

The lost ships of the Dutch East India Company – a cartographic analysis

Karsten Bracker

Nong Lin Xiang 3 Hao, 1 Danyuan 2808

710061 Xi'an, Shaanxi, China

brka@posteo.de

With the discovery of the sea route to India by Vasco da Gama in 1498, the economic opportunities of the Central and Western European trading powers increased significantly. In the early modern period most of the Southeast and South Asian regions were under the permanent influence of the Europeans, which is still present in religion, society and culture of the affected states in the 21st century. After the Portuguese and Spanish had reached their pinnacle, the Dutch and the English companies dominated the Euro-Asian maritime trade from the turn of the 17th century on (Kist, 1990: 49; van Gelder, 2004: 28; Nagel, 2010: 42). The *Verenigde Oostindische Compagnie* (VOC) stands out as the first modern joint-stock company and is one of the cornerstones of today's world economy dominated by capitalism. The author has done a comprehensive research about all ships of the Dutch East India Company, which were lost between 1595, when the first of the predecessor companies, the *Compagnie van Verre*, carried out its only voyage to explore the Far East, and 1803, when the last company's contract expired (van Gelder, 2004: 28; Nagel, 2010: 122).

Preliminary Work

The method

There are lots of popular science and treasure hunt listings throughout the Internet, which often summarize the possible losses of the VOC. The longest list includes up to 635 vessels, but in fact, there are at least 99 more: All in all a total of 734 vessel losses could be recorded as lost and nine uncertain cases as well. This is caused by contradictory statements of the sources, so a dismantling cannot be excluded completely. Also, there are a few source conflicts. According to Kist (1990: 50) “about 50” vessels have been located and excavated since 1965, Gawronski (1992: 14) names 33 East Indiamen wrecks, but does not refer the other types of ships. In the context of available resources 54 wrecks could be assigned as undoubtedly “known” today. Additionally, Turner (1988) lists 18 most likely silted ships very accurately which have been known at least once. Also, there are nine additional ships which cannot be found anymore because the remains were sold or destroyed shortly after wrecking. Unfortunately, there is an undeniable and unknown number of rogue treasure hunt activities, especially in South East Asia (Flecker, 2002) where the most ships were lost.



Fig. 1: West Java and the Sunda Strait: the *Gouden Visje* was wrecked in 1697 near a “Cannibal Island”, Pulau Laki, near Banten, painting by J.T. Busscher, early 19th century, Kaarten van de VOC, Nationaal Archief, NL-HANA, Invnr.: 4.MIKO63.

In addition to a remarkable number of literature and the freely available registry directories of the VOC, mainly three projects, which were used to illustrate the individual travel and occurring ship losses completely, need to be mentioned: The *Huygens Institute for Dutch History* lists a total of 8194 travels (mostly Euro-Asian voyages) of the VOC, accessible via search engine and table form which is accessi-

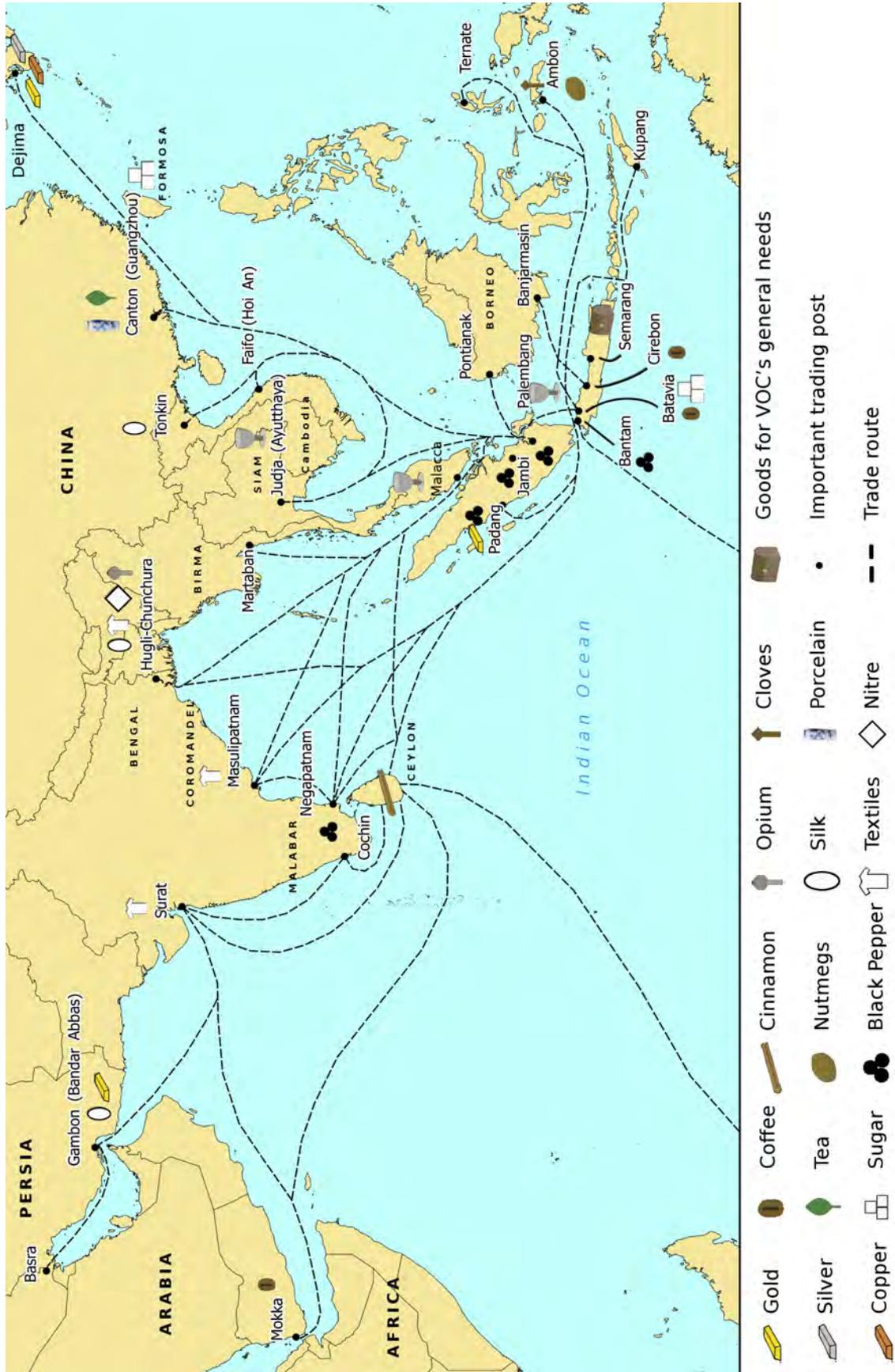


Fig.2: Trade network of the VOC in 1700 (after Noordhoff, 2011: 238a. Drawing: F. Kluge).

