2.4 Harris Tweed

Harris Tweed is produced in Outer Hebrides, Scotland. These islands are known as the Western Isles or the Long Island; its Scottish Gaelic name is Na h-Eileanan Siar. Located off the northwestern coast of Scotland, the islands consist of Lewis and Harris (actually they are one island but often described as two separate entities), North Uist, Benbecula and South Uist (Figure 18). Because of the North Atlantic Current sweeping past its western coast, the climate is temperate oceanic (Caird, 1951). In 2012, the total population of the islands was estimated at 27,560 (Comhairle nan Eilean Siar, n.d.[a]).

![Figure 18: Map of the Outer Hebrides (Wikimedia.org)](image)

In the past, crofting was widely practiced supplemented by weaving and fishing (Caird, 1951). Today, the major economies are tourism, crofting, fishing and the production of Harris Tweed. In 2012, Comhairle nan Eilean Siar (CnES), Highlands and Islands Enterprises and Skills Development Scotland (n.d.[b]) found that the creative and culture industries, including textiles and heritage were the fastest growing sectors in Scotland adding more than £33 million to the local economy. Significantly, creativity and culture is recognized as an important aspect of the social fabric of the islands, contributing to community and social wellbeing (Pirnie, 1981).

Harris Tweed is also known as ‘clo more’ which means ‘big cloth’ in Gaelic (Harris Tweed Authority, 2012). It is a unique textile, perhaps the only kind in the world that
has its own legislation, protected by an Act of Parliament, stipulating the type of yarn used, method and location of production (Platman, 2011; BBC, 2012; Bremner, 2013). Harris Tweed has always been synonymous with British textiles, with its high quality, durability and luxury, its image being enhanced through a limited supply because it is hand-woven (Mcdougall, 2011).

2.4.1 History and the Development of Harris Tweed Industry
The birth of Harris Tweed was a practical response to the temperate oceanic climatic conditions (Bates, 2009). The history of Harris Tweed can be divided into two distinctive periods, that before the 19th Century, and the modern period following the commercialization of the cloth.

Before the 19th Century, textile production was limited, produced primarily to satisfy domestic needs while surpluses were bartered for goods that were not available locally (Craigie, 2010). Wool from the Blackface sheep (introduced in 1762 as they were resilient in the harsh weather) was processed and spun into yarns within each household (Harris Tweed Authority, 2012). It is the resilient nature of the wool of the Blackface sheep that gives Harris Tweed its distinctive characteristics of durability and water resistance, making it ideal as outerwear in the Scottish climate.

Colours were obtained from nature and supplemented by imported dyes. There were no formal recipes for dyeing and colours were discovered through trial and error. Knowledge about dyes and dyeing was passed from mother to daughter (Vogler, 2002).

Technologies for weaving were basic. Spinning was initially done by hand using the spindle and whorl (dropped spindle) until 1800 when the muckle wheel was introduced. The cloth was woven on a wooden horizontal frame loom called ‘Bearst Bheag’ (Figure 19) while the shuttle was a sheep bone, thrown by hand. Women were the principal weavers, but the whole process was a domestic activity involving the entire family (Harris Tweed Authority, 2012; Hunter, 2001; Pirnie, 1981; Thompson, 1969).
After weaving, the cloth was finished in a process called ‘waulking’ in which the cloth was ‘massaged’ thus shrinking, softening and matting the textile, ready for use. It was a social event guided by strict cultural norms in which women from the community assisted each other. The final process was the consecration of the cloth for the person who would wear it (Laxdale Ladies Choir, n.d.). In the early 20th Century, it was common to see local men wearing coats and trousers made by their women folk (Gordon, 1941; Harris Tweed Authority, 2012; Hunter, 2001; Vogler, 2002; Pirnie, 1981; Thompson, 1969).

The mid 1800s marked the turning point of the cloth industry. These woven textiles were noticed by Lady Catherine Herbert, also known as Lady Dunmore. She introduced the cloth to her landed gentry friends in Scotland and England as the cloth was suitable for gaming. This established a commercial demand for this textile (Rodie, 2011; Harris Tweed Authority, 2012; Hunter, 2001; Vogler, 2002; Pirnie, 1981; Thompson, 1969, Caird, 1951).

