



# Jute Farmers in Bangladesh

A study on institutional influences

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Pia Sophie Paulsen

Degree project • 30 credits

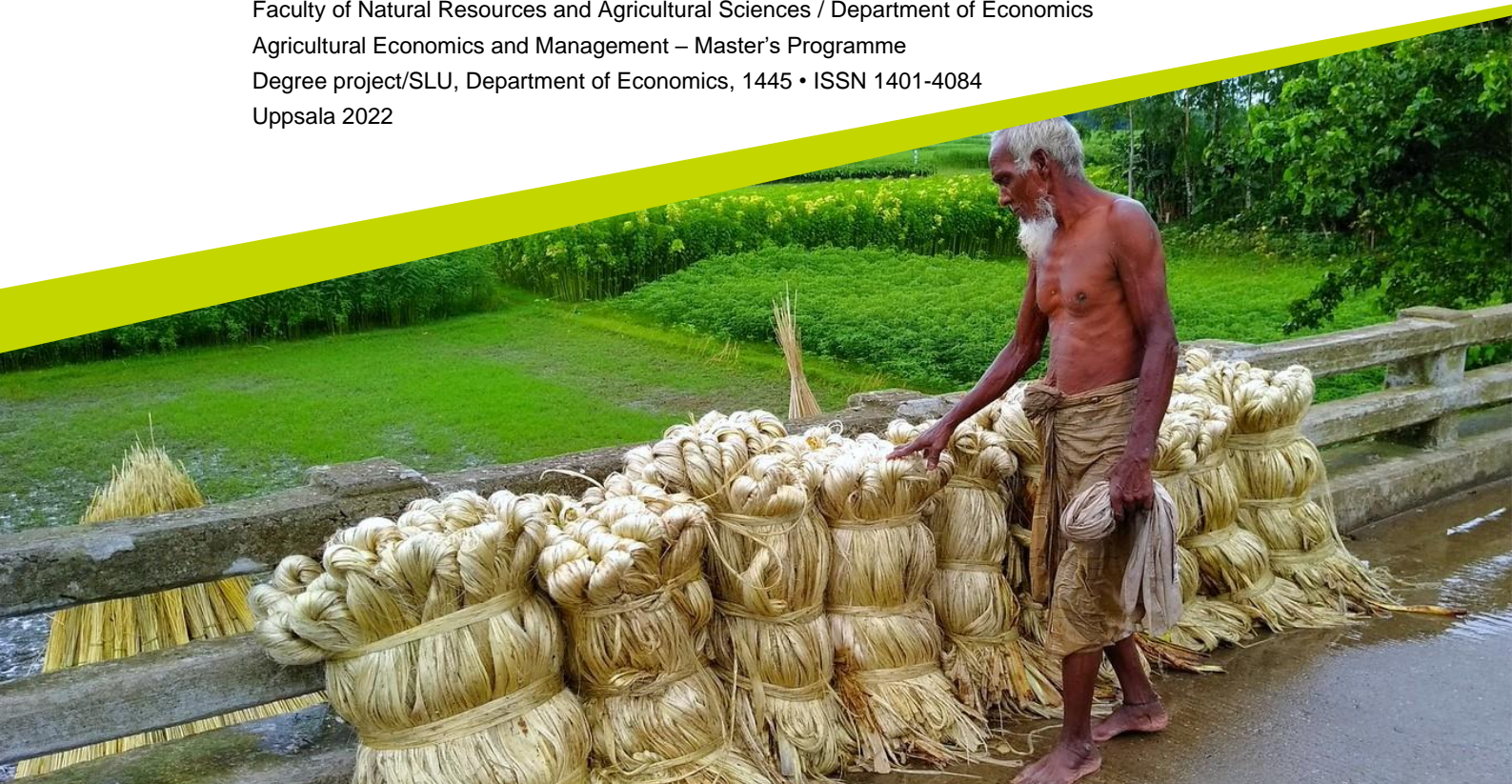
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# Jute Farmers in Bangladesh. A study on institutional influences.

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## Abstract

Jute is an important cash crop in Bangladesh that provides livelihoods for millions of workers. In recent years, jute received growing attention and faced a higher global demand, due to its positive environmental attributes and its ability to replace plastics in many products. Hence, the industry has the possibility to grow. Unfortunately, a strong limitation to the development of the industry is the fact that jute farmers in Bangladesh often cannot support themselves by selling jute. Instead, they face immense economic constraints.