ble through <http://resources.huylgens.knaw.nl/das/>. Van Overbeek (2012) has created an independent database containing lists of VOC ships as well. Van der Horst's (2011) work offers an additional listing of an impressive number of lost Dutch ships between 1500 and 1800. However, no publication contains a complete listing and none of them has ever put a focus on a geographic overview of already localized and not localized shipwrecks. With the help of several GPS-based programs, QGIS and historical maps, which have been especially important for searching for former and today's names of islands (Fig. 1), a notable database could be created and most of the (possible) positions of wrecks approximated.

The final database does not only contain the known or approximate coordinates of the wrecks, but also mentions the route on which the vessels were lost, along with the incidents' time frame, shipwreck's tonnage, cargo, the first and last owner of the ship as well as references and additional comments. The ships which were lost through seizing (Bruijn *et al.*, 1987: Tab. 22) are only mentioned within the list if there are any evidences for drowning or destruction shortly after losing the vessel.

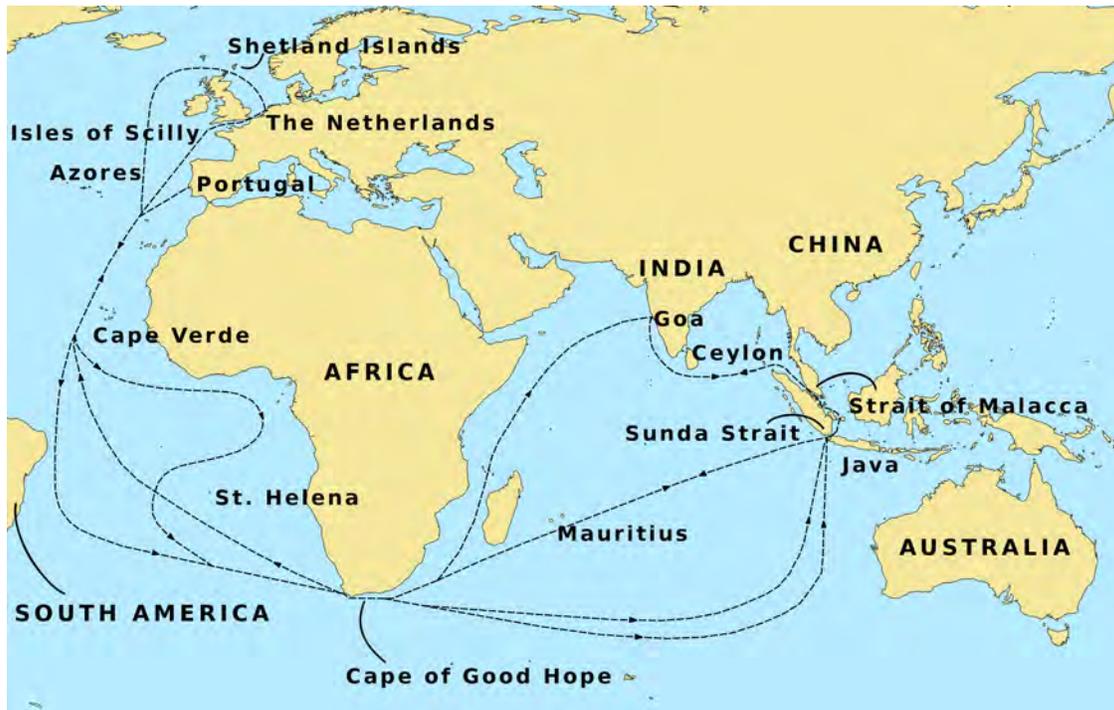


Fig. 3: The main overseas trade routes (Drawing: F. Kluge).

The main trade routes

Due to the effects of the monsoon winds the in the Indian Ocean and in the China Sea has been of high importance. The passage directly through the Indian Ocean from South Africa to Java have become possible in the early modern period only. Nonetheless, the sea distance trade is still influenced by the monsoon. The south-westerly winds between May and October as well as the north-easterly winds between December and March are of special significance (Chaudhuri, 1985: 22-28; Gaastra, 2003: 118-119).

Apart from the coastal trade the international trade between the West and East was focused on Mokka, the West Indian coast, Goa, Calicut, Cochin and the Indus Delta with Hugli, furthermore the Coromandel Coast with Negapatnam and Masulipatnam, Bengal and quite independent trade networks in Southeast Asia. From South Africa the VOC has operated via their hubs Ceylon and Batavia to Bengal, Formosa, Papua and Japan (Fig. 2). The voyage through the Cape of Good Hope was done through the Shetland Islands, the Scillys, Cape Verde and St. Helena. The crossing from South Africa to Java or Ceylon has often included a stopover in Mauritius (Fig. 3). Logically, most of the shipwrecks could be found on these routes.