The commercial demand for the cloth changed its traditional mode of production. New breeds of sheep, the Cheviot - from the Scottish Borders - and the Crossbred, were introduced to supplement the existing production of wool from the islands. As hand-
processing of wool was laborious, tedious and its productivity low, mills were eventually established to increase productivity after the discovery that there was little difference between hand spun yarns and machine spun yarns. Soon dyeing and finishing of the cloth were also no longer practiced domestically as these processes were undertaken by the mills. During these early commercial periods, weaving was still not full time work and was mainly done by women who would fit this activity into their routine household chores. Home woven tweeds were sold to local grocers or to any of the merchants on the mainland to fund social events. Although commercially based, very little cash changed hands as most of the cash was credited to the seller in terms of provisions (Rodie, 2011; Harris Tweed Authority, 2012; Hunter, 2001; Laxdale Ladies Chorr, n.d.; Vogler, 2002; Pirnie, 1981; Thompson, 1969, Caird, 1951).

At the turn of the 20th Century, the small wooden loom – The Beart Bheag - was retired and in its place the Beart Mhor was introduced (Figure 20) (Thompson, 1969). This loom was similar but larger and the shuttle was bigger, operated by a cord mechanism, enabling it to fly across the width of the textiles (hence, the term ‘fly-shuttle’) instead of having to be thrown by hand. It had greater output per hour but was much heavier to operate. This period witnessed the gradual displacement of women weavers by men, as men were physically stronger and more able to operate this loom. This loom, aptly named ‘The Big Loom’ was introduced in 1890s and by 1911 there were over 250 in operation (Harris Tweed Authority, 2012).
An association was founded in 1910 and a formal definition of the cloth was adopted in 1911. This initial definition stated that ‘Harris Tweed means a tweed, hand-spun, hand-woven and dyed by the crofters and cottars in the Outer Hebrides’ (Harris Tweed Authority, 2012, Pirnie, 1981). In the following year, the Orb trademark (Figure 21) was created (Harris Tweed Authority, 2012; Hunter, 2001; Pirnie, 1981; Thompson, 1969).

![Figure 21: The Orb Trademark](image)

Unfortunately, this formal definition of the cloth caused much confusion because two types of tweed were sold. The first was woven according to the definition and thus, the Orb logo was stamped to verify its authenticity while the other was sold as ‘unstamped Harris Tweed’ without the trademark (Harris Tweed Authority, 2012, Pirnie, 1981). For ‘unstamped Harris Tweed’, only the cloth was woven on the islands, with all other processes conducted on the mainland (Harris Tweed Authority, 2012; Hunter, 2001; Pirnie, 1981; Thompson, 1969).

It was also during this period that weavers started to abandon their wooden frame looms (Beart Bheag and Beart Mhor) for mechanized looms. The first of these newer looms arrived in 1919 and was capable of weaving cloth 36 inches in width (becoming the standard of Harris Tweed for the next 60 years). These new looms had foot operated treadles and treadling moved the shuttles (instead of being hand-thrown or pulled by a cord). The Hattersley domestic looms (Figure 22) enhanced productivity and enabled more intricate patterns to be woven (Harris Tweed Authority, 2012; Hunter, 2001; Pirnie, 1981; Thompson, 1969; Rodie, 2011; Laxdale Ladies Choir, n.d.).
By the 1930s, a new definition was needed to address changes in production. This allowed all processes, except weaving, to be moved from the crofts to the large spinning and dyeing mills. Importantly, all processes had still to be carried out exclusively in the Outer Hebrides. This resulted in clarity for producer and buyer, and also streamlined the production process, thus, increasing productivity to meet post-war commercial demands (Harris Tweed Authority, 2012; Hunter, 2001; Pirnie, 1981; Thompson, 1969).

The Harris Tweed industry reached its peak in the 1960s with production of seven million metres (Hunter, 2001). However by the 1970s, the industry was on a decline with output down to two million metres by 1975. In 1976, the industry tried to address the decline by redefining the cloth. Included in the proposal was to double the width of the cloth to 72 inches in order to fit into the mass production system of garments (36 inch width cloth was primarily used for bespoke tailoring). Another change was to reduce the weight of the textile so as to expand the range of uses of the cloth (Hunter, 2001). All these changes were accepted except for the proposal to introduce power driven factory looms which weavers overwhelmingly voted against (Pirnie, 1981).

