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# Extractivism during crises of chain governance
## The regulation of the global aluminum chain in Guinea from the 1960s until today

***Abstract***

*The aluminum business is one of the most capital intensive and concentrated sectors and has strongly affected the development of non-industrialized countries involved in its global production network. The arrival of this industry in Africa in the 1960s and 70s can be compared in many ways to the situation today. Once a country opted for an extractivist development path, its policy options became dictated to a large extent by a highly entangled network of actors from the few globally dominant corporations, international financial institutions and the consumer countries. Guinea is a typical example for these control relations that have been seriously challenged again with the new mining boom since the turn of the millennium. It remains to be seen if the current government is capable to use this new crisis of chain governance to increase its policy space and thereby the decision space of the Guinean population.*

# Introduction: Another Scramble for Africa?

Today, a number of economists assume that rising raw material prices will permanently change the terms of trade[1] between raw material producer countries and industrialized countries, thereby falsifying an empirical backbone of dependency theory (Kaplinsky 2006; Jäger, Leubolt 2011). However, the same has already been predicted during the oil crisis of the 1970s. The aftermath of 1973 has shown that a permanent significant rise of the price of raw materials leads to serious perturbations of the global economy and will therefore meet serious resistance by industrial producers and industrialized countries. Thus, both raw material price peaks (1970s and today) could be depicted as the outcomes of 'terms of trade

[1] This term has already been highly abstract when it was coined and additionally lost validity during the crisis of the 1970s and of today (cf. Ross 1999, p. 303).

wars' or of 'crises of chain governance'.[2] Both crises were the outcome of political decisions as well as consequences of rapid economic expansion (in the 1970s in Europe and Japan; today in the BRICS), and both were followed by a series of counter strategies. In the 1970s, resource rich countries tried to profit from these developments by forming producer cartels (OPEC, IBA, CIPEC, etc.), introducing higher taxes and pushing through nationalizations. Similar developments can be discerned today: Most of the raw material producer countries review their mining codes (see e.g., Campbell), form regional alliances and exert export quotas.[3] Also the global bipolarity of the 1970s is still visible today: The strategy of many African countries during the cold war to oscillate between the blocs to widen their room for negotiation as much as possible seems to become in vogue again, only with slight modifications concerning the new power players and the nature of cooperation. And also the hegemonial counter strategies of then and now are quite similar. The old industrialized centers both try to foster cooperation with resource rich countries (Lomé was followed by EPAs and BITs)[4] and with mining companies (see e.g., the German raw material strategy of 2005[5] or the Critical Raw Material Strategy of the European Commission[6]) and to develop and explore resources within their own territories. The consequences of the crisis of the 1970s were devastating for most of the "insurgents". The debt crisis of the 1980s, following the Volcker shock, led to a rising volume of primary commodity production, which was the primary cause for another drop in terms of trade (Ross 1999, p. 302; Agnew, Grant 1996, p. 730). This led to structural adjustment and resulted in the so-called 'lost decade' of development. The causal relationships in Africa are quite obvious: A considerable number of regimes was dependent on a few raw materials and therefore lost a considerable part of government revenues when the prices fell. Mining operations were shifted from politically problematic countries to OECD countries. This triggered vast political/ideological turnarounds. In Africa today, the word socialism is seldom heard, but then as now, the boom went along with a rising self-confidence of Southern governments. The 'socialist' experiments of newly independent African states could insofar be compared to the current wave of socialism in Latin America. Only recently, the Uruguayan intellectual Eduardo Gudynas (Gudynas 2012) induced a

[2] A comparison of academic literature on Africa around these price peaks is quite revealing, too. A considerable number of scholars in both periods observe new 'scrambles for africa' (e.g. Tarabrin 1974; Melber/Southhall 2009; Carmody 2011) or try to unriddle the so called 'resource curse' (Lanning/ Mueller 1979; Custers/ Matthysen 2009; Campbell 2009).
[3] Already in 2009 China was sued by the EU and the US for export restrictions on nine critical raw materials, among them bauxite {ORF 13.03.2012 #207} {ORF 31.08.2011 #201}
[4] Lambert 2012, pp. 133–134
[5] Custers, Matthysen 2009, pp. 54–55
[6] European Commission 2010

rapidly spreading discussion about ‘neo-extractivism’ in Latin America. According to him, the new socialist regimes have achieved considerable social progress in the last ten years, but the economic basis of government revenue still hasn’t changed (see e.g., Rojas-Kienzle 2012).

These general similarities can also be found in the global aluminum industry: When resource rich governments started to nationalize and raise taxes in the 1960s and finally formed the International Bauxite Association (IBA) in 1974 – explicitly after the example of the OPEC – both the aluminum oligopoly of that time, called the Six Sisters, and the governments of the consumer countries reacted by redeploying production (OCED countries obtained their bauxite increasingly from Australia) and by trying to co-opt the insurgents, e.g. by forming joint ventures with governments in Africa and the Caribbean. In most of the concerned countries, these struggles were additionally accompanied (and triggered) by declarations of independence and the resulting non-aligned movement.

