - The Consortium remained private until 1973 when it was absorbed by the newly created MARDI.

⁸⁹ UL UNI/BD/SC/1/462, Minutes of the Special Committee with the Plantation Executive, 1964, p. 2.

⁹⁰ A. Wolversperges, 'The extraction of palm oil by means of screw presses,' *The Planter*, 39, 1-3, 1963, pp. 11-14, 68- 71 and 111-113.

⁹¹ Charles Wilson, *Unilever 1945-1965: Challenge Response in the Post War Industrial Revolution*, London: Cassell, 1968, pp. 78-79.

deterioration of business conditions. In 1960, after very poor performance for several years, the estates in the former Gold Coast (now Ghana) were divested and substituted by a new plantation investment in Sabah.⁹² The same year, the Congo venture started reporting losses as independence was followed by instability and a civil conflict,⁹³ until General Mobutu seized power through a military coup in 1965, posing further challenges to economic activity. In Nigeria, major public investment in plantations during the transition towards independence in the early 1960s failed to produce the expected increase in employment.⁹⁴ When the civil conflict erupted in 1967, leading to an almost 80% drop in palm oil production, Malaysia was already established as the primary global producer and exporter of the commodity.⁹⁵

Despite the rapidity of the African downturn, the shift of leadership from Africa to Asia occurred through a gradual migration of palm oil experts to the East, and a changed configuration of the institutional platform connecting the two clusters. The TPI in London is a good example of how the existing shared institutions progressively leaned towards the East. The OPN's editor, C.W.S. Hartley, was senior researcher at the Malayan Agricultural Department from 1963, a position he gained after a decade as Director of the WAIOPR in Nigeria.⁹⁶ In 1959 the OPS gathered all the key experts in oil palm research of the time: Dr J. A. Cornelius, W. D. Raymond from TPI, T. A. Russel from Kew Gardens, Dr P. B. H.

⁹² UL UNI/BD/SC/1/461, Minutes of the Special Committee with the Plantation Executive, 1961.

⁹³ Fieldhouse, *Unilever Overseas*.

⁹⁴ Usoro, *The Nigerian Oil Palm*.

⁹⁵ TNA AY/4/2972, Oil Palm News minutes, 1969; Harcharan S. Khera, *The Oil Palm Industry of Malaysia: An economic study*, Kuala Lumpur: Penerbit University Malaya, 1976, pp. 183-185.

⁹⁶ TNA AY/4/2972, Oil Palm News minutes, 1969.

Tinker from WAIOPR and Martin and De Blank from Unilever.⁹⁷ From 1966 the committee, now called the Oil Palm Bureau, featured the same members from Unilever and TPI, but also included Hartley and, on the insistence of Martin,⁹⁸ one representative from the RGA as well as one scientist from the Malaysian cluster on a rotational basis.⁹⁹ These same people, together with experts employed in the East, such as H&C's B. S. Gray¹⁰⁰ and Chemara's R. A. Bull, are acknowledged in the preface of the first edition of Hartley's influential publication *The Oil Palm*, resembling a directory of the community of practice specialized on the crop.¹⁰¹

Hence, with the emergence of Malaysia as the leading palm oil producer, institutions such as the RGA and IPS, traditionally associated with the Malaysian rubber cluster, readjusted their focus on the new crop and joined the institutional platform to share oil palm knowledge. In 1966, the RGA, which grouped the interest of the major European agency houses operating in rubber in Southeast Asia, extended its focus to crops other than rubber and in 1967 and 1968 the IPS hosted the Malaysian Palm Oil Conference in Kuala Lumpur.¹⁰² In 1968, Malaysian Prime Minister Razak announced the creation of the Malaysian Agricultural Research and Development Institute (MARDI) to integrate the work of the TPI with local research and support the FELDA's oil palm acreage extension.¹⁰³ Through these measures, and by hiring engineers and scientists previously employed in

⁹⁷ TNA AY/4/2979, Palm Oil Committee, 1959.

