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

Valeria Giacomin**
Copenhagen Business School

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.

** Centre for Business History Department of Management, Politics and Philosophy; Copenhagen Business School; Email: vg.mpp@cbs.dk; Phone: +4538152695.

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 same commodity. In light of this, the common phenomenon of the transfer of agricultural commodities can be

[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.

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 theory[2] 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 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.

---

[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.

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's[5] 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 organizational forms in variously 'neo-Marshallian industrial districts',[8] '*milieux innovateurs*',[9] 'learning regions',[10]

[4] Hubert Schmitzand 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.
[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.

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 embeddedness[13] 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 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'

---

[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.

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 practice[19] 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

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

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 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]

---

[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.
[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.

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.

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.

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

[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.

[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.

as the Singapore Botanical Gardens, the Malayan Agricultural Department and the AVROS[28] 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.

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

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

[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.

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 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 Sumatra[35] 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 facilities[36] 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.

---

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

[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.

The British soap manufacturer William Lever encountered similar problems when he opened his palm oil subsidiary in the Congo, Huilèries du Congo Belge (HCB) in 1911, 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 products[44] 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. During the 1920s, the ISP organized its first conference, inviting the leading agronomists in the East; among the

[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.

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, Aunchinleck 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 devised by Unilever for its

[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.

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.

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

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

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.

[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,

[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-

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 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

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.

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

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.

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

[67] Martin, *The UP Saga*.
[68] UL UAC/1/1/1/12/865, Report on Kluang extension, 1949.

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 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,

---

[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.
[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.

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. (…) [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

[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.
[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.

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 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

[78] Fieldhouse, *Merchant Capital*, p. 216.
[79] LMA CLC/B/112/MS37394/004(1), Nickalls' Papers, notes on post-war rehabilitation - 1958.

schemes[80]. This collaboration was intended to set the peace 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 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

[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.
[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.

> 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 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

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

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 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.

[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.
[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.

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. 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. Gray[100] 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

[96] TNA AY/4/2972, Oil Palm News minutes, 1969.
[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, November1964; Tate, *The RGA History*, p. 582.

support the FELDA's oil palm acreage extension.[103] Through these measures, and by hiring engineers and scientists previously employed in 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]

---

[103] TNA AY/4/2973, Kuala Lumpur Oil Palm Conference, Keynote speech minutes POAB, 1970.
[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 Giacomin, 'Negotiating cluster boundaries: governance shifts in the palm oil cluster of the Malay Peninsula (1945–1970),' Forthcoming.

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 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 understudy, 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 exceptionality. 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

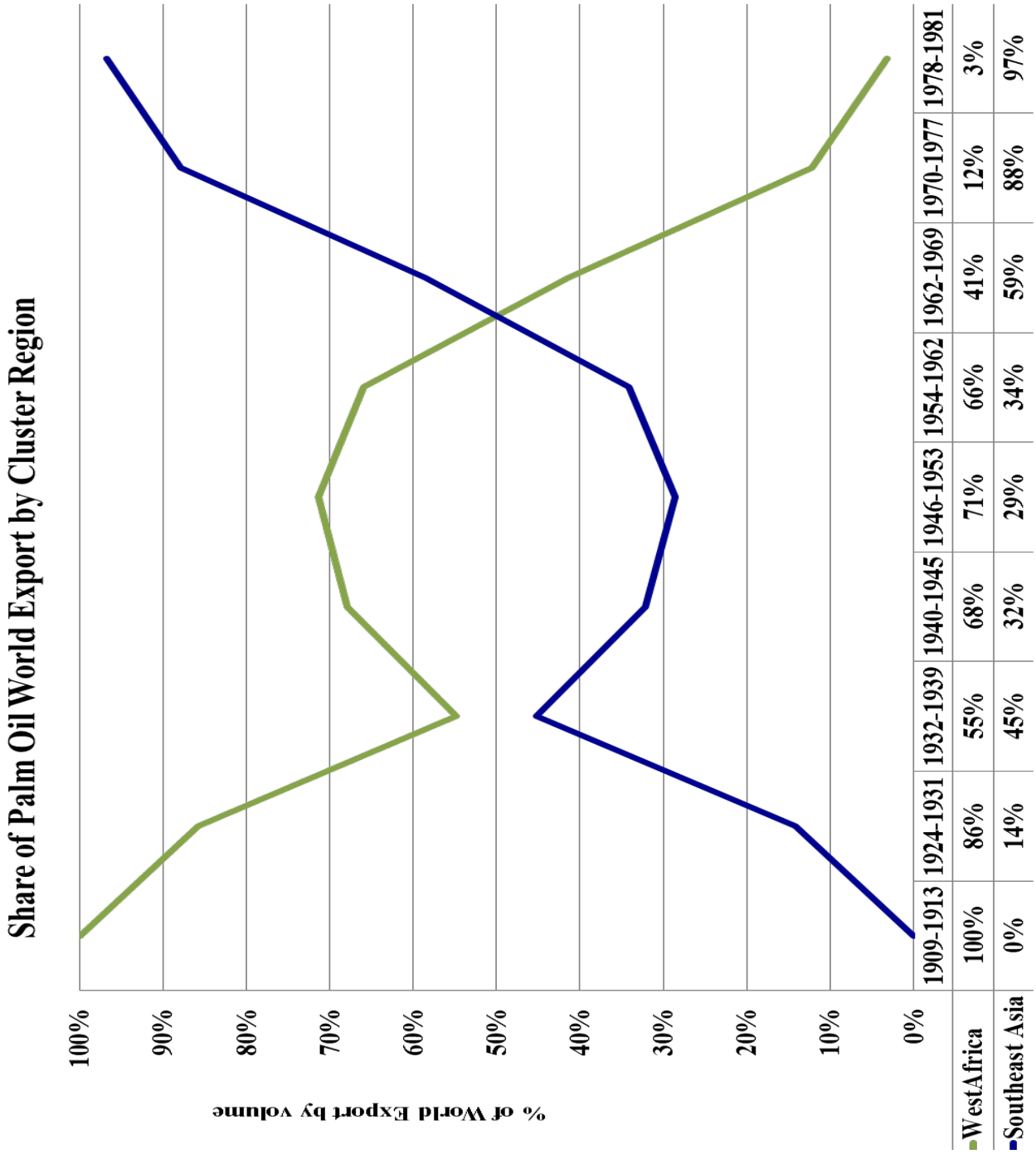
difficulties of West Africa have to be factored in when evaluating the success of the Malaysian palm oil cluster during the 1960s. The palm oil industry certainly thrived in Malaysia thanks to its superior organizational structure, yet that cluster's ascendancy would probably not have materialized at 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				
NCTION	INSTITUTIONS	YEAR FOUNDED	HEADQUARTER	ACTORS
oducers	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
	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
	Temamaram 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 Malaysia*, 2004)

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



	1909-1913	1924-1931	1932-1939	1940-1945	1946-1953	1954-1962	1962-1969	1970-1977	1978-1981
WestAfrica	100%	86%	55%	68%	71%	66%	41%	12%	3%
Southeast Asia	0%	14%	45%	32%	29%	34%	59%	88%	97%

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