To identify challenges that jute farmers face and to identify opportunities for the improvement of jute farmers' livelihoods, the cultural, governmental, and organisational environment of jute farmers in Bangladesh is studied. The theories used for this thesis are New Institutional Economics, Agency Theory, and Power Distribution. This study further applies the research philosophy of interpretivism while following an inductive approach of qualitative nature. Furthermore, a multiple case study design is used, and semi-structured interviews are conducted. The empirical background of this study is the jute industry in Faridpur, Bangladesh in which the interviewees chosen for this thesis are active in.

Findings of this study include cultural challenges, caused by a low level of education, which results in difficult, but firmly held beliefs that limit the modernisation of the jute industry. Further, a form of pride to produce jute can be found, which is identified as a positive cultural influence on the viability of the jute industry. Additional findings suggest a lack of governmental support for farmers, but no active challenges caused by the government. Lastly, organisational challenges occur due to an inefficient and unfair supply chain construct, that leaves farmers as the weakest supply chain actors. Here, powerful traders pose a challenge, as they use their knowledge and power to lower the prices that farmers receive for their jute. A crucial opportunity to improve farmers' livelihoods is education, to challenge and change cultural norms and to decrease knowledge asymmetry. Furthermore, the government needs to become more active in directly supporting farmers through policies and regulations that are not only published, but also applied. Organisational solutions consist of a supply chain model that enables farmers to sell directly to upstream supply chain actors, e.g., jute mills, instead of jute traders, as well as a farmer cooperative. Both solutions would help farmers receive higher prices for their jute and decrease power asymmetry. Lastly, agricultural innovation is seen as necessary to develop jute farmers' livelihoods and the jute industry.

*Keywords:* Jute farmers, Jute industry, Institutional influences, Bangladesh

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## Abbreviations

CVF	Climate Vulnerable Forum
F2F™	Farmer-to-Factory model™
FAO	Food and Agriculture Organisation of the United Nations
IBS	Inclusive Business Sweden
Juteborg	Juteborg AB
MIS	Management Information System
NGO	Non-governmental organisation
NJP	National Jute Policy
R&D	Research and Development
RJIL	Razzaque Jute Industries Ltd.
SDG	Sustainable Development Goal
SLU	Swedish University of Agricultural Sciences

*I believe that we can create a poverty-free world because poverty is not created by poor people. It has been created and sustained by the economic and social systems that we have designed for ourselves; the institutions and concepts that make up that system; the policies that we pursue.*

— Muhammad Yunus

# 1. Introduction

*In this chapter, background and problematisation are introduced, followed by aim and research questions. Lastly, delimitations and an outline of the thesis are given.*

## 1.1 Background

Bangladesh is a country whose economy is dominated by agriculture (Sultana et al. 2020). One of the most traditional and biggest agricultural industries is the jute industry (Moniruzzaman et al. 2008; Afroz & Islam 2012). Jute, which is also known as *golden fibre*, is here a major contributor to the economy (Moniruzzaman et al. 2008; Afroz & Islam 2012).

In Bangladesh, jute grows all over the country and is seen as the main cash crop, which is why the country is one of the largest global producers of jute, with only India cultivating more (Afroz & Islam 2012; Islam & Alauddin 2012; Islam & Moniruzzaman 2017; Rahman et al. 2017). Jute continues to be mainly used for obtaining fibre as textile material for the packaging industry, but it can today be used for a variety of other products, such as ropes, mattresses, carpets, and bags (Islam & de Silva 2011 as cited in Sheheli & Roy 2014).

In terms of global consumption, jute is the second most important natural fibre, following cotton only (Rahman et al. 2017). There are more than forty different types of jute, but the most commonly cultivated types are white jute and traditional jute (Islam & Alauddin 2012; Islam & Ali 2017b; Rahman et al. 2017). Both types of jute do not pose health hazards or environmental pollution. Additionally, jute is a cheap, durable, reusable and biodegradable fibre and therefore a superior alternative to synthetic fibre (Rahman et al. 2017). Overall, jute is known as a sustainable substitute of plastics in packaging (Islam & Alauddin 2012; Rahman 2016; Rahman et al. 2017).