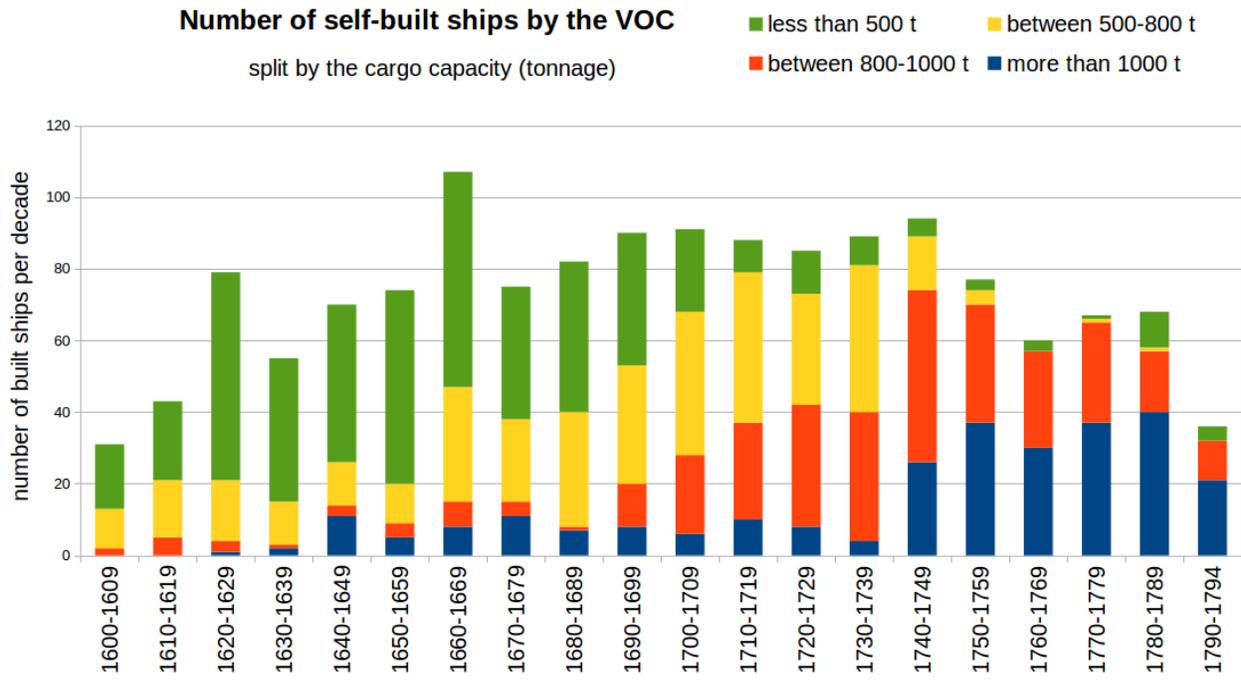


Fig. 4: The shipbuilding of the VOC (after Bruijn et al. 1987, Tab. 2).

The wrecks

Mostly, the VOC's ships have been built or purchased in the main yards in Amsterdam and Middelburg (Kist, 1990: 50). Few ships have been hired or bought overseas. For example, for Burma various barks, canoes, *galleasses* (warships) and *mussulas* (small boats to unload cargo of larger commercial vessels), were mentioned for the trade. Especially the regional barks were used extensively by the VOC (Dijk, 2006: 79-85).

As a result of intra-European conflicts several captured ships are listed within the company's lists, for example the *Ruby*, which was lost in 1653. Apart from the well-known East Indiamen, the flutes, yachts and hoekers were mainly used for the overseas trade.

Due to the different ways of construction and different names of the ships it is difficult to break down the losses into types.

Ship localization after UN regions*			
Geographical Region	Number	Geographical Region	Number
Southeast Asia	214	Atlantic Ocean**	11
South Asia	111	South Europe	8
South Africa	70	Australia/ New Zealand	7
Oceania	67	Central Africa	3
Indian Ocean**	64	West Asia	2
West Europe	54	North Africa	1
North Europe	52	Pacific Ocean**	1
unknown***	31	Polynesia	1
East Africa	24	South America	1
West Africa	12	n=734	

* after United Nations Statistics Division Code M.49
 ** not assigned to any region *** region unknown

Fig. 5: Distribution of the ship losses.

Therefore, a view on tonnage of the vessels is revealing: Here a typical increase in available cargo hold can be observed, so that tonnages lower than 500 t become quite rare during the 18th century (Fig. 4). Furthermore, the declining number of ships is compensated by freight capacity (Bruijn *et al.*, 1987; Bruijn and Gaastra, 1993: Fig. 7.4).

The following examples should demonstrate the differences of the wrecks: In summary, with the exception of 31 cases, at least the overwhelming part could be assigned to a world region (Fig. 5).

Few shipwrecks which were found so far differ in their status. For example, in 1749 the *Amsterdam* ran aground on its maiden voyage near Hastings. It has been discovered 1969 in silt off the coast of Hastings and has not been salvaged, but was rebuilt between 1985 and 1990 (Gawronski, 1990). Now the replica serves as a museum ship.

The *Hollandia* is perhaps the most widely studied wreck today. The full workup of the findings and merchandise must be highlighted in a particular way (Cowan *et al.*, 1975; Cowan, 1982; Kist, 1990: 50; Gawronski, 1992). The ship was wrecked on its maiden voyage ten days after departure from Texel at Gunner Rock west of Annet on the Isles of Scilly in 1743. The wreck has been discovered by Rex



Fig. 6: Remains of the Batavia in the Western Australian Maritime Museum, Fremantle, photo: 16th September 2014.

Cowan in 1971. Most of the coins in the wreck have been sold on auctions, but in subsequent years the place could be extensively investigated archaeologically (Gawronski, 1992).

The *Risdam*, wrecked on its way from Siam to Batavia near the Malay city of Mersing in 1727, has unfortunately an inglorious history of research. Shortly after discovering the ship in 1984 the site was confiscated by Malaysian authorities. The cook of the explorer ship of Mike Hatcher had sold the position to other com-

peting companies, so that subsequently a part of the vessel was destroyed. Consequently, there is just a brief report about the survey to date (Gandadharam and Green, 1985).

One of the best-known wrecks and the only completely salvaged one is the *Batavia* (Fig. 6). It was wrecked on its maiden voyage in 1629 on the Houtman Abrolhos 60 kilometers west of the Australian coast and was discovered in 1963 by the sea photographer Hugh Edwards. The ship was studied at the site in the 1970s and 80s (Green, 1989) and gradually transferred to the museum. The workup of the find in Fremantle Maritime Museum should be emphasized as especially extensive.

Investigation and compilation of the data shows another large problem, which is due to published information itself and partially due to the general problems of "exploring" wrecks. Poor local communities see a possible way of income in founded wrecks, the general public has a seemingly irrepressible greed for "treasures" and natural events and disasters such as storms or currents in general, for example in South Asia, result in losses of possible corpus of finds (Gaur *et al.*, 2004).

