



Hand-made Austro-Hungarian Maps of the Rio de Oro Coast

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Abstract:

The two authors undertook an unusual task as part of a research – on Hungary and the Western Sahara issue – to reproduce manuscript maps known so far to only a few researchers. One of the authors of the study provided service as peacekeeper in Africa. However, when he was serving in the UN MINURSO peacekeeping mission, a Spanish colleague informed him that in 1899 the Austro-Hungarian Monarchy had almost bought Rio de Oro – present-day Western Sahara. He found useful material meeting with historian Mihály Krámlí. He learned from him that in 1898 the Spanish had actually offered to buy the territory of Rio de Oro to the Austro-Hungarian Monarchy. Although negotiations took place between the two powers, the deal failed. The author obtained handwritten German, French, and Spanish material. The handwritten material was difficult to read in some places, and the drawn maps were naturally burdened with geographical inaccuracies. There was a need for a GIS-based reproduction of the cartographic drawings in German by the author of the study. In this study, the two authors present the course and then the failure of the Spanish and Austrian negotiations and the process of the reproduction of cartographic drawings.

Keywords:

Austria-Hungarian Monarchy, peacekeeping, MINURSO, Rio de Oro, GIS.

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Introduction

After the first democratic elections of 1994, the South African state still had a well-equipped, well-organized and well-trained police inherited from the era of the apartheid. Notwithstanding the change in the South African politics, the police was an organisation connected to the previous oppressive regime, which was based on racial segregation and policies that favoured the white minority.

The structure and the mission of the South African Police Service changed radically: people of colour could become officers and advance to high ranks, and the duties were not related to oppression of dark-skinned people anymore. This meant a transition, which contained a type of obscurity, as it is a feature of every major political change.

On the one hand, the South African Police Service became insecure about what they could do instead of reacting harshly, as they used to before 1994. On the other hand, South Africa became a member of the Commonwealth again, and the British policies turned trendy: privatisation meant higher quality and more efficient services and saving money for the state. Private ownership shifted responsibility onto the supplier; therefore, the NPM (New Public Management) reforms were seen as a solution for the problems of the public sector. (Abrahamsen and Williams, 2011, p. 173)

NPM reforms were typically implemented in English-speaking countries. The preferred methods were privatisation and outsourcing, but the goals could vary. Ewan Ferlie, Lynn Ashburner, Louise Fitzgerald and Andrew Pettigrew classified the NPM-models into four groups: 1) The 'Efficiency Drive' that made the public sector similar to the private one; 2) 'Downsizing and Centralization' that created a strongly centralized, more democratic system; 3) 'Search for Excellence' that emphasized the work ethics and the role of the members of organization, and 4) 'Public Service Orientation' that implemented of the methods of the private sector in the public sector. (Ferlie et al. (1996) pp. 10-15) As it is going to be demonstrated in this paper, the privatisation of law enforcement in Cape Town is a mix of the second and fourth method.

Negotiations between the Austro-Hungarian Monarchy and Spain on the acquisition of Rio de Oro

In 1898, after Spain had lost the war for Cuba, several of their colonies were forced to surrender to the victorious United States, and more were sold to be able to pay the cost of the lost war. Thus began negotiations with the Austro-Hungarian Monarchy on the possible sale of their African colony, Rio de Oro, acquired in 1884. The colony was offered for rent or purchase to the Austro-Hungarian Colonial Society (Österreich-Ungarische Kolonial-



Gesellschaft), founded in 1895 (Loidl 2012)². However, the Society alone was unable to take over the area, so it contacted the Ministry of Commerce of the Monarchy and also the Ministry of Foreign Affairs (HU... 211). The ministries of the Austro-Hungarian Monarchy found the offer tempting and started collecting information about the area almost immediately. On 20 March 1899, the Ministry of Foreign Affairs instructed its Ambassador to Spain, Count Victor Dubsy, and head of the Tangier mission, Count Glibert von Hohenwart to obtain further information (HU... 0004). And the two diplomats immediately began work, which lasted for several months.

From the archive materials found, it can be seen that the two diplomats had very different views on the success of the process. Not only did Hohenwart begin to be extremely agile in gathering information, but he embraced the entire project, specifically urging an agreement with the Spanish. His positive attitude is well reflected in the letter he wrote to his superiors in Vienna on 23 December 1899, "I will not leave the crumbs falling off the tables of the great ones." (HU... 0142) and (Kolm 2011). However, Ambassador Dubsy did not share his enthusiasm, and in several cases even drew the attention of decision-makers to the possible unfoundedness and failure of the project. This was probably due to the fact that the two diplomats tried to obtain information from different sources, so their conclusions and opinions differed in several cases. Dubsy obtained his information mainly from Spanish government agencies, members of diplomatic corps, and the Madrid press, which did not always support the Spanish government's policy at the time, most often criticizing the country for wanting to sell out „ancient" Spanish land. Dubsy considered the chances of a lease backed by the Monarchy to be minimal. He said the Spanish would not withdraw their troops from Rio de Oro for domestic political reasons, as this would mean giving up the right to dispose of the area. Dubsy asked the ambassador to Madrid about renting the area, who indicated that his country had pre-emptive rights to the Spanish colonies in Africa, but did not confirm whether they were specifically interested in Rio de Oro.³ At the station in Tangier, however, Hohenwart not only gathered his information through diplomatic circles, but also visited Spanish and foreign traders, missionaries in the area, and even gathered a great deal

