

# Science as Power in the Scramble for Africa: Scientific Networks and the Diplomatic Colonization of Africa in the Late Nineteenth Century

*An InsSciDE Case Study*

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Science diplomacy is usually discussed as a post-Second World War phenomenon. However, the links between science and diplomacy can be traced to earlier periods. This case analyzes one example related to the European colonization of Africa in the late nineteenth century, known as the “Scramble for Africa”. Scientists usually perform only advisory roles in politics. In this case, a scientist attained important political responsibilities, ultimately becoming Minister of Foreign Affairs and conducting formal diplomatic negotiations. This scientist was José Vicente Barbosa du Bocage (1823–1907), a nineteenth-century Portuguese zoologist.

Bocage’s knowledge of African geography acquired via his scientific studies and at the head of the Lisbon Geographical Society, as well as the scientific, colonial, and political networks he joined or formed, allowed for his political rise. Once in a position of power, he placed knowledgeable Portuguese personalities at the center of colonial discussions with powerful rival countries, such as France and Germany, ultimately seizing some colonial victories for Portugal in Africa. This case shows that while science diplomacy can be a tool for cooperation, it can also be used to gain competitive advantage over rivals.



Image credit: Biblioteca Nacional de Portugal

## **Keywords:**

African geography, geographical societies, colonialism, scientific networks, Berlin Conference of 1884



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Science diplomacy is often presented as a means to achieve cooperation among stakeholders with strained relations or divergent interests. But science can also be utilized to gain competitive advantage over rivals.

Scientific knowledge becomes relevant in diplomacy when it provides information that can be utilized to maximize gains in a negotiation. Such use is especially important when high stakes are involved. Until the end of the Second World War, diplomatic relations among European states were characterized by fierce competition, which was sometimes attenuated by the establishment and reshaping of alliances. The fact that science diplomacy has been heralded in the last decades as an instrument for peace has led attention away from its role in the competition for power. This case discusses a paradigmatic example of competing interests: the European colonization of Africa in the late nineteenth century. The scientific study of African geography had a high strategic importance because it would map its natural resources, the routes of access to them, and the African kingdoms that could challenge colonization. Such political use of science was not necessarily seen as problematic in the past, but rather as a modern tool to more efficiently advocate for state interests.

The political role of scientific experts is usually confined to advisory functions. However, there are cases in which they have attained prominent political positions.

Scientific experts can acquire knowledge of political relevance via their studies, but they can also accrue power via the scientific networks in which they insert themselves. Formal and informal relations within these networks can facilitate the entrance of such experts in politics.

This case will provide a more complex picture of the ways in which science and diplomacy have interacted in the past. It will show how Bocage's scientific career brought him closer to Portuguese colonial and diplomatic affairs in the late nineteenth century, ultimately placing him in positions of high responsibility for the defense of Portugal's colonial claims in Africa.

### J. V. Barbosa du Bocage: A career devoted to zoology

A central figure in this story is the Portuguese zoologist José Vicente Barbosa du Bocage (1823–1907). Bocage was trained in medicine, but he did not want to become a clinician. He applied to a professorship in zoology in 1848 at a recently founded higher education institution in Lisbon, the capital of the kingdom. With the death three years after of the regent of the Chair of Zoology, Bocage became full professor at a young age. In this quality, he strove to become a professional naturalist by studying animal specimens and publishing his results, participating in national and international scientific networks, joining academic societies such as the Lisbon Academy of Sciences, and mobilizing state funds to found the first natural history museum in Lisbon in 1862, ultimately becoming the director of its Zoological Section.

#### Developing scientific networks

Bocage maintained two types of networks in order to make a career in zoology. He started by reaching out to anyone who was willing to collect and supply to him the specimens he needed for his studies. At the same time, he fostered good relations with foreign scientific experts by corresponding and exchanging zoological specimens with them. Bocage's network of mostly non-specialist collaborators allowed him to discover new species, and the publication of his results in renowned scientific journals established an international reputation for himself.

