THE CRUCIAN PLANTATION SOCIETY, 1755-1805

Using digital tools and GIS to examine St. Croix over 50 years, with a focus on the island's demography and plantation productivity.

Gustav Emil Ølgaard

Studienr: 201905099 | Thesis advisor: Adéla Sobotkova
Characters: 170.067 | Date: 17/09/2024

Gustav Ølgaard 17/09/2024 Aarhus University
201905099 IGH

Abstract

This thesis examines the Crucian plantation society from 1755-1805 focusing on general demographic trends and plantation productivity. Additionally, selected aspects of the white planter elite and enslaved populations are explored. The thesis concludes with a brief discussion on the significance of St. Croix and the Danish West Indies to Denmark. The Danish West Indies and the Caribbean colonial period have long fascinated historians. Using R, QGIS and slavevoyages.org, this thesis contributes to a growing number of recent scholarly work utilizing new digital tools, methods and databases. By analysing cadastre ledgers and censuses this thesis shows that the population of St. Croix developed in three distinct stages of growth or stagnation, disproving the idea that the colony experienced non-stop growth until the end of the slave trade in 1803. This growth was shown to vary across the islands 9 quadrants. This thesis further uses cadastre ledgers, censuses and maps to examine the nationality of plantation owners, identify the largest slave owning individuals or families, and study the gender and age distribution of the enslaved population. By late 18th century, the productivity and profitability of the Crucian sugar plantations were shown to be many times higher than that of the island's cotton plantations. While a modest connection between "economies of scale" and productivity was observed, with larger plantations being more productive and small plantations less so. Using modern environmental and geological data from the US department of agriculture, no correlation between soil quality and productivity could be decisively established. This thesis argues that while the Danish West Indies had no long-term effect on Danish industrial development, the colonies served as a source of wealth and income for the state and the plantation owners, contributed to the growing consumption of sugar.

Abbreviations and glossary

Abbreviations

DWI	Danish West Indies
Pd.	Pund
Rdl.	Rigsdaler – see glossary.

Glossary

Cadastre	A cadastre is a record of land, detailing size and ownership. The colonial administration divided almost perfectly St. Croix into cadastres of 3.000x2.000 feet. Information about the cadastres is recorded in in the cadastre ledgers and on maps. The original Danish term used in the source material is "matrikel".
Cadastre ledger	The collection of yearly ledgers created from 1758-1917 encompassing all relevant details about the cadastres and its inhabitants needed in accordance with the ruling tax code. The cadastre ledgers are usually divided by quadrant and cadastre in rural areas, or by town and street in urban settings.
Denmark / Danish	From 1380 to 1814, Denmark and Norway were in a close political union, often simply referred to as "Denmark-Norway". For the sake of simplicity, however, this thesis will refer to the nation as "Denmark" and its people and territories as "Danish".
Fad(e)	Unit of measurement used for sugar and rum. Roughly translates to "casks".

Metropole	Metropole is a term commonly used to describe the parent-state of a colony. In this thesis it specifically refers to Denmark.
Quadrant	St. Croix was divided into 9 different quarters and 2 towns. In this thesis, these quarters will be referred to as "quadrants" based on the Danish term "kvadrant" used by the colonial administration. Each quadrant was further subdivided into smaller cadastres. The 9 quadrants are: 1. West Ende 2. Nord Side A 3. Nord Side B 4. Prindsens 5. Kongens 6. Dronningens 7. Compagniets 8. Oost Ende A 9. Oost Ende B A map of the quadrants and their location can be viewed in figure 1.
Rigsdaler	Standard Danish currency until 1873. 1 Rigsdaler = 96 skilling. Can be subdivided into "Rigsdaler i Specie" (In whole coins) or in "Rigsdaler Courant" (In small coins – i.e. 96 skilling). While originally of equal worth, rigsdaler courant in time lost value. Furthermore, rigsdaler courant were worth more in Denmark than in the DWI, and a distinction is needed between "Dansk Courant" and "Dansk Vestindisk Courant". According to the 1770 law on DWI currency and its exchange rate, 1 Dansk Vestindisk Courant was equal to 1.25 Dansk Courant.[1]

[1] Jacob Henric Schou, "Fr. Hvorefter Mynten Paa de Kgl Amerikanske Eilande, Og Dens Forhold Mod Dansk Grov Courant Bestemmes, 20. Marts 1770.," in *Chronologisk Register over de Kongelige Forordninger Og Aabne Breve, Samt Andre Trykte Anordninger, Som Fra Aar 1670 Ere Udkomne*, 3rd ed., vol. 5 (København: Gyldendal, 1822), 106–8.

If nothing else is noted, this thesis will referrer to rigsdaler (dansk) courant when using the terms “Rigsdaler” or “Rdl.”, as this was the most widespread version of the currency.

Table of Contents

Abstract *1*

Abbreviations and glossary *2*

Abbreviations **2**

Glossary **2**

1. Introduction *6*

2. A Short History of St. Croix and the Colonial Plantation System *7*

3. The Academic Research Landscape *10*

The historiography of Caribbean plantations and slave trade **10**

On The Danish West Indies **12**

For evaluating the impact of St. Croix on Denmark **15**

4. Sources and Methodology *15*

Messy sources and their impact **15**

Digitizing maps, transcribing ledgers and using digital tools **18**

5. Demography *22*

General demographical development, 1755-1805 ..... **22**

General development 22

General development – compared with slave voyages 26

General development - spatially 32

The plantocracy **36**

Nationality 36

Individuals vs. families 39

The enslaved **40**

Age, gender, and creole distribution 40

Work, housing and food 43

6. Plantation productivity *46*

Sugar, Rum & Cotton **47**

What is a "productive" plantation? **49**

Productivity in 1792 ..... **50**

Plantation profitability **56**

What were the most important factors in plantation productivity? **57**

7. Assessing the impact of St. Croix *60*

8. Conclusion *63*

Bibliography *65*

Appendix *72*

1. Introduction

The plantations were one of the most prominent elements of the European colonization of the Caribbean. Centred around a highly intensive agricultural production, the plantations housed not only the planters themselves but also the enslaved who toiled in the fields. The plantations were sites of not only proto-industrial "factories in the field"[2] but also of extreme human exploitation. Understanding the plantations and the slave societies that they were part of, has long fascinated historians. Yet, new digital tools and digitized sources has allowed us to once again examine the topic from a new perspective.

This thesis examines two elements of the Danish colony of St. Croix: the general demographic development from 1755-1805 and plantation productivity in the late 18th century. Furthermore, a short discussion on the impact of St. Croix and the Danish West Indies on Denmark was also conducted. While the study of St. Croix is not a new one, this thesis contributes to the growing body of new research using digital tools. Most previous studies have typically focused on island-wide trends or macro-level analyses. In contrast, this thesis will often delve down on a more granular level exploring the crucian society on regional or individual plantation level.

This thesis is structured as follows: Chapter 2 will provide a short history of St. Croix and the establishment of the Caribbean plantation system, while chapter 3 is an overview of the relevant historiography on the subject. The latter of these chapters will be sub-divided into three sections each providing an outline of the historiography of the colonial Caribbean as a whole, on St. Croix & the Danish West Indies and finally on literature exploring the broader impact of the plantation colonies. Chapter 4 describes the sources and methodology used in this thesis. This section also contains remarks about methods that were originally intended to be used but later abandoned. Chapters 5 and 6 constitute the main analysis of the thesis. Chapter 5 explores the demographics of the Crucian society, organised into three sections. The first section examines the broader demographic developments from 1755-1805, while the second and third section will examine select elements of the ruling planter elite and enslaved population. Chapter 6 examines the plantations themselves, focusing on their productivity. As part of this study, this thesis will also try and uncover what factors were important for productivity. The 7th chapter discusses whether St. Croix had a significant impact on Denmark or if it was too small to matter in the larger context. As part of this discussion, this chapter will also consider if St. Croix and the Danish West Indies played a role in the process of industrialisation. Finally, the last chapter will act as the conclusion of the thesis,

[2] Trevor Graeme Burnard and John D. Garrigus, *The Plantation Machine: Atlantic Capitalism in French Saint-Domingue and British Jamaica*, 1st edition, The Early Modern Americas (Philadelphia: University of Pennsylvania Press, 2016). P. 7

summarizing the key points from the preceding chapters and providing a few final remarks.

The topics examined in this thesis are all extremely nuanced and complex, each worthy of theses of their own. While this thesis can only scratch the surface of the Crucian plantation society, a part of its aim was also to test if the current digital tools are developed and accessible enough to combine economic history, spatial data, demography data with environmental data. Some key sections of this thesis include: a comparison of the colony's population growth with data on the influx of enslaved people from Slavevoyages.org; a short analysis of growth patterns in the different quadrants of the island; and calculations of the mean and median income, profit and per acre / per enslaved productivity across various plantation types.

2. A Short History of St. Croix and the Colonial Plantation System

In 1492 Christopher Columbus arrived in the Americas as the first European since the short-lived Viking expeditions approximately 500 years earlier. First sighting the Caribbean Island of "Guanahani"[3]. What he had found was a landmass home to an estimated 50 million people. Columbus, who had mistakenly believed he had reached the outskirts of India, named the region "The West Indies". This Caribbean region comprises thousands of islands, both large and small, and is commonly divided into the northwestern Greater Antilles and the southeastern Lesser Antilles. It is in the northern end of the Lesser Antilles that we find the island of St. Croix. With a total landmass of 213 km^2, St. Croix is approximately the same size as the Danish Island of Møn.[4] Where much of the northern and eastern regions of St. Croix are mountainous or hilly (like the islands of St. Thomas and St. John a short distance to the north), the central and southern parts consist of fertile flatland. Originally known as "Ay-Ay" by the indigenous population, the present-day name instead traces back to Columbus christening of it in 1493 as Isla de la Santa Cruz.[5]

[3] Likely San Salvador Island in the Bahamas
[4] See figure 1 for a map of the St. Croix as it looked in the late 18th century.
[5] Johannes Brøndsted, ed., *Vore Gamle Tropekolonier*, 1st ed., vol. 2 (København: Westermann, 1953). P. 134; "Saint Croix | Caribbean Sea, U.S. Virgin Islands, & Map | Britannica," July 24, 2024, https://www.britannica.com/place/Saint-Croix.

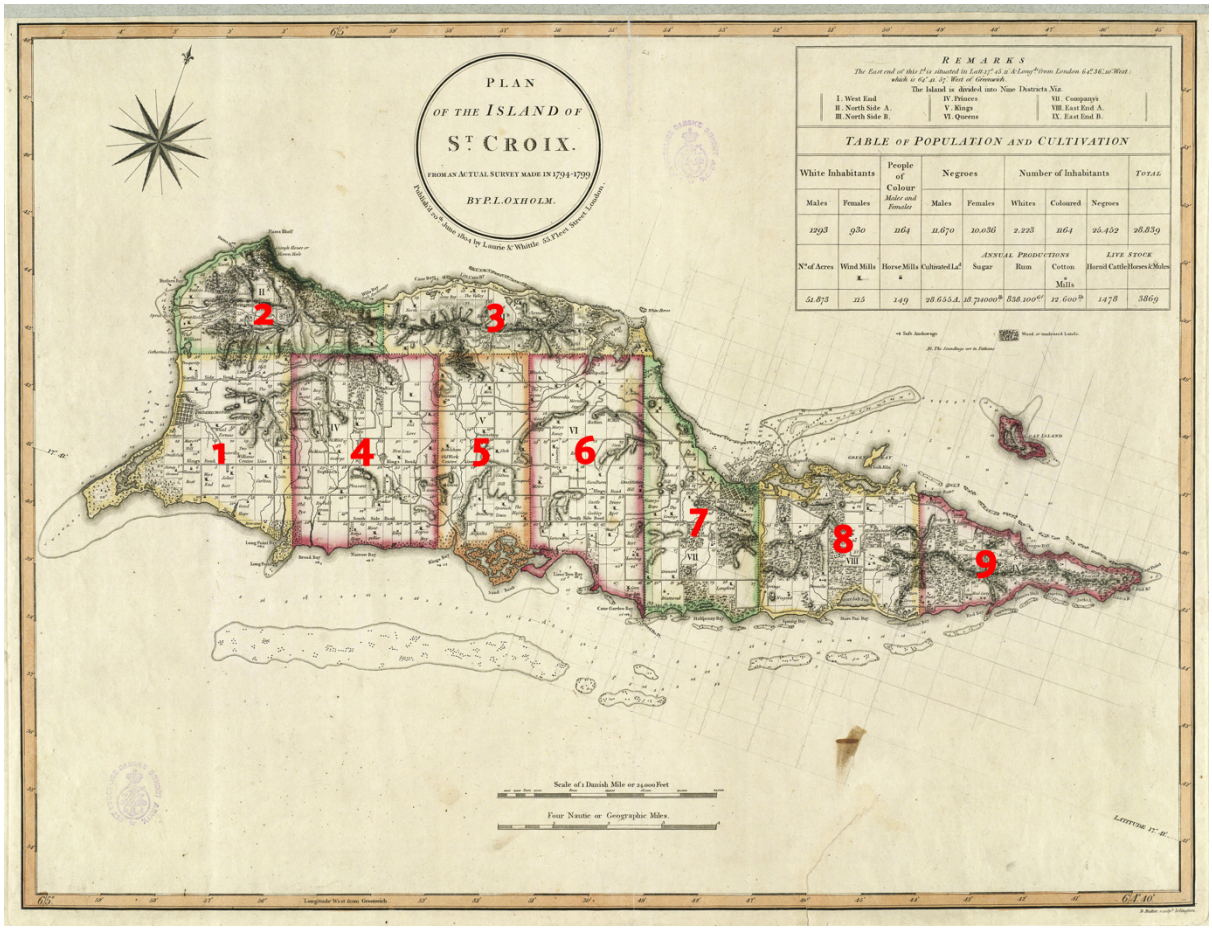


Figure 1: A 1804 reproduction of Peter Lotharius Oxholm's 1799 map of St. Croix. The quadrants are numbered in red: 1. West Ende, 2. Nord Side A, 3. Nord Side B, 4. Prindsens, 5. Kongens, 6. Dronningens, 7. Compagniets, 8. Oost Ende A, 9. Oost Ende B. Source: Det Kongelige Bibliotek, "Plan of the Island of St. Croix" (1804). Accessed September 16, 2024. http://www5.kb.dk/maps/kortsa/2012/jul/kortatlas/object65471/da/

Colombus' arrival also kickstarted the age of European colonisation in the Americas. Spearheaded by their exploratory expeditions and aided by vanguard colonies in the Atlantic, the kingdom of Spain was virtually unopposed in the first 100 years of colonisation in the West Indies. But a shifting Spanish focus towards mainland American areas, combined with a rising interest in the area by other colonial nations, ended this hegemony. At this point, England, French, and Dutch settlers started establishing themselves in the Caribbean.[6] Characteristic for most settlements in the 17th century was the widespread use of chartered companies to expand and administrate the new colonial empires. St. Croix is a prime example of this development. Inhabited by a mix of European immigrants in the early 17th century, it fell firmly under the control of France in 1649. However, only 46 years later in 1695 the island was evacuated to strengthen the nearby French colony on Hispaniola.[7] Following a time without active colonisation, but still with minor European habitations, efforts to settle the island returned. Initial discussions

[6] Poul Erik Olsen, ed., *Vestindien: St. Croix, St. Thomas Og St. Jan*, 1. udgave, 1. oplag, Danmark Og Kolonierne (København: Gad, 2017). P. 25
[7] Brøndsted, *Vore Gamle Tropekolonier, Vol. 2*. P. 134-138

about obtaining the island started arising within the Danish West Indian company[8] in the early 1700s. Though initially hampered by economic troubles within the company, favourable economic winds led the company to buy the island in 1733 for 750.000 livres (ca. 164.000 Rdl.)[9]. Together with the St. Thomas and St. John, St. Croix became part of the small Danish overseas empire in what is referred now referred to as the Danish West Indies (DWI). At first, these territories were administered by the Danish West Indian Company themselves, before being transferred to the crown in 1755.

The increased European interest in the Caribbean stemmed from a new-found interest in the potential profits associated with tropical crops such as tobacco, cotton and sugar, for which the Caribbean region was particularly well-suited. Using previously gained knowledge from the Mediterranean and Black Sea, plantations quickly became established as the agro-industrial core that emerged as the Caribbean colonial project's "raison d'être".[10] As a result, the following centuries brought immense wealth to Europe, but also spelled disaster for the indigenous peoples. While most African states had successfully resisted forceful European encroachment, the opposite was true in the Americas. Having not been previously exposed to Eurasian pathogens, and therefore not having developed any antibodies, disease would soon wreak havoc. By the time the 17th century began, the population in the new world had plummeted by over 80% to only 8 million.[11] The indigenous ethnic groups in the Caribbean (mostly Taíno and Kalingo) were no exception to this disaster.

With the establishment of plantations, a huge need for labour also arose. At first indigenous workers were forced to do the backbreaking work, but their dwindling numbers led planters to seek other alternative sources of labour. Failed attempts as using white workers, either through forced relocation or voluntary migration, led many to capitalise on the already entrenched African slave trade, where many leaders were already acclimated to the practice. Henceforth slavery would become closely interrelated with the plantation system. In the eyes of Europeans, Africans workers had the added benefit of being more resistant to more diseases than the indigenous workers, as well as having prior knowledge on agriculture and animal husbandry. Many Europeans also viewed Africans as heathens, primitive and ultimately racially inferior to whites, which provided the moral justification of slavery.[12] Having first been formalised by Spain in 1518, the slave trade and the institution of slavery persisted well into the 19th century. In the DWI the slave trade was banned in 1803, but the actual practice of slavery first was not prohibited by law until 1848. In the years that followed, the islands' economic

[8] Officially named "Det Vestindisk-Guineisk Kompagni".
[9] Brøndsted, *Vore Gamle Tropekolonier, Vol. 2*. P. 134-148
[10] Merry E. Wiesner-Hanks, ed., *A History of World Societies*, Eleventh edition (Boston: Bedford/St. Martin's, 2018). P. 456-458
[11] Olsen, *Vestindien*. P. 19-23
[12] Olsen, *Vestindien*. P. 134-1336

importance declined and suffered labour-related uprising, leading the DWI to sold to the United States in 1917.

3. The Academic Research Landscape

To contextualise this thesis to the larger body of academic scholarship, this chapter will review key authors and literature relevant to this thesis. To best achieve this, the following will be structured into three main sections each focusing on a specific aspect of the academic research landscape. An effort will be made to contextualise what made the featured research novel for the time, what its strengths and weaknesses are, and how it is either used or has influenced this thesis.

The first section will focus on the body of works about the Caribbean plantations and the slave trade. These are works that may not have any direct relevance to the subject at hand but allow us to understand the general trends and historical developments of the mid to late 18th century. The second and largest section narrows the field of view by zooming in on the Danish West Indies. Here both the general historiographical developments, including major literary works, will be discussed combined with a select few articles and theses that have were deemed important to the writing of this thesis. Special effort will be made to highlight academic works or projects using digital methods. Finally, the chapter will conclude with a brief review of the literature used in the discussion to reflect the results of this thesis to larger historical debates on the importance of colonies in the development of Europe.

The historiography of Caribbean plantations and slave trade

The Caribbean region during the colonial period has long fascinated historians, and much has been written. Too much to mention in this short historiography. And it's not only historians who this area has fascinated, as the interdisciplinary approach is popular mixing geology, sociology, economy etc. with history.

Principally much of the earliest history was written with a clear focus on the plantation and the proto-capitalist system. An example of this is Eric William. Since remembered for his status as "father of the nation" in Trinidad and Tobago, Williams was also a prominent historian publishing amongst other works the famous *Capitalism and Slavery* in 1944. In this book, Williams tried to show exactly how important slavery had been for England, driving capital to commercial centres thereby kickstarting industrialisation. This development, Williams argued, would later turn out to be pivotal for the abolition of slavery as the importance of the West Indian plantations declined. The Williams-thesis, as it his theory is now known as, sparked a historical debate that still rages to this day. Especially important for the writing of this thesis, is Trevor Burnard and John Garrigus' book *The Plantation Machine* (2016). Largely building on and re-examining the ideas

about the "plantation complex" as proposed by Philip Curtain in *The Rise and Fall of the Plantation Complex* (1990), the book analyses the plantations and plantocracies of two colonies – British Jamaica and French Saint Domingue. Through a large swath of archival material of varying kinds, *The Plantation Machine* examines the "parallel pathways" of the two societies and the emergence of the "plantation machine" – highly efficient large scale proto-industrial agricultural units. Nevertheless, one could argue the book doesn't focus enough on the shear brutality and violence of the societies described something this thesis may also be guilty of. Burnard and Garrigus book serves as the main reference for comparison of larger developments in the Caribbean plantocracy for this thesis. Since the 2000's a new approach has emerged putting emphasis on the experiences of the enslaved and colonised instead. This is for example the case of the book series *Danmark og Kolonierne*, which will be discussed in the section below on literature on the DWI.

Recently a trend towards using digital tools, methods and large datasets has emerged in field of history. Prominent amongst scholars interested in colonial and economic history is Klas Rönnbäck. Amongst his publications are attempts to estimate the importance of the triangle trade through a value-added analysis[13] and comparative studies of the economic difference between free and unfree labour.[14] Rönnbäck's scholarly works provide an excellent opportunity to compare the results of this thesis with other developments during the examined period. As mentioned, databases have become more popular than ever. In doing so the study of history has become more accessible to many by providing large amount of data based on solid historical source-work with little existing knowledge or effort required from the users. Relevant for this study, is particularly Slavevoyages.org, which has allowed for a comparison of demographic trends with the influx of enslaved to St. Croix and the DWI.[15] The website contains two of the most complete databases on both trans-atlantic and trans-american slave voyages. It should be noted that a research group led by the Department for Economy and Society at the University of Gothenburg have created an economic-demographic dataset over the DWI from 1760-1917.[16] Going by its description, the dataset sounds very similar to the one created for this thesis. But it was not noticed until shortly before the deadline of this paper due to being released midway through my own research. It is therefore not in any way utilised or mentioned in the following. Researchers wanting to recreate some of the

[13] Klas Rönnbäck, "On the Economic Importance of the Slave Plantation Complex to the British Economy during the Eighteenth Century: A Value-Added Approach," *Journal of Global History* 13, no. 3 (November 2018): 309–27, https://doi.org/10.1017/S1740022818000177.
[14] Klas Rönnbäck, "Were Slaves Cheap Laborers? A Comparative Study of Labor Costs in the Antebellum U.S. South," *Labor History* 62, no. 5–6 (November 2, 2021): 721–41, https://doi.org/10.1080/0023656X.2021.1974366.
[15] The database can be found here: "Slave Voyages," accessed September 11, 2024, https://www.slavevoyages.org/.
[16] The dataset can be found here: Klas Rönnbäck, Stefania Galli, and Dimitrios Theodoridis, "The Danish West Indies Panel" (University of Gothenburg, May 28, 2024), https://doi.org/10.5878/KR6S-5Y43.

results found here, may very well be better suited with the aforementioned dataset from Gothenburg rather than the one used here, and a comparison of the two would be recommended.

On The Danish West Indies

Much like the rest of the colonial Caribbean, the Danish West Indies has been the subject of numerous scholarly works. However, despite the volume of writing, it was only during the 1940s and 1950s that a tradition of writing about Danish colonial history was firmly established. The following will be a brief rundown of a few selected works used in this thesis. For a more comprehensive overview, Erik Gøbel's *A Guide to Sources for the History of the Danish West Indies (U.S. Virgin Islands), 1671-1917* (2002) is recommended. Gøbel's book covers most relevant litterateur for both the general history of the islands or for specific subjects, up until its release.

The first major work on the subject of Danish colonial history, was the 1953 two-volume book *Vore Gamle Tropekolonier*. Beautifully illustrated, the book's first volume is focused on the Danish overseas possessions in Africa and India, while the second is wholly dedicated to the DWI. Naturally influenced by the historic fixations of the time, the book focuses heavily on the administrative and economic aspects of the islands. The indigenous populations and the culture of the west Indian slave societies in the Caribbean is covered but is severely lacking by modern standards. The book is generally centred around the Danish colonisers perspective and structured chronologically based on Danish events. Yet since it releases, and later rereleased with minor changes in 1966, the book still stands today as one of the essential works on the Danish West Indies despite its faults. The next major contribution to Danish colonial history was published some 30 years later in the 1980 supplementary volumes to *Politikens Danmarkshistorie*. However, while the volumes about the African and Indian colonies received significant updates compared to *Vore Gamle Tropekolonier*, Ove Hornby's volume about the DWI did not. The previously mentioned flaws were still present and no larger contributions to the field were added, leading some to proclaim that it contained "nothing substantially new."[17]

The latest addition to Danish colonial history is the book series *Danmark og Kolonierne* published during the centennial of the sale of the DWI in 2017. Self-described as the modern successor to *Vore Gamle Tropekoloni*, the series seeks to rectify the latter's shortcomings. It does so by viewing each colony through its own "lens" – meaning not exclusively from the perspective of the Danish colonisers, but also through the eyes of

[17] The full untranslated qoute: "Ove Hornbys bidrag om Dansk Vestindien ligger derimod tæt op ad fremstillingen I 'Vore gamle Tropekolonier' og rummer ikke væsentligt nyt." From: Niels Brimnes, "Dansk Kolonihistorie mellem historievidenskab og antropologi - et forslag til metode," *Indianerne og de hvide guder*, Den jyske Historiker, 60 (1992). p. 104

the colonised. By viewing each colony as part of a larger region, the books challenges earlier nation- and euro-centric notions of essentialism. Europe is no longer depicted as the sole driving force of history. Instead, the rest of the world are independent actors no longer relegated to only react to European actions. This is immediately clear in the volume on the DWI, as a far larger emphasis is put on the enslaved and indigenous populations than earlier works.

So how has the aforementioned literature on the DWI influenced this thesis? While undoubtably not without issues, *Vore Gamle Tropekolonier* still stands as one of the most useful works for economic or administrative history. To counteract its issues, the book is used in combination with *Danmark og Kolonierne: Vestindien* and Neville Hall's *Slave society in the Danish West Indies* (1992), to provide the foundational knowledge about St. Croix of which much of this thesis is built upon. In addition to these, books or articles by Niels Brimnes, Poul Erik Olsen, Poul Thestrup, George F. Tyson, William Chapman, P. P. Sveistrup and Richard Willerslev[18] have all provided insights into more specific subjects relevant to St. Croix.

Daniel Hopkins works on the crucian administration and geographical subdivision in the articles *Jens Michelsen Beck's Map of a Danish West Indian Sugar-Plantation Island* (1993) and *The Eighteenth-Century Invention of a Measure in the Caribbean: The Danish Acre of St Croix* (1992) has also been immensely helpful for this thesis. Following the trend seen in the larger colonial Caribbean historiography, digital methods are tools are becoming more and more widespread in research on the DWI. Daniel Hopkins et. Al.'s article *The Application of GIS to the Reconstruction of the Slave-Plantation Economy of St. Croix, Danish West Indies* (2011) represents some of the first research utilising methods like GIS for analysing St. Croix. While seemingly inexplicable missing a follow-up with the complete results of the project described in the article, the research paper sets out to examine some of the same elements as this thesis. However, instead of

[18] On the Schimmelmann family: Niels Brimnes, *Slaveejerens Død*, 100 Danmarkshistorier (Aarhus: Aarhus Universitetsforlag, 2022);
On the organisation and history of plantations: Poul Erik Olsen, "Godserne på St. Croix 1733-1800," *Bol og By: Landbohistorisk Tidsskrift* 12, no. 2 (December 14, 1996): 80–93; William Chapman, "Slave Villages in the Danish West Indies: Changes of the Late Eighteenth and Early Nineteenth Centuries," *Perspectives in Vernacular Architecture* 4 (1991): 108, https://doi.org/10.2307/3514226;
On the cotton and sugar industries: George F. Tyson, "On the Periphery of the Peripheries: The Cotton Plantations of St. Croix, Danish West Indies, 1735-1815," *The Journal of Caribbean History* 26, no. 1 (1992): 1–37; P. P. Sveistrup, "Bidrag til de tidligere Dansk-Vestindiske Øers økonomiske historie, med særligt henblik paa sukkerproduktionen og sukkerhandel," *Nationaløkonomisk Tidsskrift*, 1942, https://tidsskrift.dk/nationaloekonomisktidsskrift/article/view/60138; Sveistrup P. P. and Willerslev Richard, *Den Danske Sukkerhandels Og Sukkerproduktions Historie* (København: Institutet for Historie og Samfundsøkonomi, 1945);
On the contemporary monetary systems and used as a guide for comparison of wages: Poul Thestrup, *Mark og skilling, kroner og øre: pengeenheder, priser og lønninger i Danmark i 350 år (1640-1989)* (København: Rigsarkivet, 1991).

fixating the GIS on a single map and point in time like this thesis, Hopkins et Al. uses a comparative approach utilizing multiple maps concentrated to a small area of the St. Croix. Other examples of the use of GIS to examine St. Croix include Bo Ejstrud, *Maroons and Landscapes* (2008) examine the possible locations of maroon settlements and Niels C. Nielsen & Bo Ejstrud, *The Salt River Bay Area, St. Croix: Combining Archival Data and Historical Maps in a GIS.*[19] The latter seems to have been written as part of the Galatea 3 expedition's trip to St. Croix in 2007. The same project also created a downloadable GIS dataset on the crucian sugar plantations in 1750[20], but both are no longer available online. Despite their relevance to this thesis, it is therefore impossible to comment or compare their research to what is done in here. The usage of maps to illustrate changes in the west Indian societies during the colonial period can however be seen in the international project *In the Same Sea*. The project seeks to explore the connection between islands in the lesser Antilles, instead of the long-distance connections that have previously dominated much of the research landscape.[21] While the works of the latter have not been able too useful for this thesis, as the examined subjects were mostly irrelevant, the above-mentioned works represent the current much of the current research on specifically St. Croix using digital methods.

Relevant to mention is also the many master's theses written on the DWI available through *Dansk Vestindisk Selskab*'s webpage. Originally only intend to be used as helpful guides to get overview of the subject, the theses of Jørgen Bach Christensen[22] and Jesper Bering Asmussen[23] will be utilized. In the case of Christensen his research on the nationality of plantation owners is used in chapters 5 and 6, while Asmussen's thesis is a great addition about the subject of demography. Furthermore, Asmussen's thoughts on the usability of available sources and literature on demography along with his usage of correlation calculations have all influenced this thesis.

---

[19] The date of publication of this article is unknown and it is only known about through a footnote in Daniel Hopkins, Philip Morgan, and Justin Roberts, "The Application of GIS to the Reconstruction of the Slave-Plantation Economy of St. Croix, Danish West Indies," *Historical Geography* 39 (2011): 85–104.
[20] More can be read about the project here: "St. Croix i Fortid Og Nutid," Virtual Galathea 3, accessed September 10, 2024, https://virtuelgalathea3.dk/projekt/st-croix-i-fortid-og-nutid.
[21] Gunvor Simonsen, "In the Same Sea" (University of Copenhagen, August 24, 2020), https://inthesamesea.ku.dk/.
[22] Jørgen Bach Christensen, "Kolonisamfundet på St. Croix i sidste halvdel af det 18. århundrede, med særligt henblik på arisokratiet blandt plantageejerne" (Thesis, Aarhus University, 1978), https://www.dwis.dk/images/Dokumenter/Specialer/Vestindien/Christensen.Kolonisamfundet_p_St._Croix_i_sidste_halvdel_af_det_18_rhundrede.rhus_1983.pdf.
[23] Jesper Bering Asmussen, "Slavedemografi. St. Croix' Landdistrikter, 1803-1848" (Thesis, Aarhus University, 1983), https://www.dwis.dk/images/Dokumenter/Specialer/Vestindien/Asmussen.Slavedemografi._St._Croix_Landdistrikter_1803_848.rhus_1983.pdf.

For evaluating the impact of St. Croix on Denmark

This leads us to the last part of the literature used for the discussion in chapter 7. The great divergence debate, the name popularly given to the discourse dedicated to studying why Europe developed and industrialised much more rapidly than the rest of the world during the 18th to 19th century, is one of history's great battlegrounds. For decades historians have been fascinated with trying to uncover exactly what made Europe so special. Was it something inherently European – a part of its culture if you will – or was its pure luck dictated by geography? The debate is far too large to accurately cover in this short section, but a few scholars will be highlighted for their relevance when discussing the role of colonies in the divergence debate. First to be mentioned is Williams whose thesis in *Capitalism & Slavery* is broadly outlined above. He was not the only one to suggest that the larger powerful states profited from colonies. The marxist inspired sociologist Immanuel Wallerstein highlighted the connection between the underdevelopment of peripheries and the development of rich core areas. His theory (now known as World Systems Theory) is best known from the series *The Modern World-System*. Usages of the core-periphery model can also be found in the works of Andre Gunder Frank, Samir Amin and Patrick O'Brien. The latter of whom wrote multiple articles downplaying the importance of colonial peripheries in the 80's and 90's. This leads us to the final relevant literary work: *The Great Divergence* written by Kenneth Pomeranz in 2000. With a new approach based in global history and with a focus on a comparative historical framework using similar regions instead of whole nations, Pomeranz both discredits many previously proposed theories, such as the Williams-thesis, and proposes a new one himself. In his view colonies are still vital for the industrialisation of core areas, but for different reasons than previously proposed. Pomeranz theory will be explained further in the second to last chapter. While this thesis will not try to either prove or disprove any of the authors above, it will use their theories when briefly discussing if the DWI had any larger impacts on Danish society and development.

4. Sources and Methodology

This chapter will explore and explain the methodology of this master's thesis. First, we will examine the source material used, followed by a description of the tools and methods are used in the thesis. Later how the digitised sources are used in programs such as R or QGIS will be discussed. This chapter also address methods and that were originally considered along with the reasons they were disregarded.

Messy sources and their impact

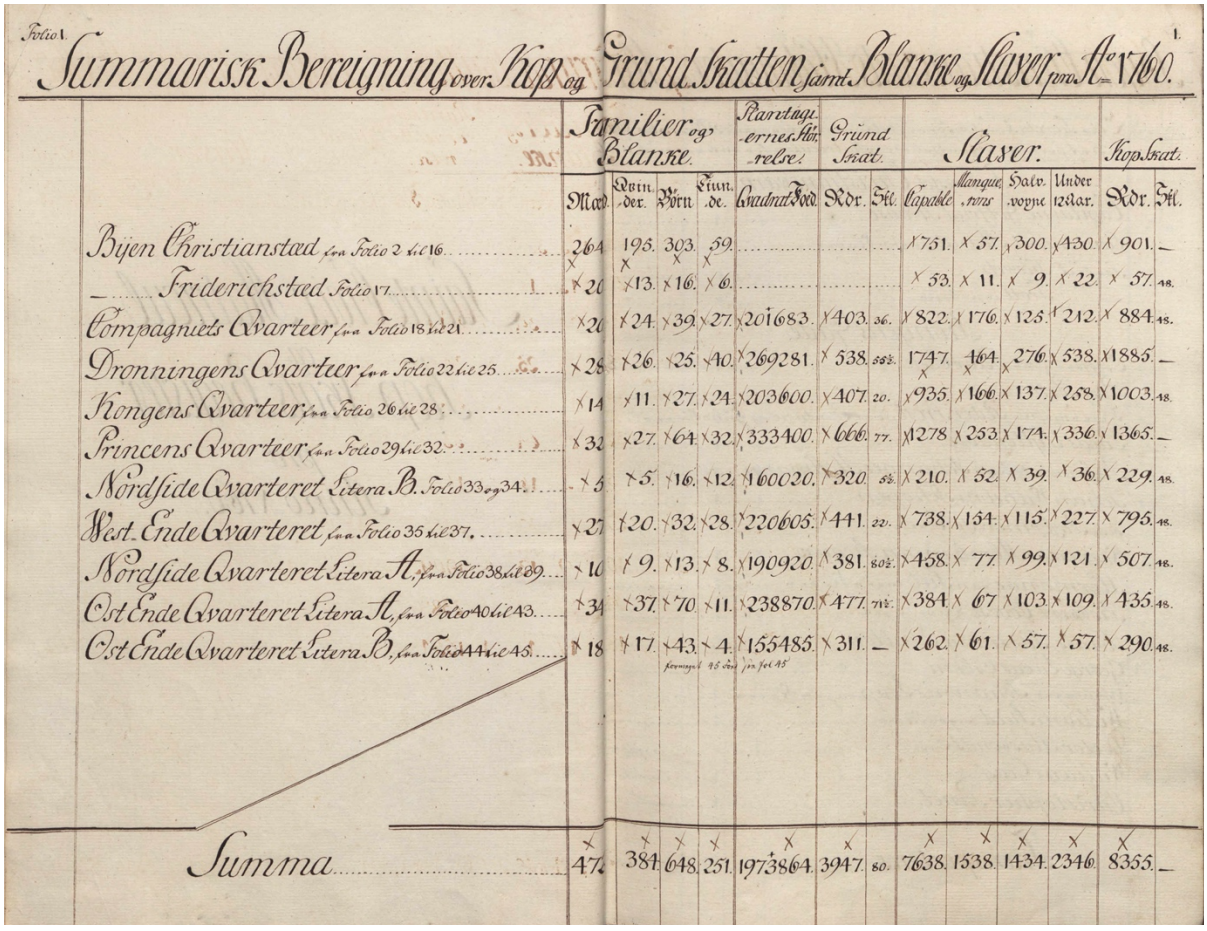
The cornerstone of any historical analysis is its sources. It is through sources that we can examine the past, and without them we are reduced to pure speculation. As such it is vital to examine the nature of the material used and what impact they have on the

research objective. These considerations need to be even further expanded when working digitally. Almost all historical sources were born era of computers and cannot be neatly transformed and formatted to be used digitally without issue. Different people might have created the sources, all with their own writing style or way of describing the subject matter, leading to data that is not easily analysed computationally. Furthermore, we seldom find sources where we can convert or compress to fit small boxes like you find in a spread sheet. This is true even when working with data that was originally written in small boxes- In other words: history is messy, and we need to consider and make clear how our sources have been formatted to be used in a digital environment.