Despite the above-described attributes of jute, authors indicate that jute production in Bangladesh showed a fluctuating tendency to either remain stable or to decline between the mid-1980s and early 2000s, whilst synthetic fibres and plastics were facing higher global demand (Rahman et al. 2017). Fortunately, environmental

awareness increased in the early 2000s, leading to a higher global demand for jute (Rahman et al. 2017). As a result, a significant growth in Bangladesh' jute production occurred between 2004 and 2019 (Sharna & Kamruzzaman 2020).

## 1.2 Problematisation

Jute provides livelihoods for millions of farmers and industrial workers in Bangladesh (Moniruzzaman et al. 2008; Islam & Alauddin 2012). A growing jute industry could in this context lead to further employment opportunities, poverty reduction and growth in GDP (Islam & Moniruzzaman 2017).

Unfortunately, key actors within the jute industry, namely jute farmers, are facing a variety of challenges that limit their personal economic development. Firstly, jute prices are highly unstable, due to changing supply and demand on the market (Sheheli & Roy 2014), which drives income insecurity. Additionally, high prices on inputs can easily lead to overwhelming production costs for jute farmers (Afroz & Islam 2012). Moreover, a low level of education, especially in rural areas of Bangladesh, imposes a significant barrier to profitable business development (Akhter & Sumi 2014). Further, extensive governmental support for jute farmers is lacking, even though the government is very interested in strengthening the jute industry as a whole (Rahman et al. 2017). A main problem is that only few policies are directed at supporting jute farmers (Rahman et al. 2017). Lastly, the organisational structure of the jute supply chain challenges farmers. Most often, farmers do not receive fair prices from jute traders, who are in a power-position as they offer market access to the farmers and are often their only option to sell jute (Sheheli & Roy 2014; Islam & Moniruzzaman 2017). Overall, jute farmers are described as the weakest and most deprived actors in the jute industry (Rifath 2018) that even with an increased interest in jute from an economic and environmental perspective, often struggle to support themselves (Sheheli & Roy 2014).

In conclusion, jute production practises did not see much progress, despite developments within product variety (Sheheli & Roy 2014). This can be explained by the difficult economic situation of farmers, which limits them from buying necessary inputs such as seed and fertilisers (Islam & Moniruzzaman 2017). As a result, jute yield per hectare in Bangladesh is below the average yield of other major jute producing countries (Sharna & Kamruzzaman 2020).

The disadvantaged position of jute farmers therefore does not only affect farmers negatively, but the development of the entire jute industry. Consequently, farmers' institutional environment requires change, to ensure that all actors can secure necessary profits, so the industry can evolve.

### 1.3 Aim & Research Questions

Previous research focused mainly on the jute industry in Bangladesh as a whole, but less on the most vulnerable actors in it, the jute farmers. Hence, this thesis intends to fill the research gap on jute farmers' institutional environment, focusing on their cultural, governmental, and organisational environment.

The author therefore intends to identify challenges that jute farmers face in their institutional environment, but also opportunities for change, which could improve the livelihoods of farmers and simultaneously strengthen the jute industry.

In line with the above aim, the author constructed the following research questions:

- 1. How are jute farmers challenged by their surrounding cultural, governmental, and organisational environment?*
- 2. How can the cultural, governmental, and organisational environment be changed to improve jute farmers' livelihoods?*

### 1.4 Delimitations

The jute industry is an interesting agricultural industry with the ability to tackle global pollution and national poverty. It further offers enormous potential to further develop due to an increasing interest in jute. Bangladesh, as the second biggest producer of jute, provides an optimal context to study this industry further.

As farmers play a crucial role in the jute industry, while often being overlooked by researchers, they are chosen to be the focus of this study. Further, jute farmers are the ones facing a high number of challenges. Due to the many examples of different challenges, their institutional environment is deemed to be of interest, to be able to identify and analyse institutional challenges, but also opportunities for the improvement of an institutional environment.

### 1.5 Outline

This thesis provides a background of the jute industry, as well as an empirical and theoretical problem, aim, research questions and delimitations in *Chapter 1*. A broader overview of the jute industry is given in *Chapter 2*, including a historical, cultural, governmental, and organisational background. Further, potential solutions for the improvement the jute industry are presented. *Chapter 3* then provides a

presentation of the chosen theories and the Conceptual Framework. *Chapter 4* introduces the research philosophy and design of this thesis, and explains different methodological choices, also with regards to the quality of the study and several ethical considerations. *Chapter 5* presents the empirical background of the study, which is followed by the empirical findings. In *Chapter 6*, results from primary sources related to the Theoretical and Conceptual Framework are presented. *Chapter 7* then comments on the theory application and quality of the primary data collected and discusses the findings from primary and secondary sources, using the chosen Theoretical Framework. Lastly, in *Chapter 8*, the author answers the chosen research questions and presents final conclusions on the future of the jute industry. Further, suggestions for future research are given. An overview of all chapters is given in Figure 1.