⁹⁸ TNA AY/4/2972, Oil Palm News minutes, Letter, 7th July 1966.

⁹⁹ TNA AY/4/2972, Oil Palm News minutes, 1969.

¹⁰⁰ Gray had joined H&C from Guthrie in 1953. See Martin, 2003, 120.

¹⁰¹ Hartley, *The Oil Palm*.

¹⁰² BC TBB/830(2), Correspondence with Grut, November 1964; Tate, *The RGA History*, p. 582.

¹⁰³ TNA AY/4/2973, Kuala Lumpur Oil Palm Conference, Keynote speech minutes POAB, 1970.

West Africa, the players in the Malaysian cluster were able to catalyze the process of knowledge generation from Africa to Southeast Asia, *de facto* sealing their leadership over native locations.

Furthermore, the Malaysian Government played a crucial role in using the cluster as an engine of local development and by the end of the 1960s had managed to fully integrate the smallholding sector into the cluster organization.¹⁰⁴ While involving the private sector in designing a model for oil palm schemes, the government had buttressed the gradual transformation of the FELDA into an agribusiness corporation equalling the foreign cluster players.¹⁰⁵ Unlike in Africa, where the effort to establish plantations had depended mostly on Unilever, in Malaysia a whole organization, preceding the entrance of the multinational, was in place to absorb and refine any fresh piece of information to foster oil palm cultivation. Hence, in the private sector, cluster companies were able to exploit the cooperation with Unilever to adjourn the existing rubber infrastructure to the needs of the new palm oil crop. In the public sector, the Malaysian Government proved more effective than its African counterparts: rather than obstructing foreign investment in estate development, it concentrated on creating incentives for cluster players to cooperate with the FELDA on the expansion of smallholdings.¹⁰⁶

Yet, despite all the locational advantages provided by the Southeast Asian environment, the African cluster managed to maintain its leadership for almost fifty years since the oil palm

¹⁰⁴ Bryan C. MacAndrews, *Mobility and Modernisation: The Federal Land Development Authority and its Role in Modernising the Rural Malay*, PhD Thesis, Massachusetts Institute of Technology, 1977.

¹⁰⁵ Tunku Shamsul Bahrin, *FELDA: 3 Decades of Evolution*, Kuala Lumpur: FELDA, 1988.

¹⁰⁶ Valeria Giacomini, 'Negotiating cluster boundaries: governance shifts in the palm oil cluster of the Malay Peninsula (1945–1970),' Forthcoming.

was first domesticated in the East. Paradoxically, the success of the Malaysian cluster became definitive only when faced with a prolonged political crisis in West Africa.

Conclusions

Departing from the knowledge-based approach to cluster theory, this paper traces the historical development of palm oil production in the two cluster locations of West Africa and Southeast Asia (mostly Malaysia). Table 2 offers an overview of the competitive positions of the two clusters during the period under study, based on their relative export account. The case is used as a tool to investigate how knowledge transfer impacts the dynamics of competition between distant clusters specializing in highly standardized products, such as agricultural commodities.

First, I observe that competition among palm oil locations had its roots in preceding cooperative relations among the major cluster players: namely producers and research institutions operating in both clusters. The analysis of the parallel development of the two palm oil clusters in Southeast Asia and Africa shows how knowledge continued to be exchanged between the two locations informing the convergence of the African institutional structure towards the Asian cluster model. Specialized knowledge scattered across different cluster locations could be shared and transferred via a recurrent and durable international institutional platform, comprising outlets like botanical gardens and public research stations;

international conferences and exhibitions; international magazines and journals, etc. During colonial times the fact that different territories were part of the British Empire facilitated the dissemination of knowledge through publicly funded institutions; then, due to decolonization, private research initiatives gained increasing relevance as channels of knowledge exchange. The lion share of both clusters was in the hands of an handful of players – the most prominent being Unilever, Socfin, Guthrie, H&C, Barlow, and UP – who detained the majority of oil palm acreage, but most importantly employed skilled personnel and hence had vast exposure over the process of knowledge generation. Indeed, at the micro level, the institutional platform connecting West Africa and Southeast Asia was shaped and managed by a community of experts working for these companies often in both locations—engineers, botanists, agronomists—as well as hybrid figures such as planters and plantation company managers. Through this platform, different stakeholders (i.e. producers, researchers, government officials and supporting industries) could interact efficiently and access research output and updated information.

