

# **Tropical raw material for new industries: The impact of rubber and palm oil in Wilhelmine Germany, 1871 – 1918**

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## **Abstract**

While the transatlantic slave trade was gradually abolished, from 1807 to the mid-19<sup>th</sup> century, the resulting excess supply of labour on African coasts encouraged entrepreneurs to set up a plantation economy which provided industrialising Europe with lubricants for its machineries, sisal for packaging trading goods, oils and fats for chemical, pharmaceutical, and food industries, etc. During the colonisation of Africa, European industries were tapping into this infrastructure and labour reservoir.

Germany, even though a late-coming colonial power, became very successful in exploiting two particular tropical raw materials: caoutchouc and palm oil kernels. By the 1890s, Germany's rubber industry had become the third largest in the world, importing 14.000 tons p.a. of natural rubber from tropical regions. At the same time, German oil mills processed ca 270.000 tons of palm kernels to oil, which was required for the making of soaps, margarine, explosives, etc.

An analysis of the 19<sup>th</sup>-century commodity chains of rubber and palm kernels reveals characteristic political and economic transformations of commercial networks. Wars for independence and nation-building in the Americas as well as the 'Scramble for Africa' triggered spatial transformations which in turn led to a reconfiguration of Germany's involvement with world trade. The paper will put the colonial endeavour during the Wilhelmine period into this context, and in contrast with patterns of trade before the era of the nation state.

## **Introduction**

In 1909 the *Colonial Economic Committee* (Kolonial-Wirtschaftliches Komitee), one of the leading colonial societies in Wilhelmine Germany, published a report entitled *Unsere Kolonialwirtschaft in ihrer Bedeutung für Industrie und Arbeiterschaft* (Our colonial economy in its significance for industry and workforce), which aimed to inform its readers about the significant increase of trade with the colonies and the importance of tropical raw materials for industrial manufacture, highlighting the economic interdependence between colonial trade and domestic labour conditions.<sup>1</sup> The seven chapters following the introduction were dedicated to the most important raw materials and arranged in descending order, thereby reflecting the significance of each commodity for Wilhelmine industry. The first chapter deals with cotton, the most important trade good. By 1900 Germany's cotton industry had become the largest on the European continent and the third largest in the world. The value of its output was the most considerable of all domestic industries and constituted the nations most important export product. In 1902 Germany imported approximately 500.000 tons of cotton, mainly from the United States, Egypt and India.<sup>2</sup> The United States provided around 70 to 80% of the countries demand, while India and Egypt remained secondary suppliers.<sup>3</sup> As for rubber, the second most important commodity, it to became an indispensable raw material during the 19<sup>th</sup> century. With the discovery of vulcanization in the 1830s, by which the manufacture of durable rubber goods was made possible, the demand grew

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1 Kolonial-Wirtschaftliches Komitee (ed.): *Unsere Kolonialwirtschaft in ihrer Bedeutung für Industrie und Arbeiterschaft*, Berlin 1909, p. 5.

2 Sven Beckert: *Empire of Cotton. A Global History*, New York 2014, p. 355.

3 Thaddeus Sunseri, *The Baumwollfrage: Cotton Colonialism in German East Africa*, in: *Central European History* 34 (2001) 1, pp. 31-51, p. 36.

enormously. Here too, Germany played a key role, as its rubber industry grew to become the third largest in the world by the 1890s. By 1910 it was importing 14.000 tons of natural rubber per year from Africa, Asia and South America.<sup>4</sup> Oil palm fruits and kernels are discussed in the third chapter. The advancements made in oil chemistry and oil seed milling improved extraction and processing methods, making palm oil and palm kernel oil appealing for a variety of production sectors and products, such as soaps, lubricants, margarine, perfumes, explosives, etc. By 1907 Germany was importing approximately 1.100 tons of palm oil and palm kernels per year.<sup>5</sup> The remaining four chapters deal with: tropical timber and tanning agents – e.g. mahogany, teak-wood, and cutchtree<sup>6</sup> –, mineral resources – e.g. steel and copper<sup>7</sup> –, animal products – e.g. ivory, wool or ostrich feathers<sup>8</sup> –, colonial edibles – e.g. bananas and pineapples –, and stimulants – e.g. coffee and cocoa beans<sup>9</sup>.