In this paper, Guinea will serve as an example for the outcomes of these developments in the 1960s and 70s. Through its integration in a global public-private “mycelium” of bauxite mining and processing facilities, Guinea became part of a global system of command that assumed the role of the French Empire. The directors of these facilities de facto became the new governors, while the management elite of the aluminum majors, together with experts from IFIs and from dominant aluminum consuming countries, became new hegemons, this time stronger based on infrastructural than on despotic power (cf. Agnew 2005, p. 443). This situation is very similar to the resource rush since the turn of the millennium that again caused virtually all aluminum majors queuing up for a piece of the Guinean cake.

## Sources

The findings of this paper are mainly based on a field research in Guinea in February 2012 and on research in the archive of Pechiney at the *Institut pour l'Histoire de l'Aluminium* (IHA) in Paris. Among the most precious sources was an account of the Guinean mining industry by a former Guinean minister for mining, Ibrahima Soumah (Soumah 2008), and a dissertation on the company town of Fria by Céline Pauther (Pauther 2002). As Pauther herself points out, almost all the available sources are strongly biased (Pauther 2002, pp. 4–5; on the role of the IHA see also Grinberg 1994). Thanks to the IHA, a considerable amount of literature on the history of Fria has emerged, but most of it has either been written by veterans of Pechiney themselves (apparently with the aim of getting acknowledged also academically (see e.g.,

Larrue 1991; Laparra) or was based almost exclusively on accounts of the company.[7] This is even more problematic as Pechiney began its work in Africa with a paternalist, socially engaged vision that was also heavily self-portrayed from the start, most prominently by the company magazine "Le bulletin Pechiney". On the third big mining complex, CBK in Kindia, I found no study in French, English or German until now, but the anthropologist Maria Hahnekamp from the Martin-Luther University in Halle has done field research on this topic that will hopefully soon be available.

# Great expectations

Independence in Africa started with huge expectations concerning economic and social development[8], but quite soon the old dependencies became visible again:

> "The essence of neo-colonialism is that the State which is subject to it is, in theory, independent and has all the outward trappings of international sovereignty. In reality its economic system and thus its political policy is directed from outside (Nkrumah 1965, p. IX)."

This statement was made 1965 by Kwame Nkrumah, the first president of Ghana. One year later he was probably reminded of this statement when he was overthrown by a US-friendly military coup while being abroad in China. This happened shortly after the Lake Volta, the world's largest man-made lake, was ready to supply the energy to produce aluminum in Ghana. Nkrumah never came back to Ghana, but he was invited by Sekou Touré, the first president of Guinea to become 'co-president' of Guinea. Tourés view on neo-colonialism was somehow more optimistic:

> "The financial support of capitalism for which we appeal does not in any way compromise the mastery of the situation which we have acquired politically [...] We launch this appeal to Capital so that those who possess it may also, with complete solidarity, enter into collaboration with us (Touré 1962: 426; q.i. Johnson 1970, p. 356)

Both countries have rich deposits of Bauxite - Guinea has the richest deposits of Bauxite in the world – and both countries are perfectly suited for the construction of huge hydro-electric power plants – Ghana possesses the biggest man-made lake in the world. But due to certain

[7] Pauther also mentions this problem, but then equally seemed to have difficulties to distance herself from this constant corporate self-congratulation.

[8] In the 1960ies it was still widely believed that everyone in the newly independent African countries would have access to running water, electricity and roads within a few years (e.g. Time magazine, 10 November 1961)

power configurations, neither of them - and no other African country ever- achieved an integrated production facility which would be able to produce aluminum out of bauxite (see Fig 1). Touré and Nkrumah had similar economic visions: Nkrumah wanted to use the Lake Volta to irrigate rice fields, construct a fishing industry and to transform the local bauxite into aluminium – but none of this happened (Wiederstein 1994, p. 35). Touré had signed similar agreements with French, American and Canadian firms – but also in this case to no avail ( see e.g., Campbell 2009, p. 76).

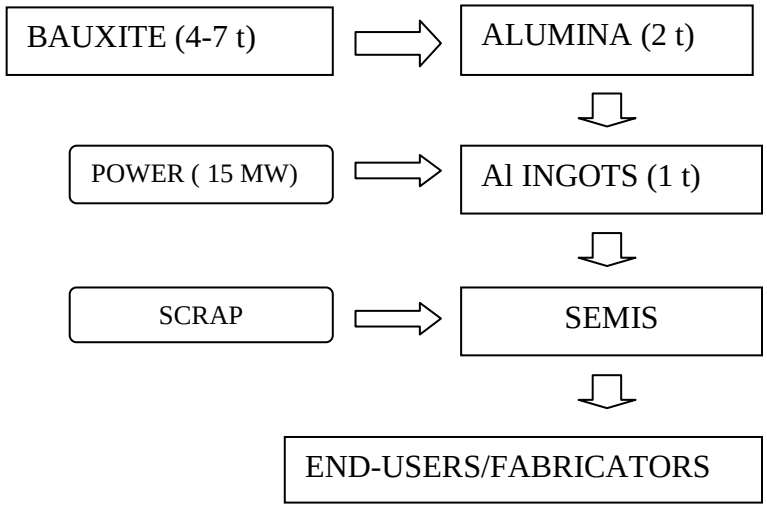



Fig. 1: Aluminum production (Source: Husband 1999: 14)

Primary aluminum, which has to be processed and blended before it can be used, is extracted in an highly energy consuming process from aluminum oxide, which in turn is refined out of bauxite, the basic material of the aluminum production chain. Africa is involved in this process mainly by providing bauxite for aluminum oxide refineries and aluminum smelters around the world. The only African aluminum oxide refinery is located in Fria, Guinea, and has produced about one per cent of world output since the start of production in 1960. Primary aluminum production can be found since the 1960s in Edéa (Cameroon), Tema (Ghana) – both facilities are linked to Guinea – South Africa, Mozambique and some negligible amounts also come from Nigeria (See tabs 1&2; USGS: Various issues).

