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Supervisor: Dr Graeme Morton

**The Islands Skelped by Kelp: An Analysis of the
Social Impacts of the Scottish Kelp Industry 1750-
1870**

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Stephen Leonard Turnbull(2416412)

DECLARATION OF AUTHORSHIP

I, Stephen Leonard Turnbull, hereby declare that this thesis and the work presented in it is entirely my own. Where I have consulted the work of others, this is always clearly stated.

Signed:

Date: 14th April 2024

Abstract

This dissertation offers an analysis of the impacts of the Scottish kelp industry with specific reference to the Islands of Scotland. This work contributes to the established literature by having the focus on the Scottish kelp industry. Through an analysis of the primary sources this work finds the direct and extended social impacts of the Scottish kelp industry. This work analyses the statistical accounts of Scotland portraying the change over the period and why this change is a specific contribution of Kelp. This dissertation analyses how the industry impacted Island quality of life showing both wealth and want. Further analysis portrays the effect on Island industry and a kelp induced period of experimentation by analysing transactions of the Royal Highland and Agriculture Society of Scotland. Finally, this dissertation proves how the industry created changes in the perception of emigration from both an Islander and Government perspective.

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Introduction

Following 1735, experiments brought a new type of manufacture the Scottish Islands.¹ After introducing the process from Ireland, the process of burning seaweed, often historically called seaware, was adopted gradually throughout the Highlands. The resultant product, Kelp, is a calcinated seaweed used in soap and glass.² The exact pricing for Kelp proved difficult due to variations in quality and if the stated price deduct overheads.³ Whilst exact prices are difficult, a general rise from 1750 until the end of the American revolution was seen.⁴ The Kelp price trended gradually upwards from £2 per ton in 1760 rising to £6 per ton in the 1790's.⁵ The gradual trend was upwards however no other commodity was as volatile in price, sometimes selling for £8 per ton and at other times fetching 50 shillings.⁶ This volatility should have been a warning to proprietors. As the price rose proprietors exploited this new source of prosperity by, increasing rents so causing more tenants to turn away from past sources of subsistence to the manufacture of Kelp to meet these rising rents.⁷ The price further increased during the Napoleonic wars with prices recorded as ranging from £18 to £22 per ton.⁸ The Kelp industry and its prices created large

¹ Sir John, Sinclair, *The Statistical Account of Scotland*, Vol. 13, (Edinburgh: William Creech, 1794) p.305 <https://stataccscot.edina.ac.uk:443/link/osa-vol13-p300-parish-inverness-north_uist> [13/04/2024].

² T. M. Devine, "Industrialisation." *The Transformation of Scotland: The Economy since 1700*, (Edinburgh: Edinburgh University Press, 2005), p. 86 <<http://www.jstor.org/stable/10.3366/j.ctt1r29w1.5>> [Accessed 9 Apr. 2024].

³ Malcolm Gray, 'The Kelp Industry in the High-Lands and Islands' *The Economic History Review*, vol. 4, no. 2, (1951) 197–209 (p.198). <<https://doi.org/10.2307/2599122>>.

⁴ Sir John, Sinclair, *The Statistical Account of Scotland* vol.13 1794 p.317.

⁵ *Transactions and Prize essays of the Highland Agricultural Society of Scotland*, vol.7 (Edinburgh: William Blackwood, 1841) p.116 < <https://archive.rhass.org.uk/archive/transactions-of-rhass-1790-1969/transactions-of-rhass-1840-1849/transactions-of-rhass-volume-1841?> >[13/04/2024].

⁶ Sir John, Sinclair, *The Statistical Account of Scotland*, Vol. 14, (Edinburgh: William Creech, 1794) p.191 <https://stataccscot.edina.ac.uk:443/link/osa-vol14-p191-parish-argyle-kilfinichen_and_kilviceuen>[13/04/2024].

⁷ James Symonds, 'Poverty and Progress in the Age of Improvement: Evidence from the Isle of South Uist in the Outer Hebrides' *Historical Archaeology*, Vol. 45, No. 3, (2011), 106-120 (112)<<https://www.jstor.org/stable/23070037>>[13/04/2024].

⁸ *Transactions and Prize essays of the Highland Agricultural Society of Scotland*, vol.7; Robert Meldrum 'Kelp' *Campbelltown Courier* Saturday 25th February 1899,p.3<<https://www.britishnewspaperarchive.co.uk/viewer/BL/0005086/18990225/046/0003?browse=true>>[13/04/2024].

social impacts throughout the Hebrides and Islands.⁹ It is these social impacts in Scotland's Island regions that this study wishes to evaluate. The price decreasing after the Napoleonic wars exposed how reliant on Kelp the Islands had become. There were numerous attempts to diversify local economies. Upon the downfall of the Kelp price, the Royal Highland Agricultural Society of Scotland (RHASS) conducted many experiments attempting to revitalise the industry.¹⁰ The experiments ranged from finding new uses for Kelp as a fertiliser and to improving the chemical industry on the Islands. Significant overlap exists between the impact the industry had on Islanders quality of life, the industrial impacts, and the final concern of this dissertation, that of emigration. As Eric Richards writes, the lack of Kelp profits coincided with landlords seeing depopulation through emigration as the logical step to raise their profits and address destitution.¹¹

Countless historians have studied the Highlands and Islands of Scotland. This dissertation hopes to achieve a more regional impact by studying Kelp shores, primarily in the Hebrides but with reference to other Islands in Scotland. The focus of the research has been on conditions within the Highlands and the Highland clearances. The Kelp industry appears in most academia as an afterthought. Malcom Gray focused on showing the socio-economic impacts the Kelp industry had, for example how landlords exploited tenants.¹² Gray's research concludes that the Kelp shores were not uniquely impacted compared to other areas of the highlands as they

⁹ T.M. Devine 2005 pp.86-98.

¹⁰ *Transactions and Prize essays of the Highland Agricultural Society of Scotland*, vol.6 (Edinburgh: Arch Constable, 1824) p.xxvii < <https://archive.rhass.org.uk/archive/transactions-of-rhass-1790-1969/transactions-of-rhass-1820-1829/transactions-of-rhass-volume-1824/171031>> [13/04/2024].

¹¹ Eric Richards, *Debating the Highland Clearances*, (Edinburgh: Edinburgh University Press, 2007)p.56 < <https://www.jstor.org/stable/10.3366/j.ctt1r205v>> [13/04/2024].

¹² Malcolm Gray, 1951, p.200.

all faced similar economic conditions by the end of his study in 1850.¹³ This study hopes to deviate slightly from Gray's work and display the main and specific impacts of the kelp industry. Historians like Tom Devine and Eric Richards have analysed how the Kelp industry impacted and coincided with capitalist Highland land reform.¹⁴ Part of this dissertation will built upon their work to show the overpopulation these new systems promoted. Gray has tended to force the Kelp industry into one century between 1750 and 1850.¹⁵ While this is a useful scope for his work this dissertation wishes to extend the Scope slightly. Gray acknowledged how the Kelp price never recovered from £3 per ton in the 1830's.¹⁶ When compared to primary material, this claim becomes inaccurate. As recorded in the Campbell town courier, at the turn of the 20th century, the per ton price of Kelp was £10 on account of the industrial uses for Iodine which for a period was extracted from seaweed.¹⁷ This dissertation hopes to explore an underrepresented area of the Kelp industry's history, the many attempts to improve Kelp as a product and the Island economies which it smothered. Devine has noted the Kelp industries impact on migration patterns.¹⁸ This study wishes to enhance this material by displaying how emigration became a tool to relieve islanders' destitution. This dissertation also seeks to explore Island tenants' perception of emigration. As previously mentioned, Richards' study weaves the industry into a factor in the highland clearances.¹⁹ This dissertation will touch upon it as a cause for migration and further explore how Kelp limited islanders' options, swaying public opinion and the Government on

¹³ Ibid. p.203-205.

¹⁴ Eric Richards, 2007 p.53; T.M. Devine 2005 pp.87-89.

¹⁵ Malcolm Gray, 1951, p.197.

¹⁶ Ibid. p.198

¹⁷ Robert Meldrum 'Kelp' *Campbelltown Courier* Saturday 25th February 1899.

¹⁸ T. M. Devine, 'Highland Migration to Lowland Scotland, 1760-1860' *The Scottish Historical Review*, vol. 62, no. 174, 1983, pp. 137-49. P.146<<http://www.jstor.org/stable/25529535>> [13/04/2024].

¹⁹ Eric Richards, 2007 p.56.

emigration. This dissertation hopes to build upon existing literature but also explore gaps in current academia. The Kelp industry's wider consequences on industrial developments and emigration, stemmed from the destitution after the price collapse. Through an analysis of primary material and views of leading historians, the direct and wider societal change Kelp induced will become evident.

The first chapter will analyse the Impact the industry had on Islanders quality of life. This section will display how the Kelp industry's boom created wealth on Kelp shores, with reference to North Uist and Orkney. Most of this section is devoted to comparing the Old and New Statistical Accounts of Scotland. These accounts being some of the best-preserved records on island conditions for the period. Through comparing accounts, overpopulation and unemployment will be shown as social consequences of the Kelp industry. Finally, through use of the Napier Commission which reported conditions in the Islands, the unhappiness created by the demise of Kelp will be explored.