*Figure 1. Thesis outline. (Authors illustration).*

## 2. Background

*This chapter presents an overview of the jute industry, including its historical, cultural, governmental, and organisational background. Finally, the chapter offers several suggestions for industry-wide improvements.*

### 2.1 Jute Production in Bangladesh

As jute became a field crop, farmers learned the process of extracting the fibre and of spinning it into yarn by hand (Islam & Ali 2017b). Jute crops require a warm and humid climate, with temperatures ranging from 24°C to 37°C and a humidity of 70% to 90% (Islam & Ali 2017a).

Apart from environmental factors, successful agricultural production starts with the right seed. Traditional jute seed production, which includes sowing during the monsoon, has not proved to be sufficient to meet national needs (Islam & Ali 2017b). Jute seed need a long time to mature and farmers thus prefer to grow other crops instead (Bhuyan 2019). Therefore, jute seed production technology is used by governmental or research actors (Islam & Ali 2017b), and seed are then distributed to farmers through open markets or the government (Moniruzzaman et al. 2008; Rahman et al. 2017). Here, Bhuyan (2019) points out a high dependency on India regarding jute seed, as Bangladesh imports almost 100% of the needed seed from India, which are often of lower quality.

#### *The Jute Retting Process*

Another very important part of jute production is the process of jute retting (Islam & Ali 2017b), which determines the quality of jute fibre to a high degree (Ahmed & Akhter 2001). As can be seen in Figure 2, jute stems are at first bundled and cut, and later placed in water (Sayed 2014). This is done in preparation of the jute retting process, in which the jute plant absorbs water and swells (Ahmed & Akhter 2001).





*Figure 2. Preparation of jute stems for the retting process. (Sayed 2014).*  
<https://textileapex.blogspot.com/2014/12/jute.html>

Ultimately, the plant bursts at several places and fibre can be extracted (Ahmed & Akhter 2001). If this process continues for too long, micro-organisms begin to degrade the fibre, which is called over-retting (Ahmed & Akhter 2001). This leads to a lower quality of jute fibre (Ahmed & Akhter 2001).

Depending on the temperature of the water, the retting process is complete within fifteen to twenty days (Sayed 2014). At the optimal time, the jute stems are loosened and fibre is removed from the stem by washing (Ahmed & Akhter 2001; National Jute Board 2016), as can be seen in Figure 3. In this last step of the jute retting process, one separates and extracts fibre from the wooden part of the stem of the jute plant (Ahmed & Akhter 2001). The quality of water, as well as the speed of the water influences the outcome of the process. Optimal retting conditions are found under slow running water (Ahmed & Akhter 2001).

After the retting process is complete, the accumulated fibre is air dried for two to three days, as can be seen in Figure 4, and then collected by a local jute trader (Sayed 2014). Before any further processing of the raw jute is conducted, the jute is graded according to quality and later baled into larger balls, in preparation for manufacturers of jute products (Razzaque Jute Industries Ltd. 2022).





Figure 3. Farmers extracting jute fibre after the retting process. (National Jute Board 2016).  
<http://www.jute.com/green-jute/agriculture-raw-jute>



Figure 4. Air drying of jute fibre by hanging it on bamboo poles. (Sayed 2014).  
<https://textileapex.blogspot.com/2014/12/jute.html>

### *Challenges and Developments*

Jute production is highly labour intensive, and demands several other inputs, such as seed, fertilisers, and insecticides. Therefore, the costs of production can be overwhelming for farmers (Afroz & Islam 2012). As workers often go to urban areas to search for better or more stable jobs, seasonal high demand for agricultural labour in rural areas is common (Sheheli & Roy 2014), which leads to high labour costs for farmers (Rifath 2018). Also, farmers often lack knowledge regarding jute farming, which leads to an inefficient use of expensive inputs (Afroz & Islam 2012).

Jute farmers also face trouble finding sufficient funds to cultivate their land efficiently as there is a lack of credit available, which leads to high interest rates, and to complex procedures to receive credits (Moniruzzaman et al. 2008). This limits farmers from being able to buy the necessary inputs and is a reason for the little change and development in production practises, whilst an intense development in product variety has occurred (Sheheli & Roy 2014).