So, what sources has been used for this thesis? This project uses the cadastres, quadrants and plantations of St. Croix as its main "units" of analysis. As such the digitized cadastre ledgers, available from 1758-1915, and Peter Lotharius Oxholm's 1799 cadastre map of the St. Croix will constitute two of the main pillars this study.[24] Although a thorough and systematic walkthrough of yearly changes at cadastre level from 1755-1805 undoubtable would be interesting, time limitations mean we must make some hard choices. Originally this project intended to examine two select years (1758 and 1800) in a highly detailed manner – including for example the names of all cadastre owners. However, this was deemed too extensive a task. As such this project will instead examine larger demographic developments on a quadrant level from 1758-1805. The lower limit of this period was chosen because it is the earliest digitalized ledger available. Similarly, the upper limit was chosen as it was right around the zenith of the slave and sugar trade, just two years after its ban, and because 1805 was 50 years after the Crowns takeover of the DWI administration. Yet, only examining larger trends would have made the analysis lacklustre. Furthermore, the cadastre ledgers also did not include information about the crucian plantations, making a more nuanced study of their productivity difficult. To counteract this, the censuses from 1792 and 1805[25] will act the final third pillar of this thesis. These censuses had the added benefit of being created around the time of Oxholm's cadastre map, making a study of its contents spatially less problematic.

[24] See figure 2

[25] The exactly dating of this census is hard to know, but going by the small inscriptions on the sources, it was written some time around 1805.



Summarisk Beregning over Køb og Grund Skatten samt Blanke og Slaver pro Ao 1760.

	Familier og Blanke. Med	Dan der	Børn	Fun de	Gradnat Fod	Rdr	Skl	Slaver. Capable	Manque rers	Halv voxne	Under 12 Aar	Køb Skat Rdr	Skl
Bijen Christianstæd fra Folio 2 til 16	264	195	303	59				751	57	300	430	901	—
— Friderichstæd Folio 17	20	13	16	6				53	11	9	22	57	48
Compagniets Qvarteer fra Folio 18 til 21	20	24	39	27	201683	403	36	822	176	125	212	884	48
Dronningens Qvarteer fra Folio 22 til 25	28	26	25	40	269281	538	56½	1747	164	276	538	1885	—
Kongens Qvarteer fra Folio 26 til 28	14	11	27	24	203600	407	20	935	166	137	258	1003	48
Princens Qvarteer fra Folio 29 til 32	32	27	64	32	333400	666	77	1278	253	174	336	1365	—
Nordside Qvarteret Litera B. Folio 33 og 34	5	5	16	12	160020	320	5½	210	52	39	36	229	48
West Ende Qvarteret fra Folio 35 til 37	27	20	32	28	220605	441	22	738	154	115	227	795	48
Nordside Qvarteret Litera A, fra Folio 38 til 39	10	9	13	8	190920	381	80½	458	77	99	121	507	48
Ost Ende Qvarteret Litera A, fra Folio 40 til 43	34	37	70	11	238870	477	71½	384	67	103	109	435	48
Ost Ende Qvarteret Litera B, fra Folio 44 til 45	18	17	43	4	155485	311	—	262	61	57	57	290	48
			formegl	95 Døde	fra fol 45								
Summa	472	384	648	251	1973864	3947	80	7638	1538	1434	2346	8355	—

Figure 2: A page from the Crucian Cadastre Ledger from 1760. Source: Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix, 1758-1761. Accessed September 16, 2024. https://arkivalieronline.rigsarkivet.dk/da/billedviser?epid=17226869#206936,39298997

While the abovementioned sources are not the only ones that have been used, they represent the majority. Furthermore, all sources were explicitly chosen because they had already been digitised and made publicly available. This is not something that should just be glossed over as we can quickly fall victim to a sort of academic "Matthew-effect".[26] As described by Ian Milligan in his book *The Transformation of Historical Research in the Digital Age,* the recent wave of digitization of resources has meant that "... the digitized [sources] get richer (in citations) and the non-digitized poorer."[27] By only using already digitized sources, we run risk of completely forget to consider the non-digitized sources. A combination of time limitations and a wish for the source material to be easily accessible to readers, have prevented this thesis from expanding its "searchlight" to non-digital material. Instead, this thesis will opt to rely on previous research and

[26] An effect that describes the tendency of people to accumulate success proportional to their initial level status. The Matthew-effect is often summarized by the adage "the rich get richer and the poor get poorer".

[27] Ian Milligan, *The Transformation of Historical Research in the Digital Age*, 1st ed. (Cambridge University Press, 2022), https://doi.org/10.1017/9781009026055. P. 2

communication with experts[28], to supplement the analysis in areas the available sources were deemed lacking.

As a final note about the sources and how this thesis will handle them, is the use of the word "slaves". While the word "slave" has been the most commonly used word to describe the many people held in bondage during throughout history, this project would like to follow in the footsteps of some of the more recent academic works and use another word instead: enslaved.[29] The change might seem insignificant, but it has a large semantic distinction. While slave is often used to describe what you are, enslaved describes the condition somebody else has put you in. The brutal slave societies of the Caribbean dehumanised and killed countless men, women, and children. The least we can do is acknowledged the fact that these people were not born to be slaves, but rather that men forcefully kept them as such. By focusing mainly on statistics, we the risk forgetting the humans described in the sources. The cadastre ledgers or censuses don't describe the lives of it subject matter in any detail, making it impossible to know exactly what happened when a number simply disappears from one year to the next. Yet, knowing what we now know of the inhumane treatment of enslaved people, such a disappearance becomes a haunting event in and of itself. I hope the reader, like myself, will remember that these are not merely numbers, but the lives of actual human beings.

Digitizing maps, transcribing ledgers and using digital tools

As mentioned in the sections above, the main sources of this analysis are cadastres ledgers, censuses and Oxholm's 1799 map of St. Croix. While all are available online in high definition at the Danish National Archives and/or The Danish Royal Library, none of them are formatted so at to be used in a digital research environment directly. In other words, the sources exist only as images and not as "machine ready" data to be used in statistical analysis or analysis using code. A substantial digitization process was first needed. Let us start by discussing what the process was with the ledgers and censuses, before describing how the map was geo-referenced.

As part of the centennial of the sale of the DWI, the Danish National Archives in 2017 started a project to transcribe all their relevant sources through crowdsourcing. While doing a fairly large amount of work, only a fraction of the cadastre ledgers or censuses have been transcribed.[30] This meant that the source material had to be processed some other way. The crowdsourcing project did however still help me get a better understanding of the original colonial administrators handwriting, something extremely

[28] These include Bill Cleveland, Erik Gøbel, Klas Rönnbäck and Niels Brimnes all of whom I would like to thank for their help in answering my questions and referring me to relevant litterature.
[29] For an example of this, see Brimnes, *Slaveejerens Død*. p.21
[30] The crowdsourcing project can be found here: "Crowdsourcing," accessed September 15, 2024, https://cs.rigsarkivet.dk/collection/3.

helpful when you're not well versed in 18th century handwriting. The crux of the problem was a need for transcribing the cadastre ledgers – that is to transform them into machine readable text and numbers. This led to a two-pronged approach where different methods were tested.

The first approach tested was using the program Transkribus. Transkribus works in a similar way to Optical Character Recognition (OCR) programs, that allow the user to identify and transcribe larger written work computationally. However, as OCR programs were built to predict printed, and thereby predictable, characters, it completely faulters when used on handwritten text. This is where Transkribus' Handwritten Text Recognition (HTR) tools come in. By creating custom models trained by advanced machine learning methods such as deep neural networks, Transkribus can predict handwritten characters.[31] These models first need to be trained to predict either a certain person handwriting or a certain type of text. While this could have set the bar of entry to use Transkribus too high for most, close to 200 of pre-trained models have thankfully been released by other users to be used. This thesis used Nina Javette Koefoed's "18C Danish Administrative Writing (PyLaia)". Trained on over 600.000 handwritten words, the model has achieved an impressive 6 % CER[32] on validations sets, meaning it has an accuracy of around 94 % when used on material like the one it was trained on.[33] After manually downloading a few of the cadastre ledgers and pre-processing them in Transkribus[34], the model was run, and outputted was transferred to a spreadsheet. However, it turned out this process was unsuited for tabular setup of the source material, leading to many mistakes. In general, Transkribus might be useful for larger bodies of handwritten text, yet even in these instances they require a process of checking the accuracy of the results. For this thesis Transkribus was in short deemed unsuitable.

The second approach was instead to transcribe the ledgers manually. While this method would ensure a high degree of accuracy, it was also very time-consuming. I therefore decided to transcribe only the aggregated totals of each year by quadrant. This prohibited very micro analyses, but in turn saved a lot of work. Instead needing to transcribe 150+ pages pr. cadastre ledger, only a single page would need to be copied. The exception here is the years between 1762-1765 where no cadastre summary was made. Regrettably, these years were not transcribed before needing to submit this paper, but the overall

[31] Joe Nockels et al., "Understanding the Application of Handwritten Text Recognition Technology in Heritage Contexts: A Systematic Review of Transkribus in Published Research," *Archival Science* 22, no. 3 (September 2022): 367–92, https://doi.org/10.1007/s10502-022-09397-0., P. 395-396
[32] Character Error Rate – meaning the percentage of characters predicted incorrectly.
[33] "Danish 18th Century Administrative Writing," READ-COOP, accessed April 12, 2024, https://readcoop.eu/model/18c-danish-administrative-writing/.
[34] This pre-process mainly included assigning "text region", meaning the areas of each document where the relevant text is located. This project only highlighted the names, while numbers were manually transcribed to ensure the highest degree of accuracy. Finding text lines and word directions was left til Transkribus' layout analysis models.

trend should still be visible through the remaining data. Between, 1776-1779 and 1784-1785 no cadastre ledgers remain, and they are therefore also absent. The censuses likewise transcribed manually. The cadastres mostly only noted the number of white inhabitants, free blacks, enslaved and taxes paid by quadrant. In the early years these not divided further, but from the 1790's and onward more and more detail starts to appear. The censuses on the other hand provide far richer details, including but not limited to number of families, plantation sizes, enslaved occupation and averaged harvests.

This leads us to the digitization of the cadastre maps. This process was done exclusively in the open-source program QGIS. Together with ArcGIS, QGIS is the industry standard program for spatial analysis and research involving Geographic Information Systems (GIS). Using open street map's standard map through the free plugin "QuickMapServices" as a basemap, Oxholm's map was digitized using QGIS' built-in "Georeferencer" tool. This tool allows the user to set "Ground Control Points" (GCP) where the un-referenced map and reality are identical – in our case reality came in the form of the Open Street Map. Then, using geometric distortions, the map is then formatted to fit the real world.[35] To illustrate this process, imagine an old map of your hometown from 100 years ago. It probably looks very different from how it does today. By using GCP's, we can link the location of, for example, your house on the old map to where it would be on a modern map. This allows us transform (like stretching or shrinking) the old map, making it easy to examine how your town has changed over time.

Many different sets of GCP's were used with varying algorithms to determine the best transformation of the map. In the end two sets of GCPs, using two different transformation types were concluded to be the most accurate. The first transformation used a set of 10 GCP's, fixed mostly upon road junctions, and the polynomial 3 transformation algorithm, achieved a mean error of 24,2435. Translated to layman's terms, this means that the average difference between the point on Oxholm's map and reality was around 24 pixels. While by no means bad, it the second transformation using a thin splice transformation was established as being closer to the current state of the island. As the thin-splice method essentially "rubber bands" the map to always be identical at GCP's, its margin of error is always 0. To determine the accuracy of this transformation we therefore need manually comparing the OSM basemap with the transformed Oxholm map. In the end a set of 52 GCP's were used. These GCP's were mainly focused on still visible road junction, coastal features and larger recognizable buildings such as forts.[36]

[35] More can be read about the Georeferencer tool here: "Georeferencer — QGIS Documentation Documentation," accessed September 15, 2024, https://docs.qgis.org/3.34/en/docs/user_manual/working_with_raster/georeferencer.html.
[36] See figure 3. Every red point is a GCP

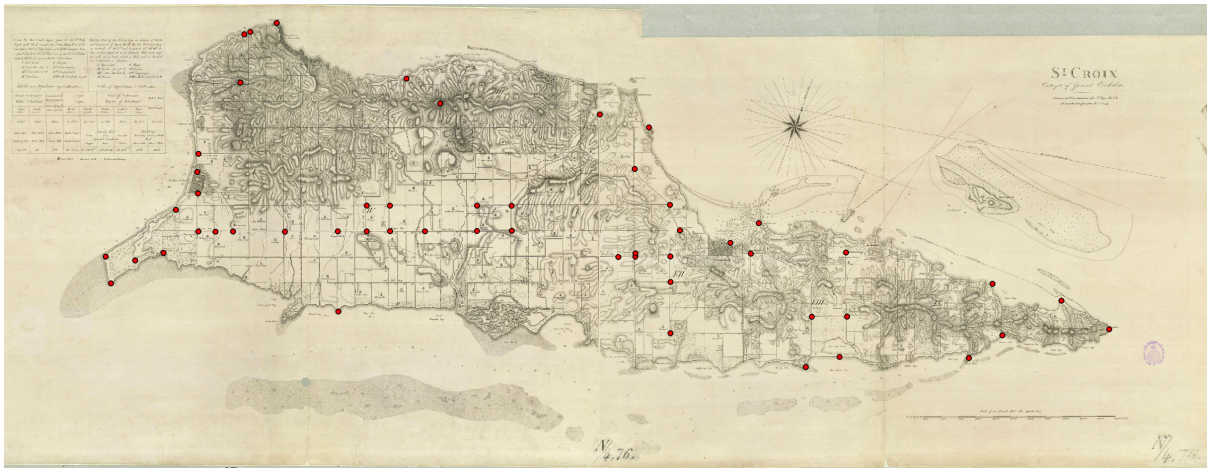


Figure 3: Oxholm's 1799 cadastre map overlaid with the 52 red Ground Control Points (GCP), used for georeferencing the map. Source: Det Kongelige Bibliotek, "St. Croix" (1799). Accessed September 16, 2024. http://www5.kb.dk/maps/kortsa/2012/jul/kortatlas/object65447/da/

In the process of digitizing maps, we strive for accuracy. The more accurate we can digitize, the closer we get to reality. However, this process quickly goes from being a science to being an art instead. While the cartographers of yesteryear did commendable work, their tools didn't ensure the level of accuracy we've come to except today. This is of course also true on the island of St. Croix. While Oxholm's 1799 map is far closer in shape than any previous map, it still does not 100 percent match reality. This means that even though we try our hardest we will still have areas of the map that doesn't transform easily when georeferencing. When using the thin splice method as mentioned above, this is especially evident around the northern coastlines.[37] Some of these discrepancies are likely to be from coastline erosion, but it is unlikely that it is to such a degree as seen. Another example of where these maps aren't 100 percent accurate, is the placement of structures. While you would think these structures, such as wind or animal mills, would be good anchor points for our georeferencing, the precision of their location has been called into question. As part of the project *Windmills of St. Croix* Dr. William Cleveland illustrated how many of these building would often alter position from manuscript to manuscript.[38] While some buildings were used in georeferencing process, care was taken to ensure that these buildings were located correctly on the map as well. If there was any doubt about the accuracy of the map, they would be ruled out and not used.

After georeferencing the map, a manual digitization of the cadastres and other noticeable features on the map was commenced, in the end creating a number of shapefiles with the Crucian cadastres, roads and buildings. Each cadastre was identified using a small unique combination indicating quadrant and cadastre number. For example, the identifier of cadastre 11 in Kongens Quadrant is KON_11. Naturally, this part of the process was also beset by issues. Most prominent of these was the fact that some

[37] Appendix 1
[38] *St. Croix Sugar Industry Traced through Variations of the Map Initially Created by J.M. Beck*, 2022, https://www.youtube.com/watch?v=uqH-rlA2Dz8.

cadastres were lacking visible borders, cadastres sharing the same number, and others having no discernible numbers.[39] To counter these two things were done. One was to create two cadastre shapefiles. One would be precisely as Oxholm had depicted it, including split cadastres. The other would be of whole cadastres only and making qualified guesses as to where the borders would have been located to create a complete cadastre map. As the general structure of the cadastres and quadrants were similar in both 1754 and 1799, an earlier map of St. Croix cadastres by Jens Michelsen Beck was used a reference for cadastres missing numbers or borders.[40] In the end both ledger data and cadastre shapefiles were combined using R to analyse it. Packages such as tidy verse and Sf were vital in this process, as they provided the necessary tools to work spatially and statistically. When not working in R, transformations and analyses of spatial data was done directly in QGIS. This proved easy enough even with limited experience, as many tutorials are freely available online. Two digital methods / tools that have been used by this thesis, correlation calculations and language detection model, will be introduced and explained as they are used in the analysis. All data and code used in this project can be found on GitHub.[41]

5. Demography

General demographical development, 1755-1805

Having now laid the foundations for this thesis, let us turn to the inhabitants of the islands. The following chapter will first examine the demographic development, in general and spatially, before turning to two of the main population groups: white and enslaved. These groups were in large decided by the source material. Free Blacks do appear in the cadastre ledgers, but not in enough detail to be of interest.

General development

So, what does the general development of St. Croix look like? Before this question is answered, it should be noted that the previous 25 years under Danish rule – both directly and via the Danish West Indian company – will not be examined. The data does exist[42] but is beyond the scope of this project. Returning to the question at hand, we can use the cadastre ledgers to observe the general trend in population growth throughout the period.

[39] Appendix 2
[40] A thorough list of the different maps of St. Croix, including manuscript copies, can be found here: "Historic Maps of St. Croix," Windmills of St. Croix, accessed April 14, 2024, https://www.stcroixwindmills.org/historic-maps/.
[41] Gustav Ølgaard, "The Crucian Plantation Society, 1755-1805," Github, accessed September 15, 2024, https://github.com/G-Oelgaard/Crucian_plantation_society_1755_1805.
[42] The "Mandtalslister" of the Crucian population under company control can be found here: Rigsarkivets Arkivalier Online, Vestindisk-Guineisk Kompagni, Bogholderen på St. Croix, Mandtalslister og matrikler. https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/76/1647759/17226860

The population on the island rose from 13.497 in 1758 to 31.554 in 1803.[43] In other words an increase of 133,79 % or an averaged growth of 1,9 % pr. year. In comparison the population in the Danish metropole only rose at a mean rate of ca. 0,4 % between 1769-1801.[44] But not all groups grew at the same speed. By subdividing the population into "whites" and "enslaved" [45] we're able to create a more detailed image the society's development.[46] It immediately becomes clear that the vast majority of the population were enslaved, comprising of ca. 88 % of all inhabitants. And while this group grew at a rate comparable to the island's average, the white population only grew circa 0,34 % pr. year - a half percent lower than the Danish mainland. The white population also grew at an inconsistent rate, shifting from very high growth to very low growth almost yearly.[47] The large disparity between enslaved and whites, also grew noticeable larger during the highlighted 50-years. While the ratio between white and enslaved was ca. 1:7 in 1758, it soon rose to 1:11. It would keep this level for much of the period before suddenly shooting up to a record high of 1:15 in 1802.[48]

It is worth mentioning that the Crucian population figures used by this thesis are slightly higher than those reported in some highly praised publications. An example of this is often cited P. P. Sveistrup who in 1942 listed the population of the island in 1773 to be 21.809, while the cadastre ledgers put it at 24.125. Yet, when estimating the enslaved population a page later in the same article, the figures suddenly become virtually identical to the cadastre numbers at 21.698. This would put the white and freedman population at an improbable 111. In other years the enslaved population is undervalued, and the difference between our data and his even more pronounced. While Sveistrup does cite the same cadastre ledgers used here, he seemingly uses Adolph Frederik Bergsøe's 1853 work *Den danske Stats Statistik, 4. Bind*.[49] As is elsewhere, the accuracy of the cadastre ledgers can certainly be questioned, but this thesis will continue to use it as its main source of population data, as it is the most detailed figures we have available.

[43] See appendix 3 and figure 2.
[44] Aksel Lassen, "The Population of Denmark, 1660–1960," *Scandinavian Economic History Review* 14, no. 2 (July 1966): 134–57, https://doi.org/10.1080/03585522.1966.10407652.
[45] Orginally refered to by the monoikers "blanche familier" and "slaver" in the sources.
[46] Appendix 3
[47] Appendix 4
[48] Appendix 5
[49] Sveistrup, "Bidrag til de tidligere Dansk-Vestindiske Øers økonomiske historie, med særligt henblik paa sukkerproduktionen og sukkerhandel." P. 78-79; Adolph Frederik Bergsøe, *Den Danske Stats Statistik*, vol. 4 (København, 1853). P. 600

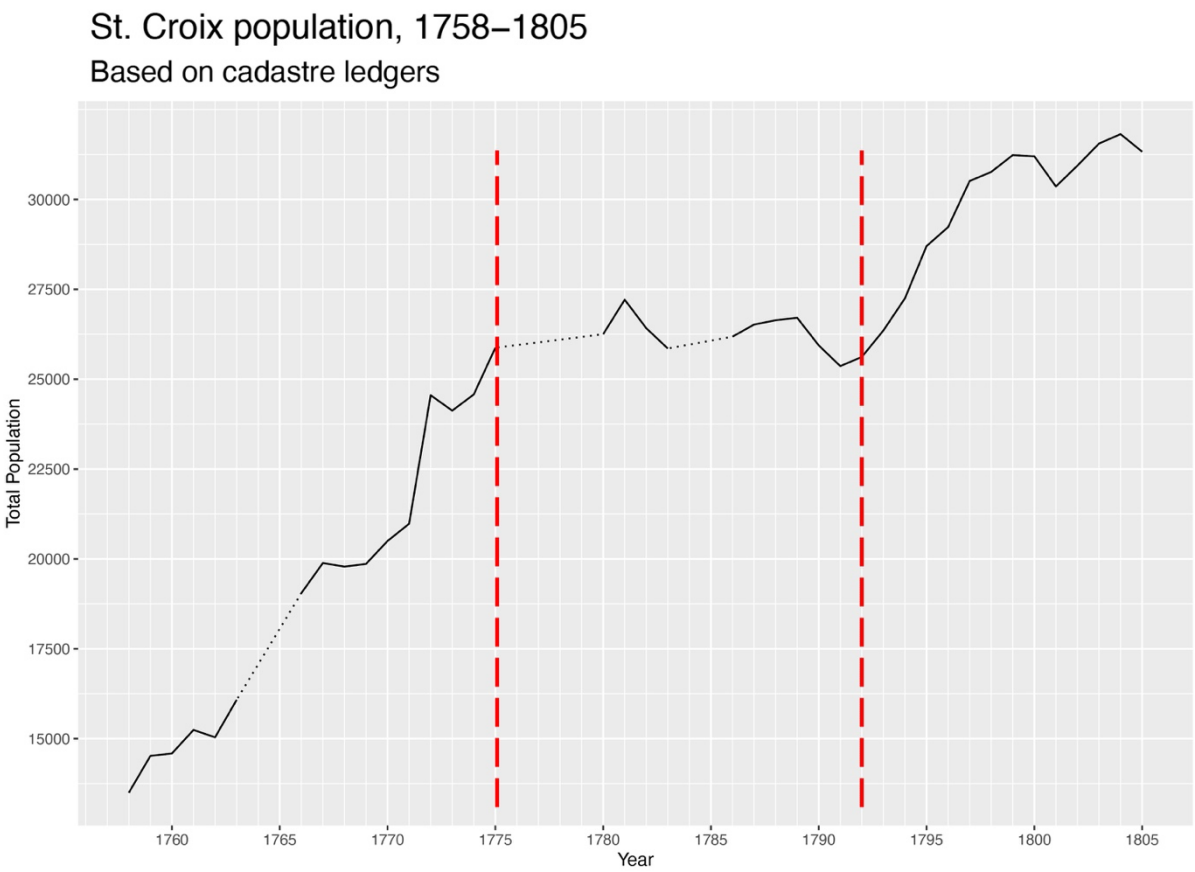


Figure 4: St. Croix's population, 1758-1805. Dotted lines indicate years without data. Red dashed lines are to be used as guides to highlight the periods of growth and stagnation that this thesis has identified. Source: Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024. https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869

The data presented and analysed here does pull into question assertions made by previous historians such as N. A. Hall, who in his book *Slave Society in the Danish West Indies* released shortly after his death, wrote: "The eighteenth century was a period of almost unvaryingly upward growth in the number of slaves, which peaked at the turn of the century (...)".[50] Halls statement was seemingly only a half truth. This period undoubtably saw a huge increase in the number of enslaved on the island, but it was not unvaryingly upward. Rather in the 17-years between 1775-1792 the islands population seemingly stagnated. Although Hall used the statement to describe the development of the Danish West Indies as a whole, no mentions of a lack of growth on St. Croix are made later. By only using data from select years, often 10-20 years apart such as Hall presents it,[51] one might get the impression that a continual upward trend is happening, yet this would be untrue. I would instead propose not to see the period as one long continual upward trend, but rather that it be split into three distinct groups.

[50] Neville Hall, *Slave Society in the Danish West Indies: St. Thomas, St. John, and St. Croix* (Jamaica: University of the West Indies press, 1994). P. 3
[51] Hall. P. 5

The first period from 1758-1775 shows an extended period of growth, although with marked variations in some years compared to others. Especially the years 1762-1767 and 1771-1772 experience a large jump in population.[52] As mentioned earlier, data from previous years haven't been included, but the upward trend would be coherent with the idea of this time frame being one of establishment and expansion of the plantation economy. As mentioned by other scholars, by 1754 ca. 95% of all plantations were sold yet nowhere all of them were being cultivated.[53] It would be plausible that most plantations at this time were still expanding, both geographical and population-wise, as money became available. This expansion was also more pronounced in the least settled parts of the islands, further highlighting the theory that these years were part of the initial settlement and establishment of the island. This will be discussed more later.[54]

In the next group of years this rapid expansion seemingly comes to a halt. Using the population data from the cadastre ledgers, it would appear the island experiences a rather abrupt change. Shifting from the initial establishment and expansion of the plantation system with its accompanying population boom, to a moderately slow growth. It would seem as if the island went through a brief 17-years of consolidation.[55] The number of years with missing cadastre ledgers naturally diminishes the certainty of this claim to a degree. However, using other archival material, no large spikes or abnormalities can be observed for the years 1776-1779 either, suggesting this is perhaps not too far off.[56] Another possible explanation could be that the growth of the island was influenced by outside events or conflicts, such as the American war of independence.

This period of slow growth came to a halt in 1792 when, after short two-year decline, St. Croix experienced yet another population boom. This time the explanation appears more apparent than earlier. In March 1792 the Danish state decided to abolish the slave trade, choosing to first implement the ban in 1803.[57] While the slave trade for long had not been a major public debate, some started to criticise it towards the end of the 18th century.

---

[52] See figure 4
[53] Olsen, "Godserne på St. Croix 1733-1800." P. 82
[54] See figure 6
[55] See figure 4
[56] Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, "Tabel over de paa hans Maijestættes vestindiske Øer værende Indvaanere, Frinegere og Slaver udi følgende Aaringer.," Historiske statistikker og topografiske efterretninger om De vestindiske øer, accessed May 28, 2024, https://arkivalieronline.rigsarkivet.dk/da/billedviser?epid=20201956#292303,58817936; Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, "Tabel over de paa hans Maijestæts vestindiske Øer værende Indvaanere, Frinegere og Slaver i Aarene.," Historiske statistikker og topografiske efterretninger om De vestindiske øer, accessed May 28, 2024, https://arkivalieronline.rigsarkivet.dk/da/billedviser?epid=20201956#292303,58817934.
[57] Jacob Henric Schou, "Fr. Om Neger-Handlen, 16. Marts 1792.," in *Chronologisk Register over de Kongelige Forordninger Og Aabne Breve, Samt Andre Trykte Anordninger, Som Fra Aar 1670 Ere Udkomne*, 3rd ed., vol. 10 (København: Gyldendal, 1822), 242–44.

Key to these was Ernest Schimmelmann, the minister of finance. Despite the fact that Schimmelmann himself[58] was the largest slaveowner on island,[59] and the son of Heinreich Schimmelmann who had expanded the families fortune using enslaved labour to grow sugar, he became one of the main driving forces towards its abolishment. The arguments made for a ban focused on one side on the humanitarian aspect of slavery, but were on the other side also likely heavily influenced by the conviction that Britian would also ban the trade imminently.[60] Ernst Schimmelmann even went so far to argue that it was for the good and protection of the planters themselves, helping ensure a more stable and long-term workforce.[61] Not all plantation owners were of the same conviction however. In 1797 Peter Lotharius Oxholm believed that while the system was morally wrong – even calling it a "blemish"[62] – the west Indian colonies could not survive without it.[63]

Following the 1792 announcement of the slave trade ban, the next 10 years saw a period of growth with renewed vigour, ending in a record-high population on St. Croix under Danish rule.[64] Following the abolition of the slave trade in 1803, the excessive mortality among the enslaved population failed to notably decline and the deadly plantation system started eating away at the labourers it so desperately needed to function.[65] With the emancipation in 1848, St. Croix's rural population would shrink even further, with 54 % of inhabitants choosing to emigrate before 1917.[66]

General development – compared with slave voyages

Comparing the population growth with the importation of enslaved via trans-Atlantic ships, we can gain further insights into the demographic developments in the last half of the 18th century. Data pertaining the transatlantic slave trade can be found via slavevoyages.org. A quick review of the data will show that almost no voyages are noted

---

[58] While the plantations officially were run by the Schimmelmann Estate, Ernest was the main inheritor. P. P. and Richard, *Den Danske Sukkerhandels Og Sukkerproduktions Historie*. P. 114
[59] Appendix 6
[60] "Forordning om negerhandelen, 16. marts 1792," accessed September 16, 2024, https://danmarkshistorien.dk/vis/materiale/forordning-om-negerhandelen-1792.
[61] "Ernst Schimmelmanns brev om slavehandelen, 18. juni 1791," accessed September 15, 2024, https://danmarkshistorien.dk/vis/materiale/ernst-schimmelmanns-brev-af-18-juni-1791-om-slavehandelen.
[62] The original sentence: "Kolonie-Syftemet er derfor en Skamplet paa Europas Statsforfatning (...)"
[63] Peter Lotharius Oxholm, *De Danske Vestindiske Øers Tilstand i Henseende Til Population, Cultur Og Finance-Forfatning, I Anledning Af Nogle Breve Fra St. Croix, Indtrykkede i Det Politiske Og Physiske Magazin for Marts Og April Maaneder 1797, Hvortil Er Føjet Beskrivelse Om Sukkerets Fabrikation Med 4 Planer*. (København, 1797). P. 9-10
[64] Sveistrup, "Bidrag til de tidligere Dansk-Vestindiske Øers økonomiske historie, med særligt henblik paa sukkerproduktionen og sukkerhandel." P. 80
[65] Hall, *Slave Society in the Danish West Indies*. P. 5
[66] Rigsarkivet, "The Population Trend in the Danish West Indies, 1672-1917," The Danish West-Indies - Sources of history, accessed May 28, 2024, https://www.virgin-islands-history.org/en/history/personal-history/the-population-trend-in-the-danish-west-indies-1672-1917/.

between 1777 and 1792 when only filtering by voyages sailing principally to St. Croix. If voyages sailing to "Danish West Indies, colony unspecified", this gap is filled, suggesting that, at least for a time, the sources were frustratingly vague.[67] But how many of these "unspecified" voyages were to St. Croix? Using figures from the *Negerhandelskommissionen* ("The Commision on the Negro Trade"), we can examine how close the numbers from slave voyages are to contemporary reports.[68] While some years show identical numbers, others seem very far apart. This is especially the case for 1784, 1785 and 1787 that all show discrepancies by a factor of between three and seven.[69] On the other hand, the same data showed a large underestimation when filtering by known voyages to St. Croix. In other words, half of all the years examined showed a large difference between slavevoyages.org and archival source material. As a result, the following data used for examining the influx of enslaved will be data from slave voyages to St. Croix and unspecified DWI ports but replaced in years where we have archival sources. This is not a perfect solution but should help give us a more accurate estimate than if we had only used slavevoyages.org. Of course, the disparities between different sources highlight that a healthy dose of scepticism is still needed.

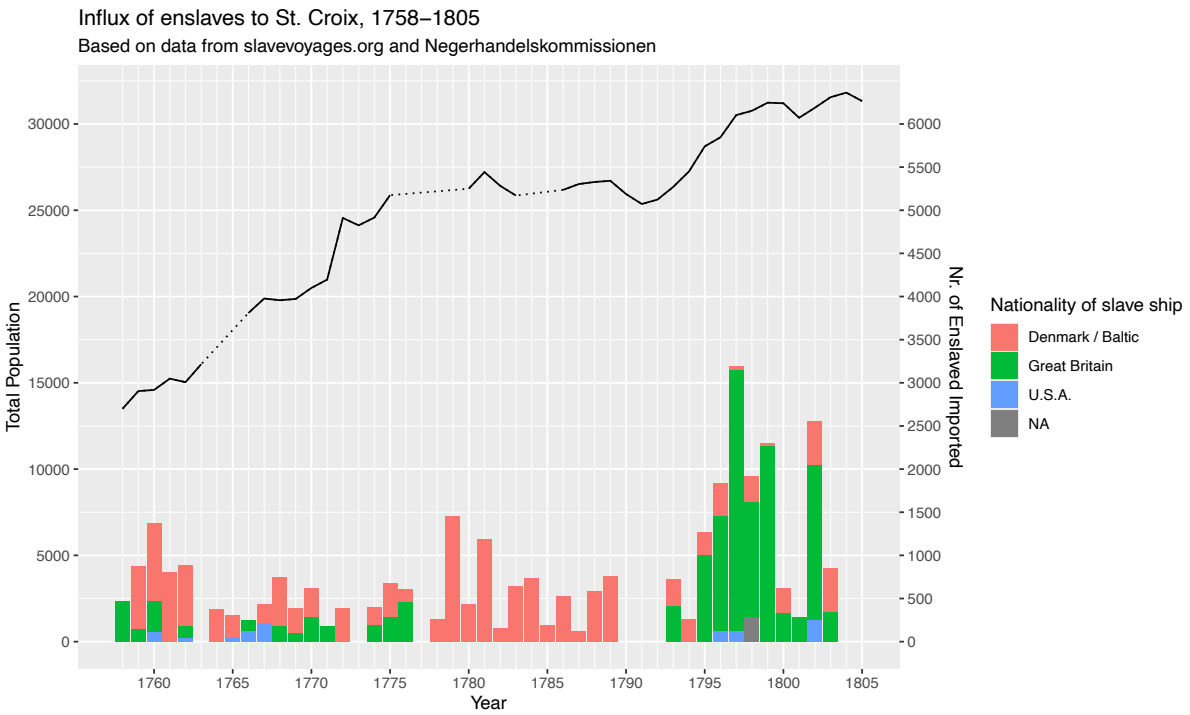


Figure 5: Population growth on St. Croix compared with the influx of enslaved to the island, 1758-1805. Note the figure also includes enslaved transported to unspecified DWI ports. Source: Calculated from Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024. https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869; Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Historiske statistikker og topografiske efterretninger

[67] The database can be accessed here: "Trans-Atlantic Slave Trade - Database," Slavevoyages.org, accessed September 16, 2024, https://www.slavevoyages.org/voyage/database.
[68] Brøndsted, *Vore Gamle Tropekolonier, Vol. 2*. p. 253
[69] Appendix 9

om de vestindiske øer, Accessed September 16, 2024 https://arkivalieronline.rigsarkivet.dk/da/billedviser?epid=20201956#292303,58817908; Trans-Atlantic Slave Trade – Database," Slavevoyages.org. Accessed September 16, 2024, https://www.slavevoyages.org/voyage/database

By splitting the imported enslaved up by the nation whom transported them, we're able to get a sense of the economics of the slave trade.[70] Whilst both Danish and British slavers were active in the earlier years, a sudden change occurs in 1777 – the year non-Danish were excluded from the trade.[71] In the years that followed only Danish ships are reported to have transported enslaved to the island. The switch to a Danish-driven slave trade had a marked impact. Whereas the years before 1777 were relatively stable in the number of enslaved imported, the subsequent years became increasingly erratic. One year experienced a record number of enslaved arriving at the island, while the following saw almost no arrivals. Interestingly, the years 1790-1792 no slave ships are noted.[72] This could either be due to a problem with the source material, or it might be an indicator that the Danish-based slave traded had decisively failed. This idea is supported by a fall in population during the same period, indicating the current influx of enslaved people was inadequate. However, more supporting evidence would probably be needed to conclusively prove this proposition.

The royal decree that ended the slave trade in 1792, also lifted the monopoly on the slave trade to the DWI.[73] In the following 10-year period of free slave trade, the enslaved crucian population grew by ca. 22,5 %.[74] The British transported the vast majority of enslaved during this time – though the trade was greatly diminished in 1800-1801. This dip in trade might be explained with the reignition of the Napoleonic wars that also led to the dano-british war and colonial occupation in 1801. Why precisely it was the British slavers who would supplying the lion's share of enslaved, is not readily clear. Perhaps it was as simple as an inability to earn money on the part of the Danish slavers. Despite often sailing slave ships less densely packed than their British and French counterparts, Danish captains frequently had higher mortality rates, leading to far less efficient voyages.[75] This could also help explain the drop off in slave ships by 1790, as Danish slavers possibly switched to more lucrative trade routes.