The second chapter will focus on Industrial developments caused by the Kelp industry. This section explores how the industry made the Islands reliant on the market and price of Kelp. A significant portion of this chapter focuses on further comparing the Statistical accounts. Through this comparison the Islands reliance on Kelp will be analysed but also the replacement, then lack of islander employment opportunities in other fields such as fishing. The other significant documents utilised in this section are the transactions of the RHASS. These transactions depict societal changes and attempted experiments to improve Kelp as a chemical material but also as an agricultural product. The final area this chapter will explore is how attempts to revitalise the industry failed with one exception being the creation of a chemical works on Tiree.

The third chapter will evaluate the industries impact on emigration and clearance. The first section will analyse the societal consequence of temporary migration the industry necessitated. The second area this chapter will cover is how the industry and the destitution it created impacted Government attitudes towards emigration. The final section will expand on a more classical discussion as it evaluates how the Kelp industry impacted public opinion on emigration.

Island Quality of Life

Comparing the Old and New Statistical Accounts of Scotland indicates how islanders faced increased destitution after the Kelp industry collapsed. The Old Statistical Account highlights positive impacts the Kelp industry had which contrasts with conditions in the new account. One impacted island was Mull which manufactured around 150 tonnes of Kelp annually, pre-collapse.²⁰ The highest price at the start of the 1800's for Kelp was £22 per tonne.²¹ Roughly, these figures provided the island with £3,300 annually. This displays how one impact the Kelp industry was providing the islands with was an increased income. This evidence indicates the extent of the economic impact Kelp had increasing Islanders' quality of life. The benefits the Kelp industry had on the parish is clear and this contrasts the negative social impacts the islanders faced when the industry failed. The Island of Mull suffered because of the failure of Kelp, now the price does not support the labourers.²² This shows how the failure of the Kelp industry left the parishioners without an adequate industry and income to support themselves. The Kelp industry

²⁰ J. Gordon, ed. *The New Statistical Account of Scotland*, Vol. 7, (Edinburgh: Blackwoods and Sons, 1845) p. 309. <https://stataccscot.edina.ac.uk:443/link/nsa-vol7-p309-parish-argyle-kilfinichen_and_kilviceuen>[13/04/2024].

²¹ Robert Meldrum 'Kelp' *Campbelltown Courier* Saturday 25th February 1899.

²² J. Gordon, ed. *The New Statistical Account of Scotland*, Vol. 7 p.309

failing had further social impacts in the region. “The Highlands have, since the admission, duty free of barilla and other substances, presented scenes of much distress including bankruptcy, and poverty.”²³ This shows a further economic impact, the loss of wages in the parish resulted in heightened destitution. The region encountered lowered quality of life after the Kelp industry had faltered. Through comparing these accounts, the Kelp industry benefitted the islander’s quality of life when the price was high. As Malcolm Gray believes that tenants in the isle of Mull achieved a better deal and more direct profit as they sold the Kelp to the Landlord.²⁴ However, upon the collapse, the islanders faced greater destitution. Overall, this supports the idea that the Kelp industry’s volatility resulted in various social impacts on island populations.

Many islands manufactured Kelp throughout the Outer Hebrides, North and South Uist amongst the greatest impacted by the trade. The renters of the Kelp shores were never wealthier than when the price of Kelp was heightened by the American War.²⁵ The Kelp industry furnished the islands with money, though limited, with islanders seeing this as an initial positive social impact. When we compare this with the New statistical account of the parish, the transition to destitution is revealed.

The clear proceeds from the Kelp alone in this parish, in 1812 after deducting every expense, exceeded L.14,000; and for several years thereafter, it came little short of that sum. Now it puts little into the pocket of the proprietor and,

²³ Ibid. p.309

²⁴ Malcolm Gray, 1951, p.197.

²⁵ Sir John, Sinclair, The Statistical Account of Scotland vol.13 1794 p.317.

in many instances, Kelp is only manufactured to enable the crofters to pay for their small possessions.²⁶

This strengthens the evidence that the Kelp industry created a limited era of affluence for the islanders however it further demonstrates how failure left many of the islanders penniless. When the price was high, tenants avoided debt, some narrowly. The recession in the price drove many renters to engage and then become reliant on proprietors continuing to farm Kelp so they avoided arrears. This shows how the Kelp industry advanced societal impacts which both helped and then hindered islander life. South Uist was also greatly impacted by the Kelp industry. According to George Munro the reverend, Kelp was the staple commodity of the parish, the only other article of note was black cattle which were relied on far less than Kelp.²⁷ Being the staple commodity maintains the importance of Kelp in supporting this parish. Compared to the parish report prepared for the New Statistical Account, the death of the staple industry was disastrous. The high prices of Kelp allowed proprietors to pay high wages which allowed workers to exist comfortably but now it barely breaks even.²⁸ When the price was high, at the turn of the century life on the islands was better. There were plenty of resources and enough savings to ensure islanders were content. The dwindling price limited wages deteriorating quality of life. “The wages have been lately reduced from L.3, 3s., and L.2, 12s. 6d., to L.2 per ton; the latter of which is still considered a fair remuneration in good seasons, but very inadequate in rainy summers.”²⁹ The £1 and 3 shilling wage reduction was enough to leave Islanders impoverished, proving Gray is correct in his

²⁶ J. Gordon, ed. *The New Statistical Account of Scotland*, Vol. 14, (Edinburgh: Blackwoods and Sons, 1845) p. 167. <https://stataccscot.edina.ac.uk:443/link/nsa-vol14-p167-parish-inverness-north_uist>[13/04/2024].

²⁷ Sir John, Sinclair, *The Statistical Account of Scotland*, Vol.13 1794 p.294.

²⁸ J. Gordon, ed. *The New Statistical Account of Scotland*, Vol. 14, 1845 p.194

²⁹ *Ibid.* p.194

claim that the Island margins were so small any change was significant.³⁰ Destitution was present in these islands and increased with the collapse of the Kelp industry. The downfall of the Kelp industry exposed the fragility of Island economies. Comparing the Kelp price of 1800 with the price in 1842 a per ton decrease of £17 is present.³¹ Displaying that the island economy losing its staple commodity transitioned from wealth to want.

The final parish examined was on Orkney which had a large involvement in the Kelp trade. The parishes of Cross and Burness faced similar impacts as the other islands, but more positive impacts are present. Once again highlighting how the Kelp trade generally impacted Islanders:

But now there are few of the young who have not some pieces, and often the most of their dress, of foreign manufactures, which is principally ascribed to the greater influx of money from the labour in Kelp, so that were this source of wealth to be lessened or withdrawn, there would remain a propensity to these conveniences it has introduced.³²

The industry improved Islander quality of life by providing the Kelp shores with more money allowing them to buy luxury goods. “Forty years ago the price it gave at market was 40 or 50 s. per ton; but for 20 years past, it has given from 5 L. to 7 L. or even 8 L. a ton, which has greatly stimulated the industry of the people to make it.”³³ This increase in value demonstrates the increase in wealth islanders benefitted from

³⁰ Malcolm Gray, 1951, p.203.

³¹ Robert Meldrum 'Kelp' *Campbelltown Courier* Saturday 25th February 1899; *The Topographical, Statistical, and Historical Gazetteer of Scotland* (Glasgow: A Fullerton, 1842 p.758) <<https://digital.nls.uk/gazetteers-of-scotland-1803-1901/archive/97437630>> [13/04/2023].

³² Sir John, Sinclair, *The Statistical Account of Scotland*, Vol. 7, (Edinburgh: William Creech, 1793) p.491 <https://stataccscot.edina.ac.uk:443/link/osa-vol7-p491-parish-orkney-cross_burness_north_ronaldshay_and_ladykirk> [13/04/2023].

³³ Sir John, Sinclair, *The Statistical Account of Scotland*, Vol. 7, 1793 p.455

the industry. The profits also encouraged many islanders to get involved in the Kelp trade. This social impact unified the island economy which made it become reliant on high prices. Overall, when the Kelp prices were high the parishes were better off especially landowners. The Kelp industry has raised value of estates from £40 to £300 annually.³⁴ When compared to the New Statistical Account the destitution which followed the collapse of the industry is highlighted. The reduction of the Kelp wealth impacted the proprietors but to the same extent the working class who relied on it.³⁵ This shows how the collapse of the industry affected different social classes of the Island. It further demonstrates how the loss of this income deteriorated quality of life.

The boom in the Kelp industry incentivised unsustainably high population increase in Kelp shores. As found in Gray's work between 1755 and 1800 the Eastern highlands 60% of parishes had stagnant population growth while 74% of Northwestern parishes increased their population by 25%.³⁶ This population increase was relatively small however the localities it acutely effected coincides with the Kelp shores. To bolster their Kelp profits the landlords during the heights of the Kelp markets were encouraging people to remain on the land, resulting in this overpopulation.³⁷ The Kelp industry encouraged proprietors to keep an abundance of people to produce Kelp and increase profits overpopulating the Islands. The population increase was a social aspect of the Kelp industry because it heightened

³⁴ Ibid. p. 455

³⁵ J. Gordon, ed. *The New Statistical Account of Scotland*, Vol. 15., (Edinburgh: Blackwoods and Sons, 1845) p.92 <https://stataccscot.edina.ac.uk:443/link/nsa-vol15-p92-parish-orkney-cross_and_burness>[13/04/2024].