Natural challenges when farming jute can be insect and disease infestation (Sheheli & Roy 2014), but also a lack of quality retting water due to droughts or overuse of water (Islam & Moniruzzaman 2017). Often, farmers struggle with low health, caused by dirty water (Sheheli & Roy 2014). Another natural challenge is a lack of suitable land due to the degradation of land, which threatens agricultural productivity (Helal & Hossain 2013). Here, policies and regulations, as well as research on the topic, are missing (Helal & Hossain 2013). Often, deforestation and urbanisation, but also intensive or improper farming practises lead to a lower productivity of land. Droughts, extreme weather events, climate change and population challenges are additional pressures on land and farmer (Helal & Hossain 2013). Nonetheless, studies indicate that the benefit-cost ratio of jute-production is generally positive for farmers, even though certain resources are used rather inefficiently (Afroz & Islam 2012; Hossain et al. 2014).

## **2.2 Historical Background of the Jute Industry**

The raw jute market has traditionally been dominated by India and Bangladesh, while other important producers are China, Thailand, Myanmar, and Nepal who mainly produce jute related fibre from similar crops (Islam & Ali 2017b). Together, the countries produce about 95% of jute fibres and related fibres (Islam & Ali 2017b).



### 2.2.1 Jute Industry in Bangladesh: 1950s to 2000s

Bangladesh has encountered several political and cultural changes in the 20<sup>th</sup> century, by gaining independence from both India and Pakistan (Rahman et al. 2017). Throughout these changes, jute production continued to be an important driver of Bangladesh's economy (Rahman et al. 2017).

Between the 1950s and 1960s, Bangladesh reached monopoly status as a jute producer, due to most land under jute production and with the highest quality jute stocks remaining in Bangladesh after the partition from India in 1947 (Rahman et al. 2017). A market for jute farmers and traders was at first lacking, as major jute mills remained on the Indian side of the border. Hence, infrastructure was built, so jute farmers and traders would have an easily accessible market for their jute (Rahman et al. 2017).

In 1971, Bangladesh gained independence from Pakistan, which led to the nationalisation of all jute mills (Bhaskar & Khan 1995; Akter et al. 2020). However, due to economic losses of the jute mills, caused by inflation and corruption, privatisation was encouraged in the 1980s (Akter et al. 2020).

In the 1990s, a global decrease in demand of jute led to further losses of publicly owned jute mills (Rahman et al. 2017). As a response, the government closed several jute mills, or downsized them and transferred around 20,000 workers to other public sectors, while further encouraging the privatisation of jute mills (Rahman et al. 2017).

In the early 2000s, global demand for jute products increased again (Rahman et al. 2017). At the same time, governmental institutions in Bangladesh started to focus more on sustainability initiatives (Islam et al. 2020) as well as the support of the jute industry (Afroz & Islam 2012). These developments are further discussed in section 2.4.

### 2.2.2 Future Implications for the Jute Industry

Overall, the jute industry has the possibility to grow, as jute can partly replace synthetic fibres (Rahman et al. 2017). The increasing awareness regarding environmental pollution due to plastics is here helping as it has led to a high international demand for jute (Afroz & Islam 2012; Rahman et al. 2017).

As can be seen in Figure 5, Bangladesh has between 2004 and 2019 steadily increased its level of *jute production*, while the biggest producer India remains on a more stable level and China on a decreasing level. In addition, Bangladesh has been the biggest exporter of raw jute since the 1960s (Sharna & Kamruzzaman

2020). Thus, the increasing international interest in jute could drive production growth further.