The 12-year period where only Danish ships participated in the slave trade to St. Croix also seems to coincide almost perfectly with the stage of slow growth mentioned in the section on general demographic developments. Perhaps the previous suggestion that the

---

[70] See figure 5
[71] Jacob Henric Schou, "Fr. Ang. Handelen Paa Kysten Af Guinea Samt Derfra Til de Vestindiske Øer, 12. maj 1777.," in *Chronologisk Register over de Kongelige Forordninger Og Aabne Breve, Samt Andre Trykte Anordninger, Som Fra Aar 1670 Ere Udkomne*, 3rd ed., vol. 6 (København: Gyldendal, 1822), 143–47.
[72] See figure 5
[73] Schou, "Fr. Om Neger-Handlen, 16. marts 1792."
[74] Appendix 8
[75] Brimnes, *Slaveejerens Død*. P. 48-49

lack of growth could be explained by plantations reaching a natural plateau, is incomplete. Could it perhaps be the result of prohibiting the slave trade to only Danish slavers? The years preceding the ban on foreign traders shows roughly the same average number of enslaved imported as the years following. Yet the growth patterns vastly different.[76] Perhaps the lack of development post-1777 was not a result of a lack of imported enslaved, but perhaps a result of the conditions of those enslaved. If the Danish slavers delivered a heightened number sick or weakened enslaved, it would not be unreasonable to presume a rise mortality among this group. Sadly, the cadastre ledgers don't include number of enslaved deaths until after 1780, so it is difficult to test this notion.

No matter how the island developed, the period examined in this thesis showcases a more globalised system of trade, than one might expect in an era where mercantilism was still the order of the day. The slave trade to the DWI was not a uniquely Danish endeavour. The DWI was one part of a far larger system of nations transporting enslaved people across the Atlantic. Furthermore, the closing and subsequent re-opening of the slave trade demonstration that the government themselves knew of their own inability to supply the desired level of labour to the DWI. As many other scholars have noted, the Danish colonial system in the West Indies never fully formed a viable, long lasting, and exclusive link to the metropole. While St. Thomas was designated as a free port in 1764, St. Croix repeatedly opened its ports to foreign traders throughout the 18th century.[77]

By comparing the influx of enslaved with the crucian population changes, one can also get a sense of the raw brutality of the plantation economy. Many years so large amounts of people forcefully relocated to the island, yet it seldomly saw a proportional increase in size. This becomes evidently clear when subtracting the yearly total growth by the number of imported enslaved. In most years, the number of enslaved imported far exceed the actual growth. In the 1760's and early 70's it was not uncommon for there to be ca. 1000 more imported enslaved than the population increased. This number would regularly rise to between 1500-2000 enslaved.[78] Naturally it cannot be irrefutably proven that these excess influx of enslaved died instead of being, for example, reexported. It does however seem unlikely that slavers would sail large amounts of enslaved to the island, just for them to be relocated elsewhere shortly after, especially due to the proximity of St. Thomas which was open to international trade.[79] It seems logical slavers would have sailed enslaved to this port, rather than to St. Croix if they intended to sell them to other markets.

---

[76] Appendix 9
[77] Hall, *Slave Society in the Danish West Indies*. P. 21-23
[78] Appendix 10
[79] Olsen, *Vestindien*. P. 183-188

Using this data, we can also see some striking developments that cannot be readily explained. Primary of these is the large jumps in population in 1762-1767 and 1771-1772. As noted earlier this growth is almost exclusively amongst the enslaved population, yet no correspondingly large influxes of enslaved can be found in these years. While we cannot rule out the possibility that this growth was the result of an increase in births, it seems extremely unlikely due to the size of the jumps – ca. 3000-3500 more than the previous year[80] – and the unfavourable birth-rates noted in most other years. Furthermore, no sources have been found that would support a sudden change in birth patterns. For these reasons this thesis will look elsewhere, and instead propose two possible explanations.

The first possibility focuses on the data pertaining to the influx of enslaved. As was already shown earlier, the data was inaccurate it regards the period between 1777 and 1792, suggesting that perhaps there might be issues in other years as well. According to slavevoyages.org, 95 % of all British transatlantic slave voyages have been included in the database.[81] Furthermore, the database estimates to include ca. 86,3 % of the minor powers slave trade – predominantly the Danish trade. While the completeness of such a comprehensive database is undoubtable an impressive achievement, we must consider the possibility of our figures being of by ca. 14 %.[82] In other words, our current dataset may be incomplete. If true, then it might lessen difference between growth spikes and the number of annually imported enslaved, but it might just as well increase difference the other way, with some years having an even more pronounced lack of growth compared to enslaved arrivals. This currently used data only accounts for transatlantic slave voyages, while omitting intra-American voyages. However, including all known intra-American voyages would only add 628 extra arrivals while also deducting 4070 enslaved who were obtained on St. Croix and transported elsewhere, meaning this trade constituted a net loss of 3.442 enslaved for the island.[83] Furthermore, most of these trades also happened during the last surge of activity in the 1790's, indicating that they can't explain the earlier growth spikes either. To quickly recall the discussion above on the idea of enslaved being transported away from the island instead of perishing, it does seem to have some merit in the later years of the examined period. Yet it this trade would only lessen the presumed mortality by ca. 25%.

---

[80] Figure 5
[81] David Eltis, "Trans-Atlantic Slave Trade - Methodology," 2018, https://www.slavevoyages.org/voyage/about#methodology/introduction/0/en/.
[82] David Eltis and David Richardson, *Extending the Frontiers: Essays on the New Transatlantic Slave Trade Database* (New Haven, United States: Yale University Press, 2008), http://ebookcentral.proquest.com/lib/asb/detail.action?docID=3420568. P. 34
[83] The intra-american database can be accessed here: "Intra-American Slave Trade - Database," Slavevoyages.org, accessed September 16, 2024, https://www.slavevoyages.org/american/database.

Still, this does not mean we should completely disregard the intra-American trade. Unlike the transatlantic, the trans-American database is presumed to be far less complete.[84] By reviewing the data, this also becomes apparent by the fact that it does not include inter-DWI transfers. There is a possibility of enslaved being bought in St. Thomas before being transported to St. Croix that cannot be disproven. In the earlier years of the island's development, it was also no uncommon for plantation owners to move large numbers of enslaved and other workers between the islands, if they owned multiple properties.[85] All this opens up for the chance that the growth spikes are the results of enslaved that came to the DWI either via St. Thomas, St. John or other Caribbean islands. Future studies of this subject would benefit from comparing the populations between islands, to see if any larger relocations took place during this time.[86]

The second possibility focuses more on the plantation system and the islands administrative organisation. During the colonial period it was not state appointed enumerators who collected data pertaining the cadastres of St. Croix. Rather it was the estate owners themselves who, under threat of financial penalties, had to report it to the nearest administrator.[87] As others have noted in regards to the export of sugar, plantation owners were not always the most lawabiding citizens of the empire, often trying to cheat the system or smugle wares to foreign ports for a greater profit.[88] Perhaps the same plantation owners also tried to cheat the system by way of knowingly misreporting their estates. On one hand, underreporting the amount of enslaved they owned would lead to a lower taxburden. On the other hand, the whole plantation system was extremely captial intesive and thereby very reliant on credit to keep operating and expanding.[89] Thus, overreporting the amount of enslaved could be used to ensure more favourable loans. This has led some to speculate that the self-reporting system should be regared as fairly accurate, with the arguments for over- and underreporting canceling eachother out.[90] However, the extreme growth spurt in 1772, might suggest otherwise.[91] This could explain sudden bumps in population, as enslaved pops were discovered by the state or reported for the first time. Yet this proposition may not be a viable explanation for longer trends. Most likely a combination of the two ideas contributed to the unexplainable demographic

---

[84] Alex Borucki and Greg O'Malley, "Intra-American Slave Trade - Methodology," 2018, https://www.slavevoyages.org/american/about#methodology/0/en/.
[85] Olsen, *Vestindien*. P. 110
[86] The project *In the Same Sea,* focused on intra-Caribbean connections, may cover this topic in future publications.
[87] Jacob Henric Schou, "Fr. Hvorved Kopskatten Af de Paa de Danske Amerikanske Eilande Værende Neger-Slaver Deels Nedsættes Og Deels, i Henseende Til Sammes Ligning, Angivelse Og Oppebørsel, Forandres, 11. November 1776.," in *Chronologisk Register over de Kongelige Forordninger Og Aabne Breve, Samt Andre Trykte Anordninger, Som Fra Aar 1670 Ere Udkomne*, 3rd ed., vol. 6 (København: Gyldendal, 1822), 100–103.
[88] Brøndsted, *Vore Gamle Tropekolonier, Vol. 2*. P. 197-198
[89] Olsen, "Godserne på St. Croix 1733-1800." P. 84
[90] Brøndsted, *Vore Gamle Tropekolonier, Vol. 2*. P. 216-217
[91] See figure 4

developments discussed earlier. Nevertheless, even when combined, these two propositions seem insufficient, suggesting the possibility of additional causes not covered here.

General development - spatially

As was discussed above, St. Croix underwent three distinct periods of population growth from 1755-1805. Relying purely on the summarised data, one might think that this growth was equal in all areas of the island. But this is not necessarily true. While one quadrant might have experienced a noticeable period of growth, another might have stagnated. In the following the islands development throughout the period will be discussed spatially. While an effort will be made to combine and discuss the development of both rural and urban areas of the island in combination, most of the following will focus on the rural plantations. During the 18th century St. Croix was still largely a rural society, with only 15-20 % living in Christiansted or Frederiksted.[92]

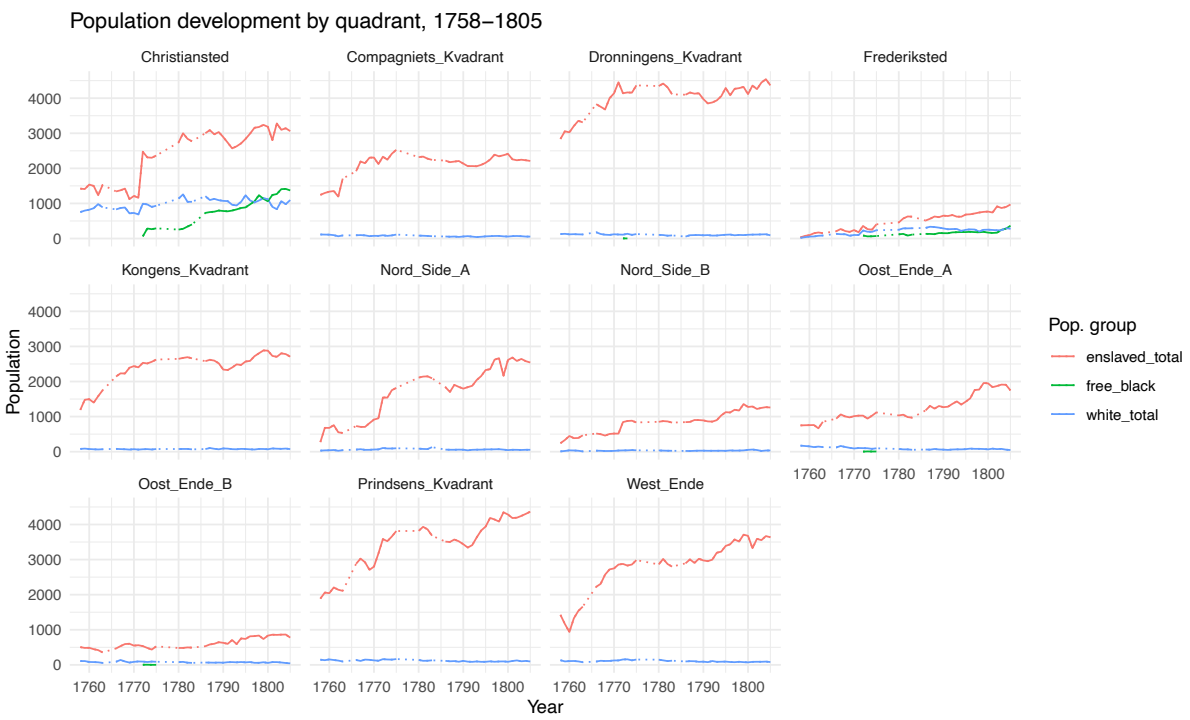


Figure 6: The three main population groups growth by St. Croix's quadrants and towns, 1758-1805. Source: Calculated from Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024. https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869

By examining the growth by quadrants, we can see that that Dronningens, Kongens, Compagniets, Prindsens and the West Ende experienced the most growth during 1750s-1770s.[93] The latter four had a growth close to 100% when compared to their initial population.[94] This development fits with the previously proposed idea that the island

[92] Appendix 11
[93] See figure 6
[94] Appendix 12

went through a period of expansion and establishment of the plantation economy during these early years. All the aforementioned areas were almost exclusively sugar producing, hinting that there likely was a close link between crop type and population growth.

Yet this was not a time of unanimous growth. Oost Ende A, Oost Ende B, Nord Side A and Nord Side B on the contrary saw almost no increase in population during the same period, although probably for different reasons. In the case of Nord Side A, it was one of the last areas of the island to be inhabited. According to Becks 1754 map, a large part of this area was yet to be divided into cadastres, suggesting that few lived in that hilly and woodland area of the island.[95] In contrast to this, the eastern end of the island was the first to be populated. Additionally, they were also primarily cotton growing, a much less labour-intensive product compared to sugar.[96] In other words they had no economic incentive to import more enslaved, nor any desirable land left to colonize. This could also explain why the same areas began seeing slight growth towards the end of the century, when almost all cotton plantations began to shift towards cultivating sugar, while also experiencing the same need to expand the enslaved population before its eventual cut-off.[97] Going back to the sudden growth in 1771-1772, it can be observed that it is not an equal development across the island. Instead, only select areas experience this sudden "pop" in population, namely: Christiansted, Nord Side A, Nord side B and Prindsens quadrant.[98] Christiansted's enslaved population for example saw an increase of over 90%.[99]

The final years of the slave trade and the following intensified influx of enslaved, and all areas did see a positive growth in total population. However, depending on how we view the influx, different areas were more heavily affect than others. Viewed by absolute growthm Christiansted and Prindsens quadrant saw the biggest influx at respectively 1243 and 849 enslaved.[100] However, viewing it as a percentage increase another story is told. On the low end of the scale Compagniets quadrant saw only an increase of 10 % while on the on the other end Nord side A, Nord side B and Oost Ende A all saw roughly a 40 % increase.[101] So what areas were the most affected by the ban? I propose we view it a third way: by population density. Calculating first the size of the quadrants in km^2 before dividing by the total population, we can gauge how high the density of each area was. Due to their small size and high population, the urban areas grew by far the most when viewed this way. Christiansted grew from 8.528,5 people/km^2 to 10.978,5 people/km^2. In six out of the nine quadrants the ban brought about an increase of ca. 20 people/km^2. Oost Ende

[95] Det Kongelige Bibliotek, "Tilforladelig kort over Eylandet St. Croix udi America" (1754). Accessed September 16, 2024. http://www5.kb.dk/maps/kortsa/2012/jul/kortatlas/object65424/da/
[96] Tyson, "On the Periphery of the Peripheries." P. 2-5
[97] Tyson. P. 9-14
[98] See figure 6
[99] Appendix 13
[100] Appendix 8
[101] Appendix 8 & 14

B and Compagniets quadrant only saw an increase of 8 people/km^2, while Nord Side A increased by 38 people/km^2.[102]

Interestingly, the 1792 census includes figures labelled simply as "still missing".[103] It's not exactly known what this label refers to, but perhaps it was a way for plantation owners to indicate how many enslaved were missing to reach an ideal workforce. If assumption is the correct, it is curious to note that the quadrants most in need of labour were not necessarily the quadrants that experienced the most growth. In fact, only two quadrants, Nord Side A & Oost Ende A, surpassed their stated "goal".[104] This leads us back to the idea of an "ideal" workforce. Ideal in what terms? The ideal size to reach maximum productivity or the needed number of enslaved to become self-sustaining in terms of labour? If we assume that planters always acted in their best self-interest, then we might also be able to assume other aspects of the plantation's society at the end of the slave trade. If motivated by productivity, one would assume planters would want to reach this goal as soon as possible to achieve maximum profits. As this does not happen, perhaps there was a lack of capital to buy enslaved among the planters. On the other hand, if motivated by a desire to become self-sustaining, then this same lack of growth may be an indicator that planters in fact did not care for long term sustainability. This would support the idea that most planters were more interested in short term profit-maxing.[105] Alternatively, it might also have been the fault of slavers who perhaps failed to transport enough enslaved to St. Croix, leaving the market unfulfilled.

[102] Appendix 15
[103] Originally: "mangler endnu"
[104] Appendix 16
[105] This would make crucian planters similar those from Jamaica or Saint-Dominque, who also chose short term profit-maxing over long term sustainability. Burnard and Garrigus, *The Plantation Machine*. P. 230

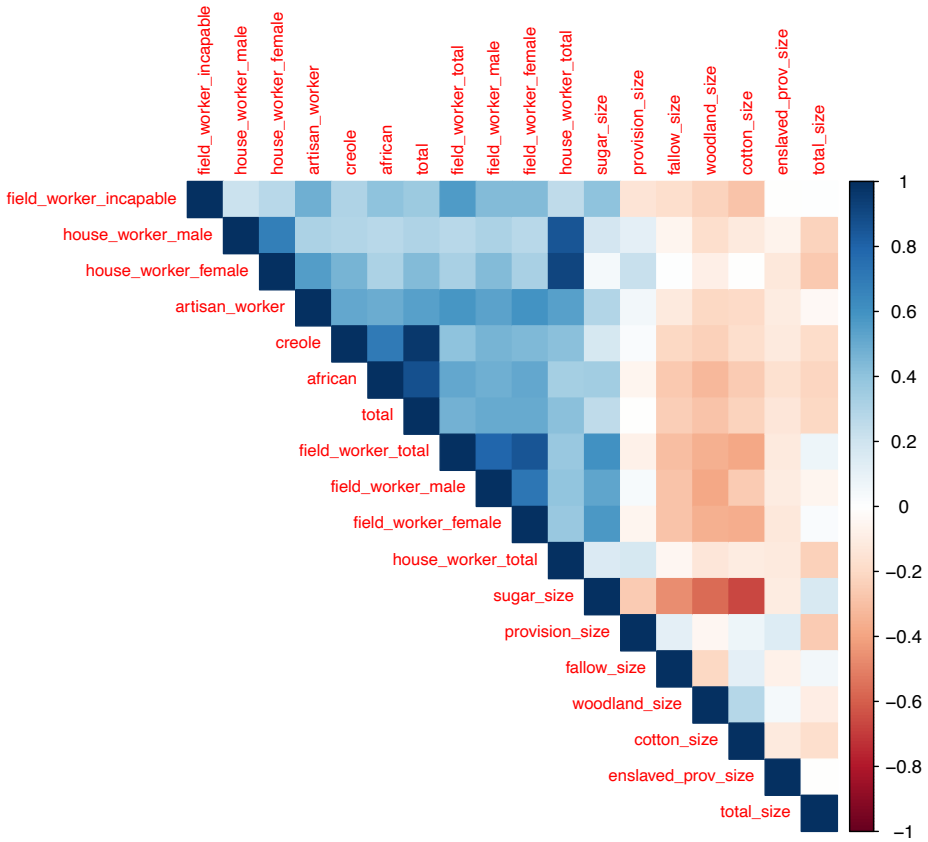


Figure 7: Correlation between estate sizes, land usage and density of enslaved. Source: Calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222

When discussing plantations the question of what factors were determining for how many labours were needed may come up. Were some crop types more demanding than others or did larger estates have proportionally larger enslaved populations, are all valid questions to ask. By using the population census of 1792, we're able to get some insight into this aspect of the plantation's organisation. One aspect we can examine is if sugar cultivation were more labour intensive than cotton plantations. By creating a correlation matrix encompassing enslaved pr. km^2 – both total and subdivided by ethnic groups, gender and / or work type – estate sizes and land usage (i.e. how much land is used for sugar, provisions, woodland etc.), this can be confirmed.[106] With a correlation value (CV) of 0,6 a strong connection between sugar and the total amount of field workers can be made. At the same time the score for domestic workers (CV = 0,16) also highlights that the same plantations in most cases did not utilise an increased number enslaved for personal use compared to plantations not growing sugar. The sugar plantations did, however, seem so have a slightly increased chance (CV = 0,41) of having more incapable enslaved. It is not immediately explained what this category includes in the original source material, but if the category is equivalent to one in the cadastre ledgers, it comprises of older and non-working (due to illness or injury). This suggest either a milder

[106] See figure 7

working regime on cotton plantations, or an unwillingness of cotton planters to classify enslaved as incapable – perhaps working them in other capacities. The difference between cotton and sugar plantations can also be viewed in how much land is allotted to other purposes. The higher the sugar usage the less land was allocated to cotton, woodland, provisions, and fallow. The same correlation cannot be seen with heightened levels of cotton planting, suggesting a more varied production. Using the same census we're also able to examine the correlation between estate sizes and density of enslaved. This shows that very smaller plantations often had a higher density than larger plantations. While plantations under 1,25 km^2 had on average of between 110-100 enslaved pr. km^2, larger plantations had between 100-75 enslaved pr. km^2.[107]

The plantocracy

As was explored in the chapters above, the vast majority of the island was enslaved Creoles and Africans, worked relentlessly as part of the plantation system. But they were not the only group on the island. St. Croix was also home to a class of powerful and rich plantation owners. The plantocracy – that is the ruling elite planter class – was not the same as the white population. While many were either directly or indirectly involved with the plantations, only a select few owned them. In fact, the plantation owners only accounted for a small percentage of the total white population. Below this top of the social hierarchy was where colonial officials, doctors, merchants, soldiers and the like.[108] In fact, it was not uncommon for plantation owners to be absent from their plantations and its day-to-day operation. Instead, these owners would hire overseer and administrators to act in their stead.[109] Buying or establishing plantations – especially sugar plantations – was a very capital-intensive endeavour. Not deterred by this, it was common for plantation owners to take loans leading to a class that, while powerful, was also heavily indebted. To avoid plantation owners paying their debts to foreign banks with the valuable sugar crops intended for the metropole, the Danish crown even saw itself forced to buy these loans in 1782 and become the new creditor to ensure more favourable interest rates.[110] These loans in addition to the loans given to buy enslaved during the last 10 years of the slave trade, meant that the total debt to the state accounted for 4,2 million Rdl. by the mid 1790's.[111] The following two sections will be a short look at the composition of the plantocracy in terms of ownership and nationality in the late 1700's.

Nationality

A unique characteristic of the Danish West Indies was the low level of Danish involvement and ownership in the plantation system. Whilst many other nations operated with a largely self-national ownership on their Caribbeans, Denmark did not. Denmark

[107] Appendix 17
[108] Olsen, *Vestindien*. P. 126-128, 153
[109] Olsen. P. 110, 127
[110] Olsen, "Godserne på St. Croix 1733-1800." P. 83-84
[111] Brøndsted, *Vore Gamle Tropekolonier, Vol. 2*. P. 227

was in many aspects a weak colonializing power. A late arrival on the colonial scene combined with a lack of population and economic prowess, meant that they often couldn't follow in the footsteps left by other colonial powers. As such, alternative strategies were needed to effectively exploit the newly acquired Danish overseas possessions. As Neville Hall described it, this led to a policy of "colonization by invitation".[112] In short, the policy made up for the Danish shortcomings by opening the islands up to foreign ownership. These owners had both the required resources and knowledge to establish and operate a successful plantation. Yet, these very same foreign owner also often chose to return to their countries of origin rather than Denmark. In practice foreign ownership also led to the DWI societies exhibiting different characteristics than one might expect. In the late 1600's on St. Thomas and St. John, the "colonization by invitation" policy had led to a large influx of Dutchmen which subsequently created a Dutch cultural hegemony on the two islands. Dutch became the islands language of commerce and casual communication. Even official proclamations were sometimes written in Dutch. On St. Croix a very similar turn of event took place, but instead of Dutch, the islands already established British settlers and later large number of colonists meant British culture became dominant.[113]

To illustrate how widespread British culture was on the island, one need only to look at the St. Croix Avis, the islands main newspaper in the late 1700s. Using The Royal Danish Library's experimental Mediestream[114] API[115] and Google's Complex Language Detector 2 (CLD2)[116], this project can examine the use of languages in the island's main newspapers "St. Croix Avis" and "Royal Danish American Gazette" in R. First a dataset contain all material from the newspapers in the time period 1755-1805 is created, and then CLD2's "detect_language()" function is able to estimate the language used in the each of the newspapers articles. While not perfect, it did for example think some Danish articles were in Norwegian, the language detector does give a good indication of the distribution between languages. Of the 31.329 articles examined 78 % were estimated to be English while only ca. 9 % percent were Danish. The remaining ca. 13 % were either not classified or in different languages – presumably due to OCR errors. Accounting for article length, measured in characters, English becomes even more dominant, accounting for ca. 84 % while Danish is only 11 %.[117] If we assume the editor and publisher of the newspaper wished to appeal to the vast majority of potential customers, we must also assume they

[112] Hall, *Slave Society in the Danish West Indies*. P. 1-6
[113] Hall. P. 9-17
[114] Mediestream is a publicly available database with almost all Danish newspapers published since 1666. The database contains over 35 million newspaper pages at the time of writing.
[115] The API can be found at this website: http://labs.statsbiblioteket.dk/labsapi/api//api-docs?url=/labsapi/api/openapi.yaml.
[116] Jeroen Ooms and Dirk Sites, "CRAN: Package Cld2," cld2: Google's Compact Language Detector 2, October 26, 2022, https://cran.r-project.org/web/packages/cld2/index.html.
[117] Appendix 18 – Note: depending on how you choose to measure languages in articles, the amount of danish can be calculated as low as 7,5 %.

would choose to feature content that the readers would find interesting in a language they would most be able to read. If this is true, English language and culture most not only have been commonplace, but it was also possibly almost hegemonic amongst the wider literate classes. While the newspaper is not, and should not be considered to be, the only marker of how hegemonic a culture is, it may be used as an indicator to this effect.

As part of his 1978 dissertation *Kolonisamfundet på St. Croix i sidste halvdel af det 18. århundrede, med særligt henblik på aristokratiet blandt plantageejerne* Jørgen Bach Christensen studied the nationality of the planter elite owning estates larger than 300 acres on St. Croix from 1742-1804. Out of 75 aristocratic families only 19 were of Danish origin (22 out of 112 individuals) Christensen estimated– with the estimate likely falling even further if taking the whole planter class and not just the elites into account.[118] Recalculated to precent, only 20 % - 25 % of the St. Croix's elite were of Danish origin. On the comparably sized British colony of Antigua in the Lesser Antilles, only ca. 3 % - 14 % of elite families were foreign.[119] Using Christensen's nationality estimates, information on plantation ownership from the 1792 census and the georeferenced 1799 cadastre map by Oxholm, we can map the distribution of all known plantation owner nationality on St. Croix in 1792.[120] Using this, can it be observed that there no obvious patterns of nationality. Perhaps this is not too surprising given the small size of the island.

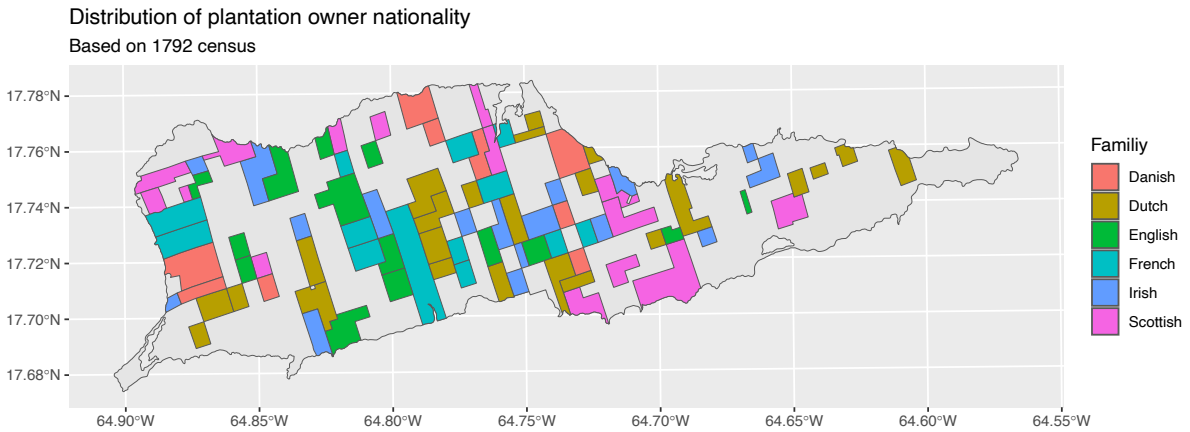


Figure 88: Distribution of plantation owner's nationality where known on St. Croix, 1792. Sources: Jørgen Bach Christensen: "Kolonisamfundet på St. Croix i sidste halvdel af det 18. århundrede, med særligt henblik på aristokratiet blandt plantageejerne." Aarhus University (thesis); 1978; Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222; Det Kongelige Bibliotek, "St. Croix" (1799).

In his thesis, Christensen also points out that the low percentage of Danish elites on St. Croix didn't necessarily mean an equally low Danish participation in the administration

[118] Christensen, "Kolonisamfundet på St. Croix." P. 85-87
[119] The lower limit of this range was calculated assuming unknown families were all british, while the upper limit assumed the opposite. The raw numbers are from Christensen. P. 86
[120] See figure 8

of the island. In fact, the opposite seems true. All higher administrative posts were exclusively occupied by Danes, and only two instances of official posts being held foreign hands are noted by Christensen: John Cooper and James Towers in 1780.[121] The administrative sphere of the islands, was the only area where Danish was widespread.[122]

Individuals vs. families

When examining the white population group and their ownership of plantations and enslaved on the island, it is also beneficial to examine them both as part of larger families and as individuals.

Using the 1792 census we're able to quickly assess who the largest estate owners were. The data from 1792 does not include either enslaved nor property from Christiansted and Frederiksted. Furthermore, when combined with the cadastre ledgers of the same year, some plantations seemed to be omitted from the census without reason. This is especially true for the eastern end of the island where multiple areas are missing.[123] It is however, one of the most comprehensive overviews of the plantations on the island that are available. A systematic collection of population and ownership data for each cadastre and year is theoretically possible but would be too time-consuming for the purposes of this chapter. In short, the 1792 census is able to get us a detailed, yet not quite complete overview of the rural plantations of St. Croix.

By using the census, it can be observed that only a small difference can be seen between the "top" individuals in terms of both land and enslaved they possessed.[124] For the sack of simplicity, heirs to estates and co-owners will be viewed as individuals in the following. The heirs of Henrich Schimmelmann's estates were the largest slave owners on the island, closely followed by Chrisopher McEvoy's heirs. Both controlled close to 600 enslaved each. With ca. 500 enslaved each Robert Tuite and William & Samuel Newton were the third and fourth largest slave owners respectively.[125] Of these four three of them were also in the top four largest estate owners by land. McEvoy's heirs top the list followed by William & Samuel Newton and Schimmelmann in third. Robert Tuite was the 9th largest landowner. Conversely, Jan Jacob de Windt's heirs who had only been the 9th largest slaveowners, were the 4th largest landowners.[126]

However, by only examining land and enslaved ownership by individuals, only a partial image of white planter class is revealed. We should also consider if some families were more widespread than others. It is not an unthinkable likelihood that a property was

[121] Christensen, "Kolonisamfundet på St. Croix." P. 89-90
[122] Hall, *Slave Society in the Danish West Indies*. P. 9-19
[123] Appendix 19
[124] Appendix 6 & 20
[125] Appendix 6
[126] Appendix 20

divided amongst several heirs who in turn reinvested their wealth and bought more property on the island, further expanding the collective wealth and status of the entire family. By sorting the plantations by surname, one family firmly stands out above all else: The Heyligers.[127] A large and wealthy family stemming from the Dutch island of St. Eustatius, some members fled to St. Croix during the war of Jenkins ear in 1739.[128] In the years that followed the Heyligers spread their influence, and by 1792 they were one of the most affluent families on the island. Both in terms of the amount of enslaved and land that the family controled, they were close to twice the size of the next family.[129] Compared to other families, they are also the family with the most amount of plantation owning members. 11 distinct Heyliger family members are noted in the 1792 census – over three times as many as the next families.[130] This most likely explains why so few Heyliger show up when examining individual ownership, as it is split up amongst many members compared to just one to four in other families.

What makes itself clear through this examination of the landowning Crucian planter class, is a society where a large portion of the wealth, enslaved and land on the island was under the control of a select few individuals and families. The 10 largest slave owning families owned close to 41 % of all enslaved in the rural setting. Even if we narrow this further down too only the largest 5, these families still owned ca. 28 % of all enslaved on the crucian plantations.[131]

The enslaved

Having now discussed the plantation owners, let us now turn to the other major population group: the enslaved. Much has already been discussed about the general development of this population group in the period 1755-1805 in the sections above. Therefore, the following will instead explore the characteristics of this group. How old they were, their gender and their work life will all be examined.

Age, gender, and creole distribution

The first element that will be examined is the age and gender of the enslaved population. Sadly, the cadastres ledgers are pretty vague on pertaining to this subject. Through much of the period examined by this paper from 1755 to 1805, only three categories of age are used: "capable slaves, half adults (aged 12-16)[132], and enslaved under 12. The age of newly imported and incapacitated end – called Busals and Manquerons respectively –

[127] Appendix 21 & 22
[128] Hall, *Slave Society in the Danish West Indies*. P. 13
[129] Appendix 21 and 22
[130] Appendix 23
[131] Note that this is assuming the census included all crucian plantations. It is a little unclear if minor planters were excluded.
[132] The exact age of this group is not stated in the sources themselves but is defined in: Brøndsted, *Vore Gamle Tropekolonier, Vol. 2*. P. 216

are also not specified nor grouped. In 1795 the ledgers started noting female domestic workers as a separate group, and while these are grouped between women and girls, no mention is made of the specific age distinction. Furthermore, the enslaved population were not subdivided between male and female until 1793, making it difficult to examine the gender dived during much of the 18th century. However, using the available age categories we can still get a general sense of how large a percentage of the population were adolescent or younger. It can be estimated that of the enslaved population around 25-30 % would have been younger than 16 – with most of them being under 12.[133] By 1795 a large shift in the age groups takes place that can be explained by the of a new tax code that changed how the enslaved population was grouped and taxed. As such it is difficult to accurately assess the age distribution after this year. However, using the 1805 census ca. 35 % of the enslaved population are 20 years or younger. Calculating for the fact this number also includes people aged 16-20 compared to the cadastre ledgers, it does not seem that the age distribution changes drastically from 1795 to 1805.[134]

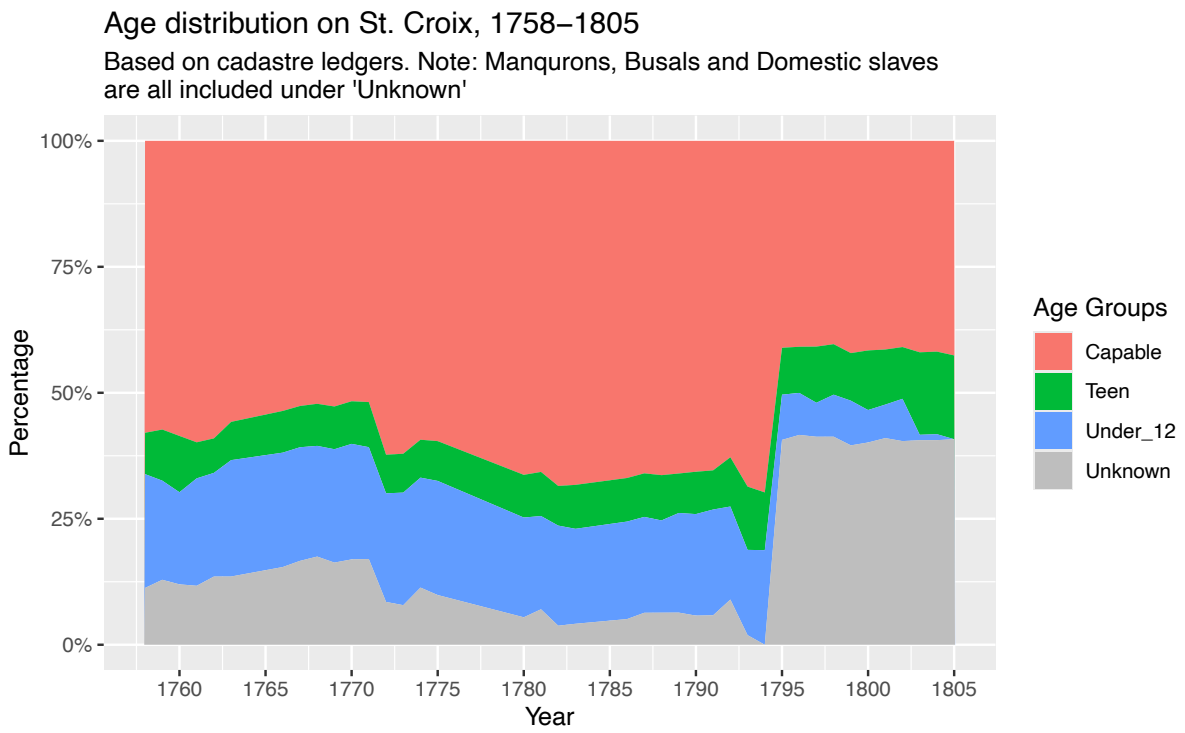


Figure 9: The age distribution of the enslaved population on the St. Croix, 1758-1805. Capable were enslaved over 16 deemed fit for work, Teens were between 16 and 12. The Unknown category is the sum of all other enslaved groups is the age was not explicitely stated. Source: Calculated from Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024. https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869

This age split is not identical between urban and rural areas of the island, however. Splitting the age groups between settings showed a large increase of young enslaved in

[133] See figure 9
[134] Appendix 24

the urban areas and also a substantial decrease of the "unknown" age group.[135] In other words the workforce on the islands many plantations were largely older than the enslaved housed or worked in Christiansted and Frederiksted. Naturally we cannot determine exactly how old the enslaved group were in general as the "Capable" age group encompasses a too wide age-span to make any beneficial conclusions. What we can do instead is use the 1805 census as it gives us the capability to examine the age of the enslaved population with far more granularity due to it splitting them up into 8 different age groups. Regrettably the census does not include any data from the urban areas of the island.