At the macro level, prior to the Second World War the platform for knowledge exchange between the locations was initiated and supported by public institutions located in global cities like London and Singapore, connecting distant colonial territories. Unlike rubber producers, who employed Singapore as an export hub, oil palm estates expanded rapidly in the area around Kuala Lumpur, which was also well positioned for the bulking facilities of Belawan, Port Swettenham and Penang. Although both locations were endowed with similar colonial institutions, the organizational structure through which they interacted with the

local environment made a difference in the relative performance of the two regions. Since West Africa lagged behind in terms of infrastructure, labour market, regulatory framework and government officials' attitudes towards foreign investment, the research efforts took more time to translate into immediate improvements of competitiveness.

While information had flowed freely within the Empire prior to the Second World War, during decolonization knowledge increasingly exchange took place through private institutions. Transnational enterprises such as Socfin and later Unilever served as global pipelines; leveraging their operations in both locations, they facilitated and encouraged the transfer of knowledge across the two business environments. These transnational links then gradually transformed the African production system into a cluster organization resembling the Eastern model. This suggests that once producers identified the most efficient organizational structure for a specific production, the model can be replicated and applied to rival locations, resulting in institutional convergence across distant clusters.

As a second finding, the paper pinpoints that if the process of knowledge transfer across a shared institutional structure can be part of, or start as, a collaborative effort between locations, it can also eventually develop into competition. The analysis suggests that competitive dynamics manifested themselves through the same institutional structure used for collaborative projects. In turn, the changed relationship between locations led to the modification of the shared institutional platform to reflect the new positioning and interest of cluster players. As a related finding, to be further explored in future research, the paper

suggests that competitive advantage can be achieved by the cluster that manages to steer the processes of knowledge generation towards its own location as opposed to competing ones.

Third, when external shocks impact the quality of the business environment and where opportunities of product differentiation are limited, clusters have the possibility to ‘move’ from their original location to another offering more suitable contextual conditions (the ‘diamond’ in Porter’s terms) such as political and/or regulatory setting, climate and/or factor endowment (capital, infrastructure or labour markets). This has two implications, which help understanding clusters as intermediary forms between the global and the local level, rather than as products of locational exceptionalism. First, clusters can be moved and, as discussed above, to a certain extent reproduced. Yet moving production to a new location involves high risk and set-up costs, hence firms may find it more convenient to replicate or imitate the organizational and institutional structure of other locations, which is easier when the product has limited possibilities for differentiation and requires quite standardized practices like, for example, agricultural commodities do. A second observation, related to the first, is that the presence and the quality of clusters—namely their system of production, infrastructure, companies, industrial associations and regulatory frameworks—can be thought of as determinants of the location choices of multinational companies. The reason why Unilever decided to invest in Malaysia was to diversify its risk, but while doing that, it favoured the upgrading of the African cluster, in competition with the Asian locations. However, this is conditional upon political stability in the host economy. Although the superior features of the Eastern cluster were known since the interwar period, the

corporation continued to operate in both regions and only scaled up its position in Southeast Asia amidst longstanding political unrest in West Africa. Ultimately, it was the relative political stability of Malaysia compared to Africa that convinced Unilever, and several researchers, to shift to the East. Hence, it can be argued that if political crisis had hit harder in Malaysia, rather than Nigeria or Belgian Congo, palm oil production might have strengthened and concentrated in Africa following the Malaysian model.