³⁶ Malcolm Gray *The Highland Economy 1750-1850* (Edinburgh: Oliver and Boyd 1956) **p.59**.

³⁷ Robert Graham, *Letter to F. Maule on Distress in Highlands of Scotland*, 1837 in Uk parliamentary Papers< <https://parlipapers.proquest.com/parlipapers/result/pqpdocumentview?accountid=10606052>>[13/04/2024].

the vulnerability of the location to market forces impacting inhabitants' quality of life. Gray is correct to point out how capitalist pursuits of the Kelp industry encouraged Landlords to pack their coasts with tenants.³⁸ Gray's view also supports the primary material that reveals this system of land usage was unsustainable as the land was unable to support the population increase. Demonstrating how Kelp had another social impact through creating a Kelp reliant population. Historian, Tom Devine supports Gray's ideas, when the Kelp price crashed the overpopulated coastal towns, landlords had encouraged faced a serious sustainability issue.³⁹ These views enhance the primary material and display how Kelp had a social impact as it encouraged Landlords to overpopulate coastlines. Devine's view further substantiates Gray because he believes that another social impact of the industry was that it created a reliance on the Kelp market.

The Kelp boom encouraged reliance on shrinking land as fathers gave their sons portions of their limited holdings. When asked what his view on the origins of small crofts in Skye. Doctor Nicol Martine expressed that, when the price of Kelp was high the labourers relocated to the coast shrinking croft sizes.⁴⁰ This exemplifies how the proprietors bolstered the unsustainable indigenous population increase. The fixation on profits created fragility which became unsustainable when prices collapsed. This subdivision was a societal change caused by the Kelp industry with the abundance of resources allowing for smaller Kelp focused holdings though these lands were far too small to sustain their inhabitants without Kelp wages. The Kelp industry gave

³⁸ Malcolm Gray, 1951, p.204.

³⁹ Ed. By T.M Devine Jenny Wormland, *The Oxford Handbook Of Modern Scottish History* (Oxford: Oxford University Press, 2012) p.152.

⁴⁰The Napier Commission, *Evidence Taken By Her Majesty's Commissioners Of Inquiry Into The Conditions Of The Crofters And Cottars In The Highlands And Islands Of Scotland* VOL I, 1883 P. 432 <<https://www.uhi.ac.uk/en/t4-media/one-web/university/research/centre-for-history/napier/napier-commission-vol-1.pdf>>[13/04/2024].

islanders a false sense of security, where survival was reliant on stable market prices. The Kelp trade allowed inflated populations to subsist on lands that otherwise had insufficient means of supporting this increase.⁴¹ The Kelp industry artificially bolstered resources creating inefficient subsistence regions. This was a consequence of the Kelp industry because it created a reliance on Kelp while increasing the vulnerability of the location as they had no stockpile or backup to support themselves when the price decreased. This shows how the Kelp industry allowed populations to exist on small lands unsuitable to sustain the populations through agriculture. Gray is correct for believing while population was increasing throughout the Highlands the inflated Kelp market bolstered this growth at a local level.⁴² The view highlights that the Kelp industry which supported islanders and more rural population growth on a micro scale. Further examples of the Kelp industry causing overpopulation can be seen in the Napier Commission's examination of Tiree. "Half of the population of Tiree is a burden on the other half? Yes I believe so."⁴³ This reveals how overpopulated the island of Tiree had become as a result of the Kelp industry. This shows how overpopulation was a significant social burden because on Tiree it had effectively doubled the population which the island could not sustain. This overpopulation is also shown as a burden on the rest of the island further highlighting how Kelp induced overpopulation, limited resources.

Overpopulation was a symptom of the change in land usage the Kelp industry encouraged. Comparing Tiree to the islands of Coll and Canna, the connection of the

⁴¹ Henry James Baillie, *First report from the Select Committee on Emigration, Scotland*, 1841 p.2 in <https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1841-019570?accountid=10606>[13/04/2024].

⁴² Malcolm Gray, 1951, p.204.

⁴³ Alex Hunter, 'Emigration' *The Inverness Courier*, 10th October 1827 p.4. <
<https://www.britishnewspaperarchive.co.uk/viewer/BL/0000446/18271010/028/0004?browse=true>>
[13/04/2024].

Kelp industry to land usage and overpopulation is clear. The proprietor of Coll having lived primarily in Coll has gone to every extent to ensure the population stays as static as possible resulting in Coll not facing the issues of destitution or misery of other islands.⁴⁴ This demonstrates that overpopulation was fostered by the Kelp industry. The proprietor of Coll strictly utilised the land, avoiding the pursuit of progressively larger Kelp profits was less strain on resources on this island and each inhabitant was still able to subsist comfortably. The proprietor of Canna was also a resident of that Island.

The proprietor of Canna engaged in effective land management, he has only allowed one married couple to a single croft he sent 200 of his tenants away as there was no means of sustaining them and increased the size of their crofts so each might subsist comfortably.⁴⁵

The package of evidence from both Coll and Canna reveals how overpopulation was a direct result of capitalist tendencies within the Kelp industry. Tom Devine and Robert Dodgshon have correctly attributed the Kelp industry as a cause of the change in land usage from clanship to profit based systems.⁴⁶ Eric Richards has corroborated Devine's views as he also argues the Kelp industry encouraged a change in land usage that sought to maximise profits.⁴⁷ The Kelp industry promoted overpopulation through this land use change. At its most significant it gave rise to

⁴⁴ Ibid.p1

⁴⁵ Robert Graham, *Letter to F. Maule on Distress in Highlands of Scotland*, 1837

⁴⁶T.M. Devine 2005 pp.86-98, Robert Dodgshon, *No Stone Unturned : A History of Farming, Landscape and Environment in the Scottish Highlands and Islands*, (Edinburgh: Edinburgh University Press, 2015) p.193

<https://libezproxy.dundee.ac.uk/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=n1ebk&AN=1140053&authtype=shib&site=ehost-live&scope=site&ebv=EB&ppid=pp_231>[13/04/2015].

⁴⁷Eric Richards, 2007 p.54.

dramatically heightened pressures and social consequences when the price of Kelp waned.

Overpopulation and the reliance on the Kelp industry setup the conditions for both social and economic turmoil through unemployment when the industry failed. The society now believed that any degradation on the price of Kelp would be catastrophic to highlanders who are reliant on its manufacture for a considerable amount of their employment.⁴⁸ This shows how the Kelp industry encouraged the overdependence of the island economies. The collapse of the Kelp price decreased employment for islanders. As the 80-year-old crofter of South Uist Alexander McNeil recalled. “When I was young no one had to leave the country to labour. Instead of going south they used to labour at Kelp at home.”⁴⁹ This reveals how the Kelp industry had employed a majority of the population from 1810 until the 1820’s. When the price fell drastically after the 1820’s, coastal populations faced unemployment and travelled away for work. Unemployment was another social impact of the industry because the end of the industry saw the end of support and economic prosperity for coastal communities. The collapse of the Kelp industry has resulted, not in temporary unemployment, but in the termination of the income that the bulk of inhabitants relied on.⁵⁰ This shows how the Kelp industry was the sole provider to many highlanders. As a result of the collapse of the Kelp industry the population that relied on it were left unemployed upon its demise in the 1830’s. The transition away from Kelp had left between one half and a third of the islanders on Tiree with no

⁴⁸ Transactions and Prize essays of the Highland Agricultural Society of Scotland, vol.6 (Edinburgh: Arch Constable, 1824) p.250-257 <<https://archive.rhass.org.uk/archive/transactions-of-rhass-1790-1969/transactions-of-rhass-1820-1829/transactions-of-rhass-volume-1824/171031>>[13/04/2024].

⁴⁹ The Napier Commission, 1883. p.745.

⁵⁰ Elliot Thomas, *Report Of Agent General On Emigration To Relieve Distress In Highlands*, (1837) in p.1-4 <<https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1841-019895?accountid=10606>>[13/04/2024].

employment whatsoever.⁵¹ This emphasises the significant proportion of islanders who became unemployed. The sweeping unemployment caused by the lack of Kelp manufacture created destitution but also strained any local relief and resources showing further social impacts of the industry.

“To what, in your opinion, may be attributed the cause of people getting so bad of late years?—There is a great deal of that owing to the want of Kelp making. I may say Kelp was the sole support of the people here.”⁵²

This quote shows how the collapse of the Kelp industry increased unemployment. Coastal inhabitants wanted work but with the collapse of the Kelp prices, destitution and unemployment went unchecked. As Mackie writes, the opening of the barilla market, offering a more efficient alternative, caused mass unemployment for people who had moved to the shores to work on Kelp. Barilla was also richer in sodium carbonate.⁵³ Drawing on the primary material, there is a strong argument that unemployment in coastal areas was directly linked with the Kelp industry. This opinion further shows that unemployment was a key social impact from the collapse of the Kelp industry.

The collapse of the Kelp industry resulted in a lack of meaningful employment. This brought islanders closer to falling into arrears. When the Kelp work continued, it allowed a new class of tenants to exist who had limited capital and few other options. If the work were to be discontinued, this class would fall into debt.⁵⁴ This shows that a class of islanders had formed solely around the Kelp manufacture with no other enterprise. This reliance on the industry exhibited a further impact on islanders as

⁵¹ Alex Hunter, ‘Emigration’ *The Inverness Courier*, 10th October 1827 p.4.