Although the late 1970s through to the 1980s saw a slight recovery in production, it was generally acknowledged that the golden years of Harris Tweed were over. In the decade from the late 1980s, production of the cloth steadily declined from two million metres to just over one million metres. In order to rescue the industry, some radical changes were needed including bringing the Harris Tweed Trade Mark in line with European
trademark laws and exploring modern marketing techniques. (Harris Tweed Authority, 2012; Bremner, 2013).

- **Harris Tweed Authority**

  In 1993, a new body – the Harris Tweed Authority (HTA) – was founded to replace the Harris Tweed Association. In the same year, an act of parliament, the Harris Tweed Act, was passed stating that HTA was to ‘promote and maintain the authenticity, standard and reputation of Harris Tweed; for preventing the sale as Harris Tweed of materials which does not fall within the definition…’ (Harris Tweed Authority, 2012; Craigie, 2010).

  The definition of Harris Tweed today is ‘… a tweed which has been hand-woven by the islanders at their homes in the Outer Hebrides, finished in the islands of Harris, Lewis, North Uist, Benbecula, South Uist and Barra and their several purtenances (The Outer Hebrides) and made from pure virgin wool dyed and spun in the Other Hebrides’ (Harris Tweed Authority, 2012).

  Harris Tweed is currently woven according to a set of laws covering yarn type, spinning, dyeing and weaving methods and geographical location. The physical manifestation of a genuine Harris Tweed consists of a stamp of the Orb symbol on every 50 metres of cloth, as certified by an inspector of the HTA.

  As one of the primary functions of HTA is to protect the usage of the name ‘Harris Tweed’ they have registered the Orb stamp internationally in 80% of the developed world (Harris Tweed Authority, 2012; Craigie, 2010).

  In recent years, there has been a resurgence in demand and popularity of Harris Tweed where it is now a fashionable must-have used by international designers (House of Holland), worn by celebrities (Madonna) and featured in movies (Jones, 2013). In 2012, the annual production exceeded one million metres, returning to the output of the late 1990s (Harris Tweed Authority, 2012).
2.4.2 Characteristics of Harris Tweed

Today, Harris Tweed displays the following characteristics:

- **Designs / Colour / Texture / Form of Harris Tweed**

Harris Tweed is created by its constant change and development of colour ways based on previously woven textiles. It is said that the colours of the cloths are inspired and reflect the land and seascape of the islands. From afar, although the cloth appears to be of a single colour, upon closer examination, it is a ‘melange’, as seen in Figure 23 and 24, made up of different specks of colours on a main colour (Bremner, 2013; Medougall, 2011; BBC, 2009[a]; Vogler, 2002).

![Figure 23 (Left): Sample of Harris Tweed](image1)
Figure 24 (Right): Details of Harris Tweed yarns from the same textile

The traditional texture of Harris Tweed is hairy, itchy and heavy, a characteristic of the wool from the Blackface sheep. The impression of the cloth is serious and dour. However, because of expanding markets, new functions and improved machinery, lighter, more colourful and finer tweeds are now available (Craigie, 2010; Pirnie, 1981).

Today, there are three different weights for Harris Tweed: Standard (10/11oz or 310/340 gms), light weight (8/9 oz or 250/280 gms) and featherweight (6/7oz or 185/220gms) (Pirnie, 1981).

Because each piece of cloth is hand-woven and each weaver is known for his or her method of weaving, the end result is that no two pieces are exactly the same (Platman, 2011).
• Materials / Yarns

Today, Harris Tweed is a blend from two different types of wool, from the Scottish Blackface and the Cheviot. Blackface wool is coarse and long, giving Harris Tweed its scratchy characteristic. The Cheviot wool is shorter and finer, resulting in a cloth that is more pleasant and comfortable to wear (Pirie, 1981; Laxdale Ladies Choir, n.d.; Vogler, 2002).

One of the unique features of Harris Tweed is in the dyeing and processing of the yarn. Rather than yarn dyed, it is wool-dyed, blended and then spun into yarns (Figures 25 and 26). Therefore, a single yarn contains between two and eight different fibre colours (Figure 27) (Harris Tweed Authority, 2012; Bates, 2009).