**Tab.1: Overall bauxite production in Africa since the start of production until 2011**

| | 1000 tons | Share (Africa) | Share (World) |
|---|---|---|---|
| Guinea (French West Africa) | 572093 | 91% | 10% |
| Sierra Leone | 31360 | 5% | 0,6% |
| Ghana (Gold Coast) | 21459 | 4% | 0,4% |
| Rest (Mozambique, Tanzania, Zimbabwe) | 927 | 0,1% | 0% |
| Total | 625839 | 100% | 11% |

Source: USGS: Various issues

| Tab. 2: Overall aluminum production in Africa since the start of production until 2011 | 1000 tons | Share (World) |
|---|---|---|
| South Africa | 15328 | 1,53% |
| Mozambique | 5433 | 0,54% |
| Ghana | 5012 | 0,50% |
| Cameroon | 3784 | 0,38% |
| Nigeria | 102 | 0,01% |
| Total (World) | 1001629 | |

Source: USGS: Various issues

Particularly in Guinea, the needs of the global production network of aluminum resulted in extensive social transformations. The most visible outcomes of this process are the mining towns of Fria, Sangaredi, Kamsar and Kindia. In addition, the Loose Islands near the capital Conakry were for a long time the only Guinean source of bauxite and thereby also contributed significantly to the growth of the city. All of these cities have been planned, created, and maintained by multinational corporations and have seen the most impressive population growth of Guinean history. Similar developments can be observed in Cameroon, Sierra Leone,[9] Ghana, South Africa[10] and Mozambique, but in all these cases the mutual dependency of firms and raw material or energy providing countries (and therefore the consequences for the population) were far less important than in Guinea.

## The global aluminum mycelium

The special character of mining towns directly points to one of the pivotal questions of the globalization debate in the late 1990s: How to uphold political sovereignty while being increasingly confronted with "distinct spaces" (Schmid 2007, p. 232) crisscrossing and undermining formal decision spaces (Geyer 2009, pp. 553–555; Maier 2006, pp. 49–50)? As local manifestations of global production networks, mining towns are quite old and special cases of these "distinct spaces", particularly because they quite neatly overlap with the sub-national identity space of the city while drastically transforming it by almost completely replacing the formal political space by a corporate decision space. These cities are thereby

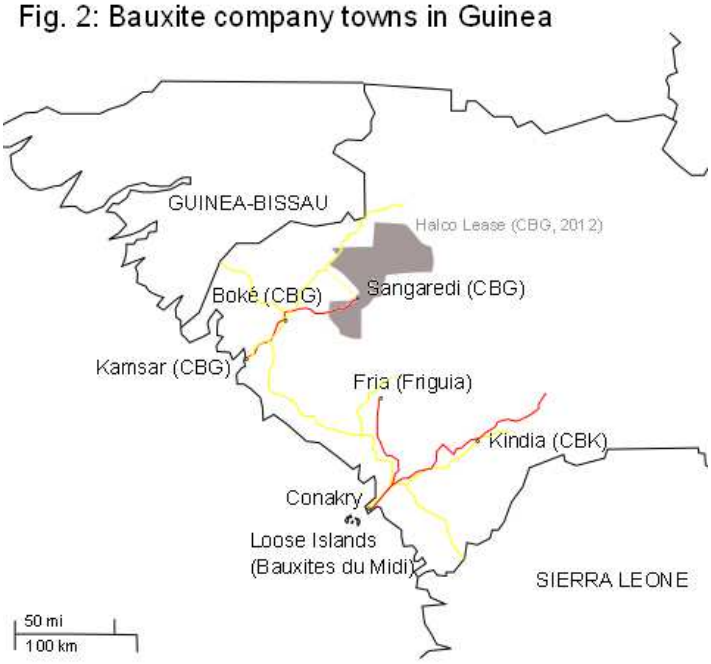
[9] From 1965 to 1995 bauxite was mined by Sieromco, a subsidiary of Alusuisse. Due to civil war, the operations were only taken up in 2001 by Sierra Minerals, a subsidiary of Titanium Resources that currently produces 1.2 million tons per year (Sierra Minerals).

[10] South Africa was first targeted by Alcan (then a de facto subsidiary of Alcoa) in the 1940s (Corts, Wells 2011). The first smelter in Bayside plant was constructed in 1969 by Alusuisse and came on stream in 1972. By then Alusuisse had a 22 per cent share in the smelter while the majority of the shares was held by the South African parastatal Industrial Development Corporation (IDC) (van der Walt 2009). Today the "two smelters in Richards Bay - Bayside and Hillside - together with a third aluminium smelter situated in Mozambique Mozal comprise Aluminium Southern Africa (ASA), the combined aluminium interests of BHP Billiton" (BHP Billiton 2009).

probably stronger interlinked with the global production network of the operators than with the concentric political hierarchy of spaces in the area.