² The Austro-Hungarian Colonial Society was founded in 1894, and its members included several people with significant influence such as e.g. Stanislaus Schanzer, Ernst Franz Weisl, Eduard Lippmann, Friedrich J. Bieber, Emeric Boyer von Berghof, Jacques Jaeger, and countless others who had significant influence because of their political position. The Society issued the *Österreich-ungarische Kolonialzeitung*, in which all issues related to „colonization issues" were discussed: migration, the status of the Austrian navy, trade policy issues, and of course specifically the acquisition of overseas territories. Since its establishment, the Company has changed its position on certain key issues several times, always adapting to existing political conditions. At the time of its foundation, the Society's program was initiated by the colonial intent of the Monarchy. This changed by the end of the 1890s: emigration became more and more the focus and at the same time colonization became less and less important. However, the exact process of change is hardly known due to the limited data available. In one of the 1915 issues of the *Kolonialzeitung*, a jubilee article was published on the history of the Colonial Society. The Society was established in 1894 based on the model of a company founded by the Germans with the main aim of acquiring overseas territories and thus reviving the economy. The plan to acquire Rio de Oro, which failed, is spoken of by the authors of the *Kolonialzeitung* as an opportunity, the fulfilment of which could have given the course of world history a whole new basin. (Loidl 2012).

³ Dubsy established a relationship of trust with the Spanish prime minister Francisco Silvela, as well as shared confidential information with him several times with the German ambassador to Madrid, Joseph Maria von Radowitz. (HU...0023, HU...0070, HU...0129, HU...0136, HU...0138, HU...0139, HU...0148, HU...0170, and HU...0182)

of information about the coast from fishermen from the Canary Islands. In his summary report on the area, he stated the following about the sources of information:

“On the basis of my reports issued on 5, 10, 12 and 13 of this month, allow me to enclose with Your Excellency a compilation of all the data due here on the Spanish estate, Rio de Oro...In Rio de Oro, only fishermen from the Canary Islands enjoyed some protection from the capital. Rio de Oro is unknown in Spain and the little written work published in this area is extremely incomplete. Most of them are travel guides prepared with semi-scientific details, and it is almost impossible to obtain reliable data from them. The sea depth measurements are rare and took place only at certain points, the constant level rise on the shore did not arouse the interest of Spanish shipping... Data from Canary Islands fishermen therefore provide the only source of information on coastal and area conditions. The Spanish military mission is not in a position to provide any information on the conditions in areas remote from supervised ports (Tangier, Tetouan). The Franciscan mission in Morocco is still in a position to provide relative information, the helpfulness of these priests is outstanding, and although they do not require scientific justification, we are grateful to them for at least, as far as possible, contributing to some information about the area.” (HU...0028, HU...0029, HU...0030, HU...0035, HU...0036).

According to Hohenwart, a colonial policy different from that of the Spanish would allow the area to flourish rapidly and bring significant benefits to the Monarchy. He saw a particularly good opportunity in fishing and related activities. He envisioned this by developing existing ports, building new ones, and setting up a fish processing plant. In addition, it wanted to develop the previously limited trade. According to Hohenwart, the emergence of the Monarchy could benefit everyone, as the territory would not fall into the hands of “large colonizing countries” who would exclude everyone else from the use of the territory, but under Austro-Hungarian patronage trade opportunities are available to smaller countries – virtually everyone. Thus, the Monarchy should not compete for Moroccan ports not yet occupied by other European powers, or even bring its disadvantage by colonizing the southern territories. According to him, the Spanish would be happy to hand over the surcharge area to them, as Santa Cruz de Mar Pequena (Ifni) will retain their African colony even in the event of a Moroccan turnaround that may be unfavourable to them. Hohenwart’s report also shows that copper, manganese, and sulphate are present in greater quantities in the area. Finally, he summarized his report as follows: *“It is a fact that the Spanish between Cap Bajador and Cap Blanco is currently of relatively less value, but due to its location, the richly exploitable interior areas, which are still difficult for European trade to access...hide metal-rich, fertile soils. The territory of Morocco is of great importance even if the port of Arksis is opened to the English by the sultan...Rio de Oro would not lose its importance but could function as a center of the neighbourhood centralizing all trade to the east and south. This will require careful, energetic,*



consistent and not too costly work, which is not to be expected from Spain today." (HU...0054, HU...0055).

Much of the data collection was completed by the diplomats by July 1899, and then on July 29, the reports they sent were received by the State Department. Although the leadership of the ministry was divided on the feasibility of the project due to differing reports and opinions, it still agreed with the other ministries as well as the Austro-Hungarian Colonial Society on how to obtain Rio de Oro. The vice-president of the company, Ernst Franz Weisl, and his well-connected foreign minister, count Agenor Goluchowsky, and some other foreign ministry officials began negotiations with the Spanish who then wanted to get rid of their colony at all costs. The port of Vila Crisneros (Dakhla) in the colony, where the ships of the Austro-Hungarian fleet could have been safely stationed, would have been an incredibly good opportunity for the Monarchy from both a commercial and a military (naval) point of view.⁴

The Spanish took the sale of the recently acquired Saharan lands so seriously that the necessary legislative amendment was prepared, and a working group worked out the conditions for leasing the land. The Spanish company operating the site, until 31 December 1899, transferred the exploitation right to a consortium whose task was to carry out the sale. The consortium was led by Juan Bautista Somogy, a Member of Parliament of Hungarian descent who wanted to sell the area but „lease” it to a foreign trading company so that the Spanish crown would retain control over the area. A letter of intent to this effect was also sent to the Ministry of Foreign Affairs of the Monarchy (HU...0158, HU...0159, HU...0160, HU...0161). The Ministry, with the involvement of members of the Colonial Society, prepared a budget plan for a possible new colony. According to the calculations, the acquisition of the area by the Monarchy, the purchase of the infrastructure developed by the Spanish, would have cost approximately HUF 150,000 and the development and operation of the commercial site would have cost another HUF 100,000. Seeing the abundance of fish in the coastal waters, the Company planned to establish, operate and possibly lease a fish processing plant (HU...212, HU...213). Trusting in the favourable economic opportunities, the slow and bureaucratic state machinery of the Monarchy seemed to start. But not only members of the state administration began to see opportunities in the Rio de Oro business, but also various economic circles. The Austro-Hungarian Chamber of Commerce itself was thinking of raising the financial base of an estimated project of HUF 250,000 to HUF 300,000 to create a syndicate. However, in the opinion of the vice-president of the chamber, the sure success would have been guaranteed by investing at least HUF 1,000,000. Finally, there are already plans to set up an international company based in Paris, which, however, is not realistic (Klein 1984).