Results

Nr.	Name of ship	LonBd	LatBd	position	Region of wreck
A2	AAGTEKERKE	-4.15	50.31694	saved	near Plymouth, English Channel
A154	EENDRACHT				Indian Ocean
A721	ZOUTELANDE	-25.24	17.17	roughly approximated	near St. Antão/Santo Antao

territorial waters	Status	Probability of finding	Type of ship	Tonnage	Built/Launch
United Kingdom	known	already found	unknown	800	1720
unknown	unknown	not realistic	East Indiaman	850	1771
Cape Verde	unknown	possible	Yacht	100	1628

Last departure	Departure from	Country of dep.	Date of loss	Destination	Country of dest.
1721-12-17	Rammekens	Netherlands	1721-12	India	India
1778-02-18	Batavia	Indonesia	1778	patria	Netherlands
1629-01-24	Wielingen	Netherlands	1629-03-24	unknown	United Kingdom

Cargo (in guilder)	silver	specie	Yard	last noted chamber	Last noted voy-nb.
unknown			Zeeland	Zeeland	2477.1
119894			Delft	Delft	8015.1
unknown	yes	yes	Zeeland	Zeeland	0378.1

Fig. 7: Extract from a part of the LibreOffice-database including wreck positions, the last voyage, owning chambers, cargo, tonnage, the type of the ship and the probability of finding.

Overview

The final database contains nearly 60000 entries (79 per ship), which collects every information about the loss, the cargo as well as the possible wreck-positions (Fig. 7). The accuracy of localization can vary widely: The already discovered wrecks or known locations are named as "secured" in the tabular lists, but there is a distinction between whether the exact location is known to the author or not. For the allocation of a fixed point, a maximum radius of 25 km (thus an area of 1963,495 km²) was chosen to allow a most accurate representation on maps. Down to a radius of 5 km these points are referred as "roughly approximated".

429 sites could be located by this system within the above mentioned maximum areas (Fig. 8). These sites are also divided into categories based on the likelihood of finding, the status and the likely territorial affiliation of a wreck. Source conflicts or completely not assignable wreck positions are mentioned separately, too. Even without a useful map using point displacement, the importance of South Africa, the English Channel, the Indian subcontinent and the Indonesian archipelago for the shipping of VOC is evident. The comparison with the trade and traffic volume in Asia illustrates this in a similar way (Parthesius, 2010: 43-59).

Statistics

The number of lost ships per decade varies significantly (Fig. 9). It needs to be clarified, that a statistical focus on every single year would be unsubstantial due to the relatively small number of losses. A view at a decade must be treated with caution as well. The exact ratio of the respective losses in proportion to the number of trips during a certain period is possible for the voyages between Europe and Asia only (Parthesius, 2010: 31-31, Fig. 3.1). Here, an average of 2 % of vessels on their outward voyage and 4 % on their return trip have not achieved their desired destination (van Gelder, 2004: 36-38). Comprehensive reports or summaries regarding a majority of the trips on regional routes do not exist. Despite the statistical calculation deficits the 1650s/60s and 1720s to 40s can be classified as quite lossy years. A quite nuanced impression can be shown when comparing the number of built ships in the VOC-yards with the losses – minus at least 46 rented, purchased or captured ones (Fig. 10). Leaving the sailor's lives aside, especially the 1650s need to be called negative and the first two decades of the 18th century particularly positive for the balance sheets of the VOC.

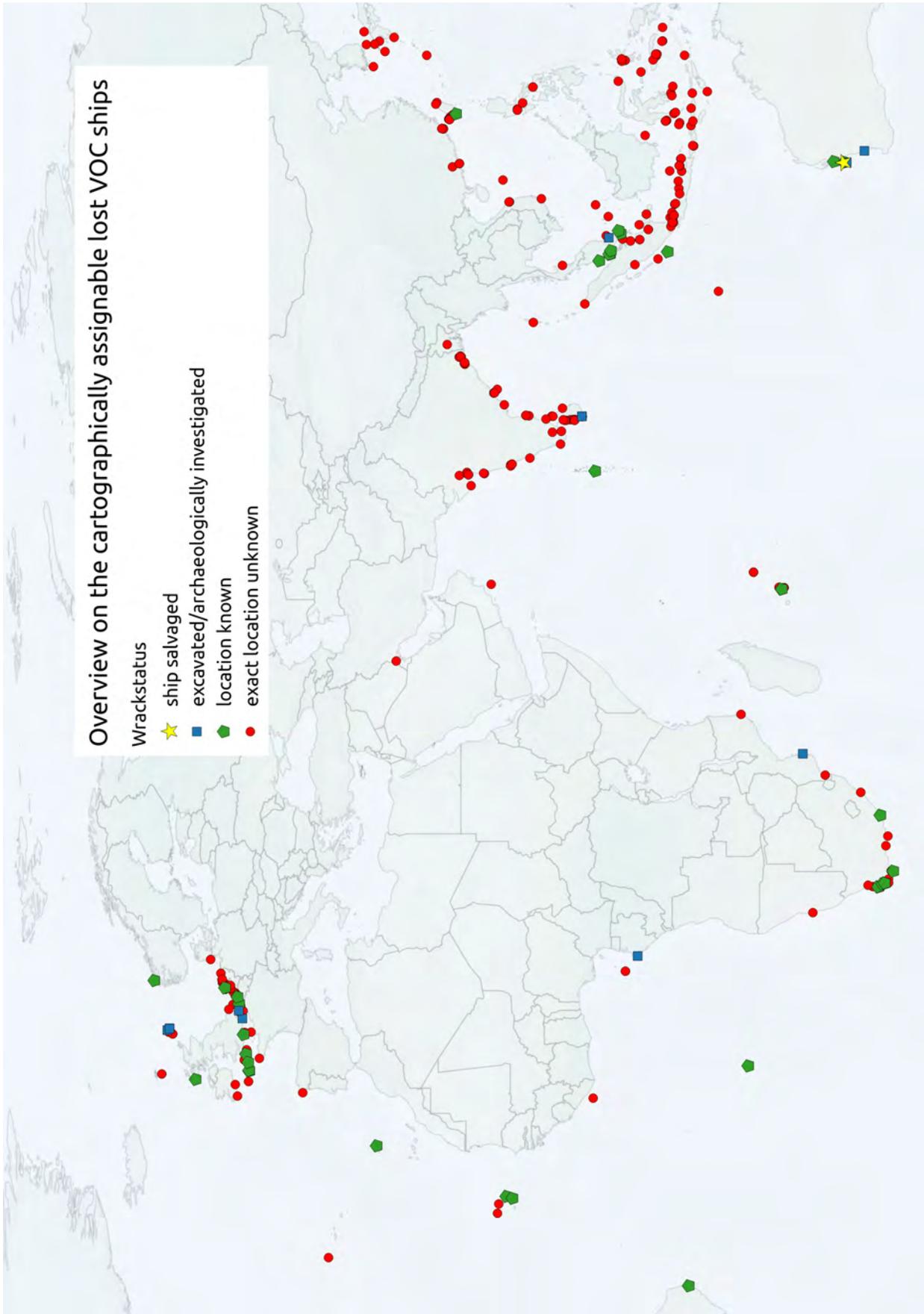


Fig. 8: Map of the 429 attributable VOC wreck sites. The focus lies on South African coast, the English Channel, the Indian subcontinent and the Indonesian islands.