## Networks of power

### When scientific and colonial networks meet

In developing a scientific network of collaborators, Bocage wanted from the start to go beyond Portugal's European borders. In mid-nineteenth century, Portugal's colonial presence spread to territories in Africa, Asia, and Oceania. Bocage took advantage of this existing colonial network in his search for more collaborators. At this point, his interests were mainly scientific: he knew that distant and largely unexplored lands with geographies and climates very different from Europe's would certainly be home to plenty of species yet unknown to science. Being the first to classify them would bring more attention to his work.

Bocage at first received specimens from scattered contributors; then things changed after coming into contact with José de Anchieta (c.1832–1897), a Portuguese explorer who was living in Angola, the most important Portuguese colony in Africa. Recognizing his qualities as a collector, Bocage proposed a more formal partnership. Anchieta accepted and in 1866 became a naturalist in the service of the Portuguese Crown, exploring many areas in Angola over decades and sending hundreds of specimens to Bocage. This long-lasting partnership was largely responsible for Bocage's career and allowed him to become an expert in Southwestern African fauna.

In the nineteenth century, scientific experts did not perceive the use of colonial networks as problematic. Bocage and other contemporary naturalists, including Darwin, relied on such networks, as well as on missions with clear economic and colonial aims to acquire rare specimens and launch a career. The scientific study of a nation's colonies by metropolitan agents was particularly valued not only because it reasserted colonial authority over those territories, but also in that it provided information on the economic potential of its natural resources, according to a utilitarian logic.

### A political dimension of scientific endeavor

Bocage studied the geographical distribution of animal species, especially birds and reptiles, across the poorly known Angolan hinterland. However, his scientific activities also yielded information of political relevance. In the correspondence that Anchieta sent to Lisbon, he commented not just on African geography, climate, and fauna, but also on the action of colonial administrators, the African peoples he encountered, or the movements of foreign explorers – valuable first-hand information for the definition of effective colonial policies.



*J. V. Barbosa du Bocage (1823–1907). Source: Anonymous, "Dr José Vicente Barbosa du Bocage. Ministro da Marinha e Ultramar." O Occidente, February 11, 1883. Lisbon Newspaper Library.*

### The institutionalization of science for colonialism

By 1875, European colonial powers were increasingly interested in controlling African territories, with Britain having already questioned Portuguese colonial authority on some occasions. As a reaction, a part of the Portuguese elite who thought that successive executives provided only weak responses to such colonial challenges founded the Lisbon Geographical Society as a private lobby group to push for expansionist policies in Africa.

Any patriotic sentiments aside, Bocage joined the association as a way to defend his career, since his colonial collaboration hinged on the existence of a Portuguese Empire. However, he was more than just an interested elite member. By 1877, now with an internationally renowned career dedicated to African zoogeography, Bocage was perceived as one of the most knowledgeable people on Africa in Portugal, and he was elected president of the Lisbon Geographical Society.

## The background

### Why a Scramble for Africa in the late nineteenth century?

In 1870, Africa was sparsely colonized by Europe. By 1914, on the eve of the First World War, the continent had been partitioned in almost its entirety. Historians continue to debate the factors that contributed to a rapid expansionist move of European colonial powers to Africa. An important factor was that previous barriers were mitigated by developments in science, technology, and medicine. Steamships and railways led to faster and cheaper circulation of the military, the invention of automatic guns gave them competitive advantage to submit more numerous African peoples, and the isolation and mass production of quinine protected European troops and explorers against the deadly malaria. Such innovations appeared at a time of unprecedented British imperial expansion, which required securing commercial routes to distant areas, such as India. Once expansion reached Africa, Britain's rivals tried to block it by competing for territories, with both new and old colonial powers joining in a struggle for power and recognition.