However, the success of the business, which promised significant profits, was hindered by the Monarchy's unwillingness to invest public funds, or negotiate with the Spanish as the only

⁴ This was also supported by the British major Albert Gybbon Spilsbury, who led an expedition to the area in 1897 to assess the possibilities of British colonization. His journey is described in detail in his book, "The Tourmaline Expedition". In his view, the Spanish considered the west coast of Africa too dangerous, so their colony was controlled from the Canary Islands, and Rio de Oro was their only point of connection with the mainland. The major himself described the Gulf of Rio de Oro as a great port (Spilsbury 1906).

partner. He wanted to leave the material matters to various economic groupings, among whom there was no agreement on who should negotiate with the Spanish consortium led by Juan Somogy. It was also suggested that the Austro-Hungarian Colonial Society lead the negotiations, but this was not supported by the government due to the dubious deals of some of the leaders of the Society. Rather, the person of the Austro-Hungarian Trade Minister, baron Josef de Paoli, or the successful Austrian businessman, Arthur Krupp, seemed acceptable to the government. In the end, however, none of them undertook to lead the negotiations (HU...0194, HU...0195).

The idea of relocating Austrian settlers to an area where they would have established a „national” colony was also unsuccessful. It is planned that 60,000 settlers would have been lured to the area, who would have flourished the desert. The government hoped to receive the HUF8,000,000 cost of the eviction program from the Austrian company Lloyd, but the Company did not see the return on the amount to be invested as assured, so it withdrew from the business opportunity. Although both government and business circles saw a serious opportunity in the project, none of the groupings was willing to start it with their own money. Therefore, the area did not pay the rent of HUF20,000 in 1899, not even the deposit of HUF50,000 negotiated by the end of 1899, which was a basic condition for the continuation of the negotiations⁵ (HU...223, HU...224).

Finally, the consortium in charge of selling the Spanish colony tried to find reliable negotiators as well as a grouping to financially support the project. Not with much success⁶ (HU...0181, HU...0182, HU...0183).

This is because the government still expected the economic groups to fully cover and implement the project, while in the absence of clear government support, they were unwilling to risk their own financial assets in a potentially unsuccessful business. Eventually, getting bored of waiting, the Spanish began negotiations with the French, who would have liked to acquire Rio de Oro to create a cohesive colonial empire in North Africa. In the meantime, the public mood in Spain has changed, so the Spanish government has permanently abandoned its plans to sell the area (HU...0148), which was thus maintained until their withdrawal in 1975 (Besenyó 2010).

Defining a task for map reproduction

A hand-drawn sketch of the 3 coasts between Cap Bojador and Cap Blanco (Figure 1,2 and 3) can be dated to 1899, and its preparation can be linked to Count Gilbert Hohenwart-Gerlachstein, Consul General of the Austro-Hungarian Monarchy in Tangier (HU...0032, HU...0034, HU...0031). The map sketches were prepared for the Ministry of Foreign Affairs of

⁵ The area was leased from the Spanish crown for the same amount by Compañia Mercantil Hispano Africana, which had since become economically bankrupt and was liquidated, and then by Compañia Transatlantica.

⁶ It was even suggested that the Spanish would form a joint consortium with the British, but this failed due to protests from the French and Germans.



the Monarchy as part of the German-language marketing material presenting the Rio de Oro coastline. The drawing was based on the travel reports of Spanish soldiers, Franciscan monks and fishermen from the Canary Island passing through the countryside. In the absence of accurate Spanish hydrographic maps, it was mainly the latter that provided the most reliable information on the fishing and hydrographic situation of the coast. The drawings show the main objects of the coast between Cap Bojador and Cap Blanco, indicating the location of the desert wells, the accommodation of the surrounding Kabul tribes, the caravan routes and the points on the coast about which the Consul General had information.

Due to its purpose, the map outlines were made in German, and as the coast was under Spanish rule, the geographical nomenclature was mostly in Spanish, sometimes in Portuguese. As handwritten nomenclature is difficult to read in some places and the drawn maps were naturally burdened with geographical inaccuracies, we undertook a GIS-based⁷ German-language reproduction of the map drawings on an A2 map and for the present study on an A4 map. In the course of this, Sándor Fülöp placed the identified, named objects in the drawing in a geographical environment, reflecting the current conditions, which allowed a more illustrative, plastic and accurate representation of the geographical space but also indicated the made, but now excavated reefs (10. picture).

Materials and methods

Of the three sketches, the main map (Figure 1) depicts the coastal strip between Cape Bojador and Cap Blanco, called Rio de Oro, which largely covers the area of present-day Western Sahara (HU...0032).

This map drawing does not have scale or scale line, but it does have a grid and data to help with spatial orientation. In the geographical coordinate system used, the latitudes are naturally the same as those used today, but the meridians do not follow the Greenwich initial meridian,⁸ but the San Fernando⁹ or Cadiz international meridian. During the reproduction, we used the starting Greenwich longitude circle used today. One of the other two maps is from the Rio de Oro peninsula (Figure 2) (HU...0034) and the other from the Cintra Bay (Figure 3) (HU...0031) showing their immediate geographical surroundings. Each of these include a

⁷ GIS (Geographical Information System). This is not a simple digital transformation, but a cartographic reworking.