In sum, the analysis helps to overcome the problem of self-containment of cluster literature, presenting clusters as interacting elements of the broader global economic system. In this way, the paper sheds light on the under-researched topic of cluster competition. So far, cluster literature has not scrutinized the issue of competition because location specificity, in terms of actor and institutional frameworks, often constitutes a barrier to comparing different production systems even when they specialize in similar products. The fact that the two palm oil locations share some of the key actors, provide the same product, operate in the same international market and were both under colonial control, make a comparative analysis possible. The major contribution emerging from the comparative analysis is that cluster success also has to be measured against the results and the positioning of clusters in competing locations, especially in the case of developing countries, which often host foreign invested clusters specializing in export. Hence, without denying the merit of a high-quality business environment for the success of a cluster, this paper makes a case for complementing the evaluation of location specificity with comparative analysis of external elements, including the political risk of competing locations or the strategies of

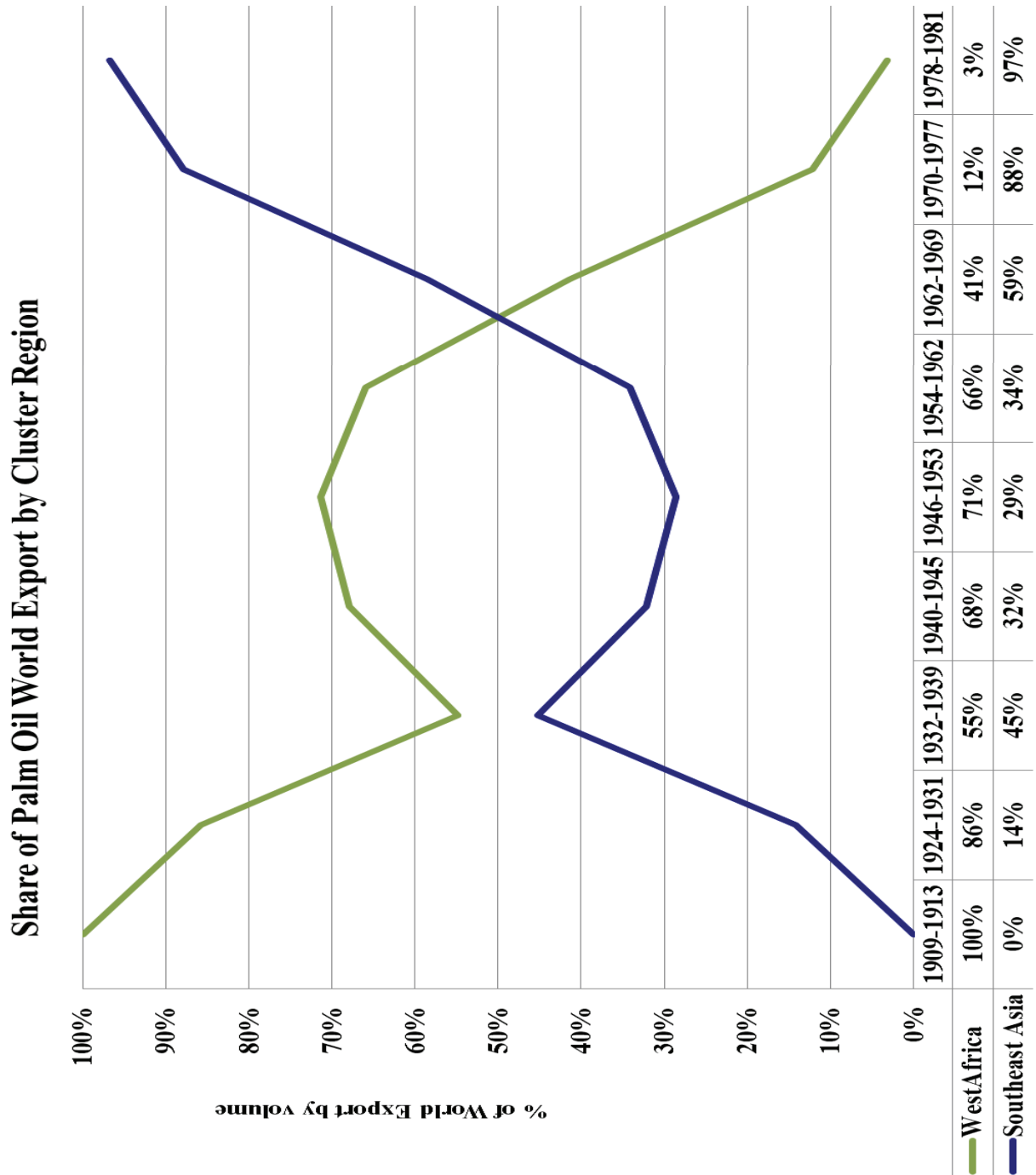
multinational enterprises operating across different cluster locations. In the case of palm oil, Indonesia emerged as the global palm oil leader in less than two decades prior to the Second World War, seriously threatening African producers, but the sudden political crises in Southeast Asia favoured renewed investment in West Africa despite its less efficient organizational structure. Similarly, the difficulties of West Africa have to be factored in when evaluating the success of the Malaysian palm oil cluster during the 1960s. The palm oil industry certainly thrived in Malaysia thanks to its superior organizational structure, yet that cluster's ascendancy would probably not have materialized at the same time and in quite the same way if African countries had not been undergoing a severe political downturn.