⁵² *The Napier Commission*, 1883. p.758

⁵³ J.D Mackie, *A history of Scotland* (London: penguin, 1991) p.323

⁵⁴ J. Gordon, ed. *The New Statistical Account of Scotland*, Vol. 14, 1845 p. 167

needed the industry simply to pay rent. The industry propped up unsustainable practices which resulted in the growth of arrears and the fragility of the island economies.

Even on Orkney which suffered less than the Hebrides, the failure of the industry had lasting impact. While Kelp can be sold for any profit, it would still get manufactured here because the allowances landlords give to partake in this manufacture enabled a third of the islanders to pay rent.⁵⁵ This shows the failure of the Kelp industry created the conditions which made islanders indebted to landlords. The Kelp made on Tiree belonged solely to the Duke of Argyll where he paid tenants between 50 or 60 shillings a tonne which was just enough to cover their rents.⁵⁶ While some landlords were still making profits their tenants were only keeping enough money for their rent not their meals or any other necessities. Islanders worked just to pay rent and became destitute if any hardship occurred. “The duke is bound to take the Kelp at £7 a ton by giving credit for which sum the rental of the small tenants is discharged; in fact it is paid in full what they promise to pay in rent he receives in Kelp and they pay no rent.”⁵⁷ This further demonstrates how the Kelp industry had economic consequences as tenants fell into debt. “The land was dear when there was such a good price for the Kelp, and when the Kelp work ceased, the people fell into arrears and could not pay the rent.”⁵⁸ This shows how the Kelp industry brought such tight economic margins adding another social impact because rents were not reduced in line with Kelp profits increasing debt. Highlanders began to face destitution and an inability to escape the debt cycle because of the collapse of the Kelp industry. Malcolm Gray writes, the islands economies relied on tenants

⁵⁵J. Gordon, ed. *The New Statistical Account of Scotland*, Vol. 15, p. 111.

⁵⁶Alex Hunter, ‘Emigration’ *The Inverness Courier*, 10th October 1827 p.4.

⁵⁷ *Ibid.* p.4

⁵⁸ *The Napier Commission*, 1883. p.219

having some capital to cover hardship as Kelp replaced cattle relying on landlords became common resulting in the piling debts of tenants.⁵⁹ He agrees with the primary material by displaying that the volatility of the Kelp industry made tenants fall into arrears as it replaced a more stable commodity in black cattle. Overall, the depreciation of the Kelp price forced many tenants into arrears.

As the industry deteriorated so too did islander's quality of life. The previous analysed social consequences of the Kelp industry had knock-on effects which spawned further social impacts. The failure of the Kelp industry created despair among islanders. There was much less singing and joy on the islands though when they manufactured Kelp they sang often.⁶⁰ Following the demise of the Kelp industry, islanders became downtrodden. On the islands there was limited recreation but due to the quality-of-life islanders had little to sing for. This unhappiness is further elaborated on by

“ I have heard in some other islands that the people are less cheerful and jovial than they used to be long ago. Is there any difference in that respect here? They are not quite so foolish now-a-days as they were when I was young. The struggle for existence is too strong for them now.”⁶¹

The Kelp industry collapsing made the fight for survival more important than recreation. The destitution had the knock-on effect of reducing islanders' cheeriness. The islanders were now less interested in singing and music which they formerly enjoyed.⁶² This shows that the islanders were disinterested in recreation in 1845. The

⁵⁹ Malcolm Gray, 1951, p.207.

⁶⁰ The Napier Commission, 1883 **vol.1** p.617

⁶¹ Ibid p.706.

⁶² J. Gordon, ed. *The New Statistical Account of Scotland*, Vol. 14, (Edinburgh: Blackwoods and Sons, 1845) p.172 . <https://stataccscot.edina.ac.uk:443/link/nsa-vol14-p167-parish-inverness-north_uist>[13/04/2024] .

Kelp industries demise increased unhappiness in the islands. “The common people used to be fond of dancing and football playing, but of late years, it is to be regretted, that, while there is less hilarity and social enjoyment among the young, there is more of quiet tipping in the public-house.”⁶³ This supplements the material from the other Kelp islands. In Orkney much of the previously mentioned recreational activities had vanished which accompanied the failure of the Kelp industry and increased unhappiness in the parishes. The deterioration in quality of life, in the islands also increased alcohol consumption on Orkney further showing how the well-being of the people had been dampened after the kelp collapse. Overall, the knock-on effect of the collapse of the Kelp industry was increased unhappiness in island communities. The Kelp industry brought many social impacts which effected the islanders. The increase in population the booming industry fostered had various extended impacts which exacerbated the industries social impacts. Comparing the Old Statistical Account to the New Statistical Account has provided prime examples of the destitution facing the islands after the collapse of the Kelp industry. The downfall of the industry also brought unemployment which made tenants fall into arrears. These made islanders discontent which became another effect of the Kelp industry.

Industry & the Era of Experimentation

Previous analysis of the old and New Statistical Accounts of Scotland provided valuable evidence of the social impacts of the Kelp industry. The Kelp industry overran island economies becoming the dominant industry. The land holders and

⁶³ J. Gordon, ed. *The New Statistical Account of Scotland*, Vol. 15., (Edinburgh: Blackwoods and Sons, 1845) p.95 <https://stataccscot.edina.ac.uk:443/link/nsa-vol15-p92-parish-orkney-cross_and_burness>[13/04/2024].

tenants of the islands neglected improving the land and were focused on Kelp while the price was high.⁶⁴ This evidence suggests the lack of industry in the highlands was in part due to an overreliance on Kelp.

So long ago as 1804 Dr Patrick Neill of Edinburgh warned the proprietors, of what has actually happened, in these words: " Should a cheap process for extracting the soda from sea water happen to be discovered, or should the market for Kelp on any other account unexpectedly fail, the landholders of Orkney will find, when too late, the great il-prudence of thus neglecting the cultivation and improvement of their lands.⁶⁵

The view of this doctor demonstrates the fragility of the single commodity economy which the Kelp industry fostered in the islands. This chapter will demonstrate the creation of a Kelp reliance throughout island economies. Furthermore, this chapter will explore the wider industrial impacts the Kelp industry created. The Kelp industry had further industrial consequences, "The experiments and observations on Kelp, which I mentioned to you, were suggested by the distress, and in some cases the inevitable ruin, which the sudden loss of that branch of national industry has occasioned in the northern parts of Scotland."⁶⁶ This shows how the failings of the Kelp industry promoted experimentation to try and relieve the destitution which has been previously displayed. "Having been extensively concerned in the Kelp trade,

⁶⁴ Robert Graham, *Letter to F. Maule on Distress in Highlands of Scotland*, 1837 in Uk parliamentary Papers<
<https://parlipapers.proquest.com/parlipapers/result/pqpdocumentview?accountid=10606052>>[13/04/2024].

⁶⁵ J. Gordon, ed. *The New Statistical Account of Scotland*, Vol. 15 1845. P.92.

⁶⁶ Prize essays and Transactions of the Highland and Agricultural Society of Scotland, vol.10 (Edinburgh: William Blackwood & sons, 1835)p.241

<<https://archive.rhass.org.uk/archive/transactions-of-rhass-1790-1969/transactions-of-rhass-1830-1839/transactions-of-rhass-volume-1835/172189>> [13/04/2024].

during its best days, and watched with painful interest its downfall, it would afford the author great pleasure, if he could be instrumental in reviving any branch of it that would again afford employment to the poor people.”⁶⁷ This view further demonstrates how the failings of the Kelp industry created a period of experimentation which tried revitalising the Kelp market. The experimentation and scientific discovery allowed a slight boost to the Kelp industry although this was very limited. This section will also analyse the types of experimentation taking place and demonstrate how this brought other social impacts due to the Kelp industry.

The Kelp industries windfall profits reinforced island economies to become more reliant on this product for their income. A reliance on Kelp specifically impacted the parish of North Uist. The small tenants spend a limited amount of time to improve their lands as they were continuously employed in Kelp making.⁶⁸ This shows how industries like agriculture were basically abandoned on the island in favour of Kelp. As Gray has correctly argued in the Outer Hebrides, the fixation on the Kelp industry saw them neglecting their agriculture.⁶⁹ This Kelp reliance limited food production and the ability of islanders to support themselves which then exacerbated destitution and famine. On North Uist, the tenants were only focused on Kelp, no attention was paid to fishing as a result.⁷⁰ North Uist was suffering because of a Kelp reliance. The Kelp industry had greatly dominated the island economy, making it extremely

⁶⁷ *Transactions of the Highland and Agricultural Society of Scotland July 1847-March 1849*, (Edinburgh: William Blackwood & sons, 1849)p.76 <<https://archive.rhass.org.uk/archive/transactions-of-rhass-1790-1969/transactions-of-rhass-1840-1849/transactions-of-rhass-volume-1849/175070>> [13/04/2024].