⁸ The longitude circle passing through the Royal Observatory at Greenwich, was defined in 1884 by the International Meridian Conference in Washington as the only uniform initial meridian. Its use became common throughout the world in the 20th century (Tímár-Molnár 2013).

⁹ The initial meridian of San Fernando (St. Francis) or Cadiz was one of the defining reference systems in Spanish cartography from the second half of the 18th century until 1901, when a formal decision was made to align the Spanish system with the Greenwich meridian. In April 1907, the Spanish Navy accepted Greenwich as the starting meridian. Subsequently, the Ministry of Maritime Affairs ordered the Hydrographic Directorate to prepare all maritime maps in accordance with it. The new system has been appearing in shipping manuals since 1910. The distance of the San Fernando initial meridian from Greenwich is 6° 17' 15" west (González 2011).

scale (the former 1: 160000, the latter 1: 125000) and a linear scale, but the coordinate data is missing.

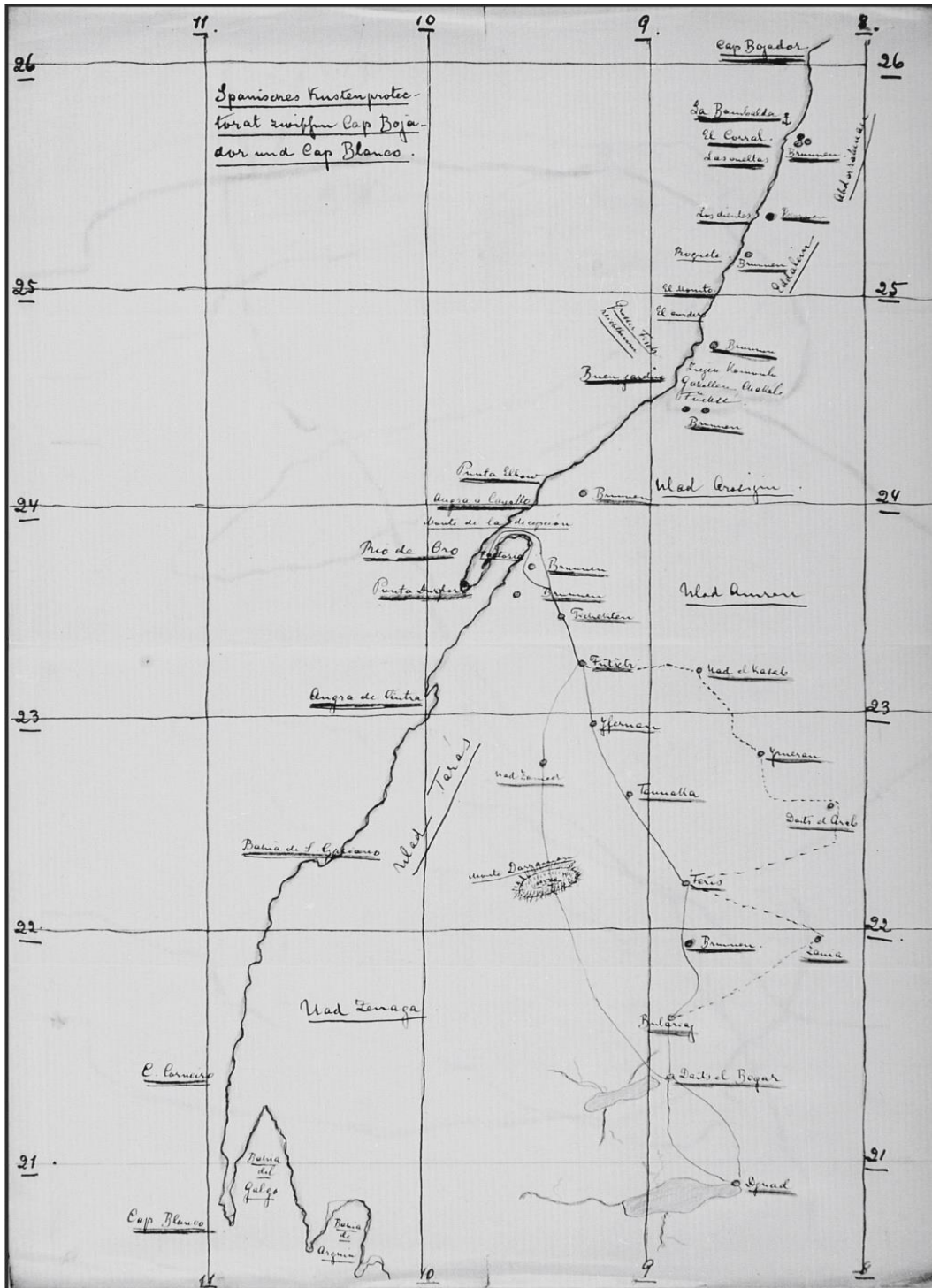


Figure 1. Hohenwart's map drawing of the coastline between Cap Bojador and Cap Blanco