Using this census, we can see that the largest age groups on the island were 20- to 30-year-olds closely followed by 30- to 40-year-olds and 0- to 10-year-olds. That the size of the population group slightly falls from the first to the second age group, could be an indicator of the child mortality of the era. After reaching 30 years old, the enslaved population starts declining.[136] As the last group is simply named "Over 60" it's hard to determine exactly what the average life expectancy was on the island, yet it may still be interesting to try. Using the average age for each group, and 65 for the last group, the average age for enslaved in the rural areas of the island comes to 29,4 for women and 28,7 for men.[137]

The difference between the male and female population is small but still slightly noticeable. Comparing both the 1805 census and the latter parts of the cadastre ledgers, it can be observed that there was very slight predominance of males on the island.[138] Only when reaching ages over 50, did the female enslaved population start to outlive the male.[139] Similar to what was noticed earlier, this split was not equal everywhere on the island. While the rural areas saw an a slightly increased male population, the urban areas experienced the opposite having more females.[140] Perhaps this could be explained by a preference for male field workers and female domestic workers, but this is not something this thesis will explore further. Interestingly, Jamaica showed a tendency towards female enslaved field workers in the early 18th century.[141] Towards the end of the century an equal gender balance amongst enslaved on plantations seems to have been established in the British colony.[142] In other words: St. Croix was not unique in its enslaved gender division. In retrospect, it would not seem as if the incitements introduced by the state to increase

[135] Appendix 25
[136] Appendix 26
[137] Calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 54-72
[138] Appendix 27
[139] Appendix 28
[140] Appendix 29
[141] Burnard and Garrigus, *The Plantation Machine*. P. 41
[142] Burnard and Garrigus. P. 250

the female population on the islands in the 10 years before the slave ban, did anything to substantially change the Crucian gender split.[143]

The enslaved population on St. Croix was often divided between individuals born in the Caribbean, called creoles, and those born in Africa. While there are signs of a distinct creole enslaved culture, the umbrella term "African" encompasses a huge variety of different ethnic and cultural groups. In 2011 Hopkins et. Al. suggested that there possibly was a connection between sugar and Creole / Africans. However, neither the 1792[144] and 1803 census show any clear signs of this. A small majority of creole could be found in Oost Ende B and Compagniets Quadrant in 1792, but in both instances, the majority had shrunk slightly a decade later.[145] No doubt in part because the end of the slave trade and the preceding influx of enslaved.

Work, housing and food

The daily routine of enslaved on the crucian plantations have often been described by other scholars. One such description can be found in the book *Danmark og kolonierne – Vestindien* from 2017. A quick rundown of an average day on one of the many plantations in the 1700s goes as follows: At 3 am the enslaved would be woken by the bomba – a enslaved overseer - using a conch-horn to gather food and feed the plantations animals, followed by work in the fields until 7. After a short 15-minute brake, work would continue until midday where a ca. 2-hour lunch break would take place. During this time the enslaved would have to gather and make their own food whilst also feeding the animals again. Hereafter work continued until around 18:30 where the workday would finally end after ca. 13 hours not including breaks. This would have continued all year round with the exception of Sundays, in which the enslaved had some rare free time to attend to their own gardens and perhaps even going to market to try and trade their way to more and better food.[146] Furthermore, they would have been under the watchful eye of the Bomba who would not shy from using harsh punishments to keep others working.[147] During the harvest season, this work schedule would have been even more demanding, as the sugar would need to be harvested and processed within a short timeframe.[148] This cruel work life would drive many enslaved into a very early grave. No doubt this way of working the plantations was driven by the mainstream trend of many planters choosing short term profits over long term welfare and sustainability.[149]

---

[143] Schou, "Fr. Om Neger-Handlen, 16. Marts 1792."
[144] The 1792 census even shows an almost identical division between the two groups on sugar and cotton plantations. See appendix 30
[145] Appendix 31
[146] Olsen, *Vestindien*. P. 118
[147] Olsen. P. 169-170
[148] Brøndsted, *Vore Gamle Tropekolonier, Vol. 2*. P. 73
[149] Brimnes, *Slaveejerens Død*. P. 57

This description mainly pertains to the enslaved that would have worked in the field. But how large of a percentage of enslaved were part of this group on a plantation, and what types of other jobs were there for enslaved. A quick reader would already have picked up on two other main jobs: domestic workers and bombas (enslaved working as overseers). Other jobs would have been working in the cook-houses - producing sugar from the harvested cane – tending to the sick or keeping a watch on the plantation's livestock.[150] While the 1805 census counts workers as part of only one category, it can probably be assumed that many workers would have worked multiple jobs. Outside the harvest season, the cookhouses would probably not have been in much use, and it would make logical sense that workers may have been utilised in a variety of different roles. Using the 1805 census, it can also be noted that there was a difference between enslaved working in the field and enslaved fieldworkers – called "marknegere" (field slaves). Even when adding the columns labelled "Enslaved Guards", "Enslaved for looking after Cattle" and "Total Enslaved Working in the Field", these groups still only amount to between ca. 65 % - 80 % of previously mentioned "Enslaved Fieldworkers" category in the census. This could be taken to mean that Enslaved Fieldworkers were more so a category describing the type of work the enslaved were deemed fit for, rather than an indicator for how many were actually working that aspect of the plantation. Finally, there also exists the group of enslaved who fled from plantation called maroons. This group was rather limited, and by it's nature hard to realistically quantify. Plantation owners were legally required to list runaways the same year they had fled and to pay taxes on them unless they were gone for over ½ of the year.[151] However, they were still not listed separately from other enslaved, and it is a real possibility that plantation owners may have tried to hide how many enslaved ran away to avoid embarrassment. Yet it must have been a semi-regular occurrence, with up to 13 % of all articles in the locals DWI newspaper mentioning the words "runaway". There was even a designated illustration that often accompanied any notices about runaways.[152] The 1792 census also tried to count the total number of maroons by plantation. Out of a total of 96 maroons on the entire island, 151 plantations reported no runaways, 43 plantations had between 1-3 runaways, and two plantations had between four and seven runaways. Meanwhile, on Augustus Pentheny's Bog of Allen plantation a staggering 20 maroons were reported, setting the island record by a large margin.[153]

As mentioned above, it was the enslaved responsibility to cook their own food. While there was a system in place that forced the plantation owners to provide some forms of nutrition – often salted fish or maize – to the enslaved, it was typically of poor quality and

[150] Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 54-72
[151] Schou, "Fr. Hvorved Kopskatten Af de Paa de Danske Amerikanske Eilande, 11. November 1776."
[152] Appendix 32 & 33
[153] Appendix 34

insufficient. To supplement these measly rations, enslaved turned to growing their own food in small kitchen gardens often located on the less attractive areas of the plantation.[154] Sadly, this was seldomly enough. As Erik Gøbel and Louise Sebro aptly wrote in *Danmark og Kolonierne - Vestindien*: "Malnutrition was the rule rather than the exception for field slaves".[155] But exactly how much land did the crucian plantations make available to the enslaved? The 1792 and 1805 censuses lets us examine this. According to these sources the average enslaved would have had between ca. 0,13 and 0,28 acres available in 1792. In the more rugged areas of the island (Oost Ende A, Oost Ende B, Nord Side A and Nord Side B) provide almost the double acres compared to the lush central plateau. Just 12 years later this had however fallen drastically to only ca. 0,05 – 0,07 acres pr. person. [156] Translated to square meters the land provided was roughly 500 – 1100 m^2 pr. person in 1792 and ca. 200 – 300 m^2 in 1805.[157] This may seem as an extreme fall in living conditions, but a closer look at the two census will show that the first census counted all areas designated for enslaved, while the latter only measured areas for enslaved housing. The total amount of area counted as uncultivated also grew slightly from 1792 to 1805, and it is perhaps not too far-fetched to imagine many of these less appealing "unused" areas were the same areas counted as "negro lots" in 1792. Regardless of how the land was counted, the censuses indicate that a maximum of only ca. 5-10% of the total plantation was used to feed and house the large majority of its inhabitants.[158]

The 1805 census also ostensibly gives us the possibility to examine the enslaved housing situation shortly after the turn of the 18th century. From this we can calculate that on most areas of the island would have had between ca. 2,5 and 3 enslaved pr. designated slave house. Oost Ende A towards the eastern tip of St. Croix stands out as the most crowded with 3,5 pr. house.[159] During this time the houses built for the enslaved began going through a transition period from the rudimentary wattle-and-daub cottages covered with cane leaves, to European inspired mason cottages and row houses. This new housing was both more spacious and durable. This was not because of some change of heart by the plantation owners, but instead it was deemed a worthwhile investment. Inspired by the British "enclosure" movement, better housing was thought to lead to more heathy workers and productive workers.[160] With the end of the slave trade this line of thought

[154] Olsen, *Vestindien*. P. 118
[155] Olsen. P. 118
[156] Appendix 35
[157] The use of acres on St. Croix is a curious historical case, as it was not in use in the rest of the country. For a long time there also existed a small difference between the british acre and the danish acre. Daniel Hopkins, "The Eighteenth-Century Invention of a Measure in the Caribbean: The Danish Acre of St Croix," *Journal of Historical Geography* 18, no. 2 (April 1992): 158–73, https://doi.org/10.1016/0305-7488(92)90129-W.
[158] Appendix 36
[159] Appendix 37
[160] Chapman, "Slave Villages in the Danish West Indies." P. 2-11

became more relevant than ever. This movement to rebuild housing might also have reduced the total of houses available pr. estate. If we use the Botzenberg estate located in Oost Ende A as an indicator for the whole of St. Croix, it can be noted that from 1787 to 1805 the total amount of listed houses falls from 28 to 21 despite the enslaved population growing.[161] This would mean that there were 2,73 enslaved pr. house in 1787, but 4,67 pr. house in 1803. So, while to houses were getting bigger and more durable, more people had to contend for them. Of course, this discrepancy might also just be the result of a calculating error from the enumerators. The 1787 appraisal of the Botzenberg states there are "21 negro houses" but also "a row of 8 negro houses for house negroes". Perhaps the 8 negro houses were not counted. It might also be that the 1805 census only chose to count houses for fieldworkers. In either case we cannot know for sure, but if the later sources do contain errors, this would naturally change the housing density numbers mentioned above.

6. Plantation productivity

Understanding the island's administrative, environmental, demographic, and proprietary aspects all paint a fascinating, yet incomplete, picture of the crucian plantation society and economy. Probably the single most important facet of the colony is missing, as we have yet to explore whole reason for the colony's existence: the wealth created from plantations. Without a fertile soil that was able to sustain a thriving agricultural sector growing sugar and cotton, there would be no need for highly specialised plantations. And without plantations also no need for vast amount of manpower to operate. Without these plantations, St. Croix would most likely have followed a very different path. Having no other natural resources to speak of nor any natural harbours able to match that of the nearby St. Thomas, it is perhaps not too unrealistic to imagine the island as just another failed colonial project: sparsely populated and a drain on state resources. Of course, this line of thinking quickly devolves into counterfactual history, but the point still stands: Without plantations St. Croix' history would have been very different.

In this next chapter the output of the "plantation machine", as Trevor Burnard and John Garrius described the highly productive agricultural unit widespread in the Caribbean, will be examined further. Special focus will be put on answer the question of what made plantations productive. What exactly is meant by "productivity" will be explained later in the section "What is a 'Productive' Plantation?". Due a lack of readily available sources and data, the following will be a highly synchronic analysis concentrating on productivity in 1792.

[161] Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, "[Appraisal of John Rengger's Boetzberg Estate, 1787]," Dokumenter vedr. Kommissionen for Nergerhandelens bedre indretning, Rigsarkivet, accessed July 22, 2024, https://arkivalieronline.rigsarkivet.dk/da/billedviser?epid=20201795#292226,58788198.

Sugar, Rum & Cotton

The agriculture on St. Croix was highly specialised focusing on only a select few crops: sugar and cotton. Even though other crops could be grown, it was the growing, processing and export of these two crops that was the whole colony's entire foundation. The importance of these two crops are visible on even the earliest Danish produced maps of St. Croix: Cronenberg's 1743 map divide the islands plantations as either sugar, cotton or "provision" plantations – the latter of which is almost absent.[162] Let us start by having a quick look at the two crops.

Synonymous with the Caribbean plantation system, sugar was by far the most profitable and widespread crop type on St. Croix.[163] Since the early ages of the European Caribbean colonisation, sugar cane production and sugar consumption had exploded and central to this was the "integrated plantation". What is meant with this is that the plantation was not only a farm that could grow sugarcane, but virtual "factories in the field" that could also efficiently transport and process it into sugar crystals.[164] The usual process from field to table would go as follows. First the plantations fields would be organised into smaller squares. Then using groups of enslaved, or "gangs", holes would systematically be dug in each of these square for the sugar canes to be planted into. Then, making sure to weed unwanted growth away during the early stages, the sugar cane would be ready to harvest after 12 – 15 months.[165] Enslaved gangs would then cut the cane close to the root, being careful not to completely remove the crop as it could be regrown for multiple seasons before needing to be replanted. From here time was of the essence. Within 24 to 48 hours the canes would have to be transported to a mill and pressed to prevent rotting and the evaporation of its juices.[166] Many stories about enslaved losing hands and arms by accidently getting them caught in the mill while crushing the canes sadly exist, highlighting the gruelling working conditions.[167] It was even customary to have an axe ready nearby as to prevent further injury.[168] From here the cane juices would flow into the cookhouse's large cauldrons where it would be crystalized into brown sugar through boiling.[169] A bi-product of turning sugar cane juice into brown sugar was the thick brown

---

[162] Geodatastyrelsens Historiske Kort, "Charte over Eilandet St. Croix udi America" (1743). Accessed September 16, 2024.
https://api.dataforsyningen.dk/rest/arkivkort/iiif/3/LzYxLTY5IC0gc8O4a29ydC82MS0wMSBhbnRpa2tlLzUwOC9BbnRpa3Qvc29lLWExOC0wNDkuasnBn/full/4000,/0/default.jpg?token=147df2cc622086861a8ca994809a1ace
[163] Olsen, *Vestindien*. P. 157-164
[164] Burnard and Garrigus, *The Plantation Machine*. P. 3-8
[165] Oxholm (1797) describes the growth time of first year crops to be 14 – 15 months, while subsequent years the same crops would be ready after 12 months. Oxholm, *De Danske Vestindiske Øers Tilstand*. P. 44
[166] Burnard and Garrigus, *The Plantation Machine*. P. 6
[167] "Plantagedrift," Nationalmuseet, accessed September 13, 2024, https://natmus.dk/historisk-viden/temaer/danmarks-kolonier/dansk-vestindien/plantagedrift/.
[168] Brøndsted, *Vore Gamle Tropekolonier, Vol. 2*. P. 224
[169] Oxholm, *De Danske Vestindiske Øers Tilstand*. P. 45-47

syrup known as molasses. This was an addition source of income, as molasses could be distilled into rum.[170] The route from crop to consumption also involved European refineries which turned the brown sugar into the expensive white and powdered sugars. In the case of Denmark, the DWI colonies were legally prohibited from creating the refined product themselves, with the privilege of importing, exporting, and refining sugar granted to only select cities. For much of the period examined here, this privilege was given to Copenhagen alone.[171] The whole plantation system was, to put it mildly, heavily reliant on large amounts of labour. For this reason, sugar cultivation was also one of the last agricultural industries to adopt machinery or other labour-saving tools. For example, introducing a plough to save labour planting wouldn't have decreased the amount needed later when harvesting. In the eyes of the planters, the use of enslaved labour was the logical thing to do.[172]

The other prevalent crop on St. Croix was cotton. During the early phases of colonisation St. Croix, cotton was thought of as a vital industry due to the low level of capital needed to start production, helping bring colonists to the island and kickstarting the plantation system. [173] Around 1750, cotton had become a common crop with many plantations in both the western and eastern ends of the island growing it.[174] Yet, from the 1760's, the crop started to fall out of favour with many estates switching to growing the more profitable sugar instead. This meant that towards the end of the 18th century the crop was almost exclusively grown in the eastern end of the island where sugar cultivation was more difficult.[175] However, aided by a rise in sugar prices following the Haitian Revolution, even these remaining estates also chose to switch crops leaving only a small handful of true cotton plantations by 1804.[176] The intensive plantation systems on St. Croix prioritizing sugar and cotton, had a marked effect on the island's environment. Comparing Cronenberg's and Oxholm's maps, created roughly 50-years apart, it becomes apparent the island when through a large-scale deforestation during this period.[177]

---

[170] Burnard and Garrigus, *The Plantation Machine*. P. 6
[171] Jacob Henric Schou, "Fr. Om Handlen Imellem de Kgl. Europæisle Stater Og de Danske Øer i America, 7. April 1777.," in *Chronologisk Register over de Kongelige Forordninger Og Aabne Breve, Samt Andre Trykte Anordninger, Som Fra Aar 1670 Ere Udkomne*, 3rd ed., vol. 6 (København: Gyldendal, 1822), 126–30.
[172] Burnard and Garrigus, *The Plantation Machine*. P. 7
[173] Tyson, "On the Periphery of the Peripheries." P. 2
[174] Cronenberg's map can be viewed here: Geodatastyrelsens Historiske Kort, "Charte over Eilandet St. Croix udi America" (1743). Accessed September 16, 2024. https://api.dataforsyningen.dk/rest/arkivkort/iiif/3/LzYxLTY5IC0gc8O4a29ydC82MS0wMSBhbnRpa2tlLzUwOC9BbnRpa3Qvc29lLWExOC0wNDkuanBn/full/4000,/0/default.jpg?token=147df2cc622086861a8ca994809a1ace
[175] Olsen, *Vestindien*. P. 161
[176] Tyson, "On the Periphery of the Peripheries." P. 14
[177] See figure 1; Geodatastyrelsens Historiske Kort, "Charte over Eilandet St. Croix udi America" (1743). Accessed September 16, 2024. https://api.dataforsyningen.dk/rest/arkivkort/iiif/3/LzYxLTY5IC0gc8O4a29ydC82MS0wMSBhbnRpa2tlLzU

What is a "productive" plantation?

Having outlined the main crops and products created by the plantations of St. Croix, we can now turn to calculating how the productivity of these estates. But what exactly is meant by "productivity"? This paper takes productivity to mean how much product is created pr. acre or pr. enslaved. P. P. Sveistrup also suggested examining productivity in relation to how much capital was invested, but like he himself noted, the data needed to do this is very lacking and it will therefore not be studied in the following chapter.[178]

Calculating productivity by acre or enslaved is easily done by taken the plantations harvest and dividing it by the total area or number of enslaved used for growing the product. In the case of rum sugar fields will be used. This will be called crop-productivity. A productivity score pr. enslaved, and pr. acre will also be calculated using the market price of the final product as weights. These prices have been extracted from the books *Vore Gamle Tropekolonier* and *Den Danske Sukkerhandels og Sukkerproduktions Historie,* naturally ensuring prices correspond to same or adjacent years as the source material. This will most inevitably favour sugar plantations, as the value of sugar and rum were higher than that of cotton. Of course, prices fluctuate wildly, and the productivity related to value – hereafter simply value-productivity – would naturally fluctuate from year to year, even if the crop-productivity stayed stable. The value-productivity numbers therefore tell us more about the financial profitability of the plantations than of its production. An aggregated productivity score for both pr. acre and enslaved will also be calculated using the value-productivity scores. Finally, productivity scores will also be examined in a normalised fashion, to study how productive both plantations and quadrants were compared to the island average.

While a single aggregated productivity score, whether it be in terms of value- or crop-productivity, would seem beneficial, there does not exist a good way to calculate it. To create such an aggregated score, one would have to weigh the productivity scores pr. enslaved and pr. acre. Which of these two should account for the most in a final productivity score? Are they of equal worth, or should one account for more productivity than the other? I do not know, and therefore will not try calculate such a score.

To calculate what plantations were the most productive, we need both information on the harvests, amount of enslaved and how much area was in usage. Therefore, we once again turn to the 1792 census that includes a large amount of information about the agricultural production and setup of the plantations. Included in this is the average sugar, rum and cotton harvest in the last 7 years. Regrettably, no units are noted in the original source

wOC9BbnRpa3Qvc29lLWExOC0wNDkuanBn/full/4000,/0/default.jpg?token=147df2cc622086861a8ca994809a1ace;

[178] Sveistrup, "Bidrag til de tidligere Dansk-Vestindiske Øers økonomiske historie, med særligt henblik paa sukkerproduktionen og sukkerhandel." P. 138-142

material, but the size of the numbers, indicate that sugar and rum was most likely measured in casks and cotton in pounds. This seems to be corroborated by Oxholm, who in 1797 noted the exact same total sugar and rum harvest numbers as the 1792 census in casks.[179] Yet, this assumption also brings some issues as sugar casks weren't regulated in size. While they were smaller in size during the early years of colony – ca. 700 - 800 pounds – they gradually became larger and larger as the island was deforested.[180] During the late 18th and early 19th century casks are often noted as being somewhere between 1000 - 1200 pounds. This rather substantial variation in size this latter period, often seems to be the reasoning why academic works sometimes differ when discussing the precise size of St. Croix sugar production. To keep estimates conservative, this thesis will assume casks were equal to 1000 pounds of sugar as to not over-inflate the harvest value of predominantly sugar-growing plantations. It should be noted that there also exists some discussion and confusion as to if the relevant source material during the 18th and early 19th used British or Danish pounds as the standard unit of measurement.[181] This is not something this thesis is interested in examining further, and all measurements will hereafter simply be referred to as pounds (pd.).

Productivity in 1792

According to Oxholm the 7 years preceding 1792 had both 4 extraordinarily good harvests and 3 bad ones, hopefully meaning that the expected average harvest as noted in the 1792 census is more or less balanced and usable as a general indicator of productivity.[182] Comparing the census' harvest to other available data shows that this was probably the case, with the exception of a remarkably large cotton harvest in the averaged data. In the 1790's the cotton harvest was often well below half of what is stated in the census.[183] To underscore the point: the following will not examine the productivity of an actual harvest, we do not have information on individual plantations for this purpose, but rather what the harvest was expected to have been in the late 18th century. It should also be noted that sugar prices during the 1790's were some of the highest ever recorded under Danish rule. With this in mind, let us start by assessing the size and value of this expected harvest according to the census.

[179] Oxholm, *De Danske Vestindiske Øers Tilstand*. P. 38
[180] Sveistrup, "Bidrag til de tidligere Dansk-Vestindiske Øers økonomiske historie, med særligt henblik paa sukkerproduktionen og sukkerhandel." P. 142
[181] Sveistrup. P. 143
[182] Oxholm, *De Danske Vestindiske Øers Tilstand*. P. 16-17
[183] P B Hatchett, "The St. Croix Agricultural Reporter," *Publ. for the Agricultural Society*, no. 3 (1864). P. 7-8

Est. value of an average Crucian harvest in the late 18th century				
Sugar	17.931.000 pd.	at 11,5 skilling pr. unit	2.147.984,38	Rdl.
Rum	8.067 casks	at 10.800 skilling pr. unit	907.537,5	Rdl.
Cotton	227.500 pd.	at 33 skilling pr. unit[184]	78.268,35	Rdl.
Total harvest value:			**3.133.790,22**	**Rdl.**

Table 1: The value of the average harvest on St. Croix in the late 18th century based on the 1792 census' average harvest data from the preceeding 7 years. Prices pr. unit were mainly sourced from Oxholm and Sveistrup. Prices have been converted to rigsdaler dansk courant. Source: Calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222

The average harvest around early 1790's was expected to produce products worth an estimated 3,1 million Rdl.[185] In comparison in the 1790's a dayworker from Copenhagen would have earned between 20-24 skilling a day, a liter of beer cost 1-2 skilling whilst and barrel of butter would set you back 32-35 Rdl.[186] In other words the total harvest value was the same as the annual salery of ca. 43.700 danish labourers[187] – more than a third of Copenhagens total population at the time.[188]

On St. Croix most plantations were created equally, but not all developed equally. The orignal plan for St. Croix called for divding the island into plots of land of ca. 150 acres, thought to be enough to sustain a thriving sugar plantation, over time many plots were merged leading to plantations of varing sizes.[189] Most notable of these were the plantations Bethlehem and Store Princessen who recored the two best expected harvests at 82.395,83 and 79.218,75 Rdl. respectively.[190] Yet, this was probably to be expected as they also were among the largest plantations on the island. The mean harvest score on the island is calculated to be 16.939,41 Rdl., but this score is rather misleading. The harvest value of plantations was in largely decided by what crop they were growing, with sugar being the most widespread. Calculating the value-productivity scores of crucian plantations by the crops they grew, highlights exactly why sugar probably was the more popular crop. Sugar plantations were expected a harvest value

[184] The prices were based on sacks of cotton; a unit of measurement neither regulated nsor defined in any of the utilized sources or litterature. The size of a sack was set to 218 Pd. based on the average sack sizes from 1793-1796 in Oxholm, *De Danske Vestindiske Øers Tilstand*. P. 39.
[185] See table 1
[186] Thestrup, *Mark og skilling, kroner og øre*. P. 33
[187] The number was calculated by dividing the total harvest value by the estimated average yearly wage of a Copenhagen laborer (set at 22 skilling a day) in rigsdaler - assuming they worked every day except Sundays.
[188] "Danmarks befolkningsudvikling 1769-2021," danmarkshistorien.dk, accessed September 16, 2024, https://danmarkshistorien.dk/vis/materiale/danmarks-befolkningsudvikling.
[189] Olsen, "Godserne på St. Croix 1733-1800." P. 86-87
[190] Appendix 38

ca. 10 times that of a cotton plantation! And while it is true that cotton plantations were often smaller, the value created pr. acre or pr. enslaved, was still many times greater on sugar plantations.[191] We should keep in mind that the large gap in productivity may have been aided by the fertility of the ground. In areas were the ground was more fertile, and which would undoubtabley have led to decent value-producivity for cotton crops, sugar became the prefered crop due to a higher yield. This slowly pushed cotton plantations to the least fertile areas of the island, as sugar was not an economically viable crop there. Yet even these few plantations switched to sugar when the prices surged following the haitian revolution.[192]

Plantation type **total count**	**Harvest value** **mean *(median)***	**Pr. acre** **mean *(median)***	**Pr. enslaved** **mean *(median)***
Cotton **26**	2.780,08 Rdl. *(1.376,15 Rdl.)*	58,02 Rdl. *(25,8 Rdl.)*	105,03 Rdl. *(63,53 Rdl.)*
Mixed **5**	9.504,47 Rdl. *(9.959,77 Rdl.)*	98,65 Rdl. *(84,2 Rdl.)*	140,34 Rdl. *(105,96 Rdl.)*
Sugar **154**	19.571,34 Rdl. *(14.457,29 Rdl.)*	114,05 Rdl. *(98,88 Rdl.)*	206,34 Rdl. *(190,15 Rdl.)*

Table 2: The mean and median aggregated value-productvity scores of different plantations types on St. Croix according to the 1792 census' average harvest data using the preceeding 7 years. Mixed plantations are defined as having over 10 acres of fields designated for both cotton and sugar growing. Source: calculated from Calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222

So we now know what plantations types were the most profitable. Let us also take a quick note of the crop- and value-productivity of the main plantation products. Worth mentioning is that brown sugar has a value-productivity score doubled that of rum. Furthermore the value-productivity of rum and cotton have median scores very close to each other. The value created from sugar can therefore be seen as the "excess" value that made sugar plantations that much more productive.[193]

[191] See table 2
[192] Tyson, "On the Periphery of the Peripheries." P. 14
[193] See table 3

	Crop-productivity		Value-productvity	
	Pr. acre	Pr. enslaved	Pr. acre	Pr. enslaved
Sugar mean *(median)*	622 pd. *(571,4 pd.)*	1202,9 pd. *(1082,7 pd.)*	79,3 Rdl. *(68,4 Rdl.)*	144,1 Rdl. *(129,7 Rdl.)*
Rum mean *(median)*	0,3 casks *(0,25 casks)*	0,53 casks *(0,48 casks)*	33,3 Rdl. *(28,8 Rdl.)*	60,5 Rdl. *(54,2 Rdl.)*
Cotton mean *(median)*	158,2 pd. *(100 pd.)*	256,4 pd. *(154,5 pd.)*	54,4 Rdl. *(34,4 Rdl.)*	88,2 Rdl. *(53,2 Rdl.)*
Aggregated score	–	–	118,44 *(101,74)*	212,73 *(181,2)*

Table 3: The mean and median crop- and value-productvity for the Crucian plantations according to the 1792 census' average harvest data using the preceeding 7 years. The sugar production in pounds was converted from casks set at a conservative estimate of 1000 pd. pr. cask. Source: calculated from Calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222

Before moving on to comparing the individual plantations, a quick note should be made of the accuracy of the crop-productivity results. In 1797 Oxholm stated that Crucian plantations could, from an average harvest, expect ca. 1000-2000 pd. sugar pr. acre. In cases of an especially good harvest or newly planted sugar cane, the yield would have been double or even triple this.[194] Comparing it to the measly 622 pd. pr. acre calculated above, Oxholm's estimates seem almost far-fetched and completely improbable.[195] But is Oxholm overly optimistic or are the numbers calculated here to conservative? While Oxholm seemingly sets casks sizes for sugar at 1200 pd., compared to the 1000 set in this thesis, this cannot explain the gap.[196] Looking to other academic works, economic historian P. P. Sveistrup estimated the Crucian crop-productivity of sugar to be between 800-1000 pd. pr. acre during the late 18th century.[197] These numbers suggest that Sveistrup also defined the size of casks at ca. 1200 pd., indicating that his estimate is probably reasonably close to the one given here if the sizes were to be adjusted. Financial accounts from the Schimmelmann estates show a crop-productivity of ca. 684 pd. pr. acre[198] in 1792.[199] A comparable estimate to this thesis.

[194] Oxholm, *De Danske Vestindiske Øers Tilstand*. P. 48
[195] See table 3
[196] Calculated from the figures given here Oxholm, *De Danske Vestindiske Øers Tilstand*. P. 39
[197] P. P. Sveistrup, "Bidrag til de tidligere Dansk-Vestindiske Øers økonomiske historie, med særligt henblik paa sukkerproduktionen og sukkerhandel." P. 139
[198] In 1792 The schimmelmann estate noted a harvest of 726 casks of ca. 1000 pd. This number was divided by the 1792 census data on sugar field acreage on all three plantations owned by the Schimmelmann family. If the estate accounts only describe the harvest on the large La Grange and Store Princessen plantations, then the pr. acre crop-productivity would have been higher.
[199] P. P. and Richard, *Den Danske Sukkerhandels Og Sukkerproduktions Historie*. P. 117.

A number of reasons could be used to explain why Oxholm has such high estimates. First is simply that he might base his study on older accounts before the crucian soil degraded. In his description of the St. Croix, Reimart Haagensen described a much more fertile environment.[200] Yet this seems improbable as Oxholms position as a plantation owner and administrator would have given him plenty of knowledge on the subject, coupled with the fact that he even describes the islands soil degradation elsewhere.[201] Another reason might be that Oxholm uses the weights of raw unprocessed sugar cane when discussing productivity, while many others, this thesis included, uses the weight of the final processed brown sugar instead. However, this does not explain the pr. acre value difference estimated by Oxholm. While he states that an acre on average created ca. 500 Rdl. of sugar, the value calculated above is only ca. 68,4 Rdl. pr. acre.[202] Even if we use the very favourable sugar prices around Oxholms time of writing,[203] and assume his estimates are given in rigsdaler vestindisk courant[204], the pr. acre. value-productivity still does not come close. To reach the same level of productivity, with the same parameters as just mentioned, the pr. acre yield would have had to be 3 times higher than stated in the census. From 1770-1804 no harvest ever came close to that size.[205] It stands to reason that Oxholm possibly used the weights of unprocessed sugar and the value of brown sugar to calculate his pr. acre value-productivity. Yet this seems seems unlikely. Alternatively, he wilfully calculated his results based on newly planted sugar cane with triple the normal yield, on a plantation with over the median pr. acre productivity. This leads us to the final possibility: that Oxholm wilfully exaggerated the productivity of the island. We must keep in mind that the book was written to counter anti-colonial sentiments expressed in periodical *Politiske og Physiske Magazin*.[206] We need not discard his book because of this, but we should be critical when using his descriptions.

When reviewing the crucian plantations crop-productivity in normalised terms - that is when compared with each other - two areas of St. Croix stand out from the rest. The mean and median crop-productivity z-scores of plantations in Dronningens and Kongens quadrant indicate that these areas were the most productive on the whole island by some margin. Plantations in Dronningens quadrant were on average more productive pr. acre, while plantations in Kongens were more effective pr. enslaved. Compagniets quadrant, Prindsens quadrant and Nord Side B's z-scores all fall fairly close to 0, showing their output as being close to the average. The least productive regions were calculated to be

[200] Reimert Haagensen, *Beskrivelse over Eylandet St. Croix i America i Vest-Indien* (København, 1758), https://www.kb.dk/e-mat/dod/113904013902.pdf. P. 2-20
[201] Oxholm, *De Danske Vestindiske Øers Tilstand*. P. 50
[202] See table 3
[203] P. P. and Richard, *Den Danske Sukkerhandels Og Sukkerproduktions Historie*. P. 63
[204] See "Rigsdaler" under glossary.
[205] Hatchett, "St. Croix Agricultural Reporter." P. 7-8
[206] Oxholm, *De Danske Vestindiske Øers Tilstand*. P. 1-9

Oost Ende A, Oost Ende B and the West Ende quadrant with z-scores below -0.5 in both productivity pr. acre and pr. worker for rum and sugar.[207] Both Oost Ende quadrants likely scored badly in terms of productivity, as these areas contain almost all St. Croix' cotton producing plantations by 1792.[208] Depending on whether comparing mean or median score, Nord Side A fall either into the group with average or below average productivity.[209] A closer look at the data will show that this quadrant's mean is heavily lifted by a single outlier, hinting that it is probably most fitting to put them in the latter below-average group.

The aggregated value-productivity z-scores show a very similar story, with the exception of both cotton producing Oost Ende quadrants placing even worse.[210] This was probably to be expected as the median pr. acre value produced from cotton is comparable to rum, but still not of sugar.[211] Rum is made from the bi-product created from the sugar crop, meaning both products are crated on sugar plantations. This naturally results in the aggregated pr. acre value-productivity being lower on cotton plantations. As was noted earlier in this thesis, it was also common for cotton plantations to have a lower amount of enslaved than sugar or mixed plantations, meaning the close value-production score pr. enslaved for cotton and rum becomes significantly less impressive.[212] In conclusion: cotton plantations created ca. half of the value both pr. enslaved and pr. acre when compared to sugar plantations.[213]

Combining the ownership information in the 1792 cadastre ledger and census with the 1799 map of St. Croix, we're able to review the calculated productivity scores spatially by individual plantations. Although this combined data is not able to fully recreate the landscape of ownership on the island, it should be able to give us a general idea of what areas were more productive than others on a more detailed scale than previously discussed. In doing this it's possible to highlight two areas of the island that stand out in terms of pr. acre and pr. enslaved aggregated value-productivity. Contemporary authors often noted the flat central plateau on the island, encompassing the southern half of the island from Christiansted to Frederiksted, as being the most fertile and productive on the island. This is still largely the case when reviewing the spatial results calculated here, but there are some interesting differences. First it is interesting that several plantations on the northern edge of the island rival the productivity of the central plateau plantations.[214] This area is not often mentioned when describing the fertility or productivity on St. Croix.