⁶⁸ Sir John, Sinclair, *The Statistical Account of Scotland*, Vol. 13, (Edinburgh: William Creech, 1794) p.325 <https://stataccscot.edina.ac.uk:443/link/osa-vol13-p300-parish-inverness-north_uist> [13/04/2024].

⁶⁹ Malcolm Gray *The Highland Economy 1750-1850* (Edinburgh: Oliver and Boyd 1956) p126.

⁷⁰ Sir John, Sinclair, *The Statistical Account of Scotland*, Vol. 13 1794. P.314.

fragile. This fragility opened the door to catastrophic failure. As the reverend for North Uist noted, “It is almost unnecessary to observe, that establishing manufactures, and erecting villages, would help much to better the condition of the people.”⁷¹ This shows how the reverend reflected that the island desperately needed another form of industry. This reinforces how the Kelp industry had greatly dominated the island economy with most relying on one trade. There was little attention to alternative economic prospects explored by inhabitants. The island of North Uist in 1794 was left with a fragile economy unfit to withstand hardship. When comparing this research with evidence from the New Statistical Account, the Kelp reliance is highlighted but also new attempts to improve industry are revealed. Annual premiums are offered to the tenants who improve unproductive lands making them useful for agriculture.⁷² This primarily shows that, proprietors were encouraging improvements in land usage after the deterioration of the Kelp price. The Island’s wealth being reinvested to expand economic and subsistence productivity displays how the Island economy had refocused from back from Kelp to agriculture. The premiums expanded industrial prospects on the island showing how the fall of the Kelp industry sponsored economic diversification. When compared to the old reverend’s account, it further displays how Kelp had choked any development of agricultural land improvements in favour of promoting the industry. Another comparison can be made in the parish when referring to the fisheries. As the new reverend for North Uist stated, during the summer season the population is far too engaged in producing Kelp preventing them from successfully fishing while the sea is calm.⁷³ Clearly then while some industrial developments were underway, the

⁷¹ Sir John, Sinclair, *The Statistical Account of Scotland*, Vol. 13 1794. p.325.

⁷² J. Gordon, ed. *The New Statistical Account of Scotland*, Vol. 14 1845 p.176.

⁷³ J. Gordon, ed. *The New Statistical Account of Scotland*, Vol. 14 1845 p. 177.

Kelp industry was still smothering island economies and Islanders' economic prospects. North Uist in conjunction with the other parishes, faced a serious consequence of the Kelp industry as it created a self-fulfilling Kelp reliance.

Another region that requires analysis is Orkney. Orkney faced the economic domination experienced because of the Kelp industry. When comparing the old and the New Statistical Account's greater improvement can be seen in the parish compared to North Uist. As the parish minister John Sinclair writes, "There is no manufacture carried on in these islands, unless Kelp may be reckoned one."⁷⁴ At the turn of the 19th century Orkney had limited industrial prospects. Kelp was the only material manufactured so the island suffered the consequence of being reliant on a single market. This reliance is further evidenced by the minister, "No fish of any kind, or oil are exported to any foreign market; the people being employed in making Kelp during the summer season, have not time for fishing."⁷⁵ The Kelp industry sapped tenants time which made pursuing any form of industry other than Kelp impossible. Having no secondary industry created fragility which resulted in destitution.

The islanders faced limited job prospects and a fragile system because of the Kelp industry. This Kelp reliance is further detailed in both the New Statistical Account of the Parish and the transactions of the RHASS. "Formerly in Orkney every consideration was sacrificed to Kelp. Agriculture was much, neglected, and even the

⁷⁴ Sir John, Sinclair, *The Statistical Account of Scotland*, Vol. 7, (Edinburgh: William Creech, 1793) p.491. <https://stataccscot.edina.ac.uk:443/link/osa-vol7-p491-parish-orkney-cross_burness_north_ronaldshay_and_ladykirk>[13/04/2023].

⁷⁵ Sir John, Sinclair, *The Statistical Account of Scotland*, Vol. 7 p.453

fisheries, for which the county is so well adapted, were unattended to.”⁷⁶ This demonstrates how the Kelp industry made islanders ignore the fishing industry, limiting the robustness of their economy. The Kelp industry overpowering fishing is also detailed by James Dickson’s account of the Orkney Islands to the RHASS. Kelp manufacture prevented islanders from pursuing fishing only when the industry is on the verge of collapse have inhabitants considered it a viable venture.⁷⁷ The evidence presents how the Kelp industry had strangled industrial diversification in Orkney. The Kelp industry dominated employment options for islanders. Compared to the Old Statistical Account some improvements regarding island industry are displayed.

“With every disadvantage, however, the peasantry of the country have done wonders for themselves. Most fortunately, before the entire fall of Kelp, Mr Laing of Papdale and others, had, by liberal encouragement and large advances, induced their small tenants and cottars to fit out boats, nets, and lines, and to attempt the prosecuting of the herring and cod fisheries.”⁷⁸

The evidence here displays how the profits generated by the Kelp industry were reinvested in the parish. These profits furnished peasantry with advances that allowed them to change their focus to fishing. This also demonstrates how the Kelp industry itself could have provided capital investment to loosen its grip of the Island economy.

⁷⁶ J. Gordon, ed. *The New Statistical Account of Scotland*, Vol. 15 1845. P.92.

⁷⁷ *Transactions and Prize essays of the Highland Agricultural Society of Scotland*, vol.7 (Edinburgh: William Blackwood, 1841) p.116 <<https://archive.rhass.org.uk/archive/transactions-of-rhass-1790-1969/transactions-of-rhass-1820-1829/transactions-of-rhass-volume-1824/171031>>[13/04/2024].

⁷⁸ J. Gordon, ed. *The New Statistical Account of Scotland*, Vol. 15 1845. P.93

This reinvesting did not seem to apply to agricultural development. The manufacture of Kelp siphoned tenants time away from improving and working on their own farmland.⁷⁹ This further demonstrates how the Kelp industry suffocated employment opportunities for islanders. The industry also impacted how much produce inhabitants had to subsist on. The land has become inefficiently used as landlords fill their shores with Kelp labourers who each need areas to cultivate for subsistence.⁸⁰ Agriculture was further affected in the wake of Kelp only, improving on Orkney after the Kelp crash.

Strangers still find much to condemn in the management of the land in these parishes; but to those who recollect what it was forty years ago, a very great improvement, indeed, is perceptible; and now that the slavery of the Kelp manufacture has been removed, and the free and unfettered energies of the farmers begin to be applied to their proper business.⁸¹

The Kelp industry collapsing had offered tenants more time to improve their agricultural prospects. While this failure did limit industrial manufactures on the islands the population gained more robust industries.

The Kelp industries impact shows how it restricted industry in the island locations. A lesser studied impact is how the hardship following the Kelp crash also spawned multiple experiments and attempts to improve the Kelp manufacture. The Kelp industry was causing devastation to both poor tenantry and proprietor investments.

⁷⁹ *Transactions and Prize essays of the Highland Agricultural Society of Scotland*, vol.13 (Edinburgh: William Blackwood, 1841) p.115-137 <<https://archive.rhass.org.uk/archive/transactions-of-rhass-1790-1969/transactions-of-rhass-1820-1829/transactions-of-rhass-volume-1824/171031>>[13/04/2024].

⁸⁰ *Ibid* p. 115-137.

⁸¹ J. Gordon, ed. *The New Statistical Account of Scotland*, Vol. 15 1845. P.96.

The Royal Highland Agricultural Society attempted to bolster the industry with experimentation and research. The society looked to foreign markets for innovation.

The society was informed that a type of seagrass which has been processed to be used as stuffing for bedding is being imported from Hamburg. The society seeks to encourage this process in the western isles which is plentiful in the raw material to bolster work and stimulate a new industry which could take place simultaneously with the manufacture of Kelp.⁸²

This shows an attempt to diversify the Kelp reliant economies to possibly stave off effects of a crumbling market. This economic change hoped variation in Kelp uses would provide alternative income that faced little competition from barilla.

The Society wished to incorporate Kelp alongside agriculture. Seaweed had been used throughout the islands as fertiliser for agricultural crops.⁸³ The Society sought to optimise this usage of seaweed as a fertiliser to improve the agricultural industry on the islands. “I have no doubt of Kelp proving a most valuable manure, particularly in districts distant from towns, where dung is not to be had to purchase, besides, the dung required for an acre, costs much higher than Kelp at L. 4 per ton.”⁸⁴ The failure of the Kelp industry had prompted many experiments to try and improve crop yields on the islands which suffered from dwindling capital reserves coinciding with the kelp collapse. The experiments were seeking to utilise seaweed in a different way hoping to allow continued employment in Kelping but also

⁸² Sir John, Sinclair, *The Statistical Account of Scotland*, Vol. 7, (Edinburgh: William Creech, 1793) p.491 <https://stataccscot.edina.ac.uk:443/link/osa-vol7-p491-parish-orkney-cross_burness_north_ronaldshay_and_ladykirk>[13/04/2023].

⁸³ *Transactions and Prize essays of the Highland Agricultural Society of Scotland*, vol.6 (Edinburgh: Arch Constable, 1824) p.581-587 <<https://archive.rhass.org.uk/archive/transactions-of-rhass-1790-1969/transactions-of-rhass-1820-1829/transactions-of-rhass-volume-1824/171031>>[13/04/2024].