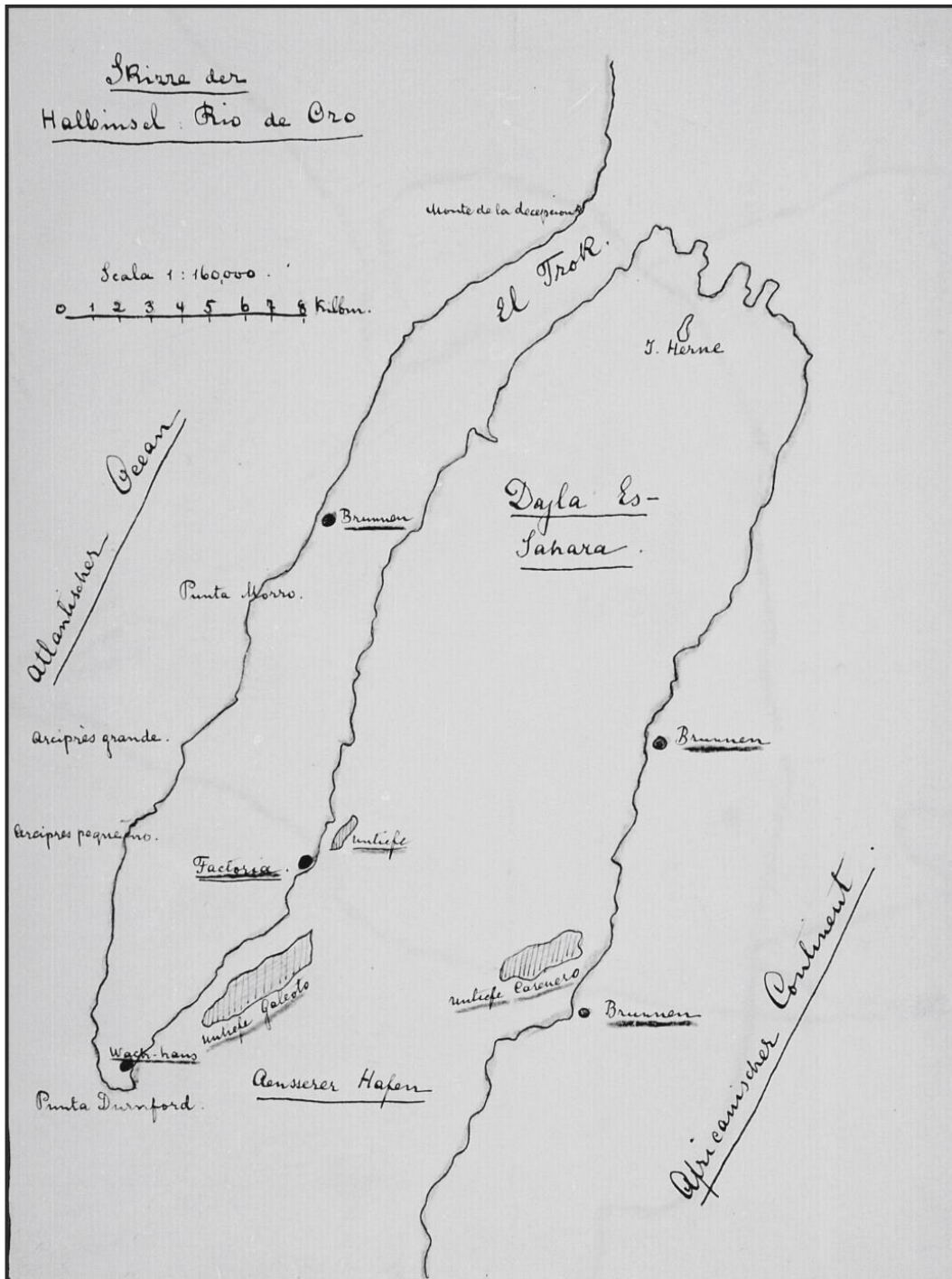


Figure 2. Hohenwart's map of the Rio de Oro peninsula

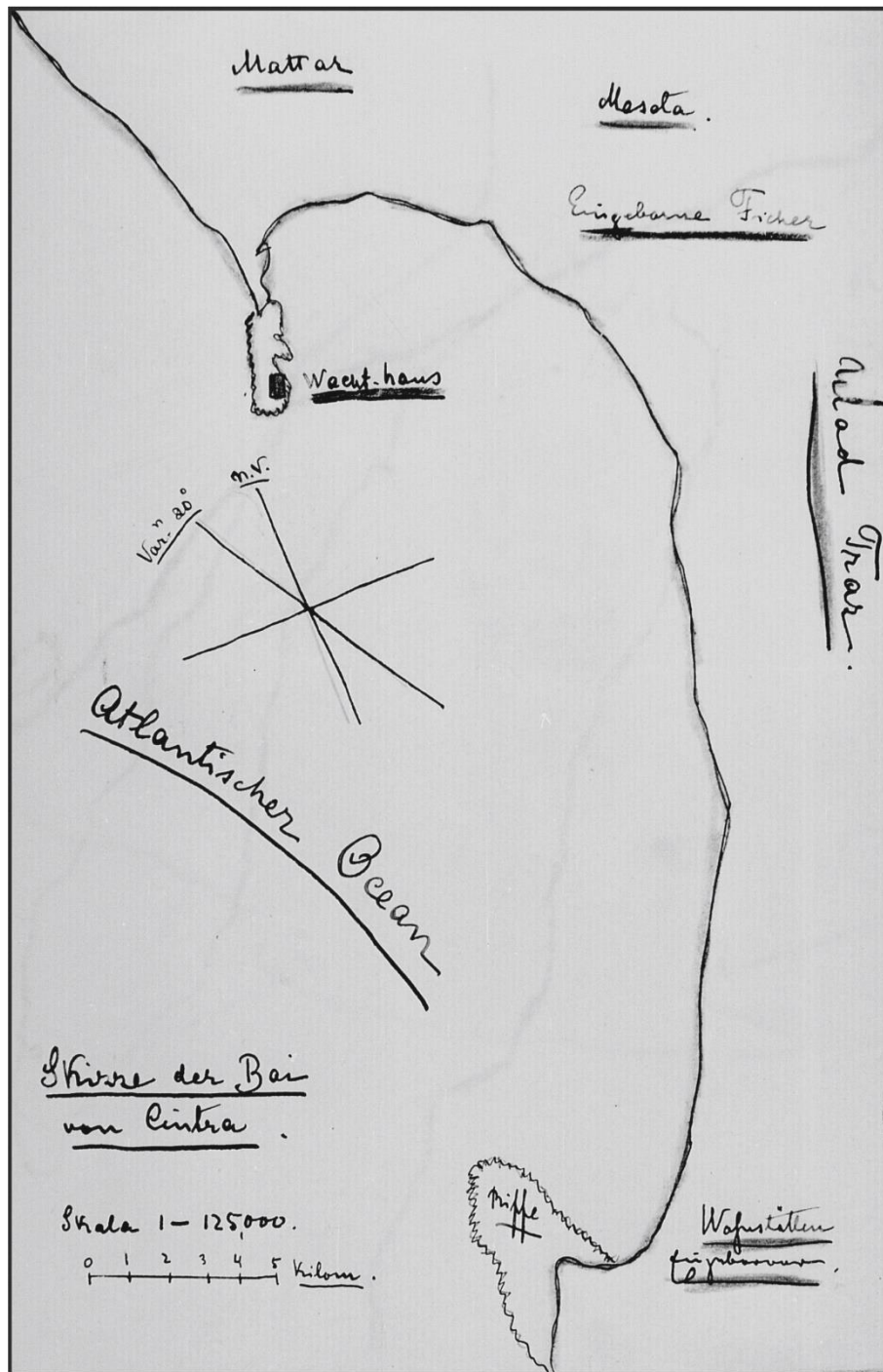


Figure 3. Hohenwart's map of the Czintra Bay area

To identify the handwritten geographical nomenclature and other parts of the of the text, a palaeographic aid (Germanic...without year) containing old German handwriting style was needed, as well as digital versions of some contemporary maps (Mapas... without year) provided significant help.



The mapping processing software tool was provided by ArcGIS Desktop 10.5. In order to make the maps more accurate, we used the SRTM surface model¹⁰ included in the latter software, which is part of the basic data file, the shaded relief¹¹ data file derived from it, which is part of the basic data file, primarily for aesthetic purposes, and a vector database of *bathymetry*¹² of the world's seas made available free of charge by OpenDemEurope for research and educational purposes.

Data for the Rio de Oro coastline were generated based on 2017 Google satellite imagery, using the GPS Visualizer interactive website for online digitalization (*vectorization*) and download of generated data (Schneider 2002).

The process of map reproduction, the difficulties encountered during processing

The analogue, hand-drawn map sketches were converted to digital form, and then, in preparation for further processing we cut out the map mirrors, which can also be done with the built-in Windows tool Paint. The digital map drawings cut out were then processed on the ArcGIS platform.

A major sub-task was the production of the Rio de Oro coastline (including islands). Although the digital master data file included with ArcGIS Desktop contains data on such topics, it was advisable to re-create it, because with digitalization it is possible to create data of virtually any accuracy based on the current 2017 satellite recordings. The workflow was performed using the drawing tools of the GPSVisualizer interactive website. Track points were placed on the zoomed satellite image, and a track (line object) was composed of the lines connecting them. Trackpoints were deposited every 200-300 meters on average, which corresponds to the data density of a 1:150000 scale map (*the large-scale cut-out showing the Czintra-bay area*) (Figure 3) (HU...0031). A continuous track formed the continuous shoreline, with additional tracks for each island (Figure 4.). Those tracks were downloaded in KML format, which files can be converted to ArcGIS platform using the KML to Layer tool of the ArcToolbox Conversion Tools, in this case a so-called polylines feature class, which can be displayed in ArcMap, for further processing.