Figure 25 (Left): Dyed Fleece
Figure 26 (Right): Blended Wool
Figure 27: Microscopic Detail of Yarns
Two different types of yarns are produced. Warp yarns require more twist and strength than weft yarns. It is the number of turns per inch or the ‘twist’ of the spinning which determines the look and the strength of the yarn, which in turn governs the quality and look of the textiles, that is whether it is stronger or weaker, bulky or fine. In the past, it was common to use a combination of machine spun yarns (for warp) and hand-spun yarns (for weft). These were called ‘50-50’ hand-woven tweed. Today, it is stipulated that only virgin wool is used; the mixing of other types of fibres such as cashmere or silk will corrupt the cloth and the cloth cannot then be certified as Harris Tweed (Craige, 2010; Laxdale Ladies Choir, n.d.).

Currently, there are three different cut and twist of yarns corresponding to the three different weights of the textiles. They are: Standard weight (eight and a half cut, nine cut), light weight (12cut, 13cut) and feather weight (13cut, 15cut) (Harris Tweed Authority, 2012).

• Function

Before the 1940s the most popular usage of Harris Tweed was for clothing. However, by 1941, it is reported that it was rare to see anyone on the island wearing clothes in Harris Tweed (Gordon, 1941). Rather, the cloth was (and still is) exported, targeting high-end designers for the fashion industry (Bremner, 2013). Design houses such as House of Holland (Figure 28) and Jaggy Nettle (Figure 29) use Harris Tweed in their collection regularly. The fabric is also used for fashion accessories, interiors and furnishing (Gordon, 1941; Craigie, 2010; The Harris Tweed Authority, n.d) as seen in Blythswood Chair in Figure 30.

(From Left to Right) Figure 28: Garments by House of Holland (2013), Figure 29: Jaggy Nettle Harris Tweed Boots (2013) and Figure 30: Blythswood Chair by Modus and Graven Images for Blythswood Square Hotel, Glasgow (2013).
• Labour
In 1980, there were about 640 weavers, but by 2012, the number had dwindled to 140. The current average age of weavers is 60 and so the stereotypical image of a Harris Tweed weaver is of a retired elderly gentleman working in a draughty shed (Caird, 1951; Bates, 2009).

• Skills and Knowledge
In the past, knowledge and skills were gained through experience and experimentation (as in the case of using natural elements to colour the wool). These were entrenched in the minds of the maker. There was no documentation or written records of designs or colour blending for wools. At best, knowledge was informally transmitted through successive generations within a family (Bremner, 2013; Thompson, 1969).

However, with the commercialization of the textile, a formal system was established to train weavers to achieve the standard to meet the quality requirements. In 2010, a newly established weaving course was developed and delivered by Cardonald College, Glasgow. Upon completion, trainees were awarded a Scottish Vocational Qualification (SVQ) Level Two in Manufacturing Textile Products, which has been adapted for Harris Tweed weavers. Existing weavers were also accredited, ensuring formal recognition of existing skills and quality of work (Hebridies News Today, 2011; Platman, 2011; Bremner, 2013).

• Technology
Today, Harris Tweed is woven on three different types of loom. They are:

The Domestic Hattersley Mark 1 Loom
This is a human-powered mechanical loom. Because of its superior speed in weaving, it was soon adopted widely in the Outer Hebrides. However, the width of the textile produced by this loom is only 36 inches and hence, the market appeal for such cloth is limited. Today, only a handful of weavers, mostly independent weavers, use this loom.

The Domestic Hattersley Mark 2 Loom
These arrived in the 1980s. The main difference between this model and the earlier one is the size of the revolving box that holds the shuttle. Because it is larger, it can accommodate a larger weft pirn, making it more efficient.
The Bonas Griffiths Loom (Figure 31)
Also commonly known as the ‘Double Width’, it produces 72 inch wide textiles. This loom was introduced in the 1990s to expand the appeal of Harris Tweed to a wider market. This machine was also cleaner, quieter and less laborious to work with. One of the main features of this loom was that it did not have a shuttle but worked with a flexible rapier system. Hence, weft yarns need not to be wound on a bobbin but were unreeled directly from the cones. Currently, 140 weavers use this loom for producing Harris Tweed, making it the most common of the looms. (The Harris Tweed Authority, 2010; Rodie, 2011; Platman, 2011).