Even though this report invites us to retrace the commodity chains of various different raw materials of tropical/ colonial origin, in this paper I will only focus on rubber and palm oil. To outline all the mentioned trade goods and their respective commodity chains would require a more extensive appreciation, for which in this case I do not have the necessary time or space. Rubber and palm oil will thus serve as a showcase, through which the spatial rearrangements, political and economic transformations of commercial networks leading to the reconfiguration of Germany's involvement in 19<sup>th</sup> century world trade will become visible.

### **Abolition of the slave trade and legitimate commerce**

Following the abolition of transatlantic slave trade in 1807, European merchants began searching for alternative products that could help maintain or establish new commercial relations with West Africa. In this search for legitimate commerce the fruits of the oil palm and its kernels, later on rubber and subsequently other cash crops became sought after alternatives.

When contemporary observers and sources speak of *legitimate commerce* they mean trade in anything other than slaves, including non-agricultural commodities such as gold and ivory. Together with slaves, these commodities had a long trading history, which we can trace when looking at a map of the Gulf of Guinea (west-African coastline). Here particular stretches of the coastline were named: Gold, Ivory or Slave Coast, thus reflecting the major trade that occurred in that particular area.

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4 Wolfgang Jünger, *Kampf um Kautschuk*, 4<sup>th</sup> edition, Leipzig 1942, p. 202.

5 Kolonial-Wirtschaftliches Komitee, *Unsere Kolonialwirtschaft*, pp. 67-68.

6 *Ibid.*, pp. 71-78.

7 *Ibid.*, pp. 79-85.

8 *Ibid.*, pp. 86-99.

9 *Ibid.*, pp. 100-109.

In practice, legitimate commerce concentrated mainly on the commercialization of products obtained from commercial agriculture.<sup>10</sup> Furthermore, contemporaries even conceived that West Africa could take the place of the Americas as supplier of tropical products to Europe, with African labour retained and employed locally. Missionary societies took up upon this idea, implementing it in their stations, enforcing a rather Marxist system of religious conversion, “in which change in the ideological sphere depended upon transformation of the economic base”.<sup>11</sup> Thus the idea of *civilizing* the peoples of sub-Saharan Africa, either religiously or later on by colonial rule, was linked to the idea of incorporating them into the world economy as producers and exporters of raw materials derived from the exploitation or cultivation of cash crops. However, we should not imagine these changes as a top-down process in which European interest always dominated over those of local populations, or as an uncontested linear process in which the peoples of Africa were merely passive players without agency. As Andrew Zimmermann and Sven Becket have shown, the Ewe people of Togo effectively contested the reform-agenda imposed by German colonial rule. It sought to dismantle local textile production centres and to change the cotton-growing practices embedded in patterns of subsistence economy agriculture, in order to persuade and later on force the Ewe to solely grow cotton for export to Germany, in turn creating an import-export dependency with Wilhelmine industry for food, clothing, etc.<sup>12</sup> Similar cases of resistance can be traced in other areas where civil unrest and even armed upheavals resulted from the implementation of colonial policy by German colonial officials.<sup>13</sup>

Still, a broad variety of crops – sisal, kapok, coffee, cocoa, rubber, etc. – were introduced from other geographical and climatological areas to Africa, in order to be cultivated in plantations. And even though not every attempt was successful, plantations in Africa supplied large amounts of raw commodities for consumption and processing in Europe.

In the following section I want to shift the perspective away from the products and towards the merchants and trading houses involved in West Africa and the Americas, in order to illustrate their economic and political significance, crystallizing in the policies that launched German colonial rule in Africa.