¹⁰ SRTM – Shuttle Radar Topography Mission. It was created by the National Aeronautics and Space Administration (NASA) to represent the Earth's surface digitally. The data system is available free of charge almost all over the Earth with a pixel size of 3" x 3" (~ 90m x 90m) (SRTM... 2011).

¹¹ Shaded relief - topography shading. In addition to the SRTM interface model, this is also part of ESRI's core data but can be generated independently with any parameter using ArcGIS Hillshade.

¹² The resolution of data system is 30 angular second (Download... 2014).



Figure 4. Digitalization of the shoreline on the GPSVisualizer interactive website

Since the usable interfaces in the relevant area were available in an uneven distribution and with differentiated accuracy, we used an approximate transformation in the work phase of georeferencing, which can thus be considered as quasi-georeferencing. The 3 map drawings were inserted into the WGS'84 geographical coordinate system, which was the reference system used to create the reproduction maps. The generated shoreline data were used as a reference file, however, the coordinate grid shown on the main map sketch proved to be useful, as in some places the hand-drawn shoreline showed significant differences compared to reality.

The referenced contemporary maps also helped to clarify the position of the geographical objects, especially the inland accommodation and the desert wells, but they could not be used to reconstruct the contemporary coastline, as they were quite rough and showed significant differences in some places. To substantiate this statement, in the following figures, we used the largest-scale or relatively contemporary maps we found. The excerpts show the geographical conditions of the Czintra Bay area, one of Hohenwart's map drawings (HU...0031). The maps in Figures 5 and 6 are from 1896-1900, while Figure 7 shows the conditions in 1945 and Figure 8 shows the conditions in 1951, the latter at 1: 50000, on a significantly larger scale than the others. It can be observed that even comparing 1945 and 1951 the differences are significant (Carta..., 1896), (Mapa..., 1900), (Mapa..., 1945), (Mapa..., 1951).



Figure 5. Cut-out 1896 Spanish hydrographic map



Figure 6. Cut out of a 1900s map of the Spanish Rio de Oro



Figure 7. 1945, cut out of a map of the United States Army



Figure 8. 1951 Spanish military map

An important factor in the change of the image of the coast, in this geomorphologically short period of time, may be the ability of the rivers flowing into the sea to deposit sediment. As much as the area in question is the Sahara Desert, there are no wide-water rivers or even permanent watercourses, only intermittent ones. This factor cannot, therefore, have a significant effect on the appearance of an otherwise largely undivided coastline.