By the time the mentioned cities blossomed in the 1960s to the 1970s, Guinea had become one of the most desired targets of the global aluminum industry. During this time, the first important Guinean mining complex, Fria, was owned (with changing shares) by the Guinean Government, the Olin Mathieson Chemical Corporation (later Noranda, USA), Alusuisse (Switzerland), British Aluminum, VAW (Germany) and Alcan (Canada). The *Compagnie des Bauxites de Guinée* (CBG), the biggest African producer that started to exporting bauxite in 1973, also with changing shares, belonged to the Republic of Guinea, Alcan (Canada), Alcoa, Harvey, Martin Marietta, Reynolds (all from US), Pechiney (France), VAW (Germany) and Montecatini Edison (Italy). The third big Guinean mining complex until today, the *Compagnie des Bauxites de Kindia* (CBK), started production in 1974 and had been constructed with the help of Russian experts. It exported almost exclusively to the Soviet Union and was fully owned by the Guinean state. This means that five of the so called Six Sisters,[11] producing 50-60 percent of worldwide primary aluminum at that time (USGS: Various issues), were present in Guinea. All the firms and state enterprises working together in Guinea produced almost 70 percent of primary aluminum in 1960 and still more than 60 per cent in 1975 (USGS: Various issues). The same happened all over the globe: In all new producing countries since the 1950s almost all the Six Sisters were present: In Australia, only Alcan and Pechiney were missing, in Guinea only Kaiser, in Jamaica only Alusuisse and Pechiney; in Brazil, Alcoa, Alcan and Reynolds began to produce (cf. Bunker, Ciccantell 1995, p. 59; for shares in world production of these countries see fig. 5).

Fig. 2: Bauxite company towns in Guinea




[11] Alcoa, Reynolds, Kaiser (all of them based in the US), Alcan (Canada), Alusuisse (Switzerland) and Pechiney (France)

This global industry is thereby much more than an oligopoly: Having been mainly dependent on war until the 1960s, it is highly entangled with public administrations, while its main strategy during the multiple crises of the 1970s was to form joint ventures, again with governments, but first and foremost as kind of an intermarriage system that consolidated about 70% of the whole industry. The Six Sisters were therefore not only almost as dominant as their pendent in the oil industry, the Seven Sisters, but they were also highly interconnected, mainly through their shared production facilities, but also through technology exchange. In Guinea, Alcan, Pechiney and VAW possessed shares in both joint ventures (Fria and CBG) and virtually all firms had additionally formed joint ventures in other countries that linked them up with all their bigger "competitors". The sixth of the six sisters, not being present in Guinea, Kaiser Aluminum, for instance, operated a smelter in Ghana together with Reynolds (a shareholder of CBG) that apparently also received aluminum from Fria.[12] Kaiser and Reynolds were also heavily supported by the US government to produce alumina in Jamaica starting from 1969, in order to break a quasi-monopoly of Alcoa in the US.[13]

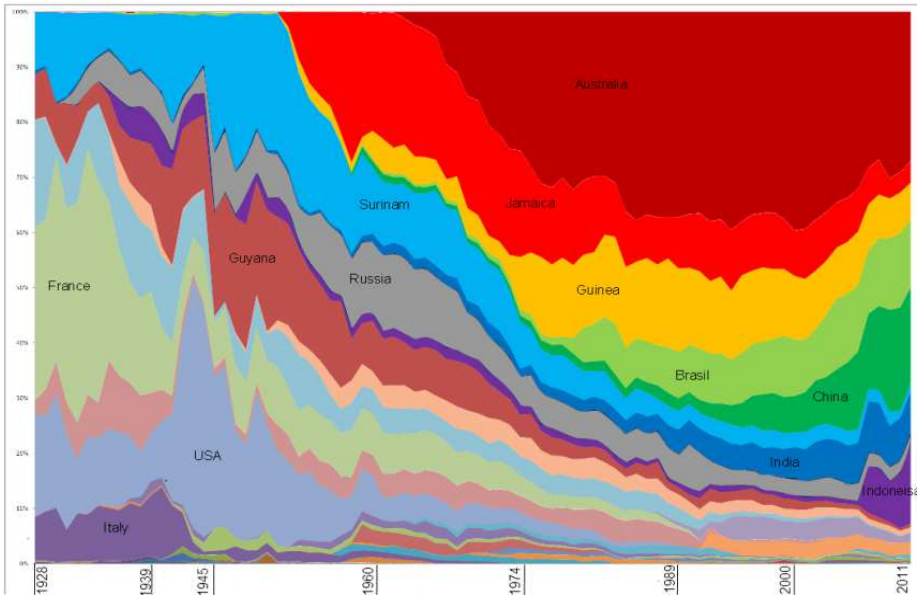


Fig 3: Global bauxite production in % per country, 1928-2011 (USGS: Various Issues)

[12] See Holloway 1988. This is also very likely because Reynolds took over Friguia (now AGC) for two years from 2000 to 2002 (IMF 1998, p. 7).