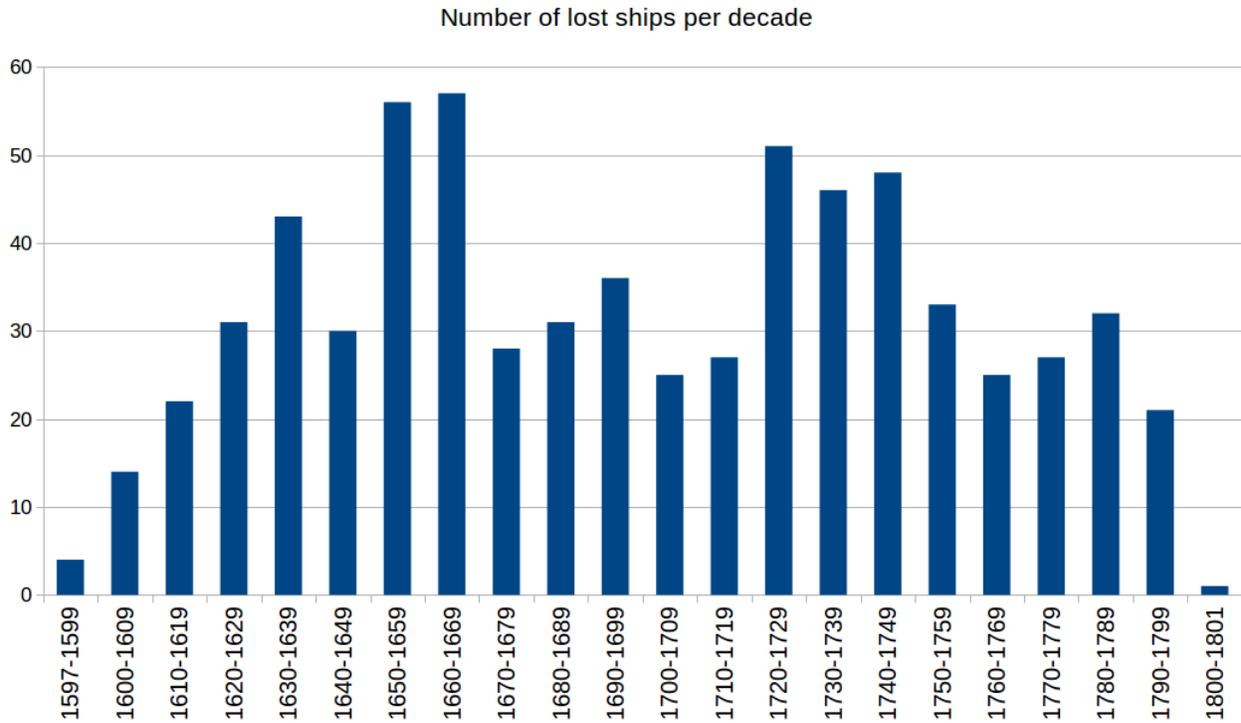


Fig. 9: Comparative chart of the ship losses per decade. (Between 1597 and 1801 a total of 19 years are without any dismantling. 1722 with a total of 17 ship losses represents the exceptional year, in which case, for example, seven ships were lost in June of this year at the Cape of Good Hope because of a storm. In the total of 734 ships and an observation period of 205 years, 1597-1801, the annual average is "only" three to four ships, which makes a statistically relevant analysis impossible.).

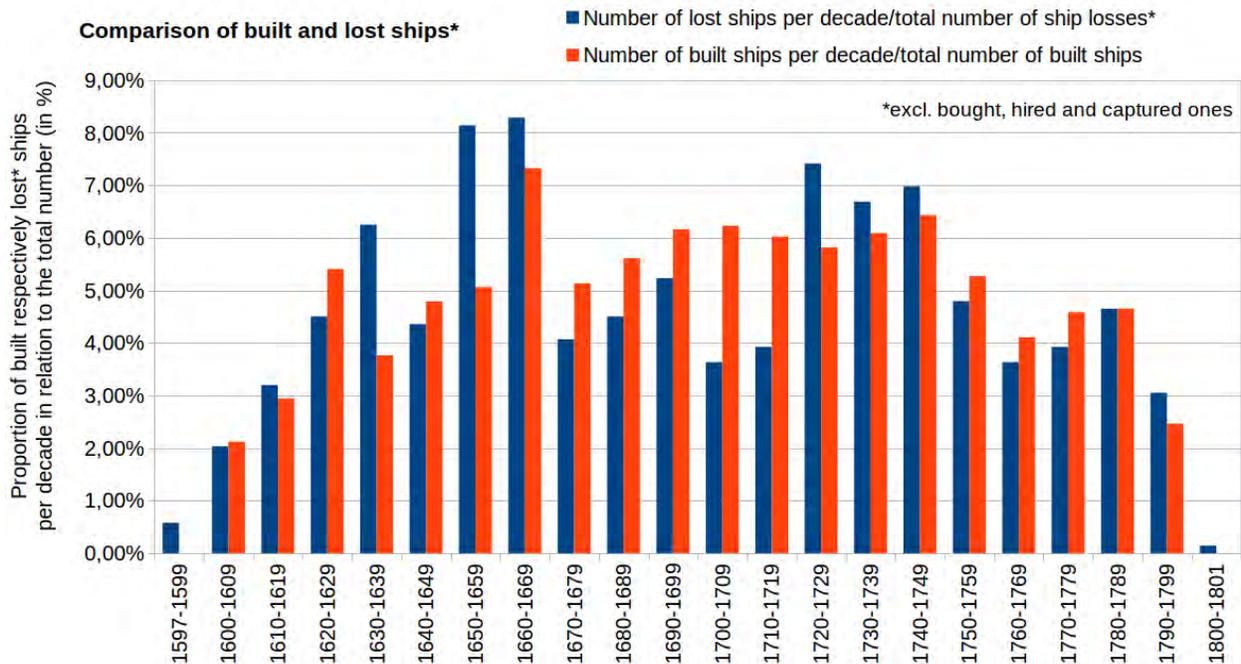


Fig. 10: Comparison of the built and wrecked VOC-ships, blue=688 (losses), red=1461 (ships built between 1600 and 1794, see also Fig. 4).