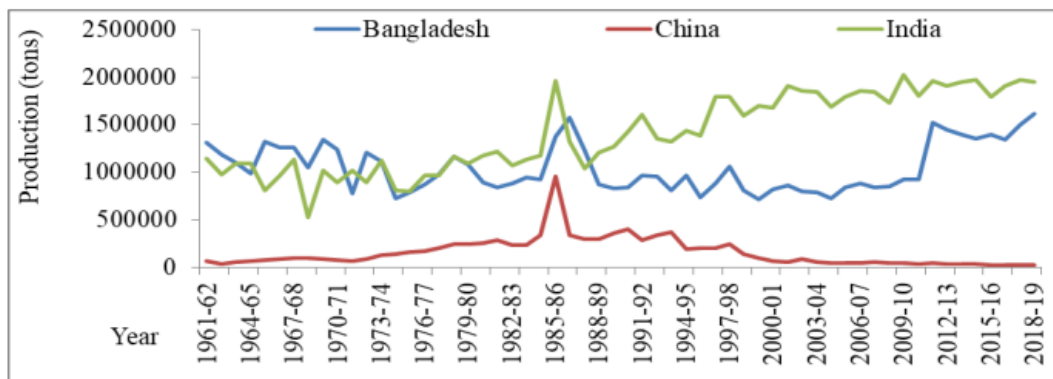


Figure 5. Jute production in Bangladesh, India, and China. (FAOSTAT 2020 as cited in Sharna and Kamruzzaman 2020). <https://doi.org/10.3329/ralf.v7i2.48858>.

Bangladesh is on the other hand not as efficient in increasing *jute yield* per hectare of production, compared to India and China (Sharna & Kamruzzaman 2020), which can be seen in Figure 6, when focusing on the 2000s. Here, Bangladesh lacks efficient jute varieties and production techniques (Sharna & Kamruzzaman 2020).

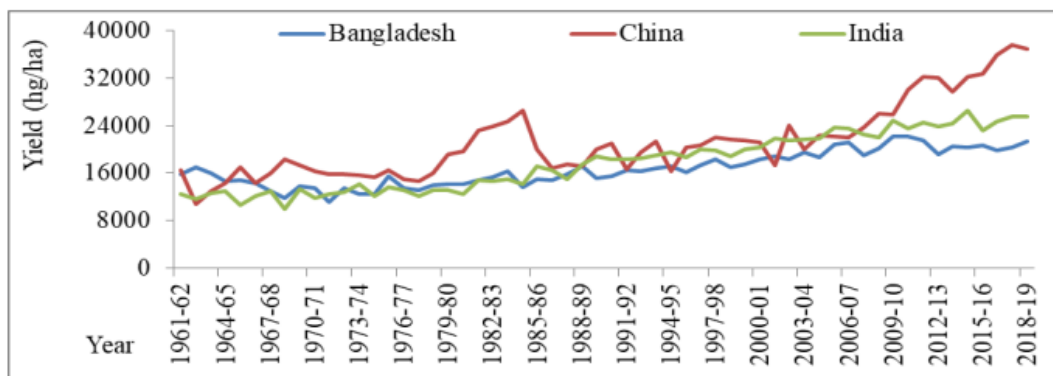


Figure 6. Jute yield in Bangladesh, India, and China. (FAOSTAT 2020 as cited in Sharna and Kamruzzaman 2020). <https://doi.org/10.3329/ralf.v7i2.48858>.

Authors emphasise that Bangladesh instead has the option to grow its jute industry by expanding its *jute area* (Islam & Alauddin 2012; Rahman et al. 2017). Gupta et al. (2009) as cited in Rahman et al. (2017), state that Bangladesh in fact decreased its *jute area* until 2002, due to competition for land with other crops and due to the global falling demand until the beginning of the 2000s.

As can be seen in Figure 7, Bangladesh increased its *jute area* heavily in 2011, while it is on a similar level as India in 2019 (Sharna & Kamruzzaman 2020). This

indicates that farmers respond to the global increase in jute demand (Afroz & Islam 2012).

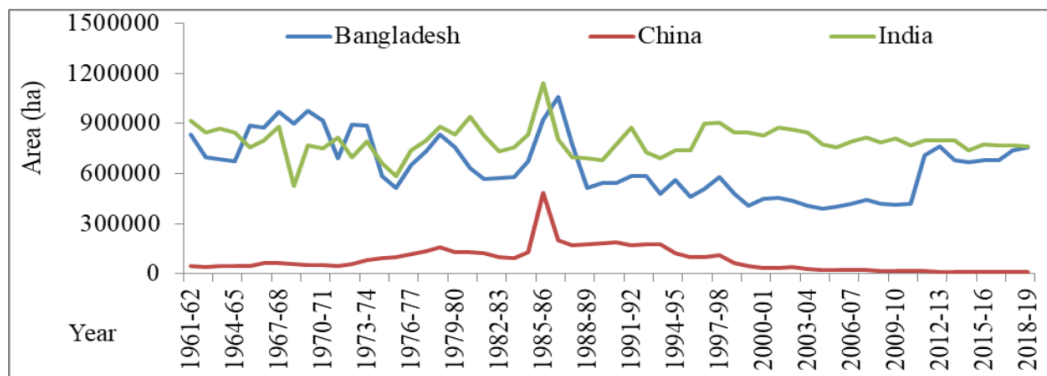


Figure 7. Jute area in Bangladesh, India and China. (FAOSTAT 2020 as cited in Sharna and Kamruzzaman 2020). <https://doi.org/10.3329/ralf.v7i2.48858>.