### Science: Geography and cartography

#### A colonialist role for geography

In 1870, African geography was mostly unknown to Europeans. Its scientific study had high strategic relevance, since it could be used to map the distribution of its natural resources, the routes of access, and the African kingdoms that could present challenges to colonization. Moreover, geographical knowledge was also crucial to delimit the spheres of influence of neighboring colonial rivals and hence avoid any diplomatic and military conflicts. Geographical societies multiplied in Europe in the last decades of the nineteenth century with clear imperial and colonial intentions. They prepared or sponsored geographical missions to Africa, organized congresses to share the results, and pushed the colonial agenda forward.

#### Cartography as a tool of empire

Geographical missions led explorers to travel to Africa with the instruments and mathematical knowledge necessary to calculate latitudes, longitudes, and other parameters. Such explorers were frequently military men, whose training prepared them to explore inhospitable territories as well as to conduct scientific studies. The information they gathered allowed the construction of maps that were used as tools of empire. They were clear, visual representations that summed the main features of a territory and could be used to plan colonial strategies for securing important areas.

### Science as colonial ideology

In the late nineteenth century, most Europeans saw themselves as culturally and racially superior to other peoples, especially Africans. Anthropology incorporated such views, and Darwin's evolutionary theory was used to argue that Africans were human types less evolved than Europeans, and hence in need of their guidance. Science was used to promote racist ideologies (**scientific racism**), which presented European expansion in Africa as a "civilizing mission". **Such political utilization of science was widespread and not seen as problematic. In fact, it was considered modern in that it followed recent scientific developments, as well as trustworthy because science enjoyed a high social status in Europe as a knowledge-producing activity.**

## An expanding colonial network

As president of the Lisbon Geographical Society, Bocage followed the discussions regarding the Portuguese colonization of Africa. In addition to his connections with European scientific experts and institutions, as well as with continental and colonial collaborators, he now joined extended colonial networks uniting military men, experts in additional scientific fields, private interests, politicians, and other members of the elite favorable to Portugal's expansion in Africa. Bocage participated in the organization of a Portuguese geographical expedition, the publication of colonial propaganda, and the discussion of reports to be sent to the government. He was now fully entangled in colonial affairs.

### A path to politics

In the late 1870s, Bocage also became closer than ever to Portuguese politics. At this point, Portugal's Minister of the Navy and Overseas Territories was his decade-long friend João de Andrade Corvo (1824-1890), who also taught at Bocage's own higher education institution. Recognizing the knowledge and abilities of his friend, Corvo probably introduced Bocage to his fellow party members. In 1879, Bocage formally entered politics by being elected Member of Parliament. Two years later, he ascended to the upper Chamber of Peers.

**In the second half of the nineteenth century, it was not unusual for Portuguese technoscientific experts to enter politics. Political activity was a faster route to social prestige, but the pervasive ideology that equated progress with science and fostered its use for the modernization of state administration also facilitated the path for such experts.**

## A political career

### Reorganizing Portuguese colonial administration

Bocage entered one of the two main Portuguese parties that usually ruled the country in this period. In 1883, when it had already returned to power, Bocage was invited to become the Navy Minister and coordinate the Portuguese colonial administration. At that point, he had a sound experience in colonial affairs by having served as president of the Lisbon Geographical Society for seven years. He now had an opportunity to push for the reforms he had lobbied before. However, Bocage did not cope well with his new political responsibilities. He felt exhausted by the need to navigate the muddy waters of politics, and resigned after less than a year.

### A new technoscientific organism for colonial policy

Nevertheless, Bocage did leave an important mark as Portugal's Navy Minister. Following concerns voiced at the Lisbon Geographical Society, he created a **Cartography Commission** within his Ministry with the aim of producing maps of strategic interest for colonial policies, with Africa in mind. At its outset a small organism, the Commission provided technical assistance to successive executives. **Such an organism placed technoscientific knowledge at the heart of political decision, thus recruiting it for strategic purposes.**

### From colonial administration to foreign affairs

Bocage wanted to leave the executive before the end of 1883, but his party members urged him to stay, since they knew that his experience in colonial administration could still be put to use. At that moment, foreign affairs were dominated by colonial negotiations of African territories, and Bocage was persuaded to serve his country by being appointed Portugal's Minister of Foreign Affairs.