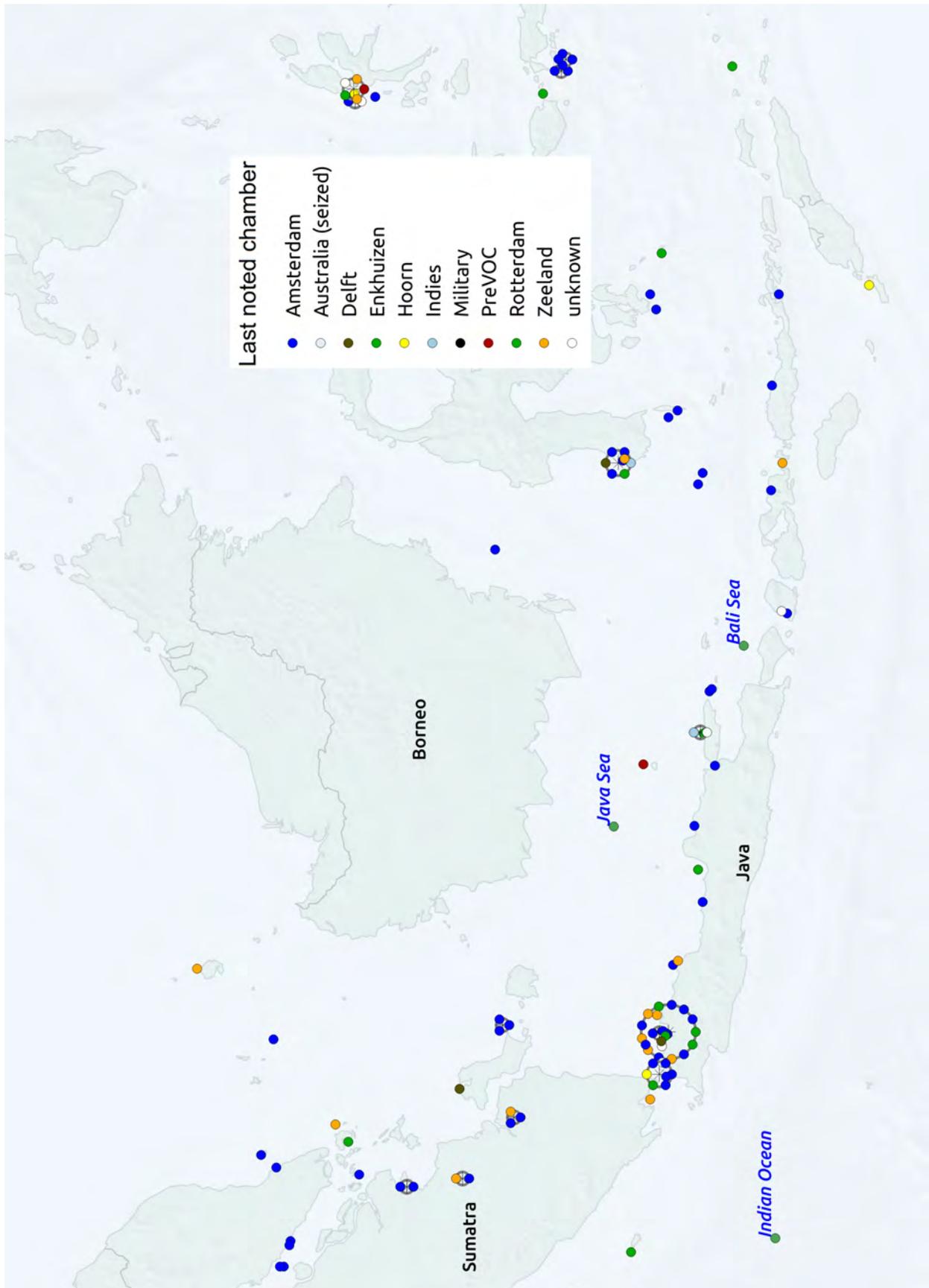


Fig. 11: Ownership of the wrecked ships in Indonesian waters.

View on trade routes

The VOC was indeed divided into individual chambers operating companies, however, no preferences of the respective subdivisions in terms suggest trade in certain regions. The close cooperation in the ports of the mother country becomes visible with the location of the lost ships, which are spread over the entire coastal area of the Netherlands and Flanders. A view on the Indonesian waters demonstrates it clearly (Fig. 11) although in both examples the dominance of Amsterdam's ships can not be overlooked.

The volume of trade and the general importance of a site can be easily determined on the basis of ships which have been traveling on routes to the respective bases or set off for a voyage. In the case of the city of Batavia (Fig. 12) the centered trade network is shown thoroughly (Fig. 2/3). The high losses in the Indian Ocean and the China Seas can just be shown approximately. The comparatively high loss rate on the return journeys to Europe can be seen as well. This is in contrast to Japan, which had been approached until 1641 via Hirado and later via Deshima and was, especially during the 17th century, one of the most important trading partners. The fact that the archipelago has been in contact only through Batavia or rarely Bengal results in a limited finding image (Fig. 13).