[207] Appendix 39 & 40
[208] Appendix 39 & 40
[209] Appendix 40
[210] Appendix 41 & 42
[211] See table 3
[212] See chapter 5, section "General development – spatially".
[213] See table 2
[214] Appendix 43

Furthermore, as was hinted to above, a sharp decline in productivity can be observed towards the far eastern and western halves of the island. This is despite the West Ende quadrant being part of the so called fertile central plateau. In general, the most productive areas pr. acre were found in the areas a short distance west of Christiansted, while the most productive pr. worker were more spread out but still in the western and central parts of the plateau.[215]

Plantation profitability

Of course, while being a productive plantation is not quite equal to being a profitable plantation, although it is very reasonable to suggest the two are very closely linked; especially in terms value-productivity. With the usage of coerced enslaved labour still came expenses. This includes expenses for clothing or food.[216] The teacher and official Hans West, who resided on the island in the late 1700s estimated this expense to ca. 28,5 Rdl. Pr. year.[217] Other expenses include wages for administrators and other paid employees, land and head taxes, auction costs to buy enslaved and regular expenditures to maintain the plantations inventory. Combing the data obtained above on the average harvest value with information about expenses from Oxholm, West, Sveistrup and the Crucian 1792 cadastre ledgers,[218] we're able to give a very rough estimate on what the profitability of different plantation types would have been.[219] It is clear that not only was the harvest values largest on sugar plantations, but the profits were also. Using the values in the table below, the average cotton plantation lost and estimated ca. 50 - 75 % of their income to expenses compared to only ca. 20 - 25 % on sugar plantations.[220] It is very probable that the estimated expenses were too high on the average cotton plantation. As the cost to maintain plantation inventory and import of enslaved had to be calculated proportional to the enslaved populations on plantations by quadrant, sugar plantations and cotton plantations paid roughly the same compared to their size. As Sveistrup notes, however, plantation inventory expenses were largely the results of equipment needed for

[215] Appendix 43
[216] Enslaved were mostly intended to provide for themselves. See the section "Work, Housing and Food" for more information.
[217] Hans West, "Beretning Om Det Danske Eiland St. Croix i Vestindien, Fra Junii Maaned 1789 Til Junii Maaneds Udgang 1790," *Iris*, 1791. P. 14
[218] For enslaved auction prices: Oxholm, *De Danske Vestindiske Øers Tilstand*; West, "Beretning Om Det Danske Eiland St. Croix"; Sveistrup, "Bidrag til de tidligere Dansk-Vestindiske Øers økonomiske historie, med særligt henblik paa sukkerproduktionen og sukkerhandel." P. 147; For taxes: Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix, 1791-1792. Accessed September 16, 2024. https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869
[219] See table 3. These numbers were calculated by first coverting all values from West, Oxholm, and Sveistrup to Rdl. Expenses were in most cases only known on a quadrant level and had to be calcualted to be proportional to either estate land size of total enslaved population. Expenses related to interest payments are not calculated her. As mentioned in the methodology chapter, the code used for this thesis can be found on Github: Ølgaard, "The Crucian Plantation Society, 1755-1805."
[220] A rule of thumbs worth mentioning is that the Crucian rum production often covered all other of the plantations expenses. Brøndsted, *Vore Gamle Tropekolonier, Vol. 2*. P. 228-229

sugar harvesting.[221] Yet even if we assume cotton plantations were moderately lower and that cotton was grown in the least fertile areas of the islands further diminishing their harvests sizes, they were still many leagues less profitable than sugar plantations. No wonder cotton planters switched to growing sugar the moment it became an option.[222]

Plantation type **total count**	**Harvest value** **mean *(median)***	**Expenses** **mean *(median)***	**Profit** **mean *(median)***
Cotton **26**	2.780,08 Rdl. *(1.376,15 Rdl.)*	1.261,25 Rdl. *(1.021,55 Rdl.)*	1.518,83 Rdl. *(300,12 Rdl.)*
Mixed **5**	9.504,47 Rdl. *(9.959,77 Rdl.)*	2.892,28 Rdl. *(2.953,17 Rdl.)*	6.612,19 Rdl. *(5.554,32 Rdl.)*
Sugar **154**	19.571,34 Rdl. *(14.457,29 Rdl.)*	4.381,07 Rdl. (4.031,77 *Rdl.)*	15.190,26 Rdl. *(10.118,05 Rdl.)*

Table 4: The mean and median incomes, expenses and profits of different plantations types on St. Croix in the late 18th century. Mixed plantations are defined as having over 10 acres of fields designated for both cotton and sugar growing. Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222; Hans West, "Beretning Om Det Danske Eiland St. Croix i Vestindien, Fra Junii Maaned 1789 Til Junii Maaneds Udgang 1790," Iris, 1791.; Peter Lotharius Oxholm, De Danske Vestindiske Øers Tilstand (København), 1797.; P. P. Sveistrup, "Bidrag til de tidligere Dansk-Vestindiske Øers økonomiske historie, med særligt henblik paa sukkerproduktionen og sukkerhandel," Nationaløkonomisk Tidsskrift, 1942,

For some, profits from growing sugar would have been catapulted even further upwards. Whilst many planters' profits were created solely from the plantations, some like the Schimmelmann family also owned a sugar refinery in Denmark.[223] Refineries processed the raw brown sugar from the colonies turning it into the more expensive white or powdered sugar. Both a popular product domestically but also widely exported from Copenhagen to the many Baltic nations lacking colonies of their own, refined sugar could turn a nice profit. In 1792 the Schimmelmann family is recorded as making a total profit of 177.344 Rdl., more than half of it coming from its refinery. Even though 1792 seems to have been an extraordinarily good year – in most years refinery profits only constituted about a quarter of the total profits – they generally still added a considerable boost to the wealth created from the colonies.[224]

What were the most important factors in plantation productivity?

Using the functions above we're able to determine what plantations were the most productive. While fascinating in and of itself, these results pose a new and equally

[221] Sveistrup, "Bidrag til de tidligere Dansk-Vestindiske Øers økonomiske historie, med særligt henblik paa sukkerproduktionen og sukkerhandel." P. 147
[222] Tyson, "On the Periphery of the Peripheries." P. 14
[223] P. P. and Richard, *Den Danske Sukkerhandels Og Sukkerproduktions Historie*. P. 112-114
[224] Appendix 44

interesting question: why were some plantations more productive than others? Was the most important factor environmental, administrative or perhaps down to the individual way of running the plantation? Here we compare the results of our previous analyses with productivity. Furthermore, because all known 1792 plantations have been spatially located, we can also combine our data with environmental and geographical information from the United States Department of Agriculture (USDA).[225] Regrettably it was only in the 19th century that the weather and rainfall on St. Croix started to be measured in any detail. There also does not exist any detailed surveys on the island's soils to the authors knowledge. We're therefore forced to use modern statistics to answer the question posed above. Naturally this opens up the analysis up for potential flaws, but it is something we must accept. Studies on ancient maritime weather have all concluded that the broad patterns have most likely stayed the same until now.[226] This thesis will use this same assumption to use modern data to represent the average weather patterns 300 years ago. Whether or not this has any effect on the final results, will be discussed later.

Comparing the productivity of plantations with ownership nationality (excluding plantations / owners of unknown nationality), show a slight positive edge for Danish and French owned plantations, whilst Irish and Scottish plantations stand out as some of the least productive.[227] One might expect the Danish and French plantations to score higher due to the large Store Princessen and Bethlehem plantations, but both the Schimmelmann and the de Windt family are absent from the list of most productive families, suggesting a more collective national effort.[228] With this in mind, we might be able to suggest that cultural habits could have had an effect. As we established earlier many planters immigrated to the island from other European nations or colonies.[229] That some of these immigrant owners may have brought new production methods, technologies or labour management systems from their origin does might not seem too far-fetched. Yet so many plantations were owned and run by planters or administrators where we cannot conclusively confirm their nationality. It is therefore bordering impossible to confirm or deny if any cultural bias truly exists.

---

[225] Data on soil qualities can be accessed through the USDA's Web Soil Survey online resource that provides access to the Soil Survey Geographical Database (SSURGO). The area of interest used here is the Virgin Islands of the United States (VI960) with data from 2019-2023. National Resource Conservation Service USDA, "Web Soil Survey - Home," accessed August 9, 2024, https://websoilsurvey.nrcs.usda.gov/app/.

[226] For a short overview on the current debate about the comparability of ancient weather to modern weather see: David Gal, Hadas Saaroni, and Deborah Cvikel, "A New Method for Examining Maritime Mobility of Direct Crossings with Contrary Prevailing Winds in the Mediterranean during Antiquity," *Journal of Archaeological Science* 129 (May 2021): 105369, https://doi.org/10.1016/j.jas.2021.105369. p. 2

[227] Appendix 45

[228] The only exception is aggregated worker value-productivity, where the de windt family places third. See appendix 46

[229] See the section "Nationality"

This leads us to focus elsewhere to find factors relevant for productivity. Using a correlation matrix, like the one from chapter 5, we can examine if plantation sizes, workforce or windmill / animal mills had an influence. With a CV of 0,28 and 0,38 it seems as if the size of the enslaved workforce had a slight positive impact on productivity.[230] In other words, more worker often led to slight increase in productivity both pr. acre and pr. enslaved in what can probably best be described as a "scale of economy" effect. Especially pr. acreage productivity seems to be positively impacted by more workers. Larger plantations in term of total size, does not seem to have had as big an affect if at all. It should be noted that more area dedicated to sugar growing did increase productivity positively while cotton acreage had a slight negative impact. This again showcases how much more productive sugar plantations were compared to cotton growing estates. Intriguingly while windmills incited more productivity, as might be expected, animal mills seemed to have had the opposite effect.[231] It can be discussed whether this is due to animal mills being in areas already less productive, or if animals' mills were a necessary but ineffective tool that cause a drop in value created both pr. acre and pr. worker.

This leads us to the effect of the soil and metrological patterns on productivity. To lightening the manual work needed when transferring data, only relevant soil qualities where extracted. What made a soil quality relevant was in large part decided using the Food and Agricultural Organisation of the United Nations' (FAOUD) overview on sugar cane and cotton crops requirements.[232] Interestingly only a few factors seem to have any impact on productivity. Of these the bulk density, calcium percentage and PH levels are the only that have any effect. But as even these have very low CV-values, their impact is very much up for debate.[233]

The above paragraphs point to few factors that influenced such as scale of economy and possibly even nationality. But it also dispels others – including most soil qualities. It might therefore be valuable to discuss if some values are misrepresented or even completely missing. First the correlation matrixed used mean raster scores calculated using USDA the soil values and the digitised plantation cadastres. What this means is that the whole plantation size is used when calculating mean raster scores, most likely combining both scores of fertile and infertile areas into one. While plantations often had areas not in use or for alternative purposes, valuable crops would likely have been placed on the most productive areas. We only have the actual layout of a few select plantations[234], but not

[230] Appendix 47
[231] Appendix 47
[232] Food and Agriculture Organization of the United Nations, "Crop Information," accessed August 26, 2024, https://www.fao.org/land-water/databases-and-software/crop-information/en/.
[233] Appendix 47
[234] Many of the known plantation plans can be found at The Danish National Library (Det Kongelige Bibliotek). The Danish National Museum also posseses an extraordinarly beautiful depiction of the Bethlehem Plantation, which can be previewed here: Nationalmuseet Samlinger Online, "Koloreret

enough to estimate where only the sugar / cotton fields on all plantations would have been. This could explain why soil qualities seem to have such a limited impact. While the USDA has information on almost all aspects pinpointed in the FAOUD's crop overviews, soil aeration is notably missing. It is consequently a possibility that some impactful soil qualities are simply not represented in the current data. Alternatively, perhaps the industrial and residential developments since the late 18th century, has had a detrimental impact on the crucian soil, making previously fertile soil infertile. This would conceivably invalidate much of the USDA data if used as a representation of the soil from 1792.

We should also consider factors that we cannot represent accurately in the above analysis and are thus absent. Factors such as different equipment or technological advantages on some plantations compared to others. Such an analysis is inherently more qualitative than the previously explored factors and would also require comprehensive lists of all plantation inventories. A more nuanced topographical analysis of the Crucian plantation might also have been beneficial. The ruggedness of the plantations fields likely had a large impact on how easy it would have been to establish, grow or expand sugar cultivation. This could possibly be the missing key factor determining productivity. Unfortunately, such an analysis falls outside the scope of this thesis.

7. Assessing the impact of St. Croix

Having now examined how productive St. Croix's plantations were, why these plantations were productive and how the demography on the island changed from 1755-1805, it may now be appropriate to take a step back and ask the question: how impactful was St. Croix and the DWI to Denmark? When discussing what impact the crucian plantocracy and slave society had, it may be beneficial to evaluate its importance for the larger developments of Danish society. In the now classic book *Capitalism and Slavery* first published in 1944, Eric Williams argued that the capital accumulated through the triangle trade, was an essential element in the early development of the British industrial revolution.[235]

The Williams Thesis, as his theory has since been called, was based on the history and development of Britain. As he himself put it, it might have been pedantically correct that his book should have been called "British Capitalism and Slavery". But the same characteristic developments he described were also visible in nations such as France, suggesting that perhaps the theory was more universal.[236] Similar theories can be found

tegning af plantagen Bethlehem, Sankt Croix" (1779). Accessed September 16, 2024. https://samlinger.natmus.dk/dnt/object/223372#DNT-25593

[235] Eric Williams, *Capitalism & Slavery*, 2nd ed. (London: Andre Deutsch, 1967).

[236] Williams. P. 209

in the previously popular school "dependency theory" and Immanual Wallerstein's "World Systems Analysis". Put simply, both theories believe that the development of rich core areas, happen by the purposeful underdevelopment of poorer peripheral areas.[237] Perhaps we can transfer the same ideas to the DWI and St. Croix when studying the development of Denmark. Schimmelmann (both Heinrich and his son Ernst) were two of the main beneficiaries of the Danish colonial trade. Owning not only two of the largest plantations on St. Croix, but also two other plantations in the DWI, a gun factory and the largest sugar refinery in Northern Europe, the Schimmelmann family accumulated large amounts of capital. If we believe the Williams thesis, this should translate into investments in burgeoning industrial industries. And perhaps there a few signs of this happening can be found. On their Danish estate Ahrensburg in Schleswig Schimmelmann bought in a spinning frame 1782.[238] Yet this seems to have been the exception. No large-scale industrial investments appear, and the Danish industrialisation and urbanisation would first gain steam towards the latter part of the 19th century. The mercantilist laws requiring trade with the DWI to be conducted exclusively through Denmark, also does not seem to have stimulated this process. The universality of Williams thesis is as such called into question. It would seem the capital accumulated through colonial exploitation of the peripheries alone was not enough to meaningly develop the core, whilst small colonial possession were insufficient recipient markets for manufacturing.

This leads us to two opponents of the previously described theories: Patrick O'Brien and Kenneth Pomeranz. In the view Patrick O'Brien, there are several faults with the previous theories. Putting aside the impossible task of definitively proving exactly where profits from the periphery ended, other issues still persist.[239] Assuming colonial commerce was extra-ordinarily profitable when compared to other enterprises and that a very large degree of profits were reinvested, O'Brien concludes it could account for no more than 7% - 20% of gross investments.[240]

This might make one discard colonies such at St. Croix as having absolutely no impact on the development of the metropole, perhaps even leading one to subscribe to more Eurocentric "development from within" theories, but we should consider historian Kenneth Pomeranz' renowned book *The Great Divergence* before doing so. Colonies were

[237] A short overview of the theory can be found here: D. Chirot, "World Systems Theory," in *International Encyclopedia of the Social & Behavioral Sciences*, ed. Neil J. Smelser and Paul B. Baltes (Oxford: Pergamon, 2001), 16609–13, https://doi.org/10.1016/B0-08-043076-7/01891-X.
[238] Brimnes, *Slaveejerens Død*. P. 17
[239] Patrick O'Brien, "European Economic Development: The Contribution of the Periphery," *The Economic History Review* 35, no. 1 (February 1982), https://doi.org/10.2307/2595100. P. 7
[240] O'Brien; Patrick O'Brien, "European Industrialization: From the Voyages of Discovery to the Industrial Revolution," in *The European Discovery of the World and Its Economic Effects on Pre-Industrial Society, 1500-1800*, ed. Hans Pohl, Vierteljahrschrift Für Sozial- Und Wirtschaftsgeschichte 89 (Stuttgart: F. Steiner Verlag, 1990).

vital for the divergence of Europe from the rest of the world, but not in the ways previously mentioned here. It was not the "fruits of overseas coercion" that proved vital, but rather the ability of colonies to free Europe from its land constraints and impending ecological disaster. The colonies were able to provide vital and land intensive resources, not capital, that allowed the home countries to specialise and urbanise without major issues. It should be noted that Pomeranz theory still hinges on unfree labour, as a way to counter import-substitution in the colonies. That is to say, to counter the colonies from industrialising themselves. Combined with the availability of coal near population centres, Pomeranz' theory highlights the importance of colonies for industrialisation.

But then why is Denmark not in the beginning stages of industrialisation by the early 19th century? Well, we might have to look at the size of St. Croix and the DWI. Being only a fraction of the British or French empires, it is hard to imagine what land constraints they practically would have solved for Denmark. Granted, St. Croix did export large amounts of sugar enabling the establishment of a profitable sugar refining industry in places such as Copenhagen, it did not provide any other resources in large enough amounts to kickstart additional industries. In the view of this thesis, it is therefore difficult to claim that St. Croix or the DWI had any larger societal, technological or industrial effects on Denmark.

Likely, the effects of the DWI and St. Croix were probably just a lot more immediate. It provided the state with a stream imports and export perfect for taxation. In the late 18th century, sugar tariffs accounted for approximately 3 % of the state's total income.[241] Furthermore, the import and export of sugar constituted between 30 – 60 % of Copenhagen's trade when viewed by value.[242] In other words: in a time when commerce was booming, sugar was a central commodity. As was discussed above, the crucian sugar planters profited massively from this system. However, it is hard to determine how big of an impact these individuals and families had as many non-Danish planters returned to their country of origin rather than Denmark. In other words: the "colonization by invitation"[243] strategy employed during the early developments of the island, appear to have caused a flight of capital in the years following. Perhaps the most apparent impact of St. Croix on the average citizen in the metropole, was the proliferation of sugar in society. From a rarity in the 17th century, to a luxury in the 18th, it become a common commodity in the 1800s. Numbers vary on exactly how much sugar Danes consumed at end of the 18th century. Sveistrup and Willerslev claim the average person consumed 1,25 kg pr. year, while Klas Rönnbäck calculates sugar consumption to 6-8 kg. The latter figure would make Danish consumption almost comparable to the British (9 kg. pr. person). Yet,

[241] Brimnes, *Slaveejerens Død*. P. 59
[242] Olsen, *Vestindien*. P. 158
[243] "Colonization by invitation" was described earlier in the section on planter nationality and stems form Hall, *Slave Society in the Danish West Indies*. P. 6

while the mentioned scholars disagree on the exact amount consumed, both show a huge growth in relative sugar consumption during the last half of the 18th century.[244] And this development was long before the emergence of sugar beets which would catapult Danish domestic sugar production even higher.[245]

8. Conclusion

In this thesis general demographic developments from 1755-1805 were examined in conjunction with a closer look at plantation productivity at the end of the 18th century. Furthermore, a short discussion on the impact of St. Croix and the DWI on Denmark was also conducted. Having now examined these, what are the key observation made during this thesis?

The general demographic trend of the island can broadly be divided into three eras: the first period from 1754-1775 saw a massive growth of population, followed by a 17-year respite where growth was essentially halted. Comparing the growth of the island with data on the influx of enslaved, principally from slavevoyages.org, show that these two eras had very similar levels of enslaved transported to St. Croix. The 17-year period of low growth coincided closely with the law closing of the slave trade to all non-Danish slavers. This could suggest either the Curcian plantation reaching a natural equilibrium where more enslaved labour was not an economically practical option or that Danish slavers were unable to fulfil the islands demands. The last era from 1792 and onward saw yet another large spike in population growth, driven by a rush to buy enslaved before the abolition of the trade in 1803. This increased demand for enslaved labour was mainly fulfilled by British traders. This three-stage development disproves the notion that the colonial plantation period was one of "unvaryingly upward growth" as suggest by some scholars. In total the island's population grew by ca. 130 % over the examined 50-period. As shown, this growth is however difficult to explain solely using available data on the influx of enslaved from slavevoyages.org.

To add detail to the analysis of broader population trends, the results were also examined spatially. This breakdown showed that growth was not uniform across the island, with some quadrants reaching close to peak population levels already by 1770. The spatial analysis also showed that larger plantations usually had a lower density of enslaved pr. km^2 than smaller plantations. Using a correlation matrix, it was also shown that more sugar fields correlated to larger populations of field work designated and incapacitated enslaved, while not showing a correlation to more domestic focused enslaved labourers.

---

[244] Klas Rönnbäck, "An Early Modern Consumer Revolution in the Baltic?," *Scandinavian Journal of History* 35, no. 2 (June 23, 2010): 177–97, https://doi.org/10.1080/03468750903522349; P. P. and Richard, *Den Danske Sukkerhandels Og Sukkerproduktions Historie*. P. 367
[245] Brimnes, *Slaveejerens Død*. P. 20

Additionally, the analysis of the planter class both highlighted the frequency of non-Danish owners and showed that the 10 largest families by number of owned enslaved, controlled over 40 % of all enslaved outside of the cities. The demographic analysis also examined key aspects of the enslaved populations such as gender and age distribution. This revealed that up to 30 % of the enslaved population were under 16 years old, and that there was slight predominance of males in rural areas and females in urban settings. Overall, however, the equal gender ration was fairly balanced across the island.

The analysis on plantation productivity, understood as crop yield or value created pr. acre or pr. enslaved – called the crop-productivity and value-productivity. This showed that the expected harvest values were over 10 times larger on sugar plantations compared to cotton plantations, with the median value-productivity being ca. 3-4 times larger. When considering expenses, the profitability of the different plantation types also showed sugar plantations as being many factors more profitable than cotton or mixed plantations. The most productive plantations were on average to be found in Dronningens and Kongens Quadrants, with the former being more productive pr. acre and the later more productive pr. enslaved. The least productive areas of the islands were found to be the predominantly cotton-producing Oost Ende quadrants. This thesis also examined what factors were significant in determining productivity. A small positive correlation was found between productivity and total number of enslaved, possibly highlighting a "scale of economy" influence, whilst no correlation could be found to any soil qualities as recorded by the USDA. Yet, this analysis may have had several flaws. This includes the notion that the available modern data is unsuitable as a representative for 18th century soil qualities or that some important factors were possible absent from the correlation matrix, calling the reliability of the analysis into question.

It is the opinion of this thesis that from what was discusses here it is hard to claim the DWI laid the foundations a future long-term industrialisation. However, the colonies do seem to have had other more immediate impacts, such as providing the state with a lucrative source of revenue in the form of tariffs and making sugar consumption more widespread. As was seen in the section discussing plantation profitability, sugar plantations would also have created large amounts of wealth for their owners, but it is difficult to measure the impact of this on Danish society as many planters settled to other European nations.

Although, this thesis has only scratched the surface of the Crucian plantation society, it has demonstrated the potential of digital tools in historical research – examining not only demographic but also economic facets of St. Croix's colonial past. All digital tools and databases used in this thesis can be found freely online. With the availability of online tutorials and guides, the use of digital methods has never been as access17/09/2024 12:16:00ible as it is now.

Bibliography

Github (all code and data used in this thesis)

Ølgaard, Gustav. "The Crucian Plantation Society, 1755-1805." Github. Accessed September 15, 2024. https://github.com/G-Oelgaard/Crucian_plantation_society_1755_1805.

Sources

"Ernst Schimmelmanns brev om slavehandelen, 18. juni 1791." Accessed September 15, 2024. https://danmarkshistorien.dk/vis/materiale/ernst-schimmelmanns-brev-af-18-juni-1791-om-slavehandelen.

"Forordning om negerhandelen, 16. marts 1792." Accessed September 16, 2024. https://danmarkshistorien.dk/vis/materiale/forordning-om-negerhandelen-1792.

Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor. "[Appraisal of John Rengger's Boetzberg Estate, 1787]." Dokumenter vedr. Kommissionen for Nergerhandelens bedre indretning. Rigsarkivet. Accessed July 22, 2024. https://arkivalieronline.rigsarkivet.dk/da/billedviser?epid=20201795#292226,58788198.

———. "Tabel over de paa hans Maijestæts vestindiske Øer værende Indvaanere, Frinegere og Slaver i Aarene." Historiske statistikker og topografiske efterretninger om De vestindiske øer. Accessed May 28, 2024. https://arkivalieronline.rigsarkivet.dk/da/billedviser?epid=20201956#292303,58817934.

———. "Tabel over de paa hans Maijestættes vestindiske Øer værende Indvaanere, Frinegere og Slaver udi følgende Aaringer." Historiske statistikker og topografiske efterretninger om De vestindiske øer. Accessed May 28, 2024. https://arkivalieronline.rigsarkivet.dk/da/billedviser?epid=20201956#292303,58817936.

Haagensen, Reimert. *Beskrivelse over Eylandet St. Croix i America i Vest-Indien*. København, 1758. https://www.kb.dk/e-mat/dod/113904013902.pdf.

Hatchett, P B. "The St. Croix Agricultural Reporter." *Publ. for the Agricultural Society*, no. 3 (1864).

Oxholm, Peter Lotharius. *De Danske Vestindiske Øers Tilstand i Henseende Til Population, Cultur Og Finance-Forfatning, I Anledning Af Nogle Breve Fra St. Croix, Indtrykkede i Det Politiske Og Physiske Magazin for Marts Og April Maaneder 1797, Hvortil Er Føjet Beskrivelse Om Sukkerets Fabrikation Med 4 Planer.* København, 1797.

Schou, Jacob Henric. "Fr. Hvorefter Mynten Paa de Kgl Amerikanske Eilande, Og Dens Forhold Mod Dansk Grov Courant Bestemmes, 20. Marts 1770." In *Chronologisk Register over de Kongelige Forordninger Og Aabne Breve, Samt Andre Trykte*

Anordninger, Som Fra Aar 1670 Ere Udkomne, 3rd ed., 5:106–8. København: Gyldendal, 1822.

———. "Fr. Hvorved Kopskatten Af de Paa de Danske Amerikanske Eilande Værende Neger-Slaver Deels Nedsættes Og Deels, i Henseende Til Sammes Ligning, Angivelse Og Oppebørsel, Forandres, 11. November 1776." In *Chronologisk Register over de Kongelige Forordninger Og Aabne Breve, Samt Andre Trykte Anordninger, Som Fra Aar 1670 Ere Udkomne*, 3rd ed., 6:100–103. København: Gyldendal, 1822.

———. "Fr. Om Handlen Imellem de Kgl. Europæisle Stater Og de Danske Øer i America, 7. April 1777." In *Chronologisk Register over de Kongelige Forordninger Og Aabne Breve, Samt Andre Trykte Anordninger, Som Fra Aar 1670 Ere Udkomne*, 3rd ed., 6:126–30. København: Gyldendal, 1822.

———. "Fr. Om Neger-Handlen, 16. Marts 1792." In *Chronologisk Register over de Kongelige Forordninger Og Aabne Breve, Samt Andre Trykte Anordninger, Som Fra Aar 1670 Ere Udkomne*, 3rd ed., 10:242–44. København: Gyldendal, 1822.

West, Hans. "Beretning Om Det Danske Eiland St. Croix i Vestindien, Fra Junii Maaned 1789 Til Junii Maaneds Udgang 1790." *Iris*, 1791.

Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor. Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning", Box 2. P. 54-72. Rigsarkivets Arkivalier Online. Accessed September 16, 2024. https://arkivalieronline.rigsarkivet.dk/da/billedviser?epid=20201795#292226,58788325

———. Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning", Box 2. P. 203-222. Rigsarkivets Arkivalier Online. Accessed September 16, 2024. https://arkivalieronline.rigsarkivet.dk/da/billedviser?epid=20201795#292226,58788325

Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, "Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning", Box 2. P. 54-72. Rigsarkivets Arkivalier Online. Accessed September 16, 2024. https://arkivalieronline.rigsarkivet.dk/da/billedviser?epid=20201795#292226,58788325

Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024. https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869

Database / Digital Tools

Borucki, Alex, and Greg O'Malley. "Intra-American Slave Trade - Methodology," 2018. https://www.slavevoyages.org/american/about#methodology/0/en/.

Eltis, David. "Trans-Atlantic Slave Trade - Methodology," 2018. https://www.slavevoyages.org/voyage/about#methodology/introduction/0/en/.

Eltis, David, and David Richardson. *Extending the Frontiers: Essays on the New Transatlantic Slave Trade Database*. New Haven, United States: Yale University Press, 2008. http://ebookcentral.proquest.com/lib/asb/detail.action?docID=3420568.

Ooms, Jeroen, and Dirk Sites. "CRAN: Package Cld2." cld2: Google's Compact Language Detector 2, October 26, 2022. https://cran.r-project.org/web/packages/cld2/index.html.

QGIS. "Georeferencer — QGIS Documentation Documentation." Accessed September 15, 2024. https://docs.qgis.org/3.34/en/docs/user_manual/working_with_raster/georeferencer.html.

READ-COOP. "Danish 18th Century Administrative Writing." Accessed April 12, 2024. https://readcoop.eu/model/18c-danish-administrative-writing/.

Rönnbäck, Klas, Stefania Galli, and Dimitrios Theodoridis. "The Danish West Indies Panel." University of Gothenburg, May 28, 2024. https://doi.org/10.5878/KR6S-5Y43.

Slavevoyages.org. "Slave Voyages." Accessed September 11, 2024. https://www.slavevoyages.org

———. "Intra-American Slave Trade - Database." Accessed September 16, 2024. https://www.slavevoyages.org/american/database.

———. "Trans-Atlantic Slave Trade - Database." Accessed September 16, 2024. https://www.slavevoyages.org/voyage/database.

USDA, National Resource Conservation Service. "Web Soil Survey - Home." Accessed August 9, 2024. https://websoilsurvey.nrcs.usda.gov/app/.

Maps

Det Kongelige Bibliotek. "St. Croix" (1799). Accessed September 16, 2024. http://www5.kb.dk/maps/kortsa/2012/jul/kortatlas/object65447/da/

———. "Plan of the Island of St. Croix" (1804), Accessed September 16, 2024. http://www5.kb.dk/maps/kortsa/2012/jul/kortatlas/object65471/da/.

———. "Tilforladelig kort over Eylandet St. Croix udi America" (1754). Accessed September 16, 2024. http://www5.kb.dk/maps/kortsa/2012/jul/kortatlas/object65424/da/

Geodatastyrelsens Historiske Kort, "Charte over Eilandet St. Croix udi America" (1743). Accessed September 16, 2024. https://api.dataforsyningen.dk/rest/arkivkort/iiif/3/LzYxLTY5IC0gc8O4a29ydC82MS0wMSBhbnRpa2tlLzUwOC9BbnRpa3Qvc29lLWExOC0wNDkuanBn/full/4000,/0/default.jpg?token=147df2cc622086861a8ca994809a1ace

Nationalmuseet Samlinger Online, "Koloreret tegning af plantagen Bethlehem, Sankt Croix" (1779). Accessed September 16, 2024. https://samlinger.natmus.dk/dnt/object/223372#DNT-25593

Research literature

Bergsøe, Adolph Frederik. *Den Danske Stats Statistik*. Vol. 4. København, 1853.

Brimnes, Niels. "Dansk Kolonihistorie mellem historievidenskab og antropologi - et forslag til metode." *Indianerne og de hvide guder*, Den jyske Historiker, 60 (1992).

———. *Slaveejerens Død*. 100 Danmarkshistorier. Aarhus: Aarhus Universitetsforlag, 2022.

Brøndsted, Johannes, ed. *Vore Gamle Tropekolonier*. 1st ed. Vol. 2. København: Westermann, 1953.

Burnard, Trevor Graeme, and John D. Garrigus. *The Plantation Machine: Atlantic Capitalism in French Saint-Domingue and British Jamaica*. 1st edition. The Early Modern Americas. Philadelphia: University of Pennsylvania Press, 2016.

Chapman, William. "Slave Villages in the Danish West Indies: Changes of the Late Eighteenth and Early Nineteenth Centuries." *Perspectives in Vernacular Architecture* 4 (1991): 108. https://doi.org/10.2307/3514226.

Chirot, D. "World Systems Theory." In *International Encyclopedia of the Social & Behavioral Sciences*, edited by Neil J. Smelser and Paul B. Baltes, 16609–13. Oxford: Pergamon, 2001. https://doi.org/10.1016/B0-08-043076-7/01891-X.

Gal, David, Hadas Saaroni, and Deborah Cvikel. "A New Method for Examining Maritime Mobility of Direct Crossings with Contrary Prevailing Winds in the Mediterranean during Antiquity." *Journal of Archaeological Science* 129 (May 2021): 105369. https://doi.org/10.1016/j.jas.2021.105369.

Hall, Neville. *Slave Society in the Danish West Indies: St. Thomas, St. John, and St. Croix*. Jamaica: University of the West Indies press, 1994.

Hopkins, Daniel. "The Eighteenth-Century Invention of a Measure in the Caribbean: The Danish Acre of St Croix." *Journal of Historical Geography* 18, no. 2 (April 1992): 158–73. https://doi.org/10.1016/0305-7488(92)90129-W.

Hopkins, Daniel, Philip Morgan, and Justin Roberts. "The Application of GIS to the Reconstruction of the Slave-Plantation Economy of St. Croix, Danish West Indies." *Historical Geography* 39 (2011): 85–104.

Lassen, Aksel. "The Population of Denmark, 1660–1960." *Scandinavian Economic History Review* 14, no. 2 (July 1966): 134–57. https://doi.org/10.1080/03585522.1966.10407652.

Merry E. Wiesner-Hanks, ed. *A History of World Societies*. Eleventh edition. Boston: Bedford/St. Martin's, 2018.

Milligan, Ian. *The Transformation of Historical Research in the Digital Age*. 1st ed. Cambridge University Press, 2022. https://doi.org/10.1017/9781009026055.

Nockels, Joe, Paul Gooding, Sarah Ames, and Melissa Terras. "Understanding the Application of Handwritten Text Recognition Technology in Heritage Contexts: A Systematic Review of Transkribus in Published Research." *Archival Science* 22, no. 3 (September 2022): 367–92. https://doi.org/10.1007/s10502-022-09397-0.

O'Brien, Patrick. "European Economic Development: The Contribution of the Periphery." *The Economic History Review* 35, no. 1 (February 1982). https://doi.org/10.2307/2595100.

———. "European Industrialization: From the Voyages of Discovery to the Industrial Revolution." In *The European Discovery of the World and Its Economic Effects on Pre-Industrial Society, 1500-1800*, edited by Hans Pohl. Vierteljahrschrift Für Sozial- Und Wirtschaftsgeschichte 89. Stuttgart: F. Steiner Verlag, 1990.

Olsen, Poul Erik. "Godserne på St. Croix 1733-1800." *Bol og By: Landbohistorisk Tidsskrift* 12, no. 2 (December 14, 1996): 80–93.

———, ed. *Vestindien: St. Croix, St. Thomas Og St. Jan*. 1. udgave, 1. oplag. Danmark Og Kolonierne. København: Gad, 2017.

P. P., Sveistrup, and Willerslev Richard. *Den Danske Sukkerhandels Og Sukkerproduktions Historie*. København: Institutet for Historie og Samfundsøkonomi, 1945.

Rönnbäck, Klas. "An Early Modern Consumer Revolution in the Baltic?" *Scandinavian Journal of History* 35, no. 2 (June 23, 2010): 177–97. https://doi.org/10.1080/03468750903522349.

———. "On the Economic Importance of the Slave Plantation Complex to the British Economy during the Eighteenth Century: A Value-Added Approach." *Journal of Global History* 13, no. 3 (November 2018): 309–27. https://doi.org/10.1017/S1740022818000177.

———. "Were Slaves Cheap Laborers? A Comparative Study of Labor Costs in the Antebellum U.S. South." *Labor History* 62, no. 5–6 (November 2, 2021): 721–41. https://doi.org/10.1080/0023656X.2021.1974366.

Simonsen, Gunvor. "In the Same Sea." University of Copenhagen, August 24, 2020. https://inthesamesea.ku.dk/.

Sveistrup, P. P. "Bidrag til de tidligere Dansk-Vestindiske Øers økonomiske historie, med særligt henblik paa sukkerproduktionen og sukkerhandel." *Nationaløkonomisk Tidsskrift*, 1942. https://tidsskrift.dk/nationaloekonomisktidsskrift/article/view/60138.

Thestrup, Poul. *Mark og skilling, kroner og øre: pengeenheder, priser og lønninger i Danmark i 350 år (1640-1989)*. København: Rigsarkivet, 1991.

Tyson, George F. "On the Periphery of the Peripheries: The Cotton Plantations of St. Croix, Danish West Indies, 1735-1815." *The Journal of Caribbean History* 26, no. 1 (1992): 1–37.

Williams, Eric. *Capitalism & Slavery*. 2nd ed. London: Andre Deutsch, 1967.

Theses

Asmussen, Jesper Bering. "Slavedemografi. St. Croix' Landdistrikter, 1803-1848." Thesis, Aarhus University, 1983. https://www.dwis.dk/images/Dokumenter/Specialer/Vestindien/Asmussen.Slavedemografi._St._Croix_Landdistrikter_1803_848.rhus_1983.pdf.

Christensen, Jørgen Bach. "Kolonisamfundet på St. Croix i sidste halvdel af det 18. århundrede, med særligt henblik på arisokratiet blandt plantageejerne." Thesis, Aarhus University, 1978. https://www.dwis.dk/images/Dokumenter/Specialer/Vestindien/Christensen.Kolonisamfundet_p_St._Croix_i_sidste_halvdel_af_det_18_rhundrede.rhus_1983.pdf.

Websites

danmarkshistorien.dk. "Danmarks befolkningsudvikling 1769-2021." Accessed September 16, 2024. https://danmarkshistorien.dk/vis/materiale/danmarks-befolkningsudvikling.

Food and Agriculture Organization of the United Nations. "Crop Information." Accessed August 26, 2024. https://www.fao.org/land-water/databases-and-software/crop-information/en/.

Nationalmuseet. "Plantagedrift." Accessed September 13, 2024. https://natmus.dk/historisk-viden/temaer/danmarks-kolonier/dansk-vestindien/plantagedrift/.

Rigsarkivet. "The Population Trend in the Danish West Indies, 1672-1917." The Danish West-Indies - Sources of history. Accessed May 28, 2024. https://www.virgin-islands-history.org/en/history/personal-history/the-population-trend-in-the-danish-west-indies-1672-1917/.

———, Rigsarkivet. "Crowdsourcing." Accessed September 15, 2024. https://cs.rigsarkivet.dk/collection/3.

St. Croix Sugar Industry Traced through Variations of the Map Initially Created by J.M. Beck, 2022. https://www.youtube.com/watch?v=uqH-rlA2Dz8.

Virtual Galathea 3. "St. Croix i Fortid Og Nutid." Accessed September 10, 2024. https://virtuelgalathea3.dk/projekt/st-croix-i-fortid-og-nutid.