It is worth looking at the sea level rise. Between 1880 and 2014, world seas rose by an average of 23 cm (average 1,7 mm/year) (Legresy, Benoit 2017). Between 1900 and 2017, this number may have been about 22 cm, considering that the rate of rise appears to have accelerated in the last two decades, currently $\sim 3 \pm 0,4$ mm/year (Nerem et al. 2017). Based on these data, global sea level rise can be characterized by a marked trend, but of course the process fluctuates over time (Legresy, Benoit 2017), however, it should be noted that the differences are significant locally (Figure 9) (Elkins et al. 2015).

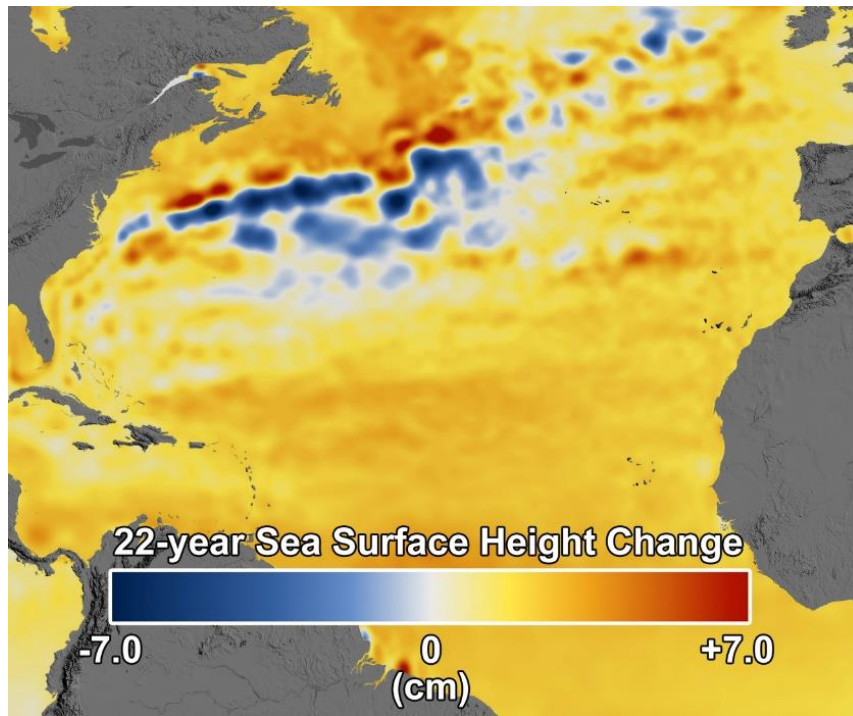


Figure 9. Cut-out of a NASA map showing sea level changes between 1992 and 2014

From this figure above, it is striking that the sea level of the Western Saharan coast increased between 1992 and 2014 at a rate roughly in line with the global sea level rise, i.e., around 3 mm/year. In the absence of specific data, by extrapolating global data to the last nearly 120 years, we can assume that, locally, sea level rise may have fallen in the 15-30 cm range, which could not have caused large-scale changes in coastal image.

In view of all this, we considered it expedient to place the named objects of cartographies in today's geographical environment in the possession of clear and sufficiently accurate data, noting that the invention of new contemporary maps depicting the studied area on a much larger scale could significantly change the preference conditions.

In the phase of processing the data of the map drawings, we created a GIS database, which contains both the geographical location of the object and the associated nomenclature.

There were a number of difficulties in identifying the handwritten passages. Much of the geographical nomenclature could be found, but in several cases it was possible to decipher a piece of German, Spanish, or even Portuguese text by studying the old German handwritten styles of the palaeographic aid (Germanic...without year).

From a practical point of view, in the working phase of the map display, the 3 separate map sketches for the present study are presented on one A4 map, which map is easy to see, on the right the coastal area between Cap Bojador and Cap Blanco is 1:3000000 (main map), while on the left the Rio de Oro peninsula at a scale of 1:580000 and the Gulf of Czintra at a scale of 1:350000 (side maps) (Figure 10). To facilitate geographical orientation, the coordinate, north mark, scale, and line ratio containing the coordinate writing have been placed on both the former main map and the latter sub-maps.