### **German merchants and trade-networks with West Africa and the Americas**

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10 Robin Law/ Suzanne Schwarz/ Silke Strickroft: *Introduction*, in: Ibid. (ed.): *Commercial agriculture, the Slave Trade & Slavery in Atlantic Africa*, Woodbridge 2013, pp. 1-27, p. 2.

11 Ibid., p.5.

12 Andrew Zimmermann: *Booker T. Washington, Tuskegee Institute, and the German Empire: Race and Cotton in the Black Atlantic*, in: GHI Bulletin 43 (2008), p. 9-20; Sven Beckert: *Das Reich der Baumwolle. Eine transnationale Geschichte*, in: Sebastian Conrad/ Jürgen Osterhammel (ed.): *Das Kaiserreich transnational. Deutschland in der Welt 1871-1914*, 2<sup>nd</sup> edition, Göttingen 2006, pp. 280-301.

13 Helmuth Stoecker (ed.): *Kamerun unter deutscher Kolonialherrschaft. Studien*, Vol. 1, Berlin 1960; Ibid. (ed.): *Kamerun unter deutscher Kolonialherrschaft. Studien*, Vol. 2, Berlin 1968.

German merchants from the port-city of Hamburg had established trade relations with West Africa long before the abolition of the slave trade and the enforcement of this ban by British naval forces. They actively participated in the slave trade, however at the beginning of the 19<sup>th</sup> century only a few ships and merchants from Hamburg were involved in maritime trade with this region, where not only slaves, but gold and ivory, as already mentioned, were traded for weaponry, spirits, tobacco, cotton fabrics, glass beads and household effects.<sup>14</sup>

Around 1840, the Hamburg based merchant and shipowner Adolph Jacob Hertz (1800-1866) established trade relations with the peoples of the Niger and Volta river basins. Hertz, and later on other German merchants, bartered cowries – spiral shaped mollusc shells found in the waters of the Indian Ocean and recognized by the local populations of western Africa as legal tender (shell money) – for sought-after commodities such as palm-oil.<sup>15</sup> Instead of trans-shipping the shells from the Maldives, Hertz started to exploit similar but lesser worth, blue-tinged cowrie-shells from the coast of Zanzibar to West Africa, thus reducing procurement costs and increasing gains from trade. As a result of the Crimean War of 1853 to 1856 the supply of Russian tallow, utilized in Western Europe for the manufacture of soap, was interrupted and ultimately succumbed. On the same page, declining whaling quotas and the increasing difficulties presented in this branch since 1851 due to the overfishing of the Atlantic Ocean, which in turn led most whalers to move out to the Pacific and Indian oceans in search for fruitful hunting grounds, also encouraged the search for alternative oil and fat sources.<sup>16</sup> Palm oil and palm kernels provided the sought-after alternative, as a broad variety of different products can be derived or manufactured out of its oil: soaps, candles, oil-gas, margarine, explosives, etc.<sup>17</sup> The increase in demand boosted its commercial value and its strategic significance as a resource for industrial manufacture in Western Europe.<sup>18</sup> As a result, more and more German merchant companies – like O'Swald & Co; Spies, Galles & Co; Hansig & Co – got involved in the so-called “cowrie-palm oil run” established by Hertz.<sup>19</sup> Of all major German companies trading with Africa only C. Woermann, which would come to dominate liner trade with Africa after Wilhelmine Germany acquired its colonial protectorates, did not participate in this

14 Walter Kresse, *Die Fahrgebiete der Hamburger Handelsflotte, 1824-1888*, Hamburg 1972 (Mitteilungen aus dem Museum für Hamburgische Geschichte – Neue Folge, Vol. VII.), pp. 84-85; Heiko Möhle, *Die Sklavenhändler. Hamburgs Weg nach Übersee*, in: Ibid. (ed.): *Branntwein, Bibeln und Bananen: Der deutsche Kolonialismus in Afrika. Eine Spurensuche*, reprint, Berlin/ Hamburg 2011, pp. 11-17.