Table 1. Major cluster players during the period understudy

MAJOR PLAYERS IN THE PALM OIL CLUSTER				
FUNCTION	INSTITUTIONS	YEAR FOUNDED	HEADQUARTER	ACTORS
Producers	Sumatran Pool	1920s-1940s	N/A	N/A
	Malaysian Pool	during the 1930s	London	Guthrie; H&C; Barlow; UP; Socfin
	MPOP	1952	Kuala Lumpur	Guthrie; H&C; Barlow; UP; Socfin
	JSC	1952	London	MPOP members controlling bulking facilities (Guthrie; H&C; UP; Socfin)
	MPOC	1969	Kuala Lumpur	FELDA and MPOP
	OPGC	1968	Kuala Lumpur	Big estates; planters; FELDA
	Unilever	enters Malaya in 1947	Port Sunlight	Plantation Estate Group
	CDC	1948	London	British colonial government
	FELDA	1956	Kuala Lumpur	Malaysian Smallholders
	RGA	enters palm oil after 1965	London	agency houses and large plantation companies
	ISP	1919	Kuala Lumpur	dissemination activities on behalf of planters in Malaya
	AVROS station		Medan	Association of estate growers in East Sumatra
	Agricultural Department of Malaya		Serdang	British colonial government
Research	Gold Coast Agricultural Department		Accra	British colonial government
	Nigeria Agricultural Department		Ibadan	British colonial government
	WAIPOR	1938	Benin	British colonial government
	INEAC		Belgian Congo	Belgian colonial government
	Chemara Estates		Malaya	Guthrie
	Elmina Estates		Malaya	Barlows
	Temmaram Estates		Malaya	United Plantations
	Dusun Durian Estate		Malaya	H&C
	OP Genetic consortium	1963-1973	Kuala Lumpur	Dunlop, Guthrie, H&C and Unilever
	HCB		Belgian Congo	Unilever
	TPI	1955	London	British Government
	Royal Botanic Gardens		London	British Government
	OPS	N/A	London	British Government
MARDI	1969	Kuala Lumpur	Malaysian Ministry of Agriculture	

Source: Compilation of archival material (TNA, LMA, BC, UL) and secondary sources (Tate, *The RGA history*, 1996; Martin, *The UP saga*, 2003; White, *British Business in post-colonial Malaya*, 2004)

Table 2. Shares of palm oil world export by cluster (Southeast Asia and West Africa)



Source: Tinker, PB, and RHV Corley, *The oil palm*. Hoboken: Wiley-Blackwell, 2016.

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