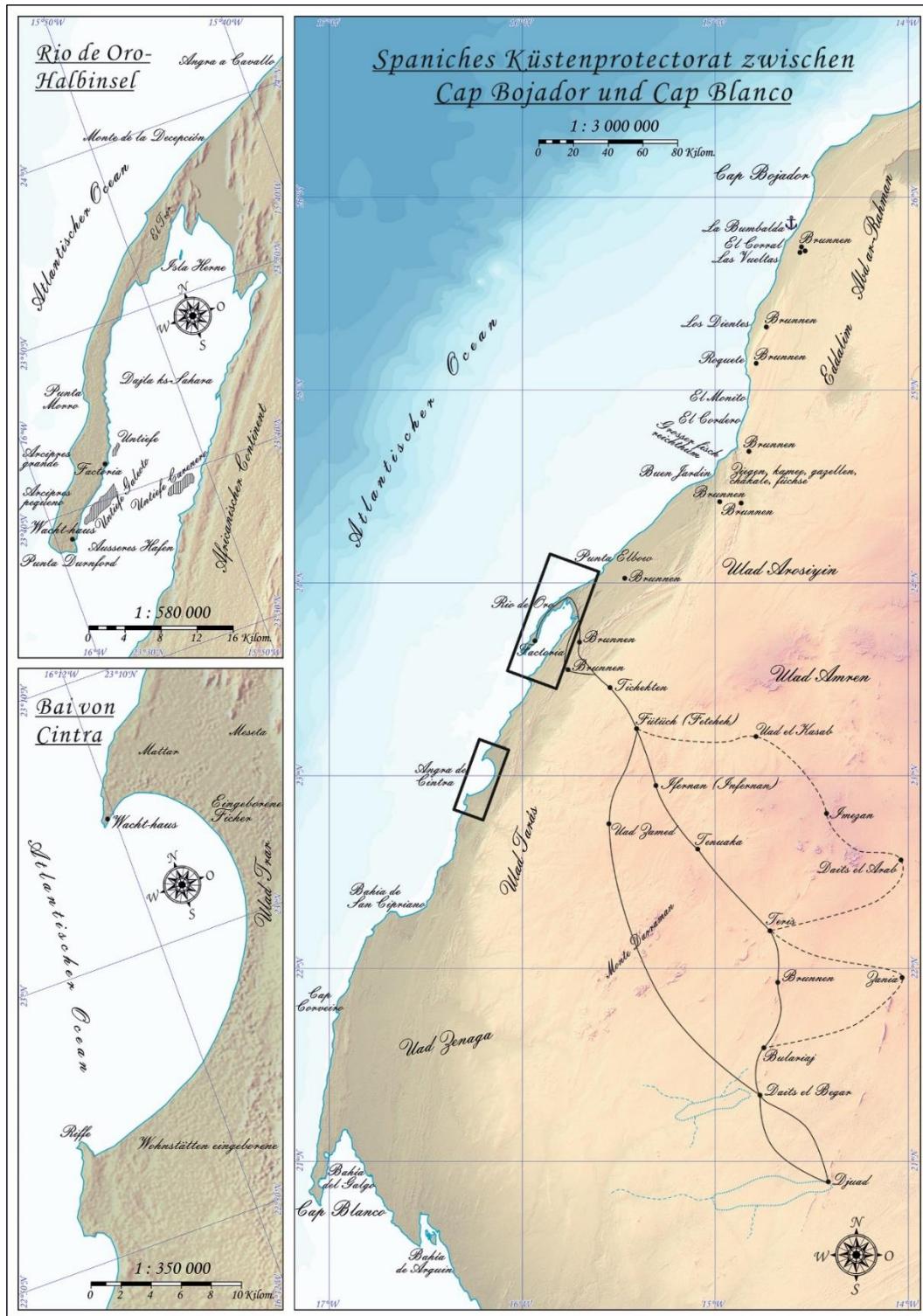


Figure 10. Reproduction map created using GIS

The original maps do not contain a signatory explanation, so it was not included in the reproduced maps either. To eliminate the disadvantages of the omitted explanation, the map content had to be clarified. In this sense, the titles of the maps (but only the titles) are

underlined, the most important caravan routes are represented by a solid black characteristic of the roads, the less important ones by a dashed line. The former reefs named by the author were visualized with outlined, coloured, hatched polygons.

Summary

An interesting and instructive episode in the relationship between Hungary and the Western Sahara was the possible acquisition of the Rio de Oro region by the Austro-Hungarian Monarchy. Exploring the course of the Spanish and Austrian negotiations, presenting three hitherto unknown hand-drawn map sketches of the area purchased as part of the information background material and in terms of the interpretability of the map content, their reproduction is an important addition to the research on the topic. In connection with the latter task, it can be said that by using GIS, a compact, illustrative map presenting three maps at the same time can be obtained as a reproduction of antique, hand-drawn map sketches. This preserves the character of the original map drawings and its content to be communicated, while it also satisfies the spatial representation needs of the modern age through greater accuracy and manner of representation. Another option for extracting the reference data needed for reproduction would be to try to reconstruct the spatial conditions of the Rio de Oro coastline around 1899. This would require the use of additional research resources and contemporary maps on as large a scale as possible. Nevertheless, we can conclude that with due care, this method of combining past and modern information can also be a viable way to reproduce contemporary maps.

The purchase of the Rio de Oro area from the side of the Austro-Hungarian Monarchy was an instructive and interesting episode in the relationship between Hungary and the Western Sahara. The three pieces of, so far unknown, hand-drawn sketch maps are an important part of the information background. The reproduction of the original maps is an essential element in the research process and in studying the details of the Spanish and Austrian negotiation process.

The latter task could be executed with GIS and result in a compact, graphically expressive projection, which includes all three charts. This process conserves the character of the original sketches; besides it satisfies the accuracy requirements of the modern age.

The other option to retrieve reference data is that we attempt to reconstruct the coast of Rio de Oro around 1899. To achieve this goal, more investigational resources and bigger-scale maps of the current age are needed. However, we can state that with sufficient care the process of combining older and modern information could be an efficient way in reprography of maps from that age.



Conflict of Interest

The author hereby declares that no competing financial interest exists for this manuscript.

Notes on Contributor

Dr. János Besenyő holds PhD of Military Science and habilitated doctorate from History. He works full time as Associate professor for the Óbuda University, Doctoral School for Safety and Security Sciences, as the head of the Africa Research Center. Between 1987 and 2018 he was a professional soldier and served several times in Africa (Western Sahara, Darfur) and Afghanistan in various peacekeeping and military missions. His research interests include contemporary and recent history of Africa, migration and the Middle East, military conflicts, peacekeeping, military logistics, terrorism, and Christian-Muslim relationship in the continent. He is teaching not only at Óbuda University, Doctoral School for Safety and Security Sciences, but ELTE Doctoral School of History, EKE Doctoral School of History, and National University of Public Service, Doctoral School of Military Sciences. Also, he is a research fellow at the Centre for Military Studies (CEMIS), Faculty of Military Science of Stellenbosch University. He wrote several books and articles. His most recent publication is „Darfur Peacekeepers” (Éditions L’Harmattan, 2021).

Sándor Fülöp is a cartographer.

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