15 Heiko Möhle, *Öl für Harburgs Mühlen. Die Jagd nach Rohstoffen an Afrikas Küsten beginnt*, in: Ibid., (ed.): *Branntwein, Bibeln und Bananen: Der deutsche Kolonialismus in Afrika. Eine Spurensuche*, reprint, Berlin/ Hamburg 2011, pp. 19-24.

16 Anna-Katharina Wöbse, *Der internationale Fettkampf: Walfang in der globalen Allmende*, in: Günther Altner/ Heike Leitschuh/ Gerd Michelsen/ Udo E. Simonis/ Ernst U. Von Weizsäcker (ed.): *Umwälzung der Erde. Konflikte um Ressourcen*, Stuttgart 2009, pp. 91-98.

17 Janice Henderson/ Daphne J. Osborne, *The oil palm in all our lives: how this came about*, in: *Endeavour* 24 (2000) 2, pp. 63-68.

18 Walter Kresse, *Die Fahrgebiete*, p. 193.

19 Ibid.

enterprise. The Woermann family, native from Westphalia, had been engaged in the linen-trade for many generations, and had, after reaching out to overseas trade, established trade relations with the West-indies and South America.<sup>20</sup>

When looking at the Americas, a different picture emerges. During the colonial period Hanseatic merchants had established indirect trade-networks over Spanish and Portuguese port-cities like Cadiz and Lisbon, and a few among them even managed to operate with own ships and call at Spanish-American ports during the 18<sup>th</sup> century.<sup>21</sup> Still, unrestrained trade relations could only be established after the wars for independence. After the postcolonial states had established, merchants from German Hanseatic port cities quickly negotiated trade treaties with the newly formed countries. The first one established with Brazil in 1827.<sup>22</sup> Here too, agricultural cash crops and tropical raw materials were the main staple. With the discovery of vulcanization in the 1830s, rubber, which was primarily gathered in the Amazon basin, became the main export commodity from that region until the enterprise became unprofitable after low-cost plantation rubber from South-East Asia began pouring into the market after 1913. But from 1879 to 1912, during the rubber-boom, Karl Waldemar Scholz – a former grocer from Stuttgart – represented numerous European firms seeking to purchase rubber and other tropical cash crops for industrial processing.<sup>23</sup> He, as well as other migrants like the merchant Ernst Schramm or the botanist Ernst Heinrich Georg Ule, emigrated to Brazil believing in the great potential the country offered as an emerging tropical market, and not, as many of their fellow countryman, to the United States.<sup>24</sup>

### **Economic autarky and the need for establishing colonies**

The transnational networks of Hanseatic merchants were not only crucial in the process of defining the expanding commercial networks of Hamburg business and shipping. They also had great influence in the configuring the policies Wilhelmine Germany adopted regarding the appropriation of colonial territories, so called *Schutzgebiete* (protectorates).<sup>25</sup> Even before the

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20 Dirk Bavendamm, *Das Stammhaus in Hamburg*, in: Dirk Bavendamm/ Günther Jantzen/ Gerhard Sendeler/ Heinrich Woermann/ Jürgen Zwernemann (ed.): *Wagnis Westafrika. Die Geschichte eines Hamburger Handelshauses 1837-1987*, Hamburg 1987, pp. 48-117, p. 49.

21 Anette Christine Voigt, *Ein Hamburger Beitrag zur Entwicklung des Welthandels im 19. Jahrhundert*, Stuttgart 2003, p. 44.

22 Bradley D. Naranch, *Between Cosmopolitanism and German Colonialism: Nineteenth-Century Hanseatic Networks in Emerging tropical Markets*, in: Andreas Gestrich/ Margit Schulte Beerbühl (ed.): *Cosmopolitan Networks in Commerce and Society 1660-1914*, London 2011, pp. 99-132, p. 108.