Figure 31: The Bonas Griffiths or Double Width

• Construction
Harris Tweed is basically formed by twill weave. Within this structure, various types of weave include plain twill, two-by-two, herringbone, diamond or bird’s eye, plaid/checks, hound-tooth, etc. (Harris Tweed Authority, 2012).

• Production Structures and Processes
Figure 32 illustrates the current production structures and processes in producing Harris Tweed.
Mill-Driven Model
The mill designs the textiles often echoing current colour fashion and furnishing trends. Short lengths are woven to test these colour combinations. Those selected are then featured in trade shows and shown to customers. When orders are secured, designs are warped up at the mill and the required quantities of weft yarns together with specific instructions are sent to the weavers for production. Weavers are required to weave according to the instructions provided to them, and the completed cloth is sent back to the mills for checking, washing, finishing and inspection by the HTA. Once approved, the textile is stamped with the Orb logo. Upon completion, the cloth is delivered to the customer. Weavers who work with the mills are not involved in designing the cloth; they only provide the labour to weave the textile.

Customer-Initiated (Mill) Model
Rather than depending on the designs of textiles offered by the mills, customers may also create their own designs based on their specific requirements. These requirements are discussed with the mills as adjustments may be needed. Once confirmed, sample lengths are woven and sent to the customer for approval before final production. If further changes are required, the mill will make the necessary alterations and a second sample length will be sent to the customer for confirmation. Once agreed, the process described above is repeated and the approved and stamped textiles are delivered to the customer.
Weaver-Driven Model.
Independent weavers can sell their cloth directly to customers. This can be conducted through their own websites or in their weaving sheds. In this model, weavers design, select the colours and purchase the required quantities of yarns from the mill. Giving instructions to the mills, the mill warps up and delivers the warp beam to the weaver. The weaver weaves the cloth according to his or her designs. Upon completion, they bring it to the mill and pay the mill for washing and finishing. These weavers also pay the HTA for certifying and stamping the Orb logo onto the textiles. The textile is then delivered back to the weaver for him or her to sell.

Customer-Initiated (Weaver) Model
This structure is similar to the Customer-Initiated (Mill) Model except that customers connect directly with the weaver, instead of the mill, to produce their textiles. More often than not, it is a collaborative process between the weaver and the customer. In this case, and similar to the Weaver Model, the weaver is responsible for purchasing the yarn, weaving it, sending it to the mill for washing, finishing and obtaining the certification from the Harris Tweed Authority (Craigie, 2010).

In terms of production rate, a competent weaver can produce 155 – 194 metres of tweed in a week (Pirnie, 1981; Platman, 2011).

2.4.3 The Future of Harris Tweed
Although Harris Tweed has seen a revival in recent years, it still faces difficult challenges, especially if the industry wants to regain its 1960s peak production. One of the main challenges is the perception and reputation of Harris Tweed. Harris Tweed is frequently perceived as an older person’s fabric. It needs to break the mould in order to address the mindset of the younger generation, which it has successfully done on small scale projects with Nike, Jaggy Nettle, etc., (Bates, 2009; Rodie, 2011).

Therefore, it is imperative that Harris Tweed reinvent itself. Immediate innovations such as changing the structure of weave to include longer float lengths to give the cloth a different drape and handle would widen its range of use. For the longer term with more extensive investments, looms could be changed to weave eight shaft designs. Other
suggestions include expanding the range of fibres beyond wool, and pushing the boundaries to include lighter and more colourful tweeds (Bremner, 2013; Mcdougall, 2011; Craigie, 2010).

The most recent development of Harris Tweed today is industry driven, a collaboration between Johnnie Walker and Harris Tweed Hebrides to create a ‘fabric of flavour’ where the textile is infused with smells of whisky. This innovation, developed by Heriot Watt University, where the scent is layered into the cloth at the finishing stage of the cloth is permanent, withstanding multiple cycles of dry cleaning (Winter, 2014).

Yet, innovation must be balanced with the choice of yarn, the way that the cloth is produced, its heritage and tradition. According to the HTA, everything is up for consideration except that cloth must be woven in the home of a weaver in the Outer Hebrides (Craigie, 2010).