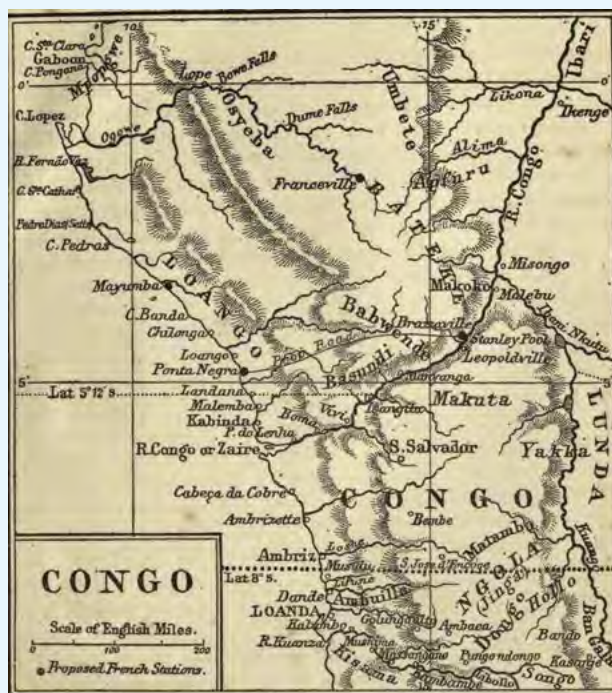
**When he became the head figure of Portuguese diplomacy, Bocage was already part of important scientific, political, and colonial networks, in which he had amassed much power. Moreover, his practice as a scientific expert of recurrent dialogue with international colleagues also gave him a diplomatic flair.**

Bocage reached foreign affairs when European colonial powers were scrambling to expand their sovereignty in Africa. Attentions were now directed to the Congo region.

## Stakes: The European scramble for the Congo

The Congo was a much coveted region in Central Africa because it was said to be rich in natural resources. The Congo River connected it with the Southwestern African coast, which was accessible to Europe by sea, and the river had several navigable segments. Whoever controlled its margins thus controlled the potentially lucrative commerce with Central Africa. Portugal, France, and Belgium had competing interests in the Congo.

**Portugal** had been the first European nation to reach the region in the fifteenth century and make contact with the Kingdom of Kongo, which spanned the last hundred kilometers of the Congo River (lower Congo) but was now much weakened. Portugal wanted to seize it and extend sovereignty north from Angolan settlements further south. Such intention had diplomatic backing, since Portuguese colonial authority had been recognized between parallels 5°12'S and 8°S (see image), which included the lower Congo, by the set of treaties of the Vienna Congress in 1815. **France** had occupied Gabon, north of the Congo River mouth, and was expanding south, close to the 5°12'S parallel. **Belgium** was also sponsoring expeditions in Central Africa to occupy territories downstream the Congo River.



*Theoretical boundaries of Portugal's colonial claims in the lower Congo (5°12'S to 8°S), according to the Vienna treaties of 1815. Source: African Committee of the Lisbon Geographical Society, Portugal and the Congo: A Statement. London: Edward Stanford, 1883.*

## Diplomacy as a tool of empire

The effective occupation of non-colonized territories was used to overcome claims of historical priority. Since building infrastructure required substantial funding and time, European colonial agents concentrated on extracting sovereignty cessions from African rulers. Such treaties could be used in Europe as proof of implantation on the ground. While Navy Minister, Bocage supported a Portuguese mission led by Angola's Governor General to coastal territories near the 5°12'S parallel, which succeeded in signing treaties in late 1883 in order to block French expansion. But Portugal also tried to reinforce its formal diplomatic backing. As Foreign Affairs Minister, Bocage concluded bilateral negotiations with Britain and signed a treaty that recognized its claims on the lower Congo in early 1884.