⁸⁴ *Transactions and Prize essays of the Highland Agricultural Society of Scotland*, vol.7 (Edinburgh: William Blackwood, 1829) p.320.

increase the lands agricultural output. These experiments proved optimistic for Kelp workers. “He thinks that 5 cwt. of Kelp per Scots acre would produce a manifest improvement on any crop.”⁸⁵ This shows how the landlords were trying to use the fragile economies of Kelp to improve industries where barilla would not be used, for example in agriculture. Another social impact from this is the utilisation of Kelp, increased crop yields making island subsistence economies slightly more robust. The islands they were targeting with this research were already engaged in using seaweed as manure. In Orkney they already cultivated sandy soil by usage of seaweed to fertilise it.⁸⁶ This showed how experimentation had a more limited social impact as it was recreating common knowledge and not offering islanders new techniques to improve land.

While this usage of Kelp as manure had a limited social impact, other experimentation promoted by the failing industry was more intense. The Society started to record and experiment with the usage of another highland raw material, peat. Writing to the RHASS Robert Hamilton noted, an experiment should take place to find if the Kelp mixed with peat will create a potent fertiliser. If the results show it is potent this could create valuable work for highlanders with their abundance of peat and Kelp and improve their growing conditions.⁸⁷ This shows how experimentation after the kelp failure hoped to provide islanders with much needed work and crop yields to protect them from their crumbling staple commodity. The Society tried to use raw materials the island tenantry already had access to bolster established island industries for cheap.

⁸⁵ *Ibid* p.320.

⁸⁶ Sir John, Sinclair, *The Statistical Account of Scotland*, Vol. 7, 1793. P.452

⁸⁷ *Transactions and Prize essays of the Highland Agricultural Society of Scotland*, vol.7 (Edinburgh: William Blackwood, 1829) p.323-325.

Using Kelp and peat ashes as fertiliser granted promising results, the peat ash bought from the poor who use it in their fires and the Kelp from their produce. The experiment offered hope that a new source of revenue to address the destitution of those tenants reliant on Kelp.⁸⁸

The experimentation was an attempt to provide islanders with better crop yields and new industries which could use their raw materials effectively. The falling price of Kelp generated this period of experimentation which would offer Kelp manufacturers stable wages and overcome some destitution.

Agriculture was just one of the experimental ways the RHASS recorded to try and improve the Kelp industry. The Kelp industry was under constant experimentation to try and increase efficiency through chemistry. The society offered premiums for the best manufactured Kelp regarding the quantity of soda.⁸⁹ This shows how the RHASS was seeking to optimise the Kelp industry. This impact offered highlanders better knowledge on how to improve their industry. The RHASS also hired chemists to complete reports on how to bolster the Kelp industry. As chemist Andrew Fyfe noted, the quantity of soda extracted from Kelp can be increased by a process of burning the Kelp a second time with carbonaceous matter.⁹⁰ This shows how the failure of the Kelp industry was promoting scientific discovery and optimisation of highlander techniques. The society using research from a chemist displayed how difficulties in Kelp industry promoted a period of experimentation. The society was

⁸⁸ *Transactions and Prize essays of the Highland Agricultural Society of Scotland*, vol.10 (Edinburgh: William Blackwood, 1835) p.241-248.
<<https://archive.rhass.org.uk/archive/transactions-of-rhass-1790-1969/transactions-of-rhass-1830-1839/transactions-of-rhass-volume-1835/172189>>[13/04/2024].

⁸⁹ *Transactions and Prize essays of the Highland Agricultural Society of Scotland*, vol.6 (Edinburgh: Arch Constable, 1824) p.581-587.

⁹⁰ *Ibid.* p.581-587.

also considering how to compete with barilla. Andrew Fyfe further notes the process might bring Kelp soda to a similar quantity as barilla which should stave off highlanders' destitution somewhat.⁹¹ This shows how the experimentation had an impact on the Kelp industry and a social impact more widely. The shrinking of Kelp prices was the driving force behind trying to recover prices via scientific experimentation.

The Kelp industry was propped up again but less profitably when large quantities of Iodine were required.

Indeed, the year 1831 would almost have seen the end of the Kelp industry had it not been that by this time chemists had given their attention to seaweed as a source of potash salts, bromine, and iodine and was for 'many years the important source from which these substances were obtained.'⁹²

The scientific discovery of Iodine in Kelp in 1811 helped to prop up the industry once markets for this element had formed. Its extraction would not become profitable enough until later in the century.

The Society continued hiring chemists to provide them with ways to improve Kelp manufacture. If Kelp was to be burned more with cheap fuel like peat, a greater quantity of sodium carbonate could be achieved.⁹³ This shows how the Kelp

⁹¹ Ibid. p.581-587.

⁹² Robert Meldrum 'Kelp' *Campbelltown Courier* Saturday 25th February 1899; [n.a] *The Topographical, Statistical, and Historical Gazetteer of Scotland*, **Vol. (Glasgow: A Fullerton, 1842 p.758)** <<https://digital.nls.uk/gazetteers-of-scotland-1803-1901/archive/97437630> > [13/04/2023].

⁹³ *Transactions and Prize Essays of the Highland Agricultural Society of Scotland*, vol.10 (Edinburgh: William Blackwood, 1835) p.241-248.
<<https://archive.rhass.org.uk/archive/transactions-of-rhass-1790-1969/transactions-of-rhass-1830-1839/transactions-of-rhass-volume-1835/172189>>[13/04/2024].

industry's problems continued to spur on experimentation. "My attention to peat was excited not only by the abundance of that fuel in Kelp-making districts."⁹⁴ This shows how the failing prices of Kelp prompted the society to improved industrial processes in Kelp districts. The Society was also concerned with utilising Highland resources effectively. This was a result of the destitution faced after the collapse of Kelp prices. No consideration would be made otherwise to optimising Kelp manufacturing and the best usage of local natural resources.

As the population grew evermore destitute, the Society stormed ahead with their attempts to bolster the industry. The Society offered a monetary reward and gold medal to anyone who could discover a cheap and effective way for highlanders and islanders of Scotland to extract iodine and other salts from seaweed.⁹⁵ This showed the RHASS was actively attempting to prop up the industry. The Kelp industry had created an era of experimentation to benefit highlanders' industrial prospects. The results of their bounty were rather pessimistic, as Macdonald M'Crummen writes, "that, from a variety of experiments, in which he has for a number of years been engaged, he is satisfied that the process of separating the salts in Kelp cannot be carried on by the people in the Kelp districts"⁹⁶ This shows how the Society's experimentation was pessimistic. This impact of the Kelp industry saw the Society now become advisers on what was best for the Kelp manufacturers. With the discovery that extraction of iodine was outside of tenant's ability the society looked to other ways to support the population. M'crummen also writes, while tenants lack

⁹⁴ Ibid p.241-248.

⁹⁵ *Transactions of the Highland and Agricultural Society of Scotland*, July 1845-March 1847(Edinburgh: William Blackwood, 1847) p.629-637. <<https://archive.rhass.org.uk/archive/transactions-of-rhass-1790-1969/transactions-of-rhass-1840-1849/transactions-of-rhass-volume-1847/17466>>[13/04/2024].

⁹⁶ *Transactions of the Highland and Agricultural Society of Scotland July 1847-March 1849*, (Edinburgh: William Blackwood & sons, 1849)p.75-78.

the agency to extract iodine Highland proprietors can erect chemical work on their land that could support tenants.⁹⁷ This further shows how the Society realised that investment from proprietors was necessary. The Kelp industry spawning this experimentation ultimately led to the belief that establishing manufacturing or some other system of support was necessary to end destitution caused by Kelp. Dr. Anderson a chemist writing for the RHASS described, while extraction of Kelp from Iodine in places where Kelp is harvested is possible it is unlikely the highlanders would be skilled enough to be employed in this work.⁹⁸ This shows how the Society was pivoting away from improving the Kelp manufacture. This was a social consequence of the Kelp industry as it limited the likelihood of any industry being formed on Kelp shores. Dr. Anderson further displays, if iodine extraction was to be set up on these shores it is improbable that enough capital could be collected to fund this risky experiment.⁹⁹ This was an impact of the Kelp industry as the destitution, as seen previously, had drawn out capital in the Islands. The experiments then offered pessimistic views which limited the reinvestment and establishment of industries in these locations. This poor prospect and lack of industrialisation stunted Kelp and this era of experimentation that the Kelp industry promoted.

Whilst the experiments conducted seemed pessimistic, one Iodine extraction project was set up in Tiree.

Through the labours of Mr C. Stanford, to whom the survival of the Kelp industry owes a great deal, great improvements were introduced in the

⁹⁷ Ibid. p.75-78.

⁹⁸ *Transactions of the Highland and Agricultural Society of Scotland*, July 1851-March 1853 (Edinburgh: William Blackwood, 1853) p.455. <<https://archive.rhass.org.uk/archive/transactions-of-rhass-1790-1969/transactions-of-rhass-1850-1859/transactions-of-rhass-volume-1853/176252>>[13/04/2024].