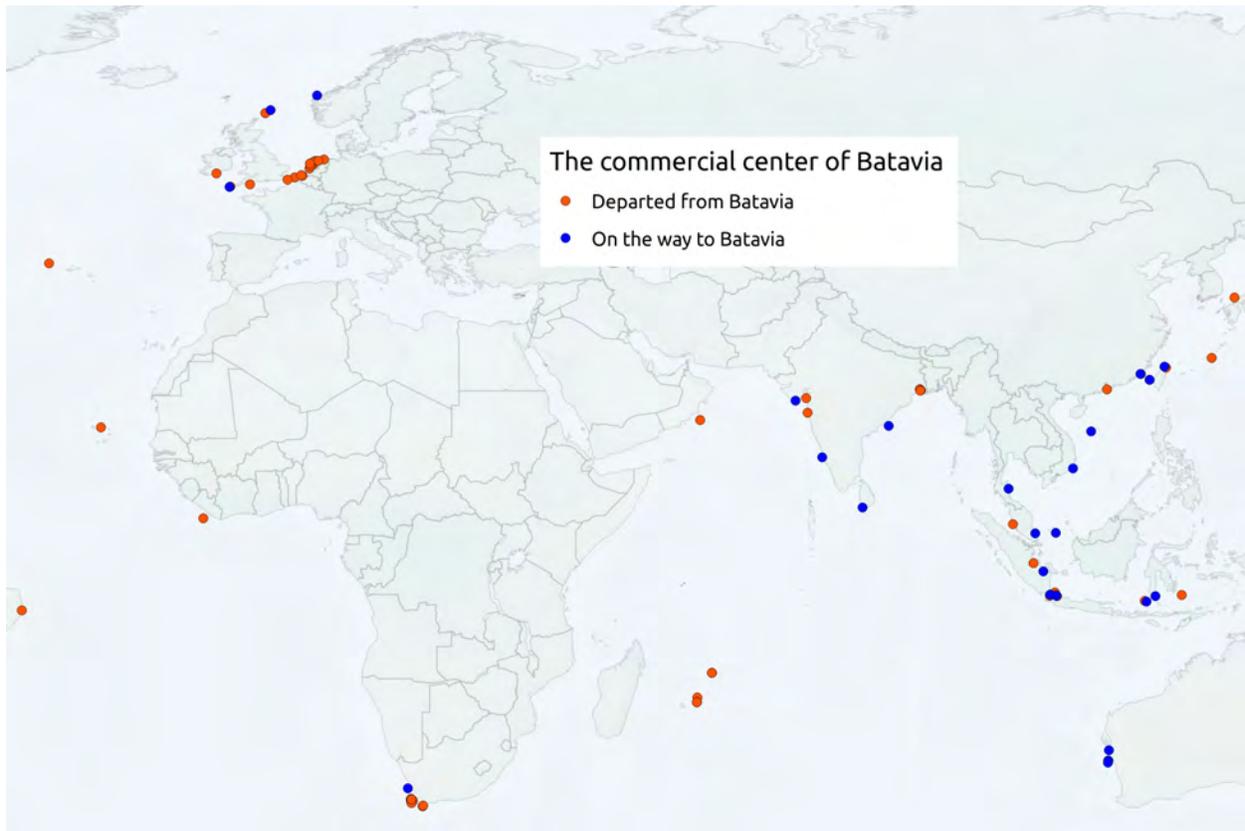


Fig. 12: Overview on shipwrecks on the way from or to Batavia.

The change in trade with East India is also the basis of temporal juxtapositions (Fig. 14). The general expansion until the turn of the 17th century is just as clear as the decline during the late 18th century. Along with this is the back focus on Ceylon and Batavia as trading centers and the decline of trade with Japan. The high importance of the Coromandel coast end of the 17th century stands out as well as the still low importance of South Africa due to a lack of compulsory intermediate stops at the Cape of Good Hope until about 1650 (Parthesius, 2010: 60).

Possibilities of finding new wrecks

Another option of the cartographic analysis of the material list and for future research of the VOC ships offers the view at the opportunities for new wreck discoveries. The slightest success can be expected for South Asia. Here, excluding silted areas and coves or port areas (see for example Gopi *et al.*, 2004;

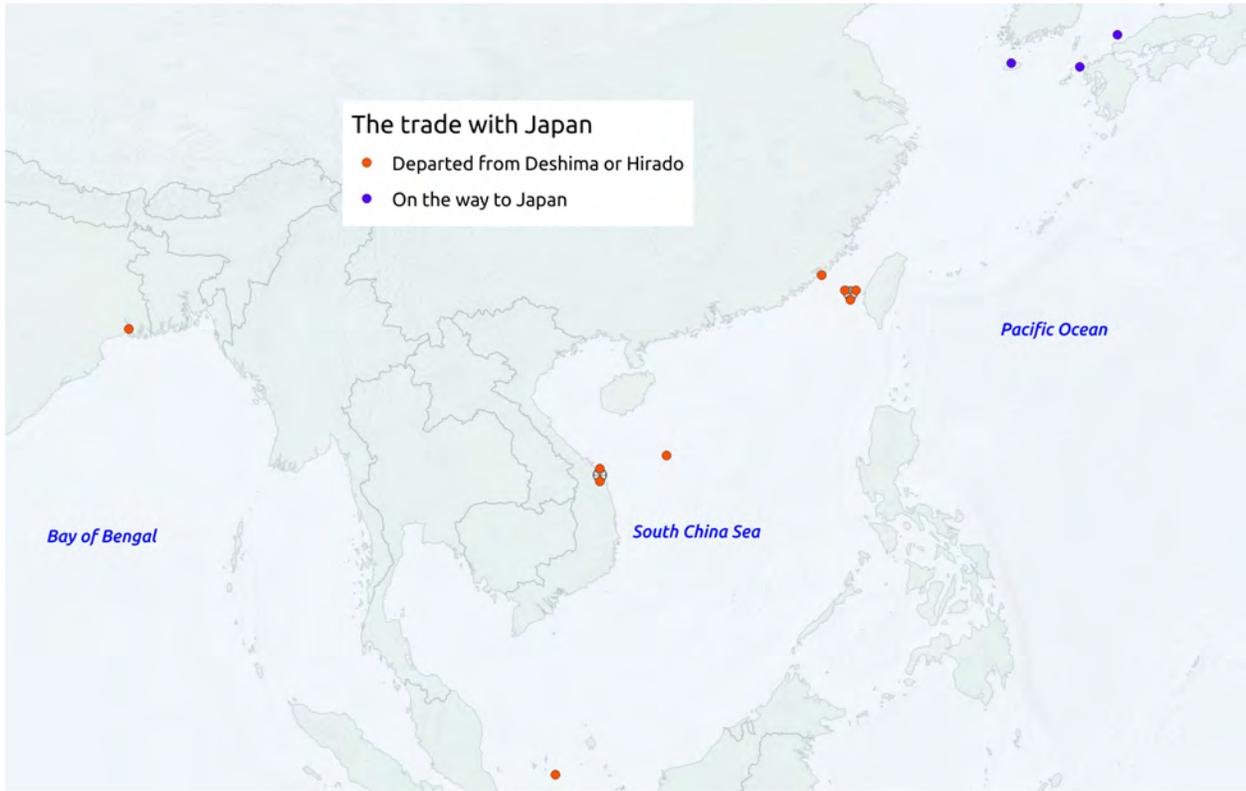


Fig. 13.: Trade on the way from or to Deshima/Hirado (Japan).