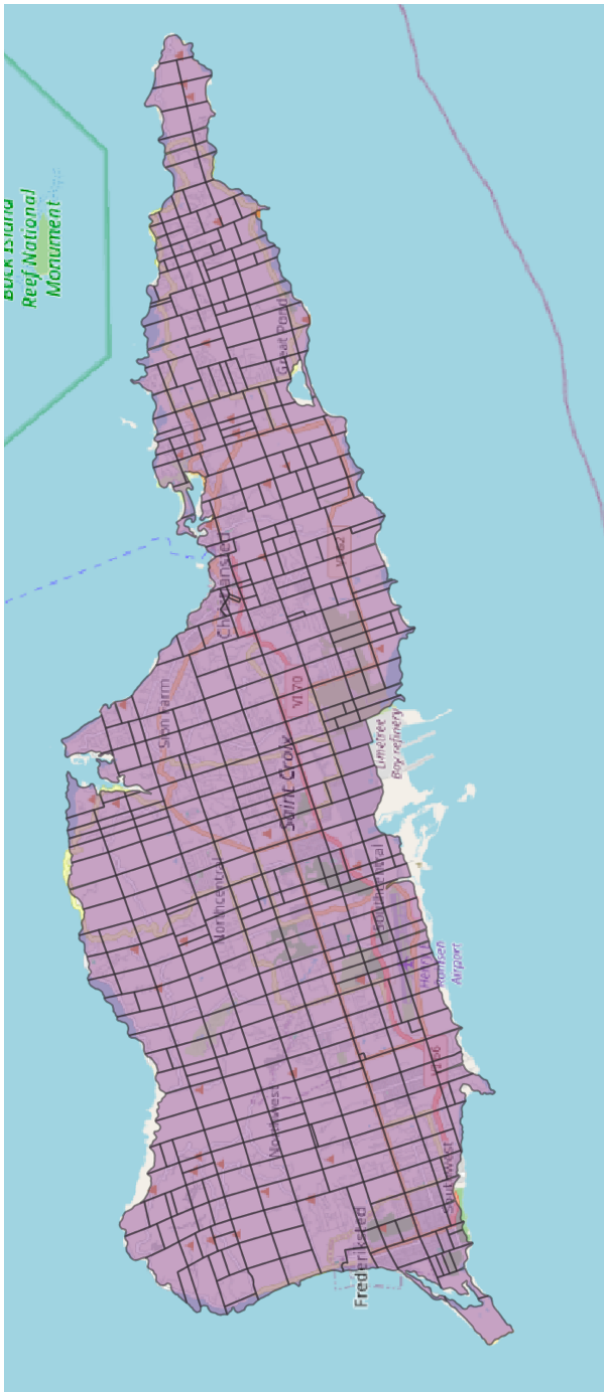
Windmills of St. Croix. “Historic Maps of St. Croix.” Accessed April 14, 2024. https://www.stcroixwindmills.org/historic-maps/.

Appendix

Appendix 1: Shoreline comparison

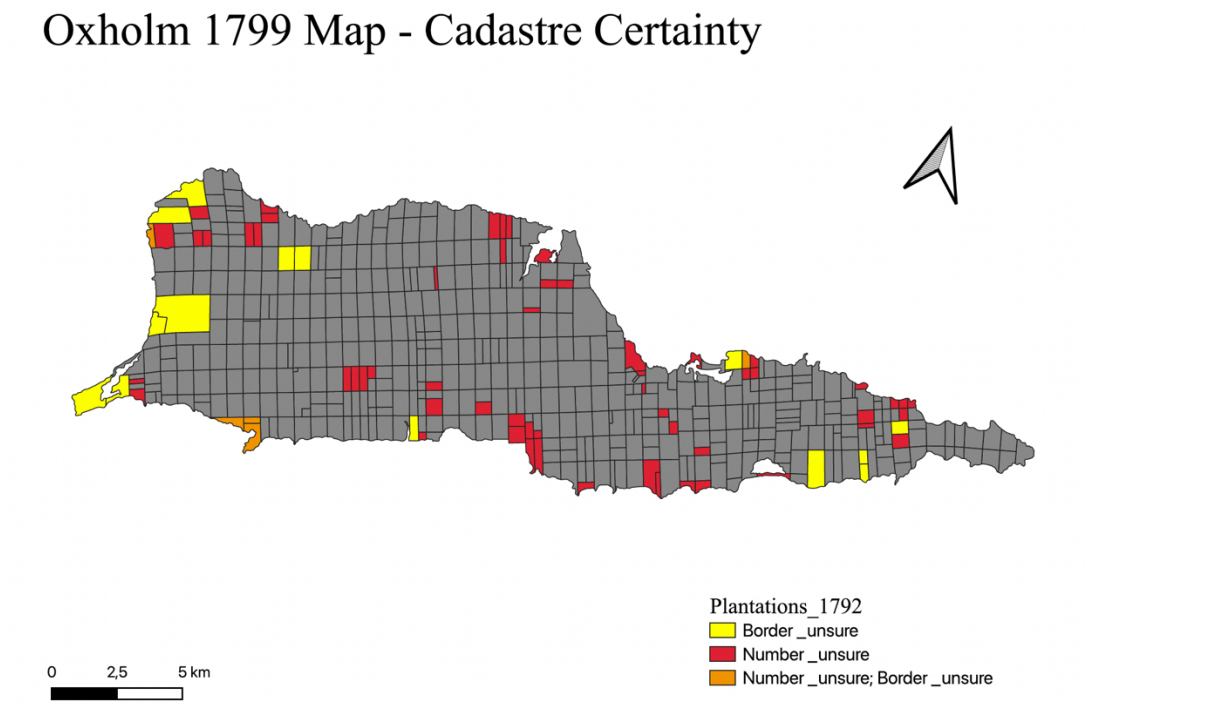
Source: created in QGIS using Det Kongelige Bibliotek, "St. Croix" (1799). Accessed September 16, 2024.
http://www5.kb.dk/maps/kortsa/2012/jul/kortatlas/object65447/da/

Note: Large parts of the island's southern coast have been altered since the establishment of a large oil refinery. The largest discrepancies are most visible on the northern coast.



Appendix 2: Cadastre certainty

Source: created in QGIS using Det Kongelige Bibliotek, "St. Croix" (1799). Accessed September 16, 2024.
http://www5.kb.dk/maps/kortsa/2012/jul/kortatlas/object65447/da/



Appendix 3: Table of total population growth

Source: Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024.
https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869

Note: going by anecdotal evidence, free blacks seem to be included under "White" until 1772. Cadastre ledgers for 1764 and 1765 are available, but are not reported here as the time it would take to calculate total populations would have been too great.

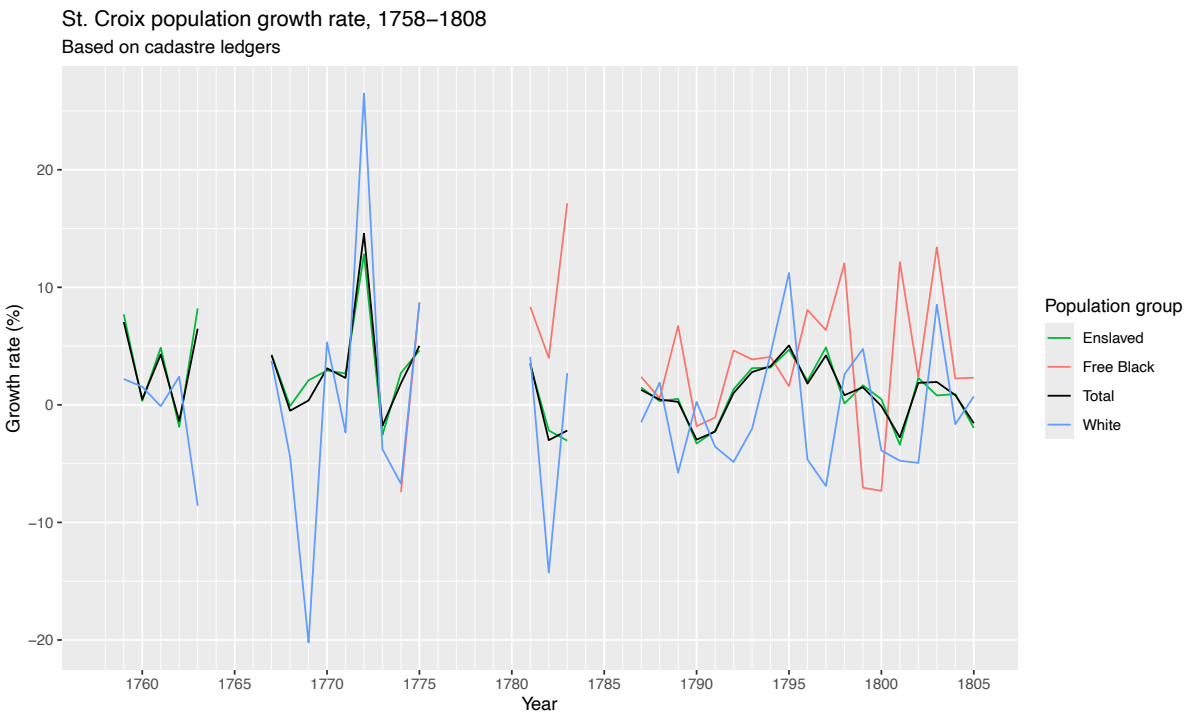
Year	*White*	*Free Black*	*Enslaved*	*Total*
1758	1.690	-	11.807	13.497
1759	1.728	-	12.792	14.520
1760	1.755	-	12.834	14.589
1761	1.753	-	13.489	15.242
1762	1.796	-	13.241	15.032

1763	1.654	-	14.425	16.079
1764	-	-	-	-
1765	-	-	-	-
1766	1.846	-	17.201	19.047
1767	1.918	-	17.967	19.885
1768	1.837	-	17.949	19.786
1769	1.528	-	18.332	19.860
1770	1.614	-	18.884	20.498
1771	1.577	-	19.401	20.978
1772	2.145	157	22.251	24.553
1773	2.067	361	21.697	24.125
1774	1.937	336	22.302	24.575
1775	2.122	368	23.384	25.874
1776	-	-	-	-
1777	-	-	-	-
1778	-	-	-	-
1779	-	-	-	-
1780	2.213	374	23.662	26.249
1781	2.307	408	24.496	27.211
1782	2.019	425	23.973	26.417
1783	2.075	513	23.265	25.853
1784	-	-	-	-
1785	-	-	-	-
1786	2.214	863	23.205	26.182
1787	2.083	884	23.552	26.519
1788	2.123	889	23.627	26.639
1789	2.007	953	23.748	26.708
1790	2.012	936	22.992	25.940
1791	1.943	926	22.494	25.363
1792	1.853	971	22.795	25.619

1793	1.816	1.010	23.529	26.355
1794	1.898	1.053	24.299	27.250
1795	2.138	1.070	25.493	28.701
1796	2.043	1.164	26.022	29.229
1797	1.911	1.243	27.359	30.513
1798	1.962	1.413	27.390	30.765
1799	2.060	1.320	27.853	31.233
1800	1.983	1.230	27.987	31.200
1801	1.893	1.400	27.068	30.361
1802	1.804	1.434	27.702	30.940
1803	1.972	1.656	27.926	31.554
1804	1.940	1.694	28.183	31.817
1805	1.954	1.734	27.640	31.328

Appendix 4: Annual growth by population group

Source: calculated from Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024.
https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869



Appendix 5: Table of ratio between white and enslaved population.

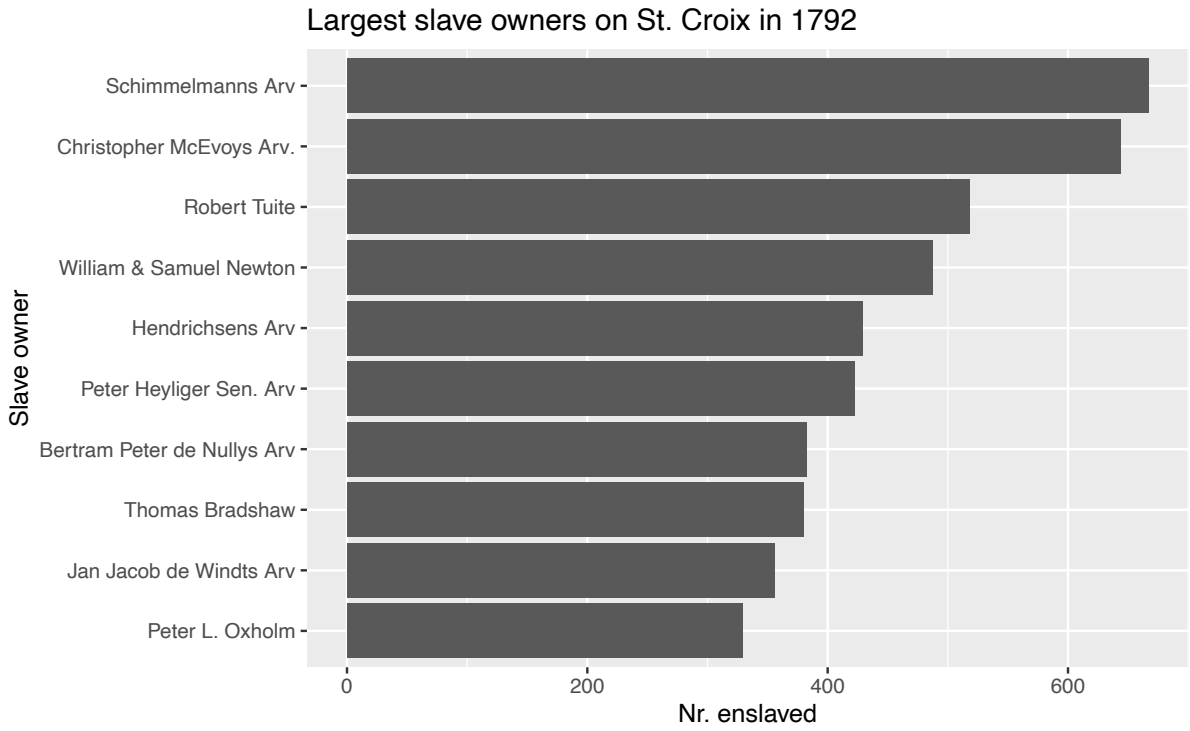
Source: calculated from Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024.
https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869

Year	*White*	*Enslaved*	*Ratio*
1758	1.690	11.807	6,99
1759	1.728	12.792	7,4
1760	1.755	12.834	7,3
1761	1.753	13.489	7,69
1762	1.796	13.241	7,32
1763	1.654	14.425	8,72
1764	-	-	-
1765	-	-	-
1766	1.846	17.201	9,32
1767	1.918	17.967	9,37
1768	1.837	17.949	9,77
1769	1.528	18.332	12
1770	1.614	18.884	11,7
1771	1.577	19.401	12,3
1772	2.145	22.251	10,37
1773	2.067	21.697	10,5
1774	1.937	22.302	11,51
1775	2.122	23.384	11,02
1776	-	-	-
1777	-	-	-
1778	-	-	-
1779	-	-	-
1780	2.213	23.662	10,69

1781	2.307	24.496	10,62
1782	2.019	23.973	11,87
1783	2.075	23.265	11,21
1784	-	-	-
1785	-	-	-
1786	2.214	23.205	10,98
1787	2.083	23.552	11,31
1788	2.123	23.627	11,13
1789	2.007	23.748	11,83
1790	2.012	22.992	11,43
1791	1.943	22.494	11,58
1792	1.853	22.795	12,3
1793	1.816	23.529	12,96
1794	1.898	24.299	12,8
1795	2.138	25.493	11,92
1796	2.043	26.022	12,74
1797	1.911	27.359	14,32
1798	1.962	27.390	13,97
1799	2.060	27.853	13,52
1800	1.983	27.987	14,11
1801	1.893	27.068	14,3
1802	1.804	27.702	15,36
1803	1.972	27.926	14,16
1804	1.940	28.183	14,53
1805	1.954	27.640	14,15

Appendix 6: 10 largest slave owners

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222



Appendix 8: Table of total growth from 1792-1803 (the last 10 years of the slave trade)

Source: calculated from Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024. https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869

Area	*1792*	*1803*	*Pop. increase*	*Pct. increase*
Christiansted	4.327	5.570	1.243	+28,7 %
Frederiksted	1.113	1.356	243	+21,8 %
Compagniets	2.119	2.312	193	+9,1 %
Dronningens	3.961	4.562	601	+15,2 %
Kongens	2.471	2.884	413	+16,7 %

Prindsens	3.498	4.347	849	+24,3 %
West Ende	3.107	3.641	534	+17,2 %
Nord Side A	1.931	2.693	762	+39,5 %
Nord Side B	883	1.269	386	+43,7 %
Oost Ende A	1.424	1.992	568	+39,9 %
Oost Ende B	785	928	143	+18,2 %
Total	25.619	31.554	5.935	+23,2 %

Appendix 9: Annual influx of slaves to St. Croix

Source: Brøndsted, Vore Gamle Tropekolonier, Vol. 2. P. 253; Slavevoyages.org, "Trans-Atlantic Slave Trade - Database."

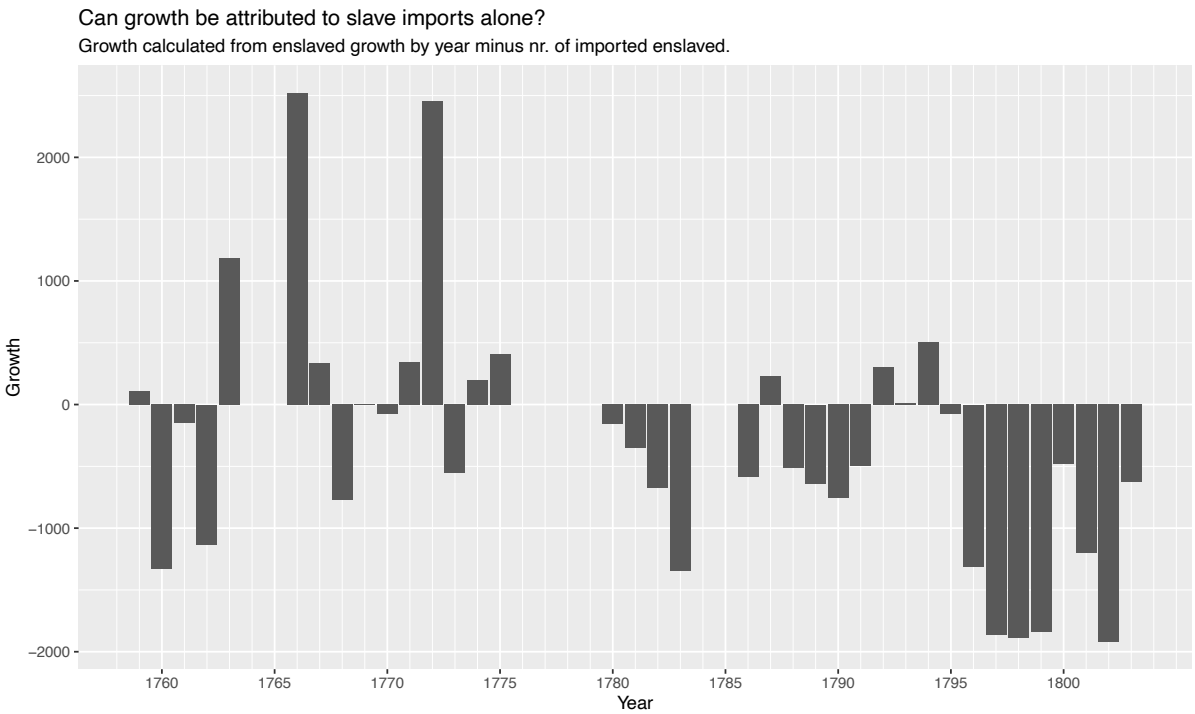
Year	*Denmark*	*Great Britain*	*U.S.A.*	*Other*	*Total*
1758	-	473	-	-	473
1759	727	146	-	-	873
1760	901	358	115	-	1.374
1761	805	-	-	-	805
1762	702	131	51	-	884
1763	-	-	-	-	-
1764	380	-	-	-	380
1765	255	-	49	-	304
1766	-	127	126	-	253
1767	224	-	208	-	432
1768	578	174	-	-	752
1769	228	96	-	-	384
1770	338	288	-	-	626
1771	-	174	-	-	174
1772	392	-	-	-	392
1773	-	-	-	-	-
1774	207	197	-	-	404

1775	388	288	-	-	676
1776	142	458	-	-	600
1777	-	-	-	-	-
1778	261	-	-	-	261
1779	1.453	-	-	-	1.453
1780	438	-	-	-	438
1781	1.188	-	-	-	1.188
1782	155	-	-	-	155
1783	642	-	-	-	642
1784	732	-	-	-	732
1785	193	-	-	-	193
1786	524	-	-	-	524
1787	119	-	-	-	119
1788	587	-	-	-	587
1789	760	-	-	-	760
1790	-	-	-	-	-
1791	-	-	-	-	-
1792	-	-	-	-	-
1793	311	411	-	-	722
1794	266	-	-	-	266
1795	266	1.004	-	-	1.270
1796	392	1.325	122	-	1.839
1797	57	3.016	126	-	3.199
1798	309	1.323	-	291	1.923
1799	35	2.265	-	-	2.300
1800	286	328	-	-	614
1801	-	279	-	-	279
1802	508	1.793	252	-	2.553
1803	512	339	-	-	851

Appendix 10: Annual difference between imported enslaved and population growth.

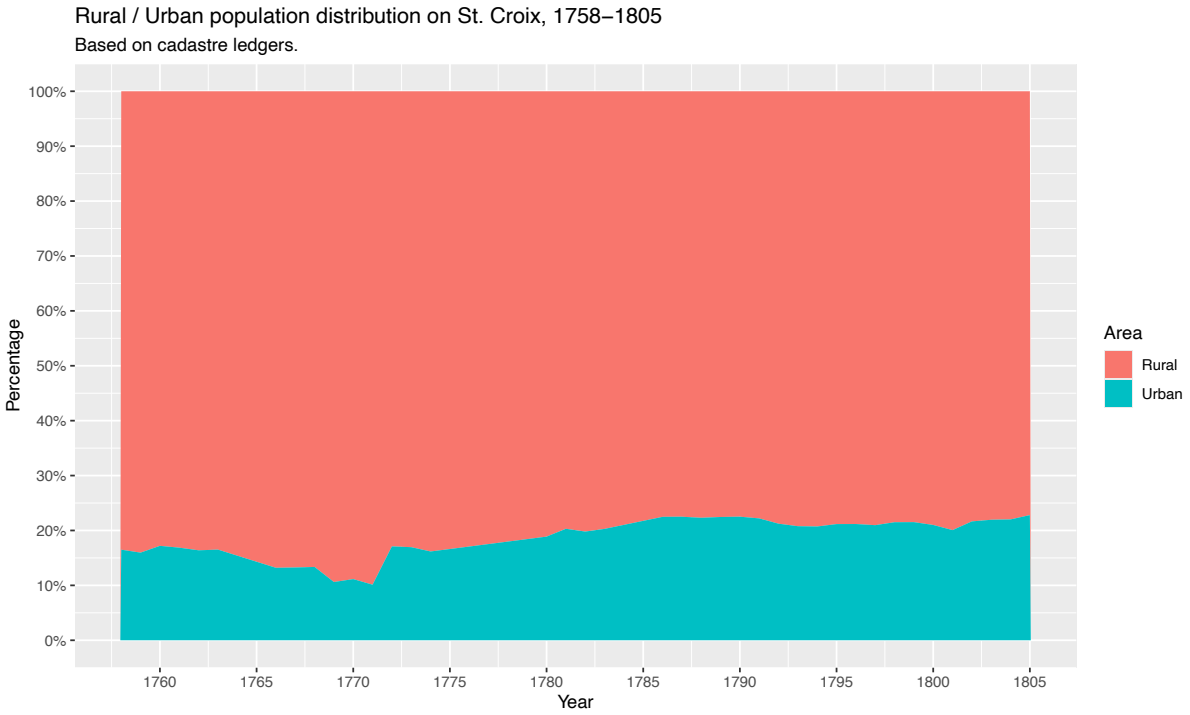
Source: Brøndsted, Vore Gamle Tropekolonier, Vol. 2. P. 253; Slavevoyages.org, "Trans-Atlantic Slave Trade - Database."; *Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024.* https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869

Positive numbers indicate growth beyond imports of enslaved and negative numbers indicate that more enslaved were imported than the population grew. What we can see from the plot is that generally far more slaves were imported than the population grew. However, for a few select years the population growth far exceeded that the total amount of enslaved imported.



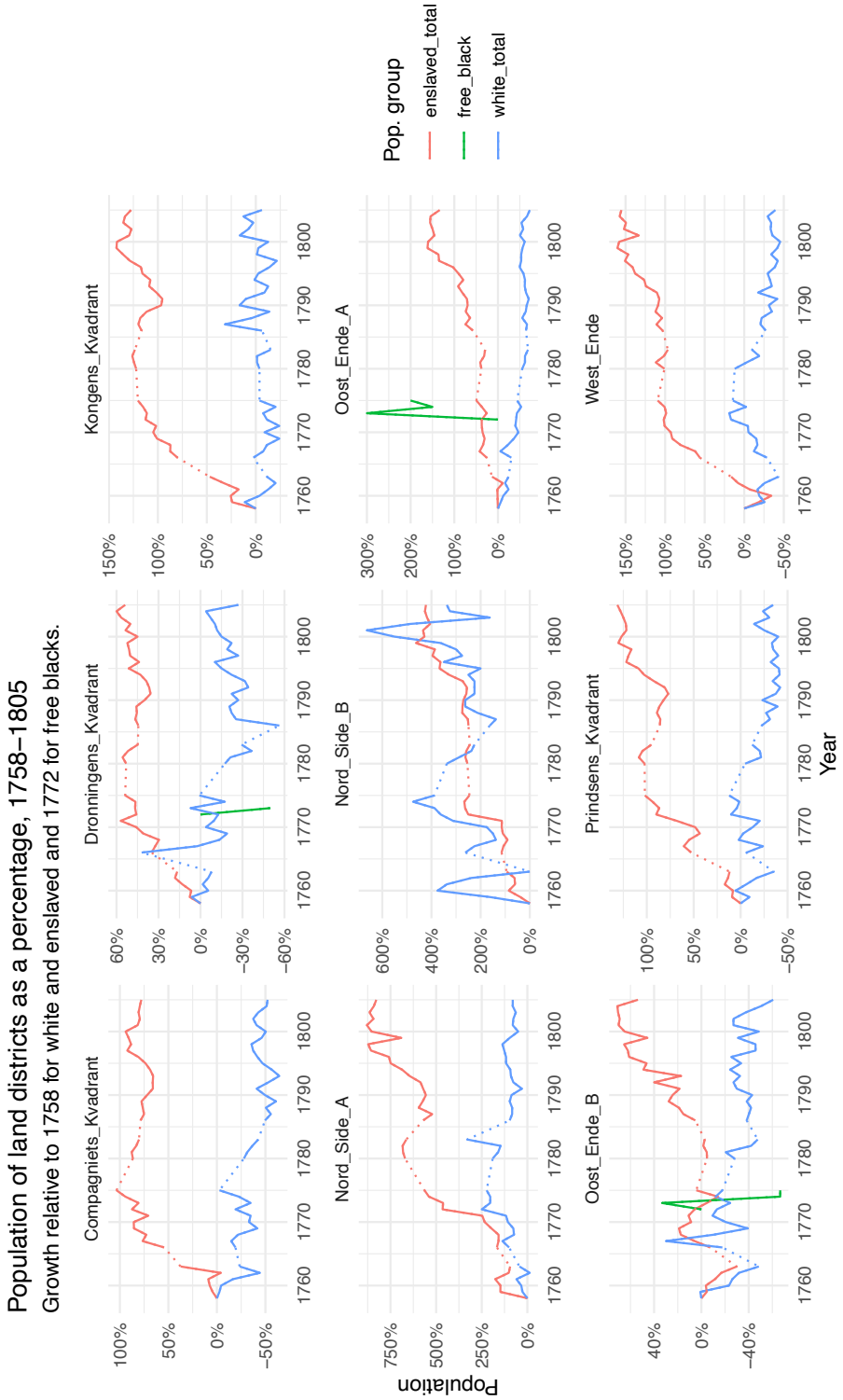
Appendix 11: Rural vs. urban population distribution

Source: Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024.
https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869



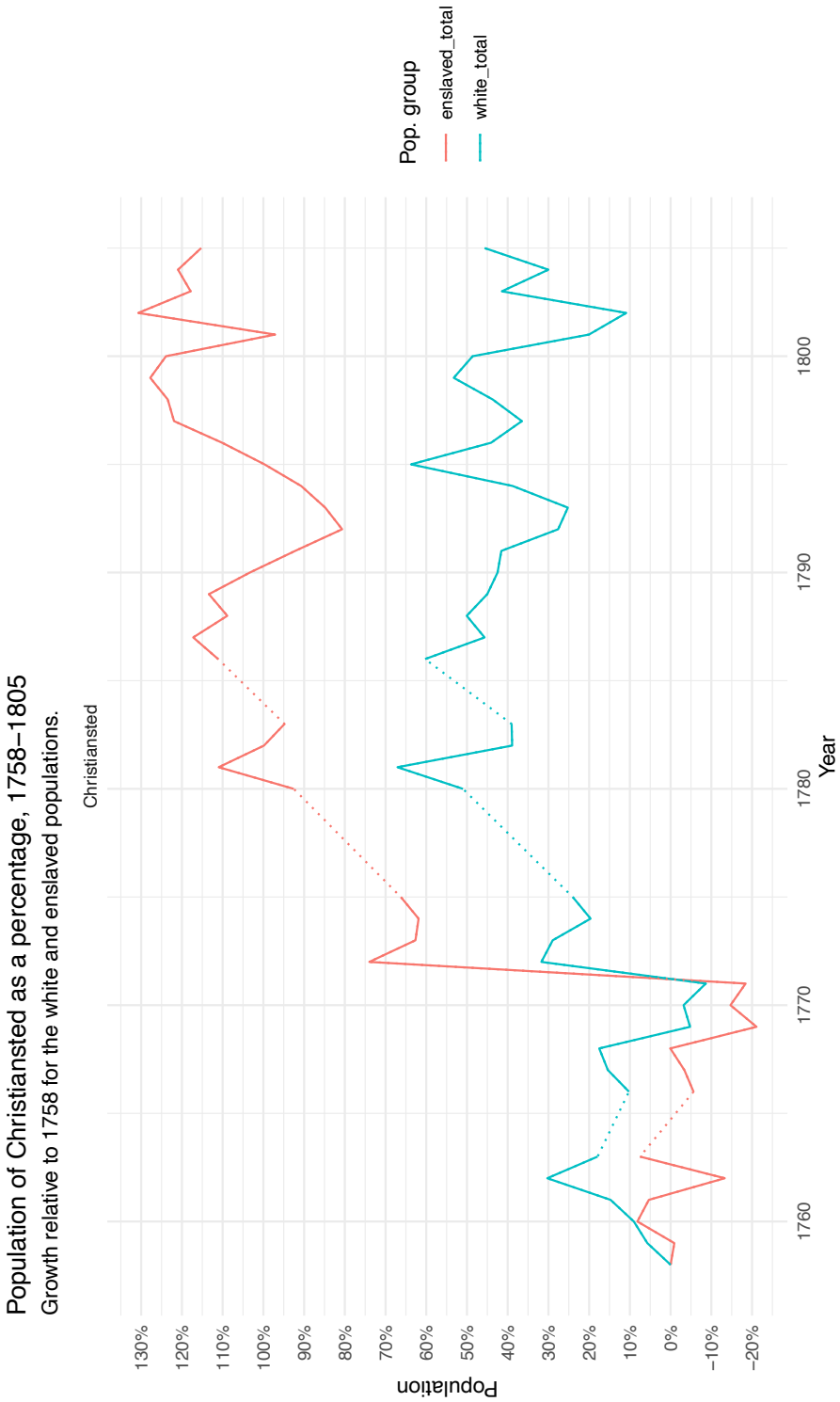
Appendix 12: Percentage increase in population since 1758 by quadrants

Source: Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024.
https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869



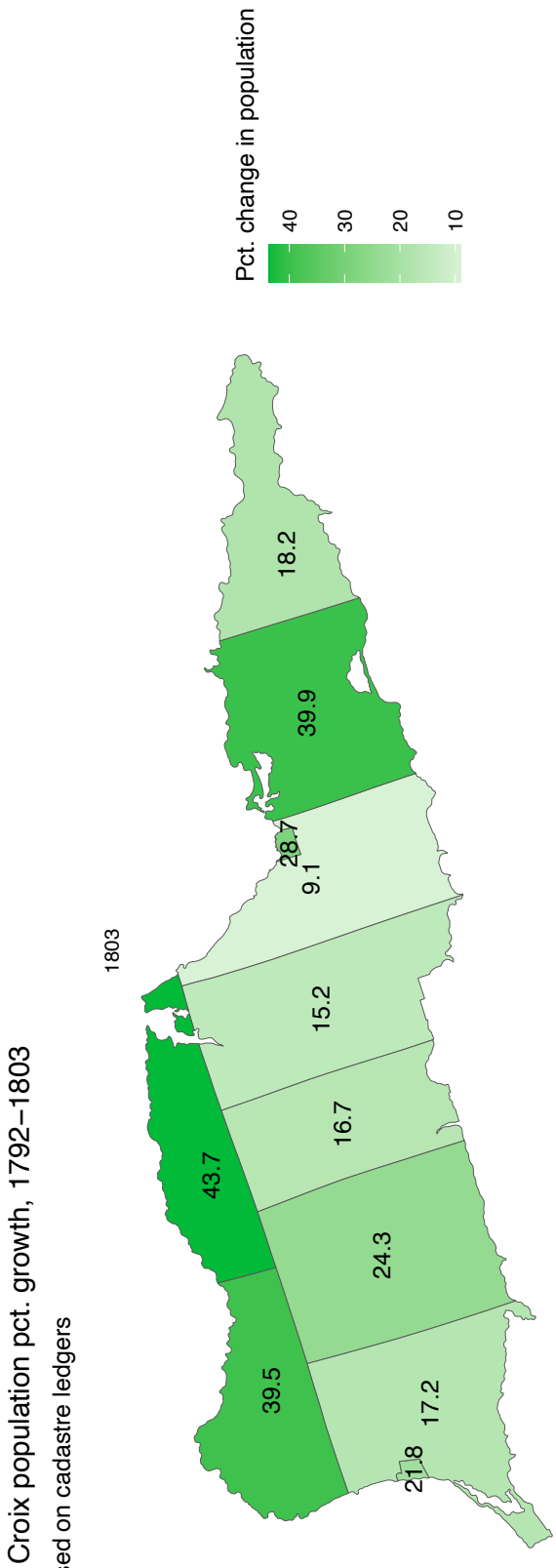
Appendix 13: Percentage increase of Christiansted's enslaved and white populations since 1758

Source: Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024.
https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869



Appendix 14: Pct. change in population by quadrant, 1792-1803

Source: Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024.
https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869



Appendix 15: Changes in pop. Density (people pr. km^2), 1792-1803

Source: calculated from Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024. https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869; Det Kongelige Bibliotek, "St. Croix" (1799). Accessed September 16, 2024. http://www5.kb.dk/maps/kortsa/2012/jul/kortatlas/object65447/da/

Area	*1792*	*1803*	*Difference*
Christiansted	8.428,53	10.978,49	+2.549,96
Frederiksted	2.521,05	3.071,46	+550,41
Compagniets	89,72	97,89	+8,17
Dronningens	139,04	160,13	+21,09
Kongens	119,61	139,6	+19,99
Prindsens	107,68	133,81	+26,13
West Ende	119,97	140,59	+20,62
Nord Side A	96,31	134,32	+38,01
Nord Side B	51,87	74,55	+22,68
Oost Ende A	56,1	78,47	+22,37
Oost Ende B	44,28	52,35	+8,07

Appendix 16: Table of enslaved pop. growth from 1792 to 1803 and the stated number of enslaved missing to reach an ideal labour force in 1792.

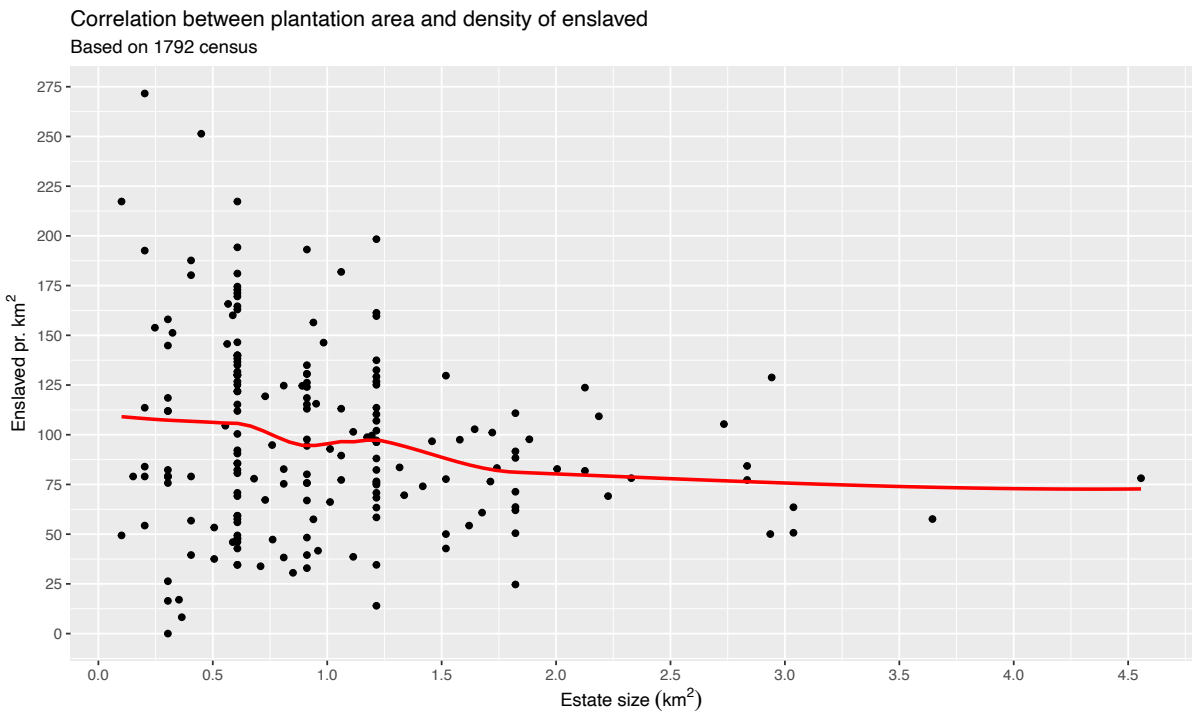
Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222

Area	*Enslaved pop. increase*	*Enslaved needed for ideal labour force*	*Difference*
Compagniets	404	560	- 156
Dronningens	567	1.035	- 468
Kongens	404	885	- 481
Prindsens	832	1.214	- 382

West Ende	556	882	- 326
Nord Side A	766	636	130
Nord Side B	391	530	- 139
Oost Ende A	550	542	8
Oost Ende B	154	238	- 84

Appendix 17: Relationship between plantation sizes and density of enslaved, 1792

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222 https://arkivalieronline.rigsarkivet.dk/da/billedviser?epid=20201795#292226,58788325 *; Det Kongelige Bibliotek, "St. Croix" (1799). Accessed September 16, 2024.* *http://www5.kb.dk/maps/kortsa/2012/jul/kortatlas/object65447/da/*



Appendix 18: Language in the Crucian newspapers.