The Anglo-Portuguese treaty, however, was fiercely contested by France and Belgium. The diplomatic conflict grew when Germany publicly supported Belgian claims in an attempt to block British-allied Portugal. Faced with such backlash, Britain refused to formally ratify the treaty. In order to avoid further escalation, an international conference with all interested parties was convened in Berlin in November 1884.



Map of the Cabinda exclave (pink), as defined by the Portuguese Cartography Commission in 1886. The territory is completely disconnected from the rest of the Angola colony (pink) and surrounded by French- (green) and Belgian-controlled (yellow) areas.

Source: Chart of Cabinda, Molembo and Massabi territories, 1886. Portuguese National Library.

## The Berlin Conference of 1884–1885

The Berlin Conference had technical sessions to negotiate how to redraw spheres of influence in the Congo region, which required expertise in African geography, and Bocage's action proved determinant. He made use of his networks and appointed two knowledgeable delegates. One was the Permanent Secretary of the Lisbon Geographical Society, with whom he had worked closely. The other was his son. Bocage had appointed him to the Cartography Commission, in which he had gained experience in African geography, and his father then instructed him personally on the Congo affair. Despite the enormous power asymmetries that placed Portugal at a disadvantage, Bocage's technical representatives were able to block attempts by rival European powers to seize the Congo region in its entirety.

Bocage's son ultimately used the treaties signed with African rulers north of the Congo (in the Cabinda region) as the decisive argument to secure Portugal's position, blocking the Belgian takeover of both margins. Although Portugal lost most of its claims to the lower Congo due to the pressure from its more powerful rivals, its sovereignty in some northern regions was still recognized, as well as in the southern margin of the last hundred kilometers of the Congo River. If the negotiations had been conducted by personalities who lacked extensive geographical knowledge about Africa, Portugal would have likely lost sovereignty to all territories on both margins of the Congo River.



Map of present-day Angola, including its northern Cabinda exclave.

Source: *The World Factbook 2021*. Washington, DC: Central Intelligence Agency, 2021.

## Conclusions: An instrumental role for science in diplomacy in the 19th century

**In the nineteenth century, scientific experts could acquire knowledge of political and diplomatic relevance thanks to the scientific networks and institutions in which they participated.** At a time in which few of the Portuguese elite had direct knowledge of the African reality, and although Bocage never travelled to the continent, he was in a privileged position because he received first-hand information through his colonial collaborators. Moreover, joining the Lisbon Geographical Society and serving as its president placed him at the heart of colonial discussions, both political and scientific, in Portugal.

**Proximity to influential politicians could rapidly propel a political career.** Bocage's closeness to people in power who were able to appreciate his expertise on colonial affairs led to a meteoric political rise. In less than a decade, and despite having little previous political experience, Bocage was elected to parliament, headed two ministries, and conducted delicate diplomatic negotiations with European colonial powers that had important consequences for the organization of a new Portuguese Empire in Africa.

**The utilization of scientific knowledge for political and diplomatic purposes was not perceived as problematic.** While Minister of the Navy and Overseas Territories in 1883, Bocage even created a state organism that coordinated, compiled and analyzed scientific studies of African geography for colonial purposes: the Cartography Commission. It continued to assist Portuguese colonial policy, including military interventions, for several decades.

**The utilization of science as a political and diplomatic instrument may have been a common occurrence in the past, especially to gain competitive advantage from rivals.** The utilization of scientific knowledge in state affairs in the nineteenth century was perceived as a tool to promote efficiency and progress. Scientific studies provided evidence to support political decisions that could maximize gains, while lowering any costs. At the same time, optimistic views of science as a trustworthy means of producing answers to complex problems led to its association with notions of progress and the well-being of nations and their inhabitants.