23 Bradford Burns, *Manaus 1910: Portrait of a Boom Town*, in: *Journal of Inter-American Studies* 7 (1965) 3, pp. 400-421, p. 416.

24 Klaus Bade (ed.), *Deutsche im Ausland – Fremde in Deutschland. Migration in Geschichte und Gegenwart*, 3<sup>rd</sup> edition, Munich 1993.

25 Ulrike Kirchberger, *Aspekte deutsch-britischer Expansion: Die Überseeinteressen der deutschen Migranten in Großbritannien in der Mitte des 19. Jahrhunderts*, Stuttgart 1999; Dirk van Laak, *Über alles in der Welt: Deutscher Imperialismus im 19. und 20. Jahrhundert*, München 2005.

German empire was unified in 1871, a small but influential group of merchants began to speak out in favour of a Prussian-led national navy capable of defending German commercial interest overseas”.<sup>26</sup> Hanseatic commercial involvement in Africa was contested by other European powers, mainly by the British, and by the local populations. In turn, the Senate of Hamburg, in which many merchant patricians sat as political representatives of the city, argued that the only conceivable long-term solution was to follow the path undertaken by other European powers: to dispatch warships to the unstable areas to punish local communities for attacks on their citizens' lives and property. This petition was repeatedly rejected by Bismarck, until Adolph Woermann – a merchant and shipping magnate, head of the family business since 1880 – managed to gain the chancelors confidence and began advising him with regard to German commercial influence in Africa.<sup>27</sup> It was through his influence and the support of other leading German shipping companies, like the North German Lloyd, that Bismarck's position changed in favour of the goals envisioned by colonial pressure groups like the Colonial Economic Committee, the German Colonial Society (Deutsche Kolonialgesellschaft) or the Pan-German League (Alldeutscher Verband).<sup>28</sup> Hence it is possible to state, following the argument presented by Bradley Naranch in a keen essay, that “the German turn towards colonial empire in the 1880s could not have taken place without the willing participation of Hanseatic merchants and shippers who drew upon their ties to nationalist networks in order to secure state protection for their private assets in emerging tropical markets”.<sup>29</sup>

It is in the light of European commercial interest that the Berlin Conference of 1884-1885 has to be contemplated. At first glance it seems that Bismarck wanted to solve the problems deriving from the scramble for Africa through diplomatic means. One objective of the conference was to clearly define and delineate respective areas of colonial influence. A secondary objective was to determine territorial sovereignty over the Congo. It is here where commercial, political, imperial and military interest merge and become visible. The distribution of Africa clearly reflects the search for a balance of power, characteristic for European politics. This is why Belgium was adjudicated with the territorial sovereignty over the Congo, one of the richest and most diverse territories in Africa. For Wilhelmine Germany the Berlin Conference brought about two major gains. On the one hand its colonial possessions in Africa were legally secured according to international law, thereby ending the ongoing disputes with other European powers. On the other hand Wilhelmine Germany

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26 Naranch, *Between Cosmopolitanism*, p. 127.

27 *Ibid.*, p. 128.

28 Hartmut Pogge von Strandmann, *Imperialismus vom Grünen Tisch, Deutsche Kolonialpolitik zwischen wirtschaftlicher Ausbeutung und „zivilisatorischen“ Bemühungen*, Berlin 2009; Hans Jaeger, *Unternehmer in der deutschen Politik (1890-1918)*, Bonn 1967 (*Bonner Historische Forschungen*, Vol. 30).