*Source: all crucian newspapers available from The Royal Danish Librarys Mediestream API (*http://labs.statsbiblioteket.dk/labsapi/api//api-docs?url=/labsapi/api/openapi.yaml.

The numbers below was estimated by Google's Compact Language Detector 2.

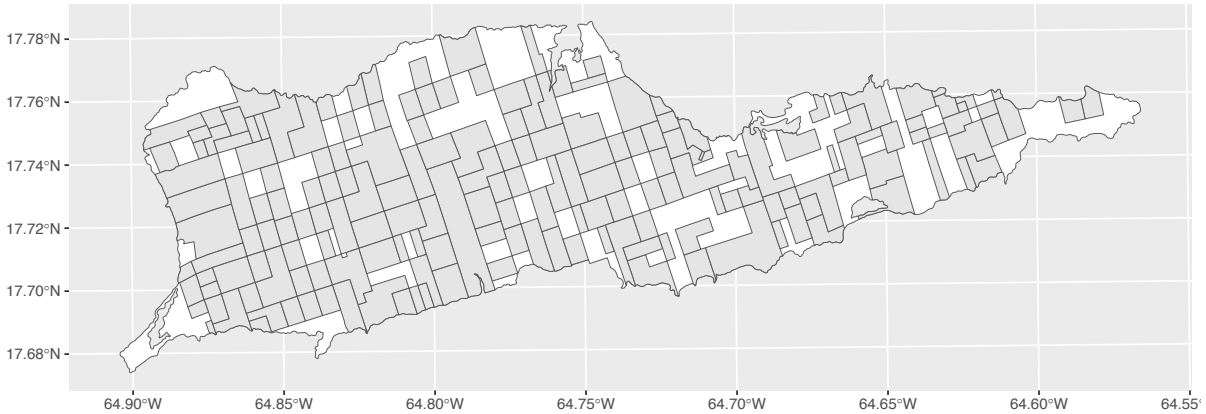
1. Article: language calculated by article. (How many articles are in each language).
2. Characters: language calculated by characters (How many articles are in each language, taking article length into account).
3. Characters – unnested: language calculated by unnested tokens (How words are in each language, taking total word count into account).

Language	***Article (Pct.)***	***Characters (Pct.)***	***Character (Pct.) – using unnested sentences***
English	78,02	84,24	83,53
Danish	9,11	11,44	7,54
Unknown	12,6	4,21	7,7
Other	0,27	0,12	0,47

Appendix 19: Crucian plantations, 1792

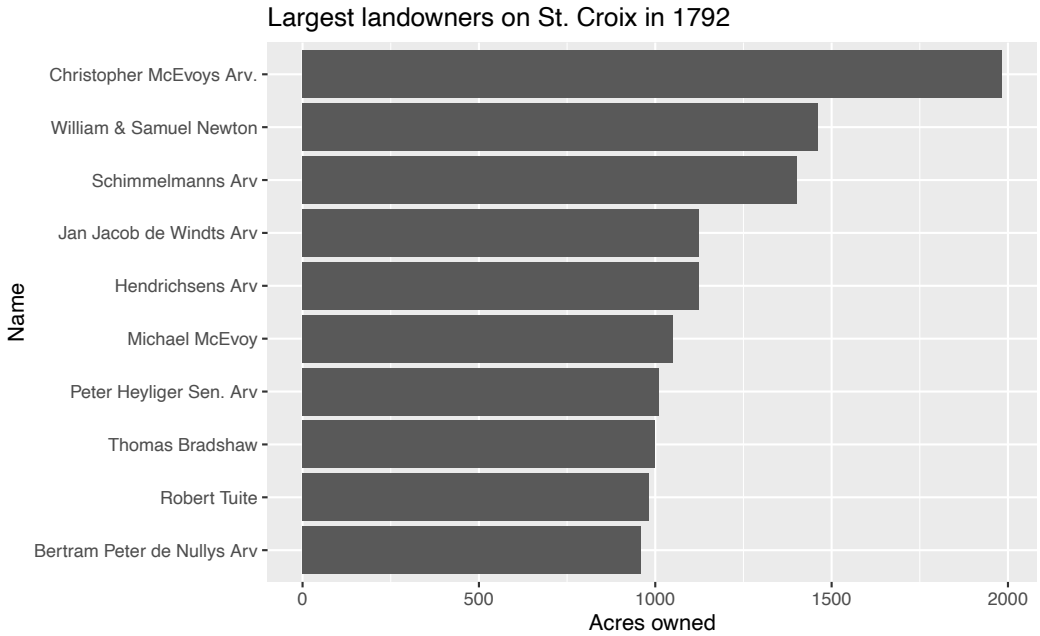
Source: created using Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024. *https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869; Det Kongelige Bibliotek, "St. Croix" (1799). Accessed September 16, 2024.* *http://www5.kb.dk/maps/kortsa/2012/jul/kortatlas/object65447/da/*

Plantations are marked in grey. Note: the map and only shows plantations were the owner in the 1792 cadaster ledger and census were identical.



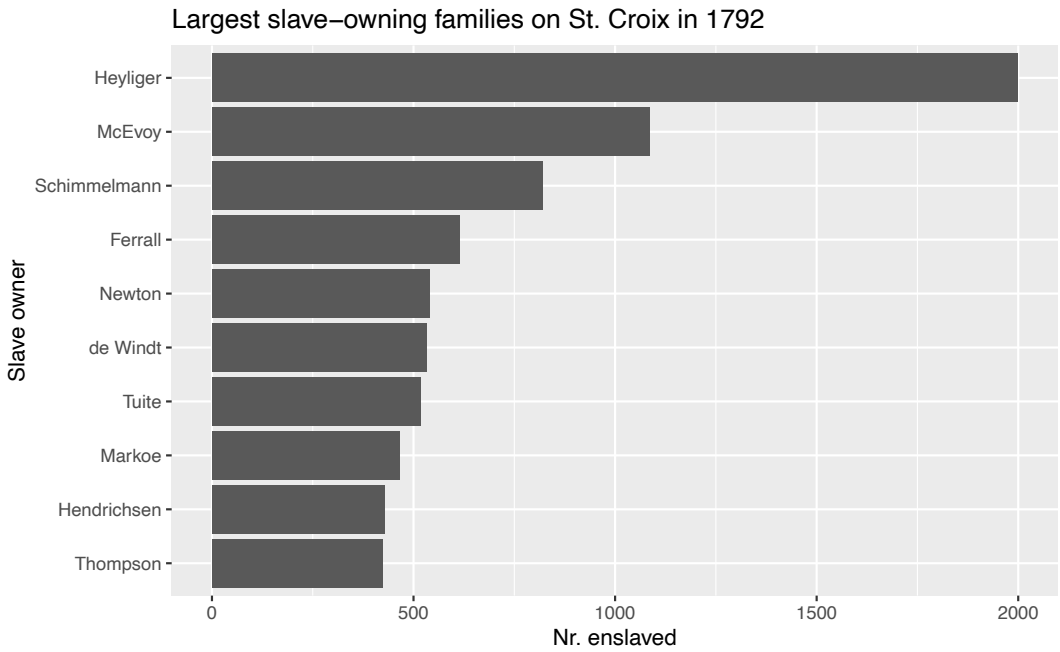
Appendix 20: 10 largest landowners, 1792

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222



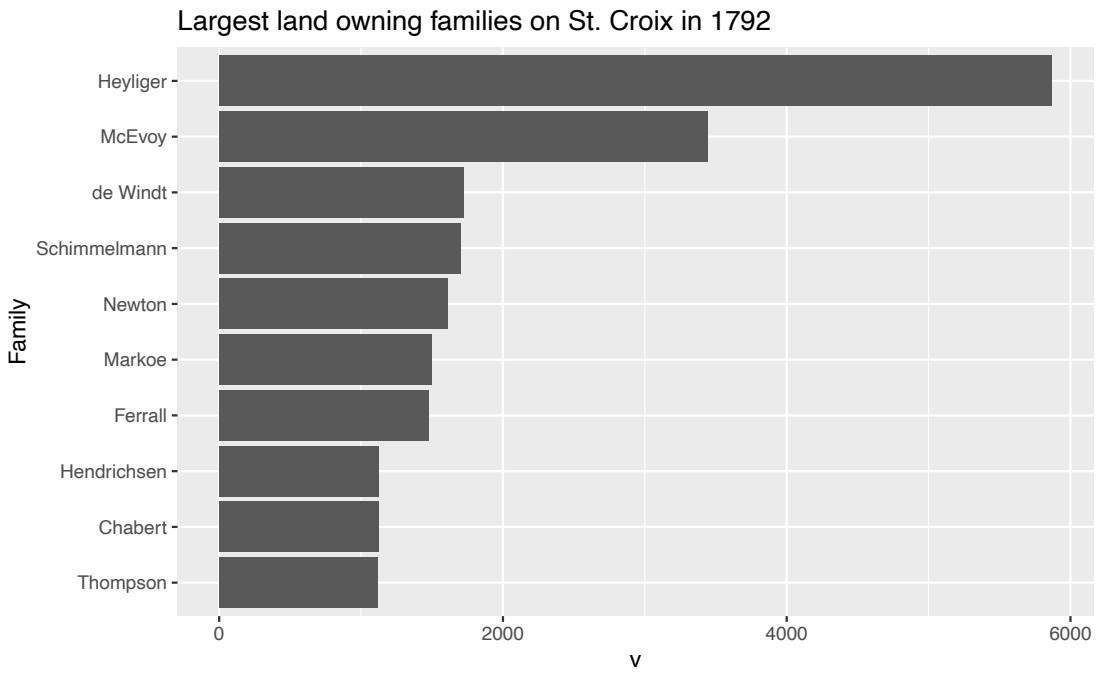
Appendix 21: 10 largest slave owners (by family), 1792

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222



Appendix 22: 10 largest landowners (by family), 1792

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222



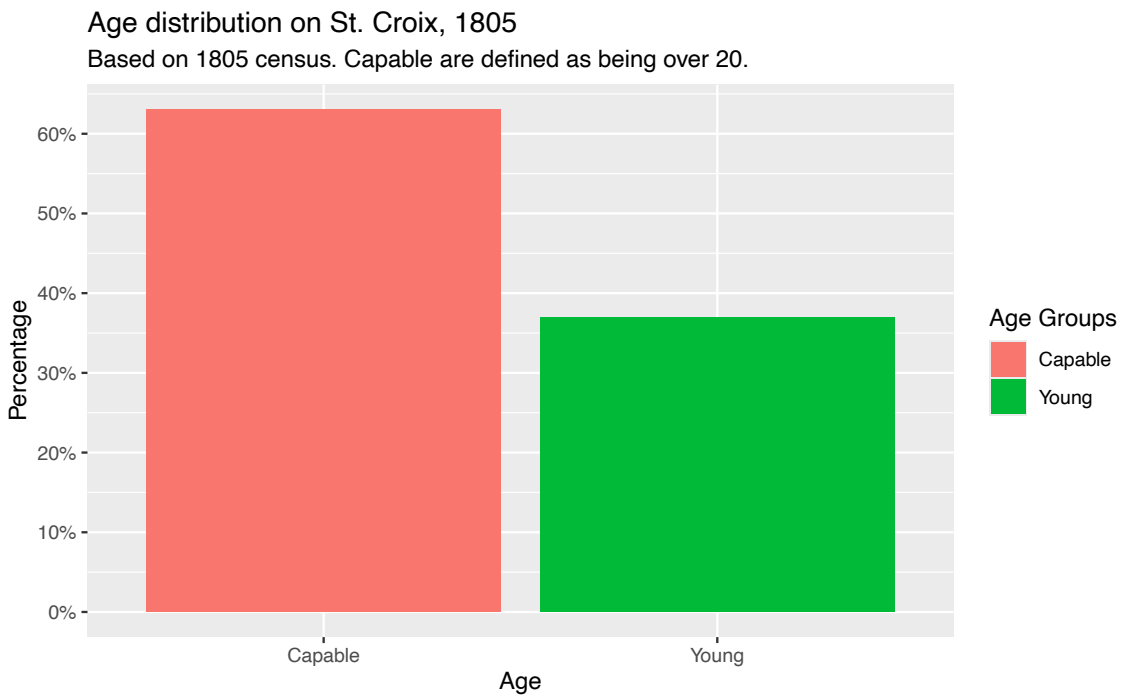
Appendix 23: Plantation-owning families with over 3 members, 1792

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222

Family	*Nr. members*	*Nr. enslaved*	*Nr. plantations*	*Total acre*
Heyliger	11	1999	20	5781
Ferrall	4	613	6	1480
Markoe	4	465	5	1500
McEvoy	4	1086	10	3446
Gordon	3	378	4	955
Hartmann	3	230	3	525
Smith	3	272	5	650
Thompson	3	424	3	1115

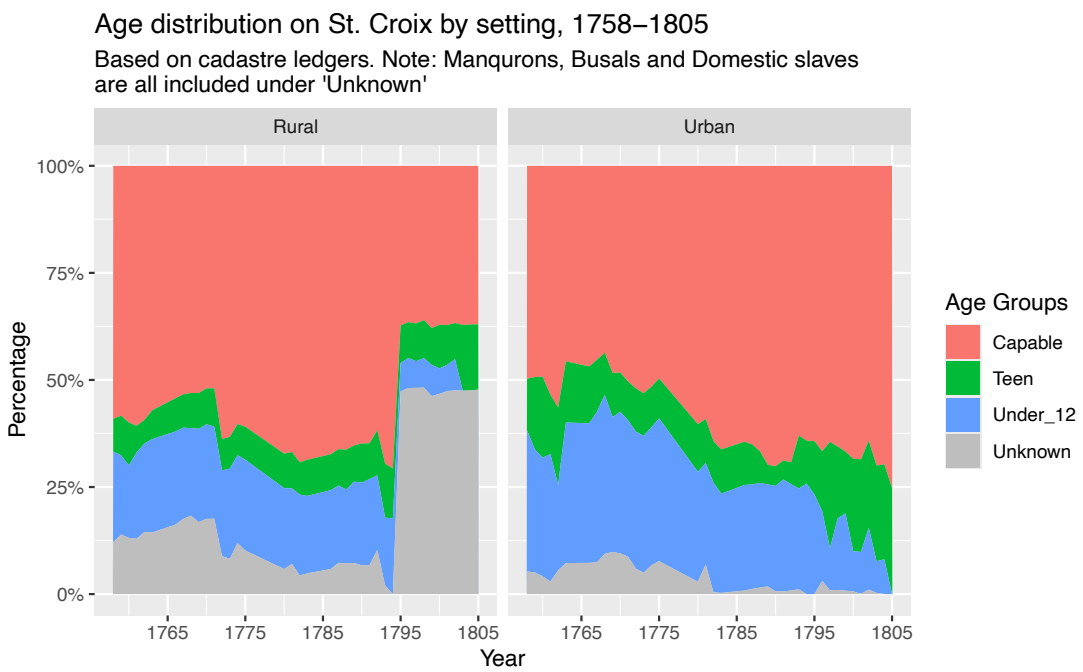
Appendix 24: Percentage of enslaved over or under 20, 1805

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 54-72



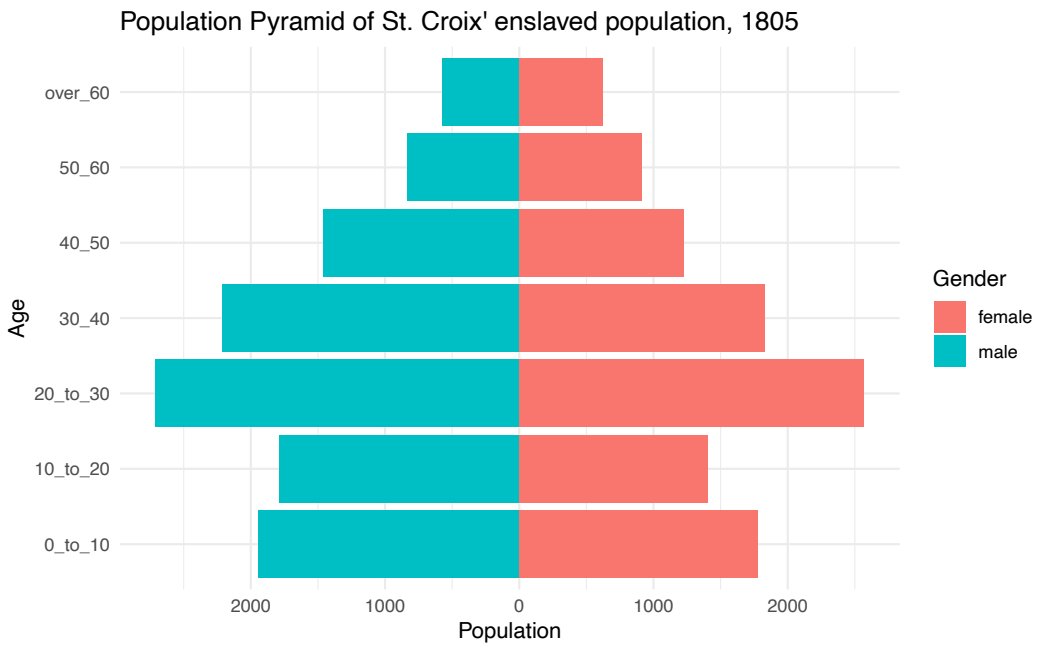
Appendix 25: Age distribution (Urban vs. Rural), 1758-1805

Source: calculated from Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024. https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869



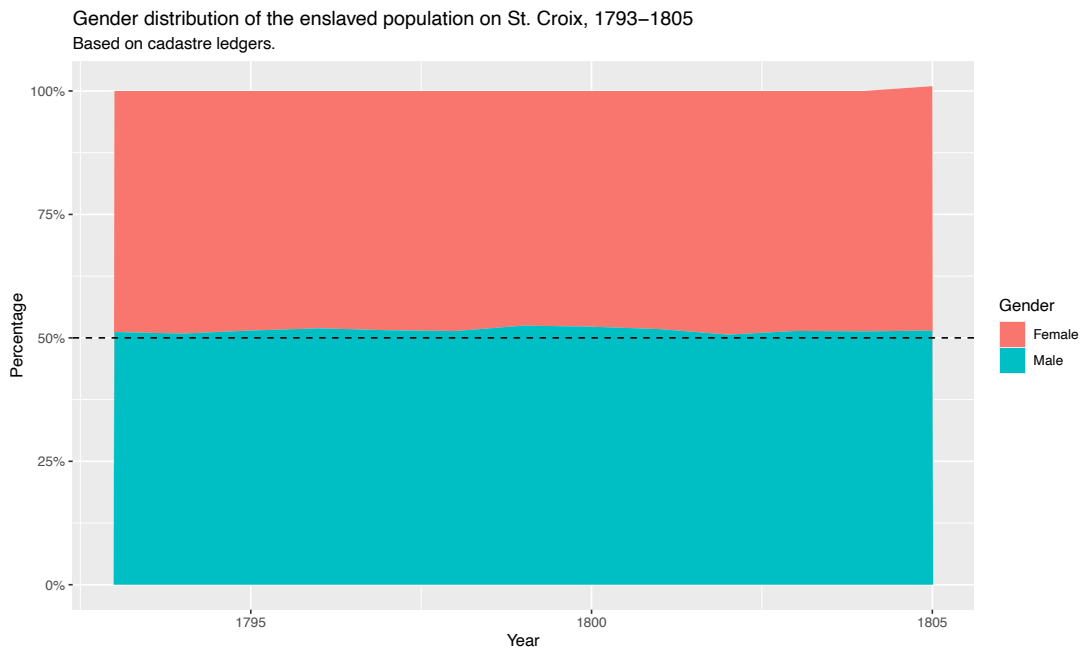
Appendix 26: Population pyramid, 1805

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 54-72



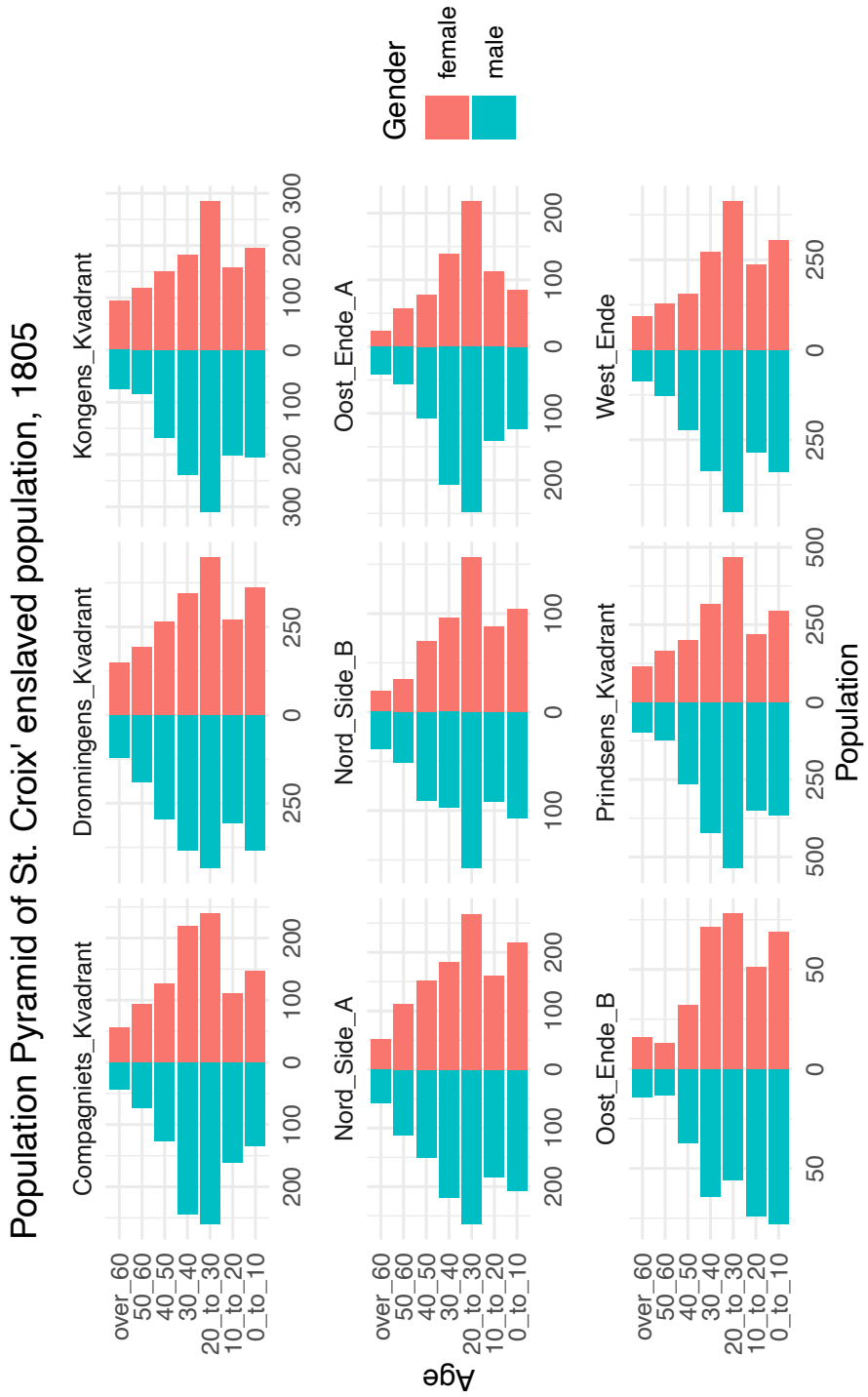
Appendix 27: Gender distribution of St. Croix's enslaved population, 1793-1805

Source: calculated from Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024.
https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869



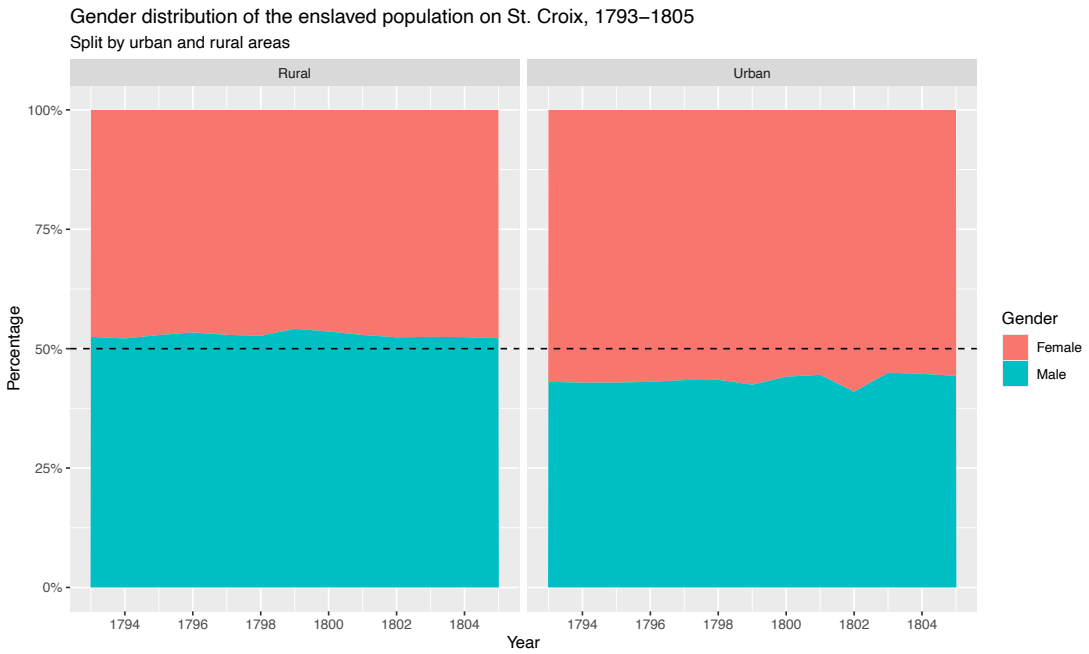
Appendix 28: Population pyramid (by quadrant), 1805

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 54-72



Appendix 29: Gender distribution of St. Croix's enslaved population (Rural vs. Urban), 1793-1805

Source: calculated from Rigsarkivets Arkivalier Online, Reviderede Regnskaber, Vestindiske Regnskaber, Martikler for St. Croix. Accessed September 16, 2024. https://arkivalieronline.rigsarkivet.dk/da/other/index-creator/106/3348662/17226869



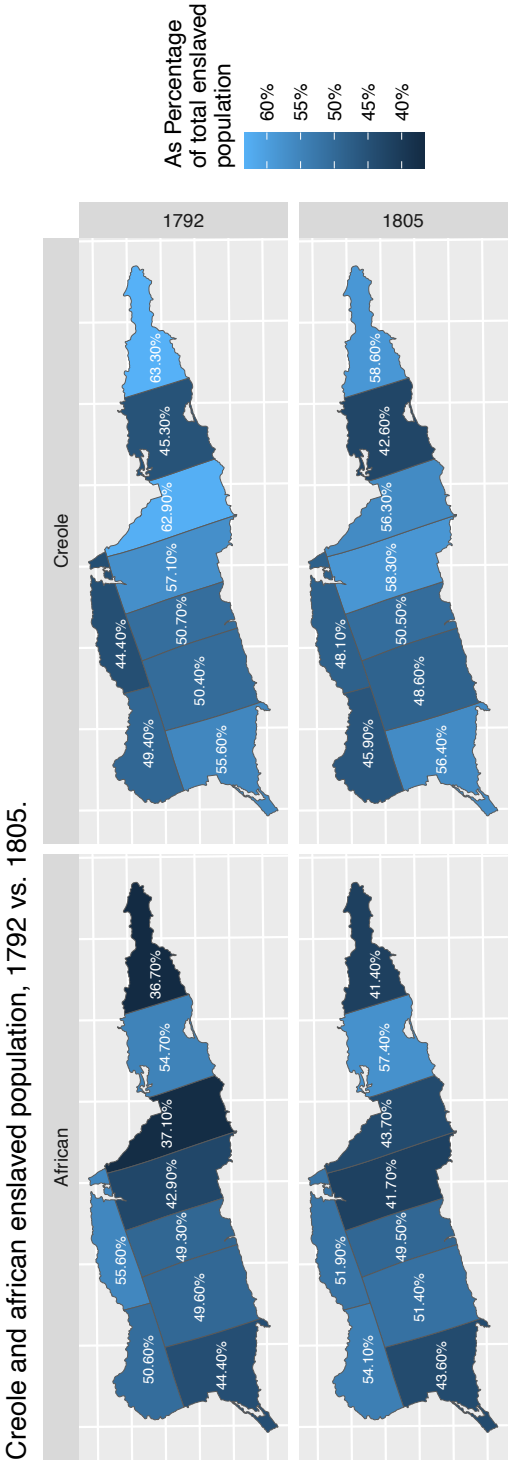
Appendix 30: distribution of African and Creole enslaved by plantation type, 1792

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222

Plantation type	***Creole***	***African***
Cotton	51,21 %	48,79 %
Sugar	52,87 %	47,15 %

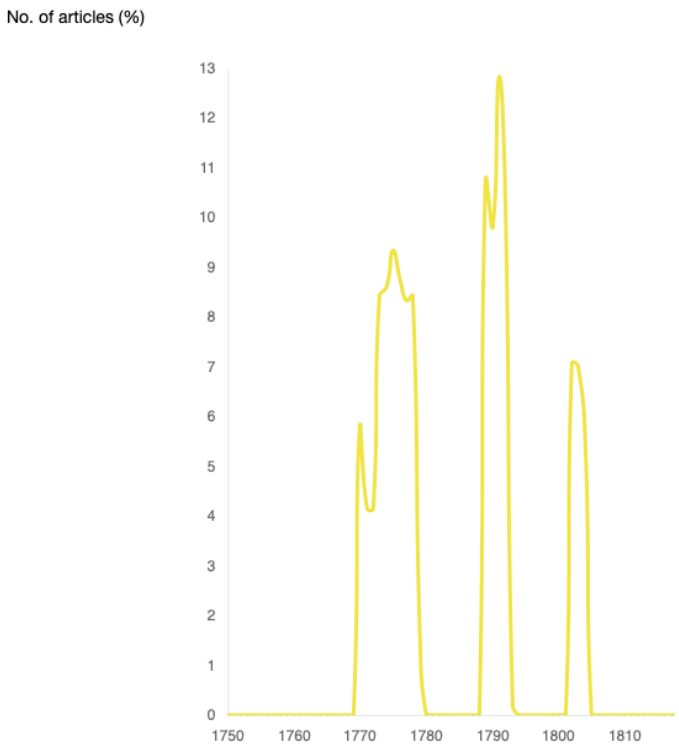
Appendix 31: spatial distribution of African and Creole enslaved, 1792 & 1805

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 54-72 + 203-222



Appendix 32: Maroons in the Crucian newspapers – media mentions

Source: graph created using The Danish Royal Library's "Smurf – Visualise Language" tool. http://labs.statsbiblioteket.dk/smurf/
The search string used in smurf was: "familyId:stcroixavisdvi 'un away' OR 'runaway'"

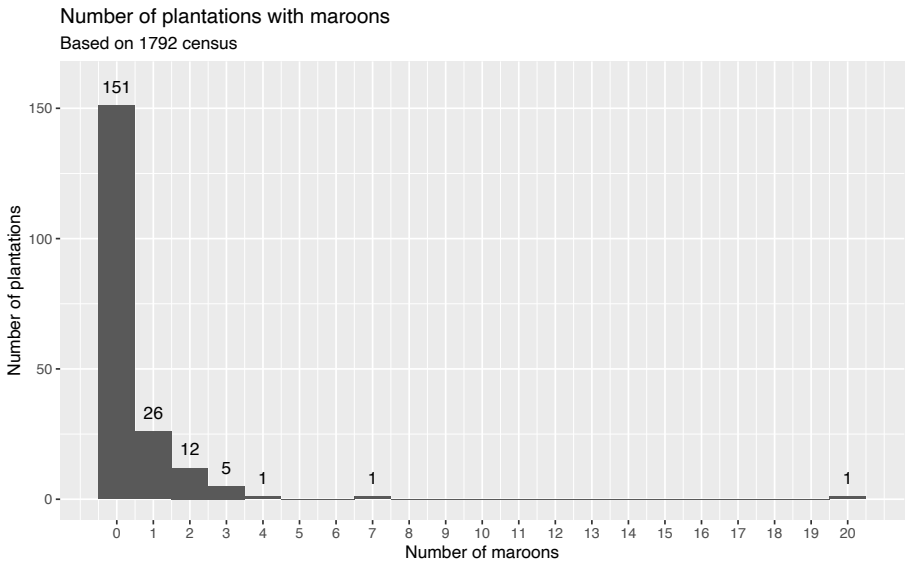


Appendix 33: Maroons in the Crucian newspapers – Runaway illustration

Source: Mediestream, The Royal Danish American Gazette (January 16, 1773). Accessed 17/09/2024. http://hdl.handle.net/109.3.1/uuid:60941b2b-bed9-4600-b52e-036e71155af2

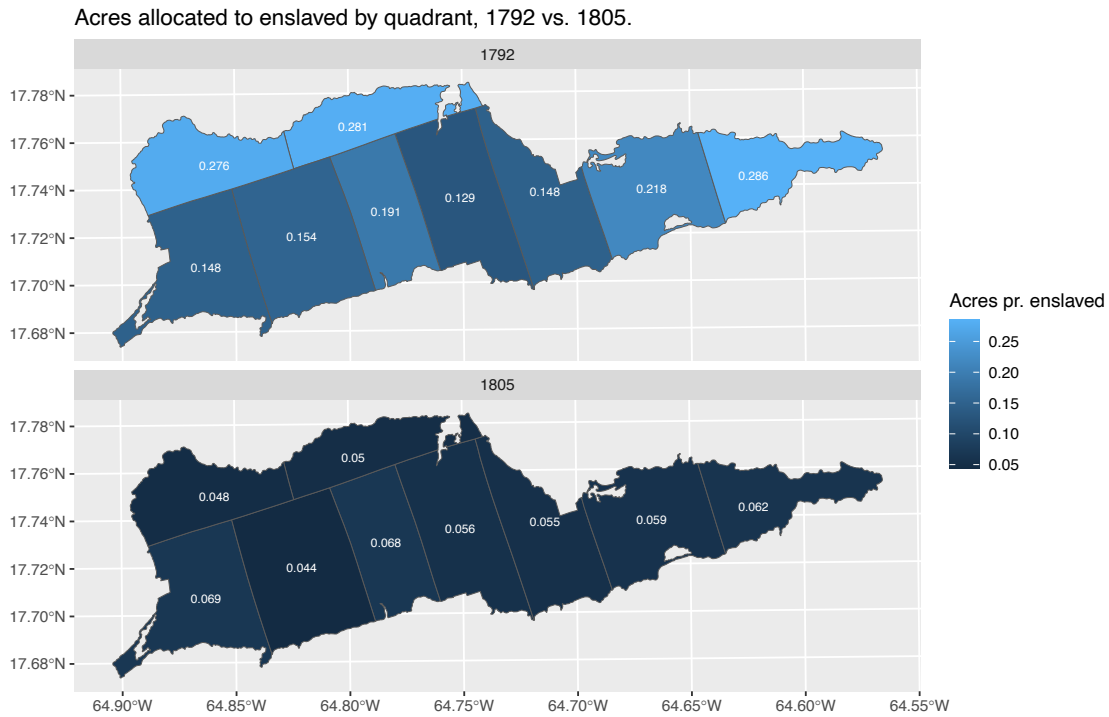
Appendix 34: Number of maroons - histogram

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222



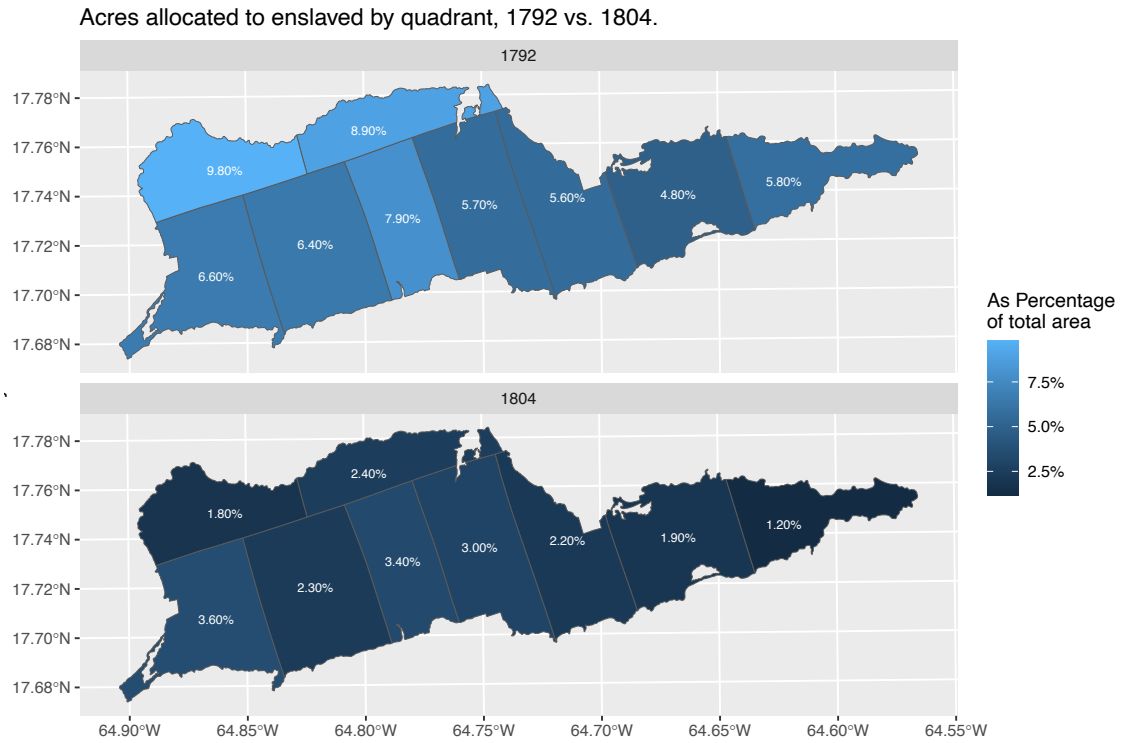
Appendix 35: Acres allocated to enslaved, 1792 & 1805