Fig. 14: Rough comparison of the lost VOC ship in the 17th and 18th century.

Parthesius, 2010: 13) the chance of recovering of preindustrial ship remains is quite low. This is a problem due to the monsoon storms and currents and the related restructuring of the offshore seabed (Gaur *et al.*, 2004). For these reasons, except for the exceptions mentioned, the fund option was considered as "not realistic". For Europe (Fig. 15) or South Africa the discovery possibilities can be evaluated significantly better, which goes hand in hand with a high general level of interest of the population as well as the intensity of local research.

A possible solution of the general problem of finding the ships could be the comprising of the typical travel paths (Fig. 2/3) and a line-up of ships like pearls on a chain to ensure a more balanced picture. Moreover, on basis of a full list of VOC voyages, the accurate analysis of individual routes in relation to the respective risk of ship loss are of high importance. A similar factor to calculate the costs and benefits of certain shipping routes would be provided by comparing the trading volume of individual regions. For example, Parthesius (2010: 48-49) has worked on the trading volume for South-, East- and South East Asia. A few aspects about Japan were discussed by Hesselink and Yōko (2000).

An important goal for the future will be to round off cargo's lists which is still incomplete due to the lack of analyzing the goods' receipt lists. Analysis of the recorded routes on nautical charts, the board diaries and other written sources would be generally required for further intensive research.

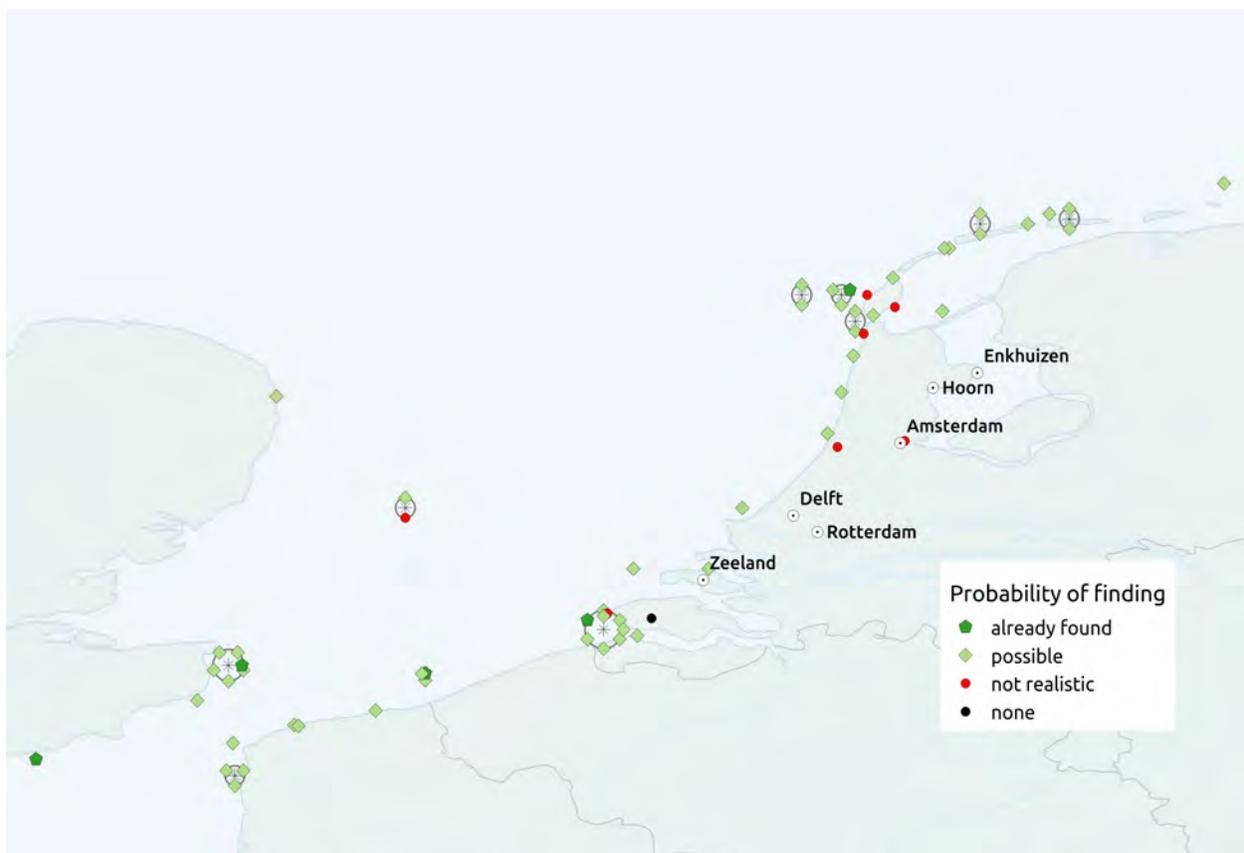


Fig. 15: The chances of finding new wrecks in the southern North Sea. Findings especially in the Wadden Sea as well as in very sandy coastal areas are, nevertheless, quite unlikely as well.

Conclusion

Such a written and charted database provides the possibility of various study areas such as trade in Japan in a simple and straightforward way. The examination of the wreckage of the VOC is still at the beginning, also due to the lack of an accurate critical appraisal in many cases and the will to change it. This compilation allows a compact overview not only on the confusing current state of research, but also shows the possibilities of working up the history of the Dutch East India Company. This approach is a good example of a comprehensive overview, which can be obtained mostly without original written sources.

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