Although the colonial gains for Portugal in the Berlin Conference of 1884 were far removed from its enormous ambitions, they were still remarkable for a nation whose rivals had much more political and economic power. After the Berlin Conference, Bocage continued to lead the Portuguese Ministry of Foreign Affairs for one more year, conducting negotiations with France for the demarcation of the borders of Portuguese Guinea as well as of the odd Cabinda exclave, hundreds of kilometers north of the bulk of the colony of Angola.

The use of geography in diplomacy was not exclusive to Portugal, but practiced by all European colonial powers in Africa. The scientific and diplomatic colonization of Africa preceded the effective occupation of the continent and the exploitation of its resources. This scientific-diplomatic process had long-term consequences: most of the now independent African states retain the borders that were defined in colonial times, and these are often at the center of disputes between neighboring countries.



Political boundaries of African colonies and states in 1914. Only Liberia and Abyssinia were not colonized. War Office, London (1918). Source: Gallica, FRBNF40718040.



Political boundaries of present-day African countries. Satellite imagery. Image credit: National Geospatial-Intelligence Agency Africa Atlas, The World Factbook 2021.

## Study Questions

- Science diplomacy is usually presented as a means for cooperation. This case shows that it can also be used to compete with rivals. Are there other examples of such use? Were they more prevalent in the past than in the present?
- Would it be easy for a present-day scientist to ascend politically as Bocage did? How would such ascension be perceived by scientists? By politicians? By society at large?
- Would present-day scientists accept an instrumental use of science in politics as Bocage did in his own time? And in diplomacy?

## Endnotes

- A fuller version of this InsSciDE work has been published as a peer-reviewed journal article. See Gamito-Marques D (2020) Science for competition among powers: Geographical knowledge, colonial-diplomatic networks, and the Scramble for Africa. *Berichte zur Wissenschaftsgeschichte* 43(4):473-492. doi.org/10.1002/bewi.202000016
- Cover image: Chart of Cabinda, Molembo and Massabi territories, 1886. Portuguese National Library.

## References & Further Reading

- Blanning TCW (ed) *The nineteenth century. Europe 1789–1914*. Oxford University Press, New York
- Costa JPO, Rodrigues JD, Oliveira PA (2014) *História da expansão e do Império Português*. A Esfera dos Livros, Lisbon
- Goss, Andrew (ed) (2021) *The Routledge Handbook of Science and Empire*. Routledge, New York
- Macleod R (2009) Discovery and exploration. In Bowler PJ, Pickston JV (eds) *The Cambridge history of science. Volume 6: The modern biological and earth sciences*. Cambridge University Press, New York, pp 225-242
- Singaravélou P (ed) (2008) *L'empire des géographes. Géographie, exploration et colonisation, XIXe–XXe siècle*. Belin, Paris
- Wesseling H (1996) *Le partage de l'Afrique*. Denoël, Paris

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Credit: Ana Brígida

### Selected Publications

(2021) A ciência ao serviço do império. Andrade Corvo, Barbosa du Bocage e a defesa das pretensões coloniais portuguesas em África. In Carneiro A, Mota TS, Amaral I (eds) *Ciência, tecnologia e medicina na construção de Portugal. Volume 3: Identidade e 'missão civilizadora' – Séc. XIX*. Tinta-da-China, Lisboa, pp 119–139

(2018) A space of one's own: Barbosa du Bocage, the foundation of the National Museum of Lisbon, and the construction of a career in zoology (1851–1907). *Journal of the History of Biology* 51(2):223–257. doi.org/10.1007/s10739-017-9487-6

(2018) Defending metropolitan identity through colonial politics: The role of Portuguese naturalists (1870–91). *History of Science* 56(2):224–253. doi.org/10.1177/0073275317722240