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 54-72 + 203-222



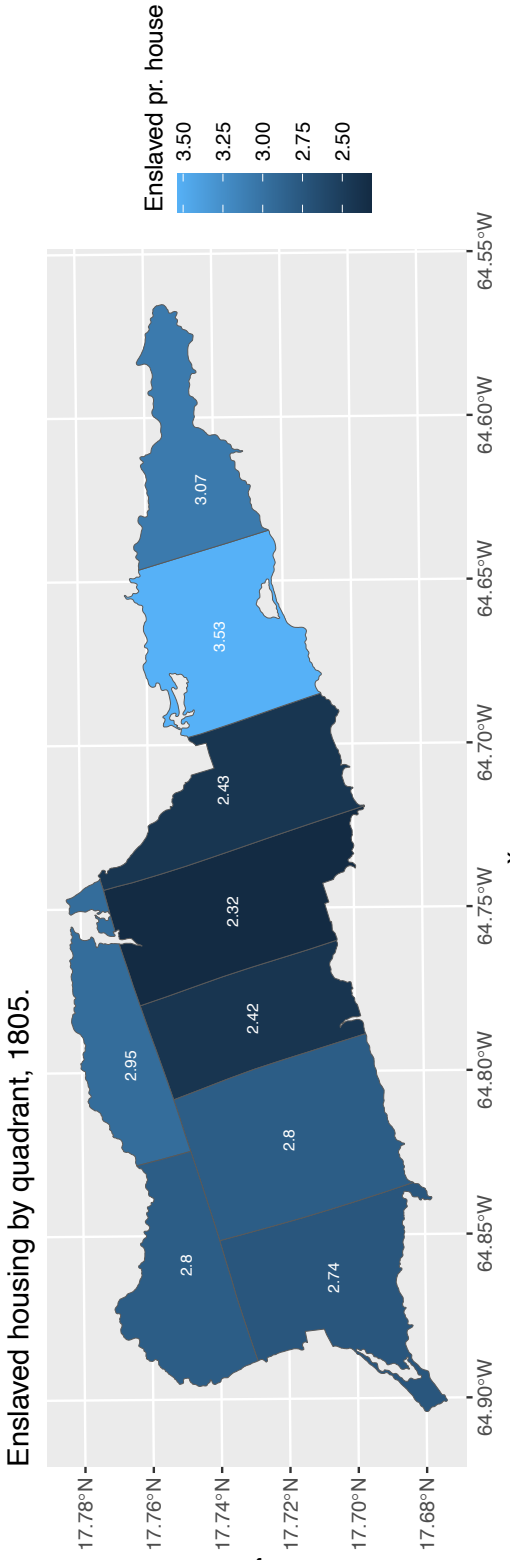
Appendix 36: Acres allocated to enslaved (pct. of total area), 1792 & 1805

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 54-72 + 203-222



Appendix 37: Enslaved housing, 1805

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 54-72



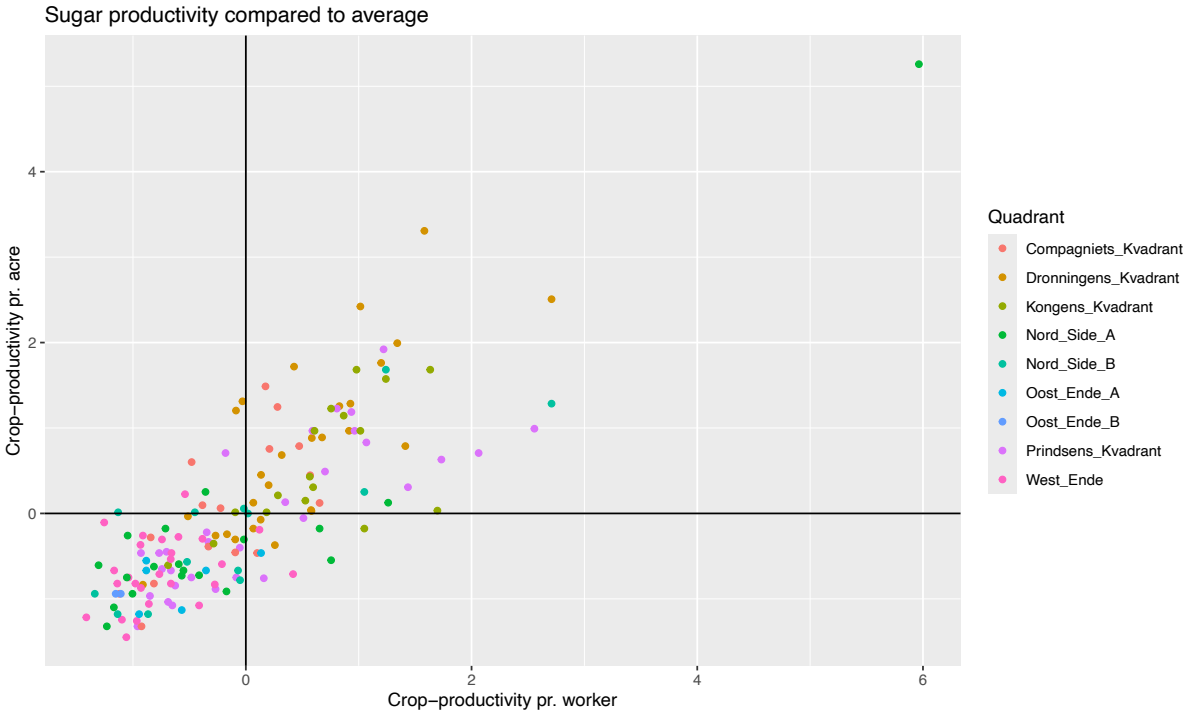
Appendix 38: 10 largest expected harvest by plantation, 1792

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222

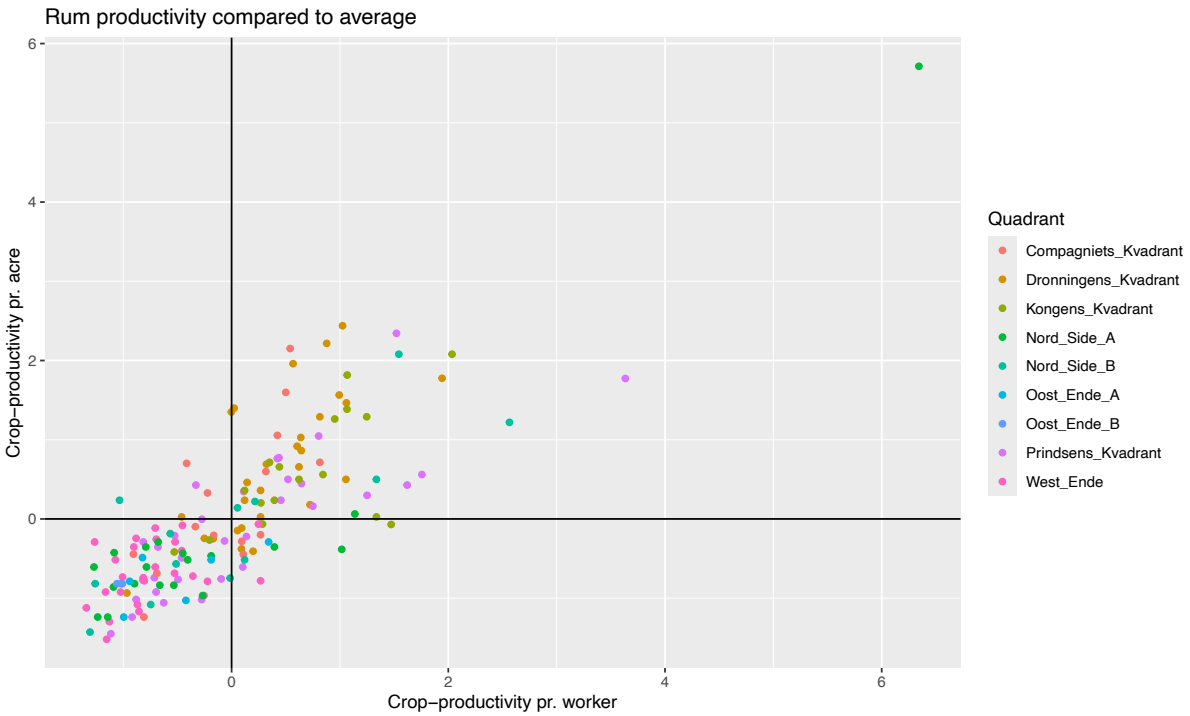
Plantation	***Avg. expected harvest value***	***Value-productivity pr. acre***	***Value-productivity pr. enslaved***
Bethlehem	82.395,83 Rdl.	117,7	260
La Princesse	79.218,75 Rdl.	193,2	246,8
Sion Farm	69.291,67 Rdl.	192,5	322,3
River	64.791,67 Rdl.	162	305,6
Diamond	64.427,08 Rdl	185,7	555,4
Diamond & Ruby	58.802,08 Rdl.	253,5	323,1
Fountain	50.562,5 Rdl.	119	353,6
Body Slob	49.437,5 Rdl.	206	389,3
Mount Plesant	48.875 Rdl.	177,7	289,2
Mon Bÿou	43.520,83 Rdl.	112,7	403

Appendix 39: crop-productivity z-scores, 1792

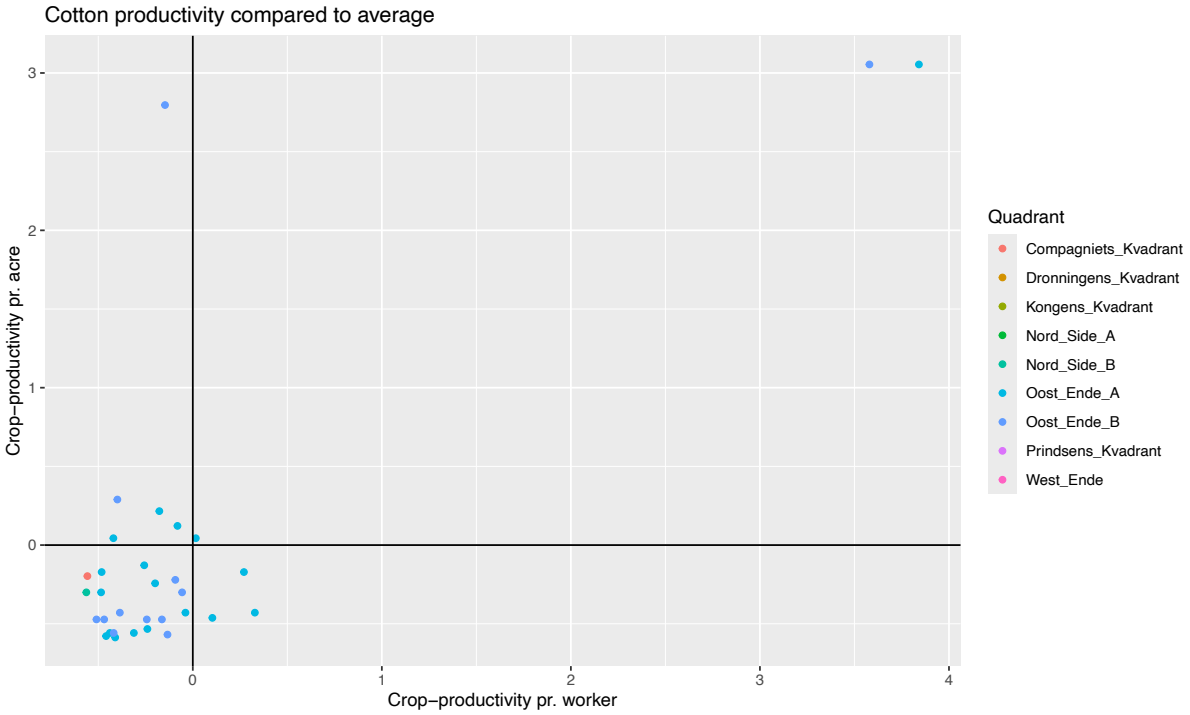
Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222



Sugar productivity



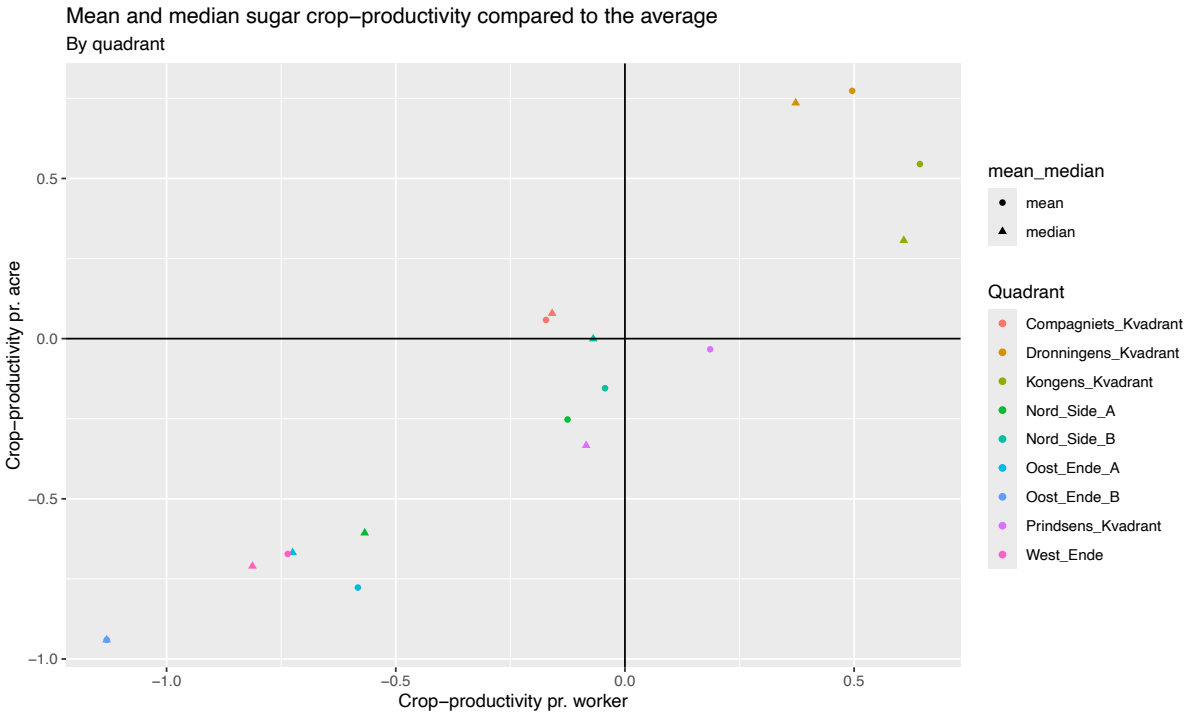
Rum productivity



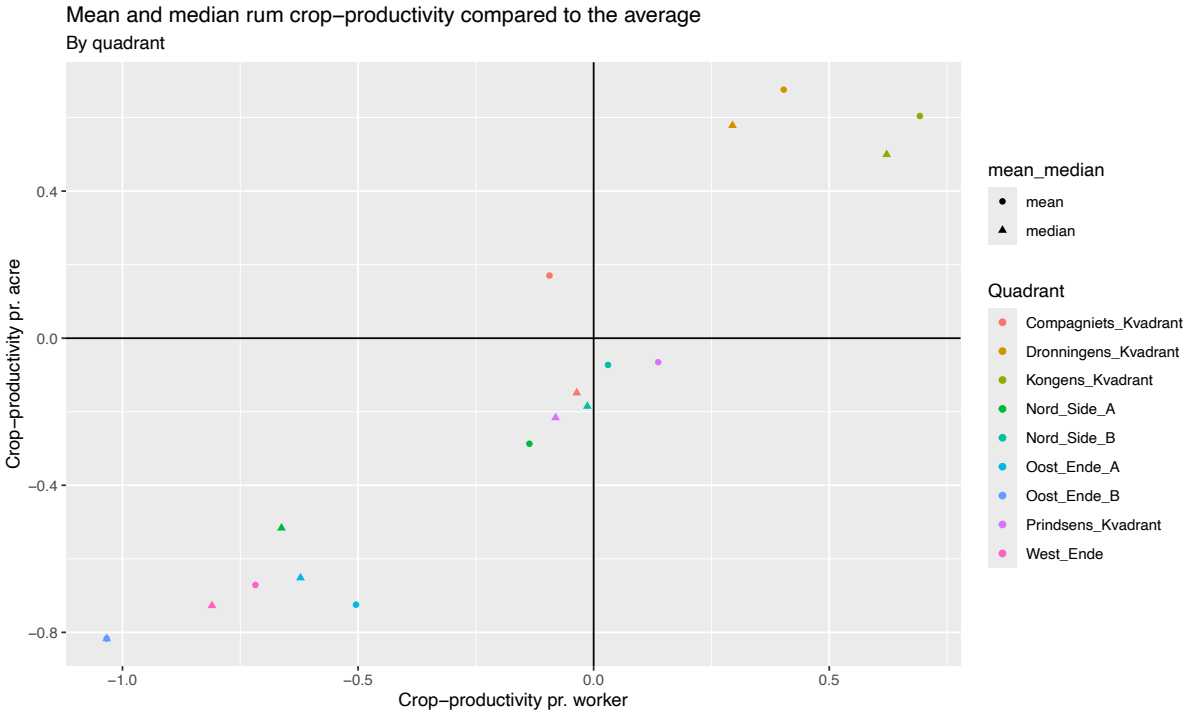
Cotton productivity

Appendix 40: mean and median crop-productivity z-scores, 1792

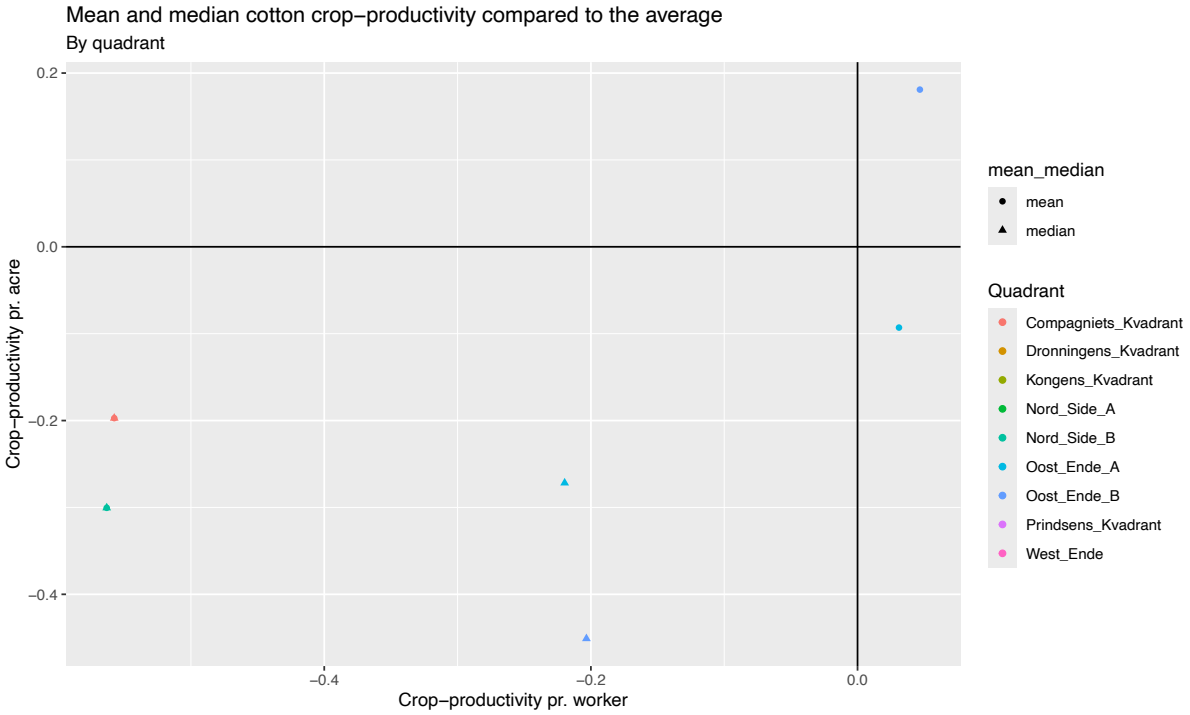
Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222



Sugar productivity



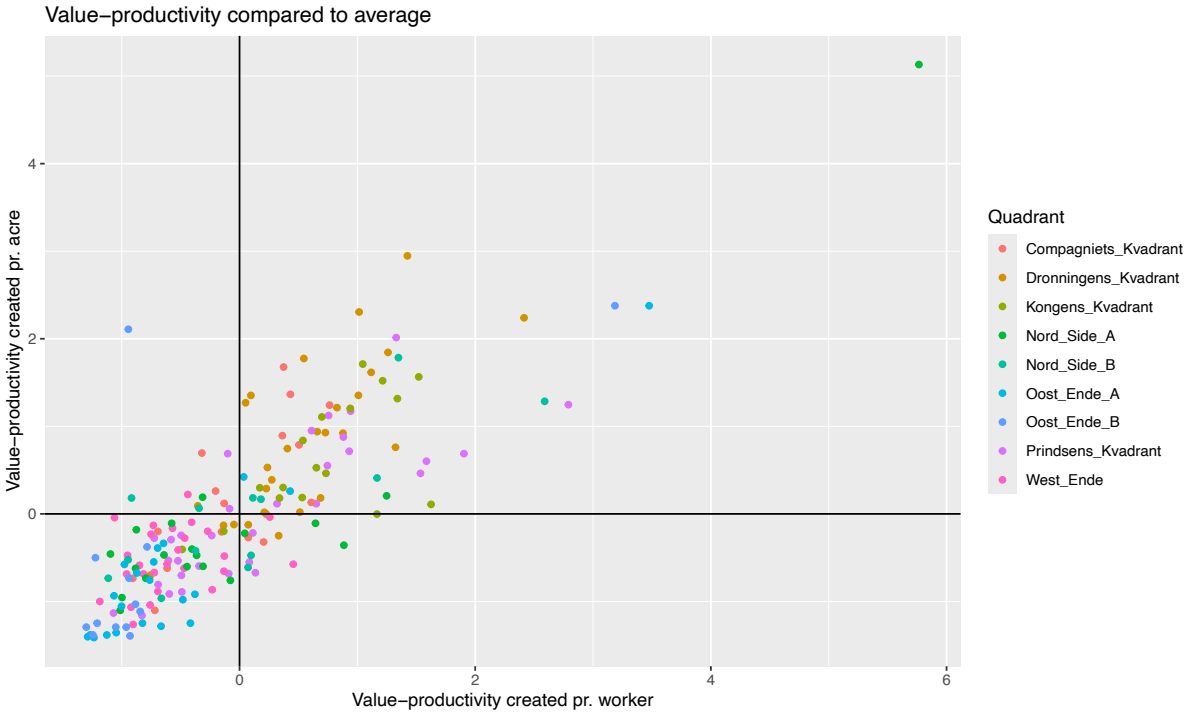
Rum productivity



Cotton productivity

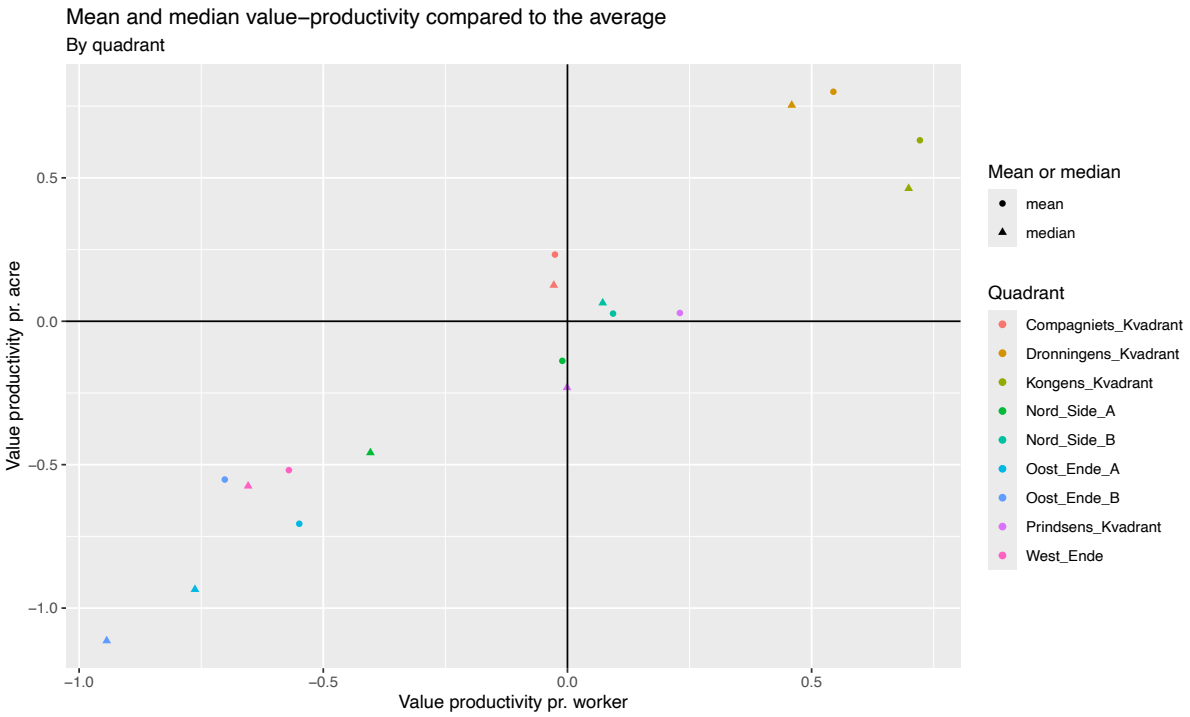
Appendix 41: value-productivity z-scores, 1792

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222



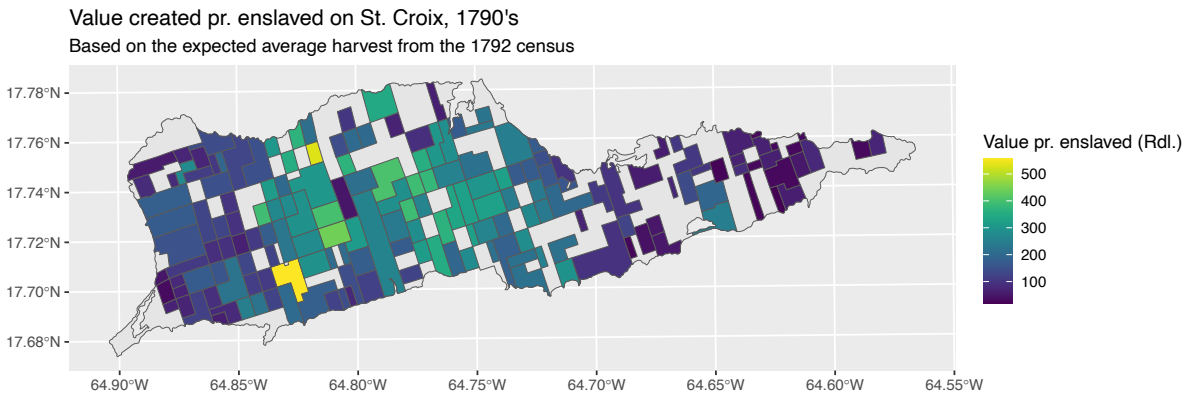
Appendix 42: mean and median value-productivity z-scores, 1792

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222

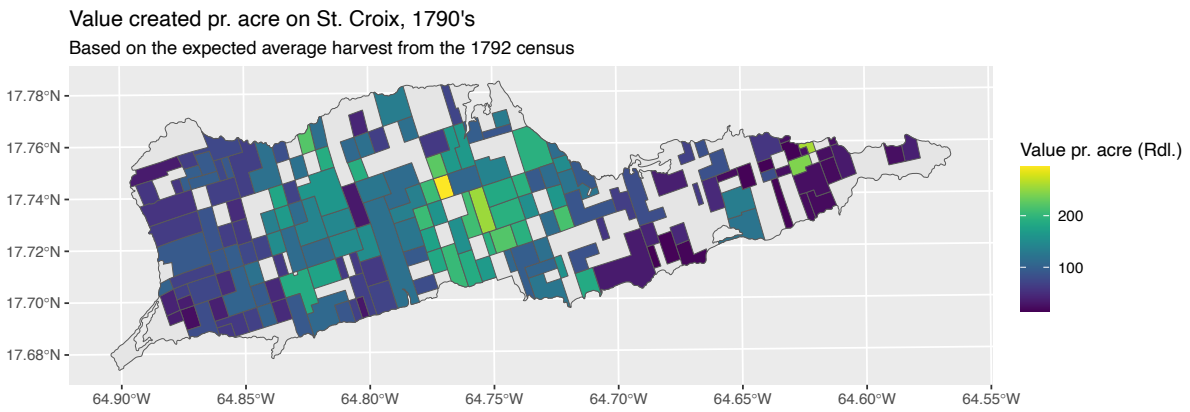


Appendix 43: plantation value-productivity scores & expected harvest value, 1792

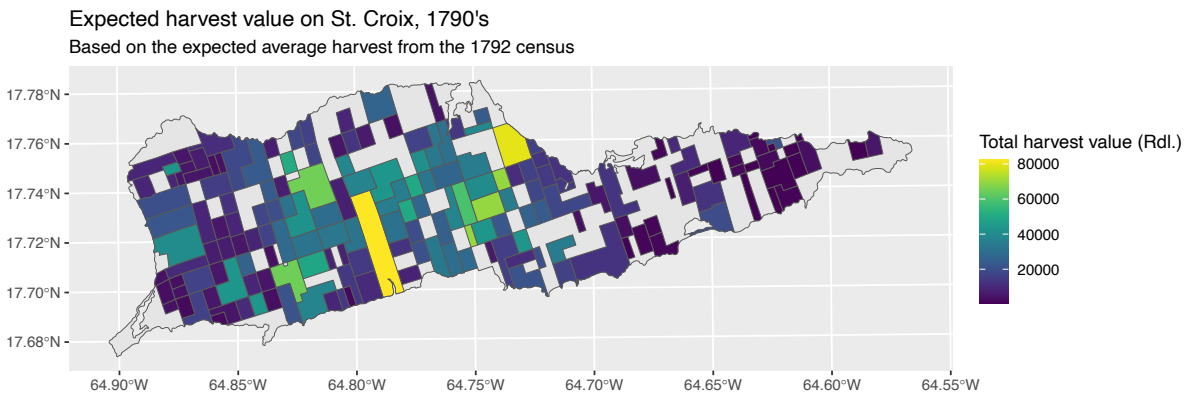
Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222; Det Kongelige Bibliotek, "St. Croix" (1799). Accessed September 16, 2024.
http://www5.kb.dk/maps/kortsa/2012/jul/kortatlas/object65447/da/



Value-productivity pr. enslaved



Value-productivity pr. acre



Expected harvest value

Appendix 44: Profits (Rdl.) from plantations and sugar refinery owned by the Schimmelmann family

Source: P. P., Sveistrup, and Willerslev Richard. Den Danske Sukkerhandels Og Sukkerproduktions Historie. København: Institutet for Historie og Samfundsøkonomi, 1945. P. 116-117

Note: the Schimmelmann family also owned to additional plantations besides the ones on St. Croix.

Year	***Plantations***	***Refinery***	***Total profit***
1792	71.552	105.792	177.344
1793	171.132	62.552	233.684
1795	85.442	40.158	125.600

1797	108.190	40.964	158.154
1801	49.259	46.362	95.622
1803	93.365	95.229	188.797
1804	77.617	82.456	160.063
1805	81.581	31.206	112.788
1806	59.131	65.915	125.047
1807	- 10.547	20.495	9.813

Appendix 45: Plantation productivity by nationality, 1792

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222; Jørgen Bach Christensen, "Kolonisamfundet på St. Croix i sidste halvdel af det 18. århundrede, med særligt henblik på arisokratiet blandt plantageejerne" (Thesis, Aarhus University, 1978), https://www.dwis.dk/images/Dokumenter/Specialer/Vestindien/Christensen.Kolonisamfundet_p_St._Croix_i_sidste_halvdel_af_det_18_rhundrede.rhus_1983.pdf.

Nationality	***Nr. plantations***	***Value-productivity pr. acre***	***Value-productivity pr. enslaved***
Danish	9	243,45	119,98
Dutch	21	197,08	105,63
English	13	179,23	109,86
French	13	259,92	117,71
Irish	17	131,99	92,93
Scottish	16	153,25	86,84

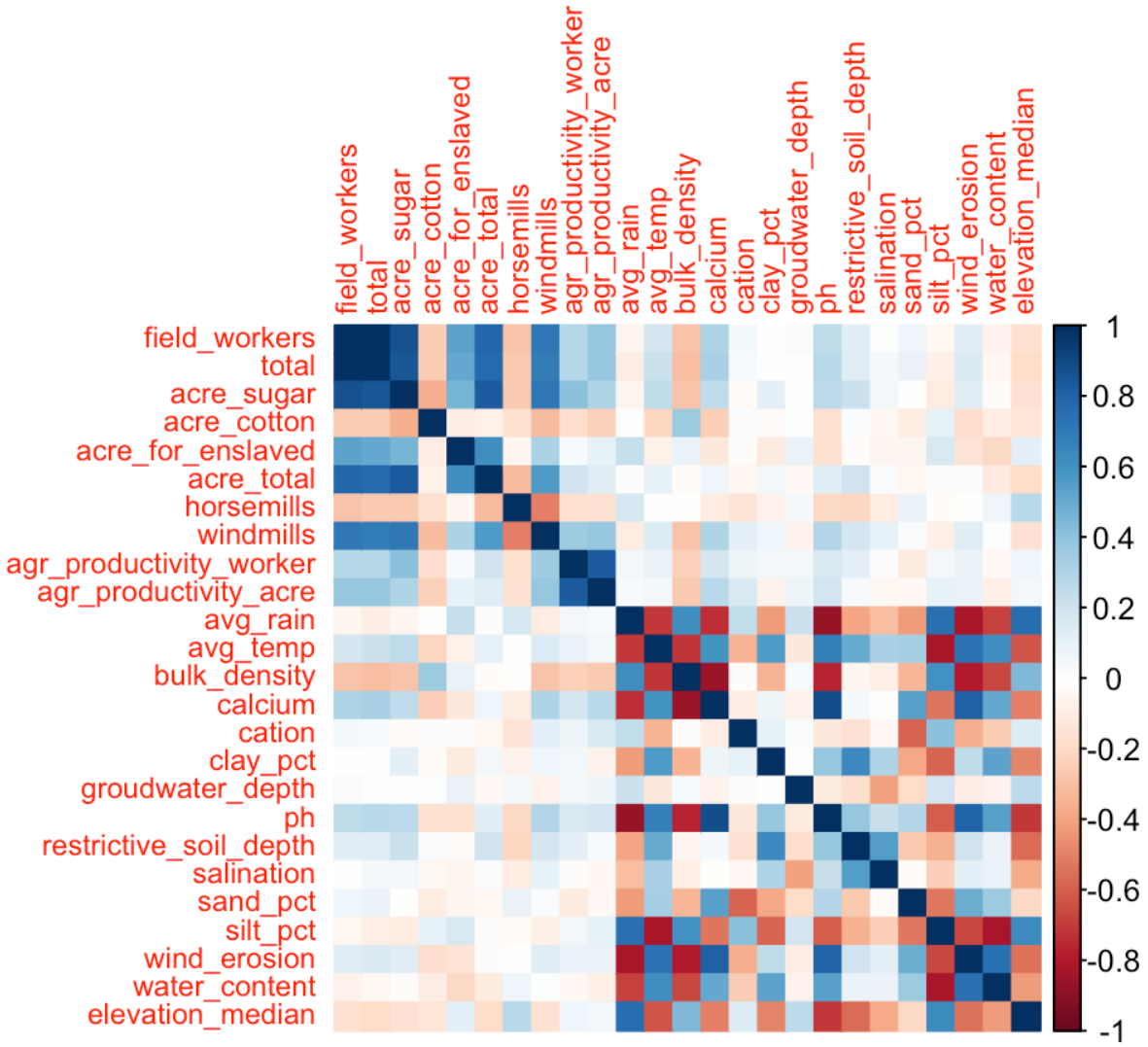
Appendix 46: 10 most productivity families (by value-productivity pr. enslaved), 1792

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222

Family	***Nr. plantations***	***Value-productivity pr. acre***	***Value-productivity pr. enslaved***
Durant	1	434,48	944,52

Block	1	258,03	607,12
de Windt	3	144,3	397,8
Duncan	2	141,92	398,44
Beckman	1	205,99	389,27
Johnson	1	223,9	355,15
O'Neal	1	118,97	353,58
Pentheny	2	158,17	352,4
Meyer	1	203,16	349,18
Tuite: Stapelton	1	209,32	336,4

Appendix 47: What influences plantation productivity correlation matrix, 1792

Source: calculated from Rigsarkivets Arkivalier Online, Generaltoldkammeret, Vestindisk-Guineisk Renteskriverkontor, Dokumenter vedr. Kommissionen for Negerhandelens bedre indretning, Folder 2, P. 203-222; Det Kongelige Bibliotek, "St. Croix" (1799). Accessed September 16, 2024.
http://www5.kb.dk/maps/kortsa/2012/jul/kortatlas/object65447/da/; National Resource Conservation Service USDA, "Web Soil Survey - Home," accessed August 9, 2024, https://websoilsurvey.nrcs.usda.gov/app/.

If a square has a positive value, there is a positive relation between the two factors – meaning if one grow so will the other. The higher the value the more correlated the factors are. Negative value is the same but in the opposite direction. So, if one grows the other will fall. Neutral values indicate that there is no correlation between values.