29 Naranch, *Between Cosmopolitanism*, p. 129.

could demonstrate that it was on par with other colonial powers, like Great Britain, France or the Netherlands.<sup>30</sup>

Colonial pressure groups like the Colonial Economic Committee were interested in and promoted the commercial exploitation of the newly acquired colonial dominions. Therefore an array of scientific expeditions and fortune-seekers prospected the lands, interested in finding, classifying and cataloguing new or introducing already known cash-crops that promised to yield great profit. This groundwork was largely funded by two colonial societies: the aforementioned Colonial Economic Committee and the German Colonial Society. Both associations were founded in the years 1887 and 1897 respectively. They had managed to gather around them important individuals and corporations from German society, politics, industry and commerce, such as the Deutsche Bank, the industrialist Friedrich Alfred Krupp, and the merchant and ship owner Adolph Woermann.<sup>31</sup> Also many leading German economists and scientists belonged to the board of directors of these societies. Both merged in 1902, by incorporating the Colonial Economic Committee into the German Colonial Society, as its economic committee. Their main objective was to advance the economic and scientific development of the colonies, thereby focusing on the cultivation of useful tropical plants needed for industrial processing in Germany, primarily cotton, cocoa and rubber, later also oil palms, coffee, kapok, sisal, etc. To this effect, they stimulated the establishment of plantations in the colonies. They believed that tropical raw materials could be grown and gathered in such quantities, as to satisfy industrial demand and to breach Germany's dependency on importing such goods from other nations, mainly Britain, the Netherlands, the United States, Brazil, etc.

In order to achieve this goal, a network of institutions, experimental stations and qualified personnel was needed, which was responsible for the maintenance of infrastructure, for the production and circulation of knowledge, and the allocation and transfer of plants. Here the Colonial Economic Committee could rely upon assistance by the Botanischer Garten Berlin (Botanical Garden Berlin), the Botanisches Museum und Botanisches Laboratorium für Warenkunde (Botanical Museum and Botanical Laboratory for Merchandise Knowledge), the Botanische Zentralstelle für die deutschen Kolonien (Botanical Research Centre for the German Colonies) and the Versuchsstationen in den Kolonien (Research Gardens in the Colonies). The projects, activities and prospects of the Colonial Economic Committee were published in its own journal *Der Tropenpflanzer. Zeitschrift für Tropische Landwirtschaft* (Tropical Planter. Periodical for tropical farming).

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30 Andreas Eckert, *125 Jahre Berliner Afrika-Konferenz: Bedeutung für Geschichte und Gegenwart*, in: GIGA Focus 12 (2009), pp. 1-7.

31 Pogge von Strandmann, *Imperialismus vom Grünen Tisch*, p. 48.

Rubber manufacturers and other industrialists were increasingly concerned with their dependency on imports for the supply of raw materials. They turned to the Colonial Economic Committee and tropical botanists like Otto Warburg or agronomists like Ferdinand Wohltmann, editors of the *Tropenpflanzer* and promoters of colonial agriculture, to foster the development of plantations in the colonial realm, in order to satisfy the demand for e.g. rubber or palm oil. As a result, rubber and palm oil plantations were created in the colonies. First in Togo, Cameroon and German-East-Africa, and later on in the South-Pacific colonies, Samoa and Kaiser-Wilhelmsland.<sup>32</sup>

### **The failure of supply autarky and the search for alternative sources**

As outlined in this paper, a variety of economic, political, legal and military factors influenced and shaped the reconfiguration of Germany's involvement in world trade during the 19<sup>th</sup> century. The abolition of the slave trade, the wars for independence, the networks and interests of Hanseatic merchants, etc. were key elements in this process. The securing of tropical raw materials for the new industries became the paramount objective of industrialists and pressure groups alike, who in turn advocated in favour and promoted the appropriation of colonial lands in Africa and later on in the South-Pacific.