⁹⁹ Ibid. p.455.

treatment of seaweed, with the result that works were 'established in the Outer Hebrides in 1863.¹⁰⁰

This shows how the Kelp industry could in some regions provide success. With support of the chemist Mr Stanford the Kelp shores of Tiree had industrial manufacturing. This was a further social impact of the Kelp industry bringing industrialisation to Tiree giving many people employment. Furthermore, it displayed how proprietors could assist in industrialising the highlands which could stave off destitution. The social impacts the Kelp industry had then are obvious. It dominated island economies focusing Islander effort on the Kelp industry. The diminishing price created an era of industrial experimentation which impacted agriculture and chemical industries. While Tiree was successfully industrialised, and an Iodine plant set up, this was only a one-off regional experience. For the Kelp shores at large proprietors were realising a new policy was required to reduce Kelp induced destitution.

Perceptions of Emigration

The consistent fall in the price of Kelp evidently created the decades of experimentation to improve prices. Islanders had been migrating for work consistently over this period. The collapse of the Kelp industry increased the necessity for islanders to temporarily travel south in search of employment. As William Creech of Mull noted, In 1792 several families travelled south wanting

¹⁰⁰ Robert Meldrum 'Kelp' *Campbelltown Courier* Saturday 25th February 1899; [n.a] *The Topographical, Statistical, and Historical Gazetteer of Scotland*, Vol. (Glasgow: A Fullerton, 1842 p.758) <<https://digital.nls.uk/gazetteers-of-scotland-1803-1901/archive/97437630> > [13/04/2023].

employment but by 1793 most had returned to the island with the same desire.¹⁰¹ This demonstrates prior to the collapse of the Kelp industry temporary migration existed on Kelp shores. The price of Kelp coincides, to an extent, with temporary migration. Until the 1790's the price for Kelp hovered between £3 per ton and £6 increasing in value until the end of the Napoleonic wars.¹⁰² When cross examining this package of evidence many highlanders returned because of the increasing employment in the Kelp industry creating the conditions for destitution. The Kelp industry caused islanders to remain fixed in the islands when the price was high. Most Kelp shores encountered higher temporary migration because of the Kelp industry. Since the collapse of the Kelp industry the population of the Outer Hebrides have been inclined to migrate for work in other areas of Scotland.¹⁰³ This shows how the Kelp industry had consequences for the island communities as the islands were devoid of their able-bodied youth for part of the year. The lack of youth would have made life significantly more difficult for the older population left behind. As previously discussed, other Kelp shores encountered increased temporary migration. In Skye after the cessation of the Kelp manufacture the number of tenants who migrated for employment increased.¹⁰⁴ The Kelp industry had caused a drain of working aged people from the islands to a certain extent removing labourers capable

¹⁰¹ J. Gordon, ed. *The New Statistical Account of Scotland*, Vol. 7, (Edinburgh: Blackwoods and Sons, 1845) p. 309. <https://stataccscot.edina.ac.uk:443/link/nsa-vol7-p309-parish-argyle-kilfinichen_and_kilviceuen>[13/04/2024].

¹⁰² Ed. Francis Groome *A survey of Scottish topography, statistical, biographical, and historical*, Vol.6 (Edinburgh: Thomas C. Jack, 1885) p.134 <<https://digital.nls.uk/gazetteers-of-scotland-1803-1901/archive/97380838>>[13/04/2024]

¹⁰³ Henry James Baille, *First report from the Select Committee on Emigration, Scotland*, 1841 p.2 in <https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1841-019570?accountid=10606>[13/04/2024].

¹⁰⁴ **Sir John McNeill, *Report to the Board of Supervision on the Western Highlands and Islands*** (Edinburgh: Murray and Gibb, 1851) p.11 <<https://archive.org/details/m-neill-1851-parliamentary-papers/page/n1/mode/2up>>[13/04/2024]

of working the land. The failure of the Kelp industry also impacted island communities as it exposed islanders to prolonged anglicised culture in the south impacting traditional islander identity. “The practice of going to the Caithness herring fishing, to which at least one person from almost every family goes annually, commenced on the failure of employment at home, when the manufacture of Kelp ceased.”¹⁰⁵ This reveals in conjunction with the other primary evidence how the Kelp industry caused increased migration for employment. This increased emigration caused islanders to have a more nomadic existence than previously, separating them from their homes and dependents. The Kelp industry is shown to be a driving factor behind temporary migration. Now the Kelp price is so low that people must leave the island in search of employment.¹⁰⁶ This shows how the Kelp industry heightened levels of temporary migration from the islands. The temporary migration allowed highlanders to subsist on meagre Kelp profits which further enhanced fragility of island economies. Migration as an impact of the Kelp industry is noted by historians. As Devine correctly argues, failing of highlander by-employment increased temporary migration which supported the subsistence economies for considerable portions of the year.¹⁰⁷ Devine’s view further highlights the cycle of destitution the Kelp industry created. A cycle that saw Kelp prices drop so people moved away to earn money. These wages allowed islanders to scrape by as they produced Kelp to pay for their rents but needed to migrate again next year to earn money. This cycle shows both the economic and social changes the Kelp industry created. The fragile

¹⁰⁵ **Ibid. p.19**

¹⁰⁶ The Napier Commission, *Evidence Taken By Her Majesty's Commissioners Of Inquiry Into The Conditions Of The Crofters And Cottars In The Highlands And Islands Of Scotland* VOL I, 1883 P. 432 <<https://www.uhi.ac.uk/en/t4-media/one-web/university/research/centre-for-history/napier/napier-commission-vol-1.pdf>>[13/04/2024].

¹⁰⁷ T. M. Devine, ‘Highland Migration to Lowland Scotland, 1760-1860’ *The Scottish Historical Review*, vol. 62, no. 174, 1983, pp. 137–49. P.146<<http://www.jstor.org/stable/25529535>> [13/04/2024].

systems the industry created only heightened destitution when hardship occurred as the emigration had prolonged the existence of such fragile economies.

While temporary migration existed prior to the collapse of Kelp. The contemporary Government and political thinkers had an ideological change in how to assist highlanders affected by the failed Kelp industry. Contemporary political thinker Malthus demonstrated attitudes towards destitution in the period. As the means of subsistence increases so does the population but without emigration every population would have regular distress and famine as there would be a lack of resources.¹⁰⁸ This articulates how the contemporary belief was that only by utilising emigration could one ever truly relieve destitution. The Malthusian argument alludes to how destitution from Kelp enabled societal changes in poor relief policy. As evidenced previously attempts to bolster the Kelp industry had mostly failed, there was no chance of an industry being created in these islands to offset support required by the tenants with the population as high as it is currently.¹⁰⁹ This evidence displays changing attitude of the Government as they begin to seek emigration to depopulate the islands to sustainable levels. The Government was frequently looking for solutions to highland distress. In a report of the suitability of emigration to relieve highland distress, the researcher noted, “It must be admitted that few cases could arise to which the remedy of emigration on a great scale would be appear more appropriate than to the distress in the Hebrides.”¹¹⁰ This demonstrates how the Kelp

¹⁰⁸ **Thomas Malthus**, *An Essay on the Principle of Population*, (London: J Johnson, 1798) <
<http://www.esp.org/books/malthus/population/malthus.pdf> > [13/04/2024].

¹⁰⁹ Alex Hunter, ‘Emigration’ *The Inverness Courier*, 10th October 1827 p.4. <
<https://www.britishnewspaperarchive.co.uk/viewer/BL/0000446/18271010/028/0004?browse=true>>
[13/04/2024].

¹¹⁰ Thomas Elliot, *Report Of Agent General On Emigration To Relieve Distress In Highlands, (1837) in p.1-4*
<<https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1841-019895?accountid=10606>
> [13/04/2024].

industry had forced the Government to consider emigration as a solution to the problems created by the Kelp industry itself. As further evidence in the report, the colonies of Australia and Canada are seeking skilled workers not the destitute however proprietors should consider the American colonies to send their destitute to.¹¹¹ The Government were publishing guides for landlords to depopulate their lands of the destitute because of the conditions the kelp industry created. The report also explained how the only possible solution was emigration as the areas were vastly overpopulated.¹¹² This further enhances the idea that the distress created by the Kelp industry had a butterfly effect. An effect where it created prosperous conditions which insufficient holdings and overpopulation common in turn growing destitution which led to solutions like emigration. The destitution created conditions for continuous social change as the government sought to reduce this via emigration which had communal consequences.

The government wanted not to be solely burdened with reducing destitution. The system they thought up was one where the proprietors also were liable to assist in remedying the conditions. In a letter to the Treasury on highland distress it was noted that great benefit to these islands would stem from having the proprietors involved with the Government in a system of emigration to curb overpopulation.¹¹³ This evidence demonstrates the changing attitude of Government. The Kelp industry made the Government seek solutions and in turn the Government calls on proprietors help to allow highlanders to emigrate. With the cost of supporting the destitute

¹¹¹ Ibid. p.1-4.

¹¹² **Ibid. p.1-4.**

¹¹³ Robert Graham, *Letter to F. Maule on Distress in Highlands of Scotland*, 1837 in Uk parliamentary Papers<
<https://parlipapers.proquest.com/parlipapers/result/pqpdocumentview?accountid=10606052>>[13/04/2024].

islanders in tough years, it became obvious how the failure of the Kelp industry strengthened views of required emigration. “In 1812 Clanronald expended £3,353 7s in meal for these poor people”¹¹⁴ This package of evidence displays why both the government and proprietors were keen to enable emigration. Proprietors paying huge sums of money annually to support their tenants brought an economical choice to absorb these recurring costs or contribute towards the relocation. The Kelp industry’s failure created the conditions which made the Government consider emigration as the only option. This change in Government and proprietor strategy impacted both Kelp shore inhabitants and the general poor population.