[13] Systematic information on these entanglements is hard to get. Aluminum companies provide ample documentation on their global networks of smelters and even refineries, but not on their bauxite suppliers. In the late 1970s, Pechiney stated that 30 per cent of its bauxite came from Guinea, 20 per cent came each from Australia and from Greece, and the rest from metropolitan France (Pechiney Ugine Kuhlmann 1979b, p. 2). But this also includes bauxite that is directly refined to aluminum oxide near the mines. The facilities in France received more than half of their bauxite from Guinea and became even more dependent on external sources when reserves in metropolitan France were completely depleted in the 1990s (Pechiney Ugine Kuhlmann 1979a, p. 2, 1978, p. 4). The same happened in the US already in the 1980s, while Canada, Germany and Switzerland, the next biggest producer states of aluminum, never possessed significant reserves.

Because of the strategic importance of the material – e.g., until today airplanes still contain about 70-80 per cent aluminum[14] – also the state played a central role from the beginning of production at the end of the 19th century until today. The end of the colonial empires in combination with dwindling bauxite reserves in the US and in France led to a further increase of state involvment in the 1960 and 70s, this time mainly of the newly independent countries. Still in the 1980, European governments and non-OECD governments controlled more than 65 per cent of production in their respective countries, either through state ownership or equity participation. Only in the US, the state held no interests in the companies (OECD 1983, p. 99).[15] The last wave of nationalization in the 1970s also led to a deconcentration of the market that had been dominated by only six companies before. However, the end of bi-polarity and the cooling of the world economy in the 1980s led to another circle of concentration and privatization in the sector (see e.g., (Ross 1999; Shafer 1986, pp. 929–937; Prichard 2009, p. 242).

But particularly in the aluminum industry, public and private can hardly be separated. High capital intensity, in combination with long lead times, a strong vertical integration and the continuing strategic importance of aluminum resulted in public-private production networks that cannot be understood with microeconomic concepts. Both during the multiple crises of the 1970s and during the ones of today, companies and governments worked hand in hand to secure bauxite reserves and to enhance the value added of their share of the chain. This is valid both for the old industrial centers as well as for the industrializing and non-industrialized countries, but particularly the latter group tended to transform into profit maximizing enterprises for the sake of "autonomous" government incomes, while the aluminum majors became "political" entities themselves (for theoretical discussion see Taylor 2000, pp. 7–10; Shafer 1986, pp. 918–929; Barham et al. 1995, pp. 20–30; Habig 1983, pp. 246–251). The global aluminum "mycelium" thereby developed its own organizational practices beyond formal political or entrepreneurial logics, transcending political territory and political decision space to form "distinct spaces" (Schmid 2007: 232) while being organized much more hierarchically and less transparently than other sectors.

[14] During WWI war industry consumed around 90% of total aluminum production (Farin, Reibsamen 1969, p. 13). However, the metal will be subsidized in greater quantities by fiber-reinforced composites in near future. Airbus hopes to reduce the aluminum content to below 60 percent in the next years to come (see Huber).

[15] During WWII the US had also created public enterprises and subsidized particularly smaller firms like Reynolds, Kaiser, Harvey and later Olin Industries, Wheeland Company and Anaconda. It thereby turned the privately owned monopoly (Alcoa) into an oligopoly (cf. Wiederstein 1994, pp. 12–13; Campbell 1983, pp. 70, 85; Bunker, Ciccantell 1995, pp. 58–59; Holloway 1988, pp. 25ff).

## Companies create cities

The needs of this monstrous industrial network resulted in the biggest demographical restructuration of Guinean history: Fria grew from 5000 inhabitants in the 1960s to at least 60,000 at the turn of the millennium (Brygo 2009); Kamsar from a fishing village with several hundred inhabitants to 8000 (3000 in the city and 5000 nearby) in 1973 and to 150,000-500,000 today, depending on the definition of the city's borders (Soumah 2008, pp. 214, 141); and Sangaredi was apparently almost completely deserted until the 1960s and grew up to 84,000 in 2011 according to figures of CBG (Interview 14/02/2012a). Also the aluminum smelting towns in Cameroon and Ghana, being connected to the facilities in Fria, grew tremendously. Edéa in Cameroon grew from about 8000 people in the 1950s to about 240,000 today (Pauther 2002, p. 27; Encyclopedia Britannica), and Tema (Ghana) grew from a fishing village in 1962 to 170,000 inhabitants today. This concentration of labor power also corresponds with the companies' massive need for energy. By the start of production, the facility in Edéa consumed 50 times more energy than the largest city in Cameroon, Douala, with a population of about 250,000 (Matter 1959, p. 3).[16] The industrial complex of Fria today still consumes as much petrol as the rest of Guinea (World Investment News 2009).