Still, despite all the efforts made and fortunes invested, the projected supply autarky failed. Not only because Wilhelmine Germany lost its colonial domain after the First World War, but because it lacked behind other European colonial powers in many respects. In the case of rubber, most of the plantations cultivating this cash-crop in Africa and the South-Pacific concentrated their activity on fast growing, medium class rubber varieties like *Kickxia elastica* or *Manihot glaziovii* trees. The cultivation of *Castilloa elastica* failed due to the negative impact of *Phryneta* (=Inesida) *leprosa* F. (*Castilloa* borer) life-cycle: the larvae of this beetle make wide galleries under the bark before entering the sapwood, thereby, if the infestation is severe, seriously damaging the host plant. In turn, the systematic cultivation *Hevea brasiliensis*, its rubber being the most valuable and highly demanded by the industry, was neglected for many years. It was only promoted after it became clear that Great Britain had established large plantations of this rubber bearing tree in its South-East-Asian colonies. So when the rubber from these plantations, approximately 47.500 tons, flooded the market in 1913, the price for natural rubber fell dramatically, rendering the German rubber-plantations unprofitable. They were not only unable to compete because of the cultivated varieties, but most importantly because of the high cost of exploitation.<sup>33</sup> Resulting from the lack of

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32 Paul Preuss, *Über Kautschuk- und Guttaperchakultur in deutschen Kolonien*, in: *Der Tropenpflanzer* 9 (1905) 6, pp. 297-307; Eduard Marekwald/ Fritz Franck, *Der Kautschuk-Plantagenbau in seiner Bedeutung und seinen Gefahren für die deutsche Kolonialwirtschaft*, in: *Der Tropenpflanzer* 15 (1911) 3, pp. 121-129; Kolonial-Wirtschaftliches Komitee (ed.): *Unsere Kolonialwirtschaft*, pp. 69-70.

33 Kolonial-Wirtschaftliches Komitee (ed.), *Verhandlungen der Kautschuk-Kommission des Kolonial-Wirtschaftlichen*

infrastructure and trained personnel. Most of the rubber was transported on foot by carriers, also due to the negative impact of the tsetse (*Glossina* genus). Railways were built, but not in a sufficient pace to be competitive with other colonial powers. Nevertheless, in the 20 to 25 years of German colonial rule in Africa, approximately 20% of its annual rubber demand were supplied through yields obtained in plantations or by exploiting rubber bearing plants – mainly *Landolphia* liana and *Kickxia elastica* trees – in the forest hinterlands.

In the case of palm oil, plantation culture began not before 1909. As mentioned in the report published by the KWK, the oil palm was taken into “rational cultivation” in all colonial territories after that year. In the same year, a handbook commissioned by the KWK was published as supplement of the periodical *Der Tropenpflanzer*, informing and instructing its readers on the cultivation of the oil palm.<sup>34</sup> Its author was Selig Eugen Soskin, agronomist and advisor of German colonial authorities in agricultural issues in West Africa from 1906 until the end of the First World War, and also known for his contribution regarding Jewish settlement in Palestine.<sup>35</sup> However, the exploitation of the wild oil palms and of the ones cultivated in plantations or by the local population in Africa delivered approximately 37% of Wilhelmine's industrial demand for vegetable fats, and close to 70% of its specific demand for palm oil.

After losing its colonial territories, German industry and industrialists made great efforts and advancements in the field of chemistry, developing surrogates for different raw materials. A prominent and well known example is BUNA (styrene-butadiene rubber), developed in 1926 by the chemists Walter Bock and Eduard Tschunkur at I.G. Farben in Leverkusen.<sup>36</sup> The development of synthetic surrogates was picked up prominently during the NS-Period, when autarky visions gained importance once more.

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Komitees, Berlin 1913.

34 Selig Eugen Soskin, *Die Ölpalme: Ein Beitrag zu ihrer Kultur*. Im Auftrage des Kolonial-Wirtschaftlichen Komitees, Berlin 1909 (Beihefte zum *Tropenpflanzer* XIII, Nr. 10).

35 Article: Selig Eugen Soskin, in: *Encyclopaedia Judaica*, Jerusalem 1978, Vol. 15 (Sm-Un), pp. 168-170.

36 Wolfgang Jünger, *Kampf um Kautschuk*.