Following the change in Government policy schemes of assisted migration were explored. While the Kelp industry had trapped prospective migrants it was also a cause of forced migration. The Kelp industry influenced people’s reactions towards emigration. In South Uist and Barra a favourable reaction was noticed.

So fully are the people themselves convinced that emigration to the colonies affords them the only prospect of extrication from their difficulties and sufferings, that petitions signed by heads of families, representing nearly three thousand individuals, have been transmitted for presentation to Parliament, praying for aid to enable them to transport themselves to Canada. ¹¹⁵

The industry had siphoned off much of the capital owned by tenants. The societal consequence was that tenants could not flee their destitution and as a result public money was given to allow some to emigrate. Positive views of emigration are further

¹¹⁴ Alex Hunter, ‘Emigration’ *The Inverness Courier*, 10th October 1827 p.4. <
<https://www.britishnewspaperarchive.co.uk/viewer/BL/0000446/18271010/028/0004?browse=true>>
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¹¹⁵ Sir John McNeill, *Report to the Board of Supervision on the Western Highlands and Islands* (1851).

found in the Napier Commission. As the Surgeon and farmer from Barra M'Gillivray noted, the population are not against emigration as their destitution is great if they were aided to emigrate many would.¹¹⁶ The evidence shows how public opinion to emigration were shaped because of the destitution the Kelp industry created. Many islanders were trapped in poverty because of the kelp industry making them unable to emigrate. Further evidence of the positive opinions of emigration is seen in the Napier Commission. Donald Black of South Uist explained, the tenants here are not wholly against emigration some wish to remain but if assistance was offered many would seek economic prosperity abroad.¹¹⁷ This bundle of evidence enhances how the Kelp industry impacted perception of emigration. The deprivation islanders faced after the Kelp collapse offered many optimistic beliefs and desires to emigrate. Many were convinced that Kelp had trapped the poor population who were eager to emigrate but unable to fund it. Further support for emigration has been detailed by Rev. Maclean, to defeat the destitution in this parish emigration must occur the islanders require assistance as they are too poor to emigrate unaided.¹¹⁸ Without government intervention even islanders that wished to migrate could not. Supporting the argument that the Kelp industry had trapped islanders in a cycle of poverty which impacted both their ability to emigrate and their perception of emigration. Devine has correctly argued, North-western Scots liked their own subsistence way of life and few of them cared for migration to the lowlands and generally they were more

¹¹⁶ The Napier Commission, 1883 vol.1 p.681.

¹¹⁷ The Napier Commission, 1883 vol.1 p.736.

¹¹⁸ J. Gordon., ed. *The New Statistical Account of Scotland*, Vol. 14, (Edinburgh: Blackwoods and Sons, 1845) p. 194. <https://stataccscot.edina.ac.uk:443/link/nsa-vol14-p167-parish-inverness-north_uist>[13/04/2024].

favourable to continuing a subsistence lifestyle in the colonies.¹¹⁹ His view is supported by the positive opinions of emigration from the Islands. This supports there was generally a positive view Kepler's had to emigration as they desired to escape destitution but needed support.

Positive views of emigration were clearly present in areas where Kelp had trapped islanders. The Kelp industries failure however created social conditions which soured islander perception of emigration. As recorded in the Inverness advertiser and Ross-shire Chronicle, the economy is the only consideration highland landlords care for. They face no moral struggle as they have removed their tenants previously for sheep and now for shooting.¹²⁰ The landlords quickly opted for more profitable ventures as the Kelp industry dried up. The forced migration which landlords engaged in is also portrayed in the newspaper Christian news, the forced migration has carried highlanders south to the lowlands and to the colonies their native glens sit devoid of life other than sheep deer and grouse.¹²¹ This evidence reveals how the fall of the Kelp price made landlords disregard their tenants in favour of more profitable ventures. Dodgshon's argument is supported by the primary evidence as he believes.

With the post-war collapse of Kelp prices and the lower prices for cattle and wool in the 1820s and 1830s, most estates saw the growing accumulation of

¹¹⁹ T. M. Devine, 'Highland Migration to Lowland Scotland, 1760-1860' *The Scottish Historical Review*, vol. 62, no. 174, 1983, pp. 137-49. <<http://www.jstor.org/stable/25529535>> [13/04/2024].

¹²⁰ 'Highland Games & Highland Clearances' *Inverness Advertiser and Ross-shire Chronicle* 25 September 1855, P.5 <<https://britishnewspaperarchive.co.uk/viewer/bl/0003483/18550925/052/0005>>[14/04/2024].

¹²¹ Sheriff Alison, 'Our Highlanders' *Christian News* 27 October 1855 <<https://britishnewspaperarchive.co.uk/viewer/BL/0002729/18551027/026/0004?browse=False>>[14/03/2024].

numbers in poorly endowed coastal communities as now being more of a problem than a source of profit.¹²²

This forced highlanders away from areas of cultural importance showing how the Kelp industry created depopulation. The Napier commission displays the traumatic effect forced emigration had on those who suffered it. As Donald M'coll noted of Benbecula, due to the forced emigrations in 1849 and 1851 the people of Benbecula are hostile to emigration.¹²³ The fall of Kelp profits made forced emigration a reality. This forced emigration tarnished perceptions of emigration locally. The Kelp industry had a knock-on effect on public opinion as it traumatised islanders into not considering emigration. Angus Macauley also noted the effects forced emigration had in North Uist, the people here dislike emigration as only 30 years ago families were forced onto a boat to Australia many died of smallpox during the voyage.¹²⁴ The evidence from both North and South Uist demonstrates how forced emigrations traumatised tenants and made them distrustful of emigration. Eric Richards Argues while psychology of emigration is difficult many Highlanders left in poverty and sorrow as they were unsupported by the lands.¹²⁵ His argument here is correct as it is broadly supported by the hostility toward emigration stemming from forced depopulation. Richards also reveals how many regardless of their feelings of emigration had no choice. The Kelp industry impacted on how inhabitants of the

¹²² Robert Dodgshon, *No Stone Unturned : A History of Farming, Landscape and Environment in the Scottish Highlands and Islands*, (Edinburgh: Edinburgh University Press, 2015) p.193
<https://libezproxy.dundee.ac.uk/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=n1ebk&AN=1140053&authtype=shib&site=ehost-live&scope=site&ebv=EB&ppid=pp_231> [13/04/2015].

¹²³ The Napier Commission, 1883 vol.1 p.681

¹²⁴ The Napier Commission, 1883 vol.1 p.800-803.

¹²⁵ Eric Richards, *Debating the Highland Clearances*, (Edinburgh: Edinburgh University Press, 2007)p.56 <<https://www.jstor.org/stable/10.3366/j.ctt1r205v>> [13/04/2024].

highlands perceived emigration. The destitution they lived in after the Kelp collapse made some more optimistic whilst others, feeling defeated, were left with little choice but emigration.

Conclusion

This dissertation Identified how The Kelp industry has had many societal consequences broadly split into the three main categories of Island quality of life, Island economies, attitudes toward emigration. Through the analysis of the primary material it has been shown how the conditions the industry created, caused wider social impacts to take place.

Primarily by displaying, the dichotomy of the prosperity and destitution had opposing impacts on Islander's quality of life. This revealed the variation in the Impacts of the Industry. Through comparing the Old and New statistical account it is displayed how the Kelp industry caused destitution through unemployment and overpopulation. Both are common themes in the historical research of the industry, this study has reinforced this viewpoint with further primary analysis. Evaluating how the Kelp industry transformed Island land usage shows the first of many broader ideological changes which the kelp industry promoted. Lastly, by analysing the Napier Commission the impact the failing industry had on Islanders happiness has been demonstrated.

Secondly this dissertation wished to portray the industrial developments that resulted from the industry. Through a further comparison of the Statistical Accounts, how the industry dominated island industry is portrayed. This domination made the Islands less capable to weather hardship and limited Islanders employment opportunities. The transactions of the RHASS have been thoroughly studied, this research has

revealed that an era of experimentation and attempts to diversify the economies took place. The experiments were hoping to benefit Islanders through providing a more stable income. The optimisation of kelp as fertiliser was hoped to relieve some food insecurity of the Islanders. Lastly, by widening the scope of this study compared to other work, it is seen how a successful chemical plant was established giving kelp a minor price revival and the Islanders of Tiree employment. This dissertation has analysed these lesser-known industrial consequences, portraying another societal impact of the Kelp industry.

Finally, after most attempts to industrialise and diversify highland economies failed, temporary and permanent migration occurred. Through analysing government reports the kelp industry has been shown to have contributed to a change in policy towards emigration. The government pursued systems to aid destitute islanders to emigrate. The Kelp Industry had a further social Impact as it has been shown to change public opinion on emigration. As destitution grew some Islanders became optimistic of emigration while others were forcibly emigrated causing distrust of emigration. The evidence displayed here demonstrates the vast social consequences of the Kelp industry revealing how this commodity had spiralling societal impacts ranging from economic to political.

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