The actual number of workers in these towns, however, constitutes only a small part of the whole population, mainly because the spin-off effects of the aluminum industry are extremely small compared to other industries. Guinea additionally misses the final and most labor intensive stage of production. CBG, the biggest Guinean operator, sends the mined bauxite from Sangaredi directly to Kamsar, where it is only prepared for export to a wide range of ports in Europe and the US. Also the backward linkages are scarcely developed. CBG has two procurement agencies in Brussels and in Pittsburgh that receive also the demands of African facilities. They very rarely order products from Guinea or other African countries (Interview 14/02/2012b). One exception could be the provision of the workers with agricultural goods, but even this possibility to create more value added and more jobs in Guinea has not been put into practice until now, according to CBG because of a lack of stable providers of these commodities (cf. Interview 10/02/2012). This results in production enclaves that enforce the development of the mines into states within the state. In 2011, the mine in Sangaredi employed 504 CBG workers, 629 "permanent contractants", 100 "seasonal contractants" and maintained 489 houses for its workers – against a total population of 84,000 (Interview

[16] Today, the smelter consumes about a quarter of all electricity in Cameroon (Edéa consumes 1200 MW = 80 tons per year multiplied by 15 MW/t; overall consumption is 4883 MW (https://www.cia.gov/library/publications/the-world-factbook/fields/2042.html).

14/02/2012a; Compagnie des Bauxites de Guinée 2012). In Kamsar the reserve army of labor is even bigger. The facilities there employ less than 2500 people[17] – against 150,000 to 500,000 (see above) inhabitants living mainly from fishing, farming and trading. Even if we suggest that every worker "nourishes" ten other persons this leads to a far bigger part of the population that is both excluded from and dependent on the productive centers. Cost reduction measures in times of less demand for aluminum naturally result at first in cuts in voluntary (charity) measures for the population at the outskirts. Particularly in Kamsar and in Fria, living conditions have deteriorated in the last years because of such cost reductions (Alfa Issa Thiam in Soumah 2008, p. 143).[18]

These voluntary measures for the non-employed population constitute nonetheless the most important part of the infrastructural power of the global aluminum industry and have varied over time and according to the ideological background of the companies' elites. While the French aluminum giant Pechiney (now Rio Tinto Alcan) had already entered the country during colonialism with a paternalist civilizing mission based on the corporatist encyclical *Rerum Novarum* of pope Leo XIII (cf. Pauther 2002, pp. 16–20), other corporations seem to have adopted social "responsibilities" only after the first President Sékou Touré had died in 1984 and Washington Consensus was gradually taking over. My own experiences in Guinea suggest that the US company Alcoa, for instance, rather tried to preserve its status as a company while Pechiney depicted itself clearly as an agent of development and "civilization"[19] (Interview 14/02/2012a). The differences between these two approaches, however, are not as big as one would suggest and have also been reduced with the advent of corporate social responsibility (CSR). In a way, CSR was already in use in the mining sector

[17] There are no figures on Kamsar in the existing literature and CBG did not allow me to visit the facilities. If we substract the figure on Sangaredi (Interview 14/02/2012a; Compagnie des Bauxites de Guinée 2012) from the number of overall employees at CBG (Soumah 2008, p. 138), however, there are only 2157 employees left for Conakry, Boké and Kamsar.

[18] What happens when a company town totally stops producing was the last time observable during a strike at Fria in April 2012. The mining enterprise, which had been taken over by the Russian aluminum giant Russal in 2002 (Russal finally bought the plant in 2006), is still in total control of the town. The halt of production accordingly threatened the supply of water, electricity and many other basic services and had put the town, according to a spokeswoman of Russal, "on the brink of a humanitarian catastrophe" (Radio Netherlands Worldwide 2012). The mayor of the town, Amara Traore even added that Fria "is in danger of disappearing if the factory stops. […] Today I've got a starving population. People are selling their property, their homes, plots of land and even furniture to survive" (Radio Netherlands Worldwide 2012).

[19] A very ample source of these "civilizing measures" of the company is the "Bulletin Alucam", the company newspaper Alucam in Edéa, Cameroon. This paper published articles on topics like hygiene, diet, education, work ethics and polygamy, and even had a "good housewife" section where social workers advised the wives of workers. Particularly the household was seen as a means for the "promotion sociale" of the masses with the clear aim of introducing the French ideal of the core family (see Morgaut 1960, p. 14). The company paper of the mother company, the "Bulletin Pechiney", on the other hand, regularly featured derogatively racist depictions of Cameroonians during the same period.

long before it has been marketed. Production facilities in geographically isolated places necessitate considerable investments in the work force, not only in terms of wages and basic needs. In order to compensate workers for the distance from urban centers, mining companies also created social security and pension schemes, responded to the various needs of families and built recreation centers. This resulted in "truly autonomous cities" and "discrete communities", as Pezet et al. put it (Pezet et al. 2009, pp. 10–11). In any case, these policies were in sharp contrast to the economizing nature of capitalist endeavors leading to the minimization of taxation, the externalization of ecological costs and the disregard for everything that took place outside the protected realm of the enterprise (cf. Pezet et al. 2009, p. 33). The advent of CSR in the 1990s then aggravated the paradox of these policies: While the companies continued to fight fiercely against taxation (e.g., on transfer pricing see Bauer, Maissen 1989, pp. 92–100) that would – at least in theory – have enabled the local and national political institutions to do their work, their marketing departments began to implement proper programs with these very funds that were openly reserved first and foremost to increase the reputation of the company with its customers. In the case of CBG, Soumah mentions a yearly budget for "social investments" of US$500,000 since 1988 and direct payments to the villages called "mini revenue rebates". Both in Sangaredi and in Kamsar, a considerable proportion of the non-worker population receives electricity and running water for free and uses roads, drainage systems and other built infrastructure (Interview 15/02/2012). The population of Sangaredi is also given the right to harvest the cashew nut plantations that have been erected as part of the rehabilitation measures at areas that have already been mined (Compagnie des Bauxites de Guinée 2012). It is not clear, however, who finally decides on the disposition of these funds and opportunities, i.e. who decides on the use of the 1000 ha of land that have been rehabilitated in Sangaredi since 1992 (Interview 14/02/2012a). In any case, these additional tasks of "redistribution", social services and ecological preservation reinforce the absolute dominance of the companies – and in a second step, of their workers – in these cities.

## Corporate polities

While the Guinean government became more and more indebted both to the aluminum majors[20] and to the IFIs, the mining management replaced the local political system almost completely. In addition, the inner districts and the production facilities are usually highly

[20] The finance policy of Pechiney, for instance, was rather unclear: it never referred to its public investments as gifts, but at the same time never demanded repayment. These expenditures, called "operations specials", comprised buildings, engines and other machines, water, electricity, petrol, maintenance etc. (Pauther 2002, pp. 87–88).

protected by private security forces and sometimes also by officially "subsidized" police forces. This equips these corporate polities even with their proper monopoly on the use of force (Interview 14/02/2012a). The most important momentum of control in these typically remote places, however, is the simple fact that the firm becomes the most important source of financial liquidity. The corporate chains of command,[21] stretching from various headquarters of the multinational companies to the caterpillar drivers in the mines, are thereby accompanied by a "plutocratic" chain of command. Most of the city dwellers without jobs in the mines live predominantly from subsistence production. The influx of significant amounts of money into this economy thereby creates a totally new hierarchy with the "worker aristocracy" at the top that possesses the land, the shops and even the schools of the towns. This highly unequal division of the right to command, based on property and income, can also be traced back along the value chain and from there to the consumers or the investors giving orders in any place on the globe that could, for instance, trigger the forced relocation of Guinean farmers to construct a dam.[22] But because of the need for highly skilled labor that has to be attracted from OECD countries, these towns also became microcosms of global control relations themselves. On the local market squares, highly paid expats – according to Soumah the expat salaries range between US$6000 to $20000 per month, to which "countless advantages" have to be added (Soumah 2008, p. 212) – exchange working time with local farmers earning less than one dollar per day, e.g. by buying oranges. By working one hour in the same town, foreign experts thereby gain the right to tell 200 to 600 Guineans of the informal sector what to do for them within one hour.[23] Similar gaps exist between the "workers aristocracy" and the rest: Pre-existing hierarchical relationships, based on ethnicity, gender, neotraditional or religious systems were radically transformed by this "compression" of the international division of labor.

[21]Henry Fayol, director of a French iron mining enterprise during the last turn of the century, in his work of reference – which is still much in use today – defines the scalar chain or chain of command as the "the chain of superiors ranging from the ultimate authority to the lowest rank" (Fayol 1929).

[22] This argument naturally leads to a series of questions that can not be treated here. Two points are important: (1) Consumers cannot be considered as fully rational and independent decision makers; and (2) on every node of a global chain of command (e.g., from an investment decision in Austria to the relocation of a village in Guinea) actors are always at the same time "power brokers". By passing down orders from above (e.g., the CEO of an enterprise trying to raise the profit for the shareholders) they can always make use of their position for their own means.

[23] If we would also include the mentioned social benefits for a whole life span, this would easily exceed the ratio of 1:1000. Europeans begin to work much later, get funding for education, receive pensions etc.

These towns are without doubt also places of cultural encounter,[24] but their uniquely isolated lost-island-setting tends to conserve colonial patterns of dominance and exploitation at least as much as opening up an allegedly retarded[25] society to the blessings of globalization. At least until the 1970s, racial segregation seemed to be an accepted principle of spatial segmentation in West African company towns. The "inner hearts" of the residential areas, the swimming pools, were explicitly reserved for expatriates until the oil crisis[26] and until now local workers seem to be discouraged from using them; non-employed inhabitants are usually not allowed to enter. Similar forms of racial segregation were common in schools, clubs and sport teams (Soumah 2008, pp. 142–144; Pauther 2002, p. 27). These openly racial policies have been replaced by other forms of discrimination: besides property and income, both the intra-firm-hierarchy and the relation between employed and formally unemployed inhabitants play an important role in spatial segmentation.

In the end, the resulting power structures resemble very much those of colonial times. The almost omnipotent directors of the local facilities – e.g., in Sangaredi the current general-like operating director of the bauxite mine – are mainly accountable to the global mycelium of mining enterprises while they are de facto at the same time the political rulers of the mining towns. But this political power does not by all means stop at the town signs. In 2008, the overall number CBG employees amounted to 3390 persons, subcontractors included, mainly in Kamsar and Sangaredi (Soumah 2008, p. 138). These very employees, constituting about 0.3 per mill of the 10 million Guineans, generate about 70 per cent of Guinea' s foreign earnings (cf. Delasnerie, Diallo 2004) and thereby also most of the governmental budget that is not accrued from international grants. Most of the rest comes from the other two bauxite mines in Fria and Kindia, employing together no more than 5000 people. Because of the all-embracing arms of the company, the directors of the production facilities in these cities are in fact governors, partially replacing a formally existing apparatus of local and national

[24] Being the sole public meeting places for the expatriates, the recreation centers are the most astonishing and bizarre manifestations of cultural encounter. During my first stay in Sangaredi, I met lonely American and Australian technicians of advanced age coming to discover their common interests with young Muslim ladies in bikinis, next to Southern European expatriate house wives complaining about too slack migration policies in Europe, next to tipsy South African truck drivers recounting their latest adventures in the gold business, next to highly protected government officials passing by to relax outside the capital, next to German students of biology taking tennis lessons after having been trying to preserve the local baboon population as part of the companies' fully salaried CSR measures.

[25] This term has been frequently used by expatriates during my stay in Guinea in Feburay 2012.

[26] Soumah quotes Alfa Issa Thiam, an employee at CBG since 1968, who speaks of "total apartheid" in Kamsar until a change of general managers in 1977: "We can naturally recall the case of Mohamed TOURE (!), the son of Sékou TOURE, who wanted to use RBQ's swimming-pool and was first denied access because he was black. That caused a great scandal at that time" (Alfa Issa Thiam in Soumah 2008, p. 142).

politicians.[27]

## Conclusions

The most important reason why the engagement with the aluminum industry did not produce the aspired positive effects for the Guinean population until now clearly lies in the unfulfilled promise of further processing. This very promise, albeit in a somewhat less ambitious versions, has been made again since the start of the new resource boom (and has continued to be a promise until now). A glance on the scramble in the 1960s and 70s suggests three main reasons for the continuous breaking of these promises:

First of all, Guinea does not possess the required technical and organizational knowledge to control the establishment of an aluminum industry. By the time of independence, only a handful of Guineans had university degrees and these very people were additionally excluded from powerful positions by Sekou Touré, who himself had only finished primary school. This was the real Guinean "resource curse" and Touré was sorely aware of that when he ostensibly chased away the French colonialists while not touching the French bauxite mines. The same applied to his policies versus the US. Today this situation has changed slightly but significantly and could contribute to more independent industrial policies.

Second, as part of the counter strategies against the crisis of chain governance that went along with the „Southern revolt" and the oil crisis, mining companies began to increasingly disperse their chains of production over numerous countries in order to keep control.[28] The previous promises of further processing thus conflicted with profit maximizing interests: Both the danger of nationalization and higher taxation were thereby rendered less probable. Based on the vertical integration of their production facilities, aluminum companies are capable to reduce tax payments by transfer pricing. The less information governments possess about the value added of certain stages of production the easier this strategy of tax evasion can be applied (see Bauer, Maissen 1989, pp. 92–100).

The third and probably most important reason for the spatial separation of aluminum smelters and mining during the 1970s were high import taxes on aluminum in the OECD countries compared to low taxes on the import of bauxite, at least until the 1980s (United Nations 1981, p. 45). Today, this situation prevails and is also bemoaned by the European aluminum

[27] In 2010, Alpha Condé won the presidential elections. The National Assembly of Guinea, however, has not met since 2008 when it was dissolved after the military coup.

[28] Alcan for instance announced in 1974 that its share of the bauxite from CBG was not to be locally processed as previously announced, but in Aughinish, Ireland, which in turn was to produce for a smelter in Lynemouth, UK. Campbell remarks that it "would be quite impossible to explain the logic of the Aughinish project in terms of the comparative costs of the factors of production" (Campbell 2009, p. 79; see also Campbell 1983).

processing industry, but at least in Mozambique, where aluminum production started only recently, producers are exempted from these European import taxes (FACE).

After coming into power in December 2010, the current Guinean President Alpha Condé overhauled the Guinean mining code, announced the foundation of a Guinean state-owned mining company and continued with the revision of the existing mining contracts that had already been started under his predecessor Dadis Camara (Bah 2012). The new mining code caused an outcry in the aluminum sector, as the new demands of the state were seen as far too high (see e.g., Garvey 2011). Until today, however, this only prompted one multinational, BHP billiton, to sell its stakes. Already before the death of Lasana Conté, who had ruled from 1984 until 2008, three big alumina projects with Russian and American operators had been started (Banque mondiale 2007). Like many other current leaders of resource rich non-industrialized countries, Condé thereby managed to turn back the clock and to restart negotiations similar to the ones that followed the break with the colonial empire in 1958. This time, China plays a much more important role than fifty years ago – and Condé seems to know very well how to profit from this new geopolitical constellation.

The potential gains for the Guinean population from the further development of mining and processing sites have nonetheless to be assessed rather modestly. The huge global interest for Guinea's subsoil is very likely to continue to result in enclave economies with little backward and forward linkages and the high concentration of capital is very likely to further nourish the politics of the belly, create social unrest or even civil war (primarly because of the highly unequal distribution of wealth and power) and to cripple other productive sectors via the Dutch Disease and by cutting through local processes of exchange. In the short run, however, the only alternative source of governmental income seems to come again from the World Bank and the IMF, the very institutions that have already heavily contributed to the expansion of bauxite mining in Guinea. The country was recently granted debt relief through the HIPC initiative and thereby willingly reduced parts of its theoretical policy leeway: Incomes from bauxite mining and processing are now accompanied by conditionalized aid (IMF 2012). Given the negative experiences with the extractivist path so far, however, this surrender of sovereignty is to a certain degree comprehensible.

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