Unfortunately, it has to be added here that arable land is decreasing in Bangladesh (Mondal 2010; Helal & Hossain 2013). An alarming fact is that Bangladesh has lost approximately one million hectares of arable land between 1983 and 1996, with no steps taken from the government to prevent further losses (Mondal 2010). This can be a challenge for the development of the jute industry in the future, especially when considering the lower *jute yield* per hectare of production in Bangladesh.

## 2.3 Cultural Background of Bangladesh

The economic growth and development of a country is influenced by several cultural influences. One of them is religion, as it influences attitudes towards business practises (Williamson 2000). Whilst Bangladesh is a melting pot of different faiths (Shahen et al. 2019), the main religion being practised by about 88% of the country's population is Islam (Akhter & Sumi 2014). Commercial activities, as well as hard work are encouraged by the religion, but the taking of loans is for example discouraged (Akhter & Sumi 2014). Very traditional beliefs and value systems can here limit business development (Akhter & Sumi 2014).

Also, gender disparity remains. In many aspects, women continue to not enjoy gender equality, especially in rural areas (Nahar & Richters 2011; Akhter & Sumi 2014). Hence, business activities of women are highly limited as women conducting activities outside the household is against prevailing norms and values (Akhter & Sumi 2014). Other studies suggest that gender disparity is decreasing, at least in terms of school enrolment in primary and secondary school (Helal & Hossain 2013).

Further problems, such as a low literacy level (Akhter & Sumi 2014) and poverty, remain common in society (Choudhury & Ahmed 2011). These pose, even at decreasing levels, a barrier to business development in Bangladesh (Helal & Hossain 2013; Akhter & Sumi 2014). Especially in rural areas, education is perceived to bring low value as it prevents the immediate income generation (Akhter & Sumi 2014). Therefore, demand for education in rural areas tends to be low, as it includes financial costs (Akhter & Sumi 2014). These perceptions are indicated to be changing whilst the country continues to increase school enrolment and literacy levels (Akhter & Sumi 2014). The national concerns of gender equality, education and poverty are addressed by the national government and international NGOs (Akhter & Sumi 2014).

Cultural changes and changing perceptions that encourage education and business development are therefore crucial in a least developed country like Bangladesh, as they have the power to influence social and economic policies that can drive development (Akhter & Sumi 2014). Additionally, the country provides a vast amount of human resources, due to a comparably young population of over 160 million, and has therefore potential to grow economically (Helal & Hossain 2013; Akhter & Sumi 2014).

When focusing on the jute industry, authors indicate that jute farmers take pride in producing jute and the finest quality natural fibre (Rahman et al. 2017). Hence, jute production has been an important part of Bangladesh' culture for centuries and has over the decades survived several cultural, governmental, and organisational disruptions (Rahman et al. 2017).

## 2.4 Governmental Background of Bangladesh

Bangladesh provides a highly complex governmental bureaucratic system. Authors describe it as a governmental system that is inherited from colonial days (Mollah 2011) and characterised by 'inefficiency, centralisation, lack of delegation and job description' (Helal & Hossain 2013, p.361)

Further, there are many steps in the decision-making process, leading to time-consuming bureaucratic processes. These processes are further lengthened by a low degree of digitalisation when it comes to governmental services and payment structures (Helal & Hossain 2013). The government is said to be unable to promote business and investment (Helal & Hossain 2013).

Whilst some authors speak of a lack of proper policies regarding the jute industry (Islam & Ali 2017b), others discuss several policies that intend to, or intended to support to jute industry over the years (Afroz & Islam 2012; Rahman et al. 2017). In the 1950s, the jute industry was heavily supported by government subsidies, which led to an initial growth of the industry, but mainly in the 1970s, these subsidies were abandoned, which led to a shrinking jute industry until the 2000s (Rahman et al. 2017). Since the 2000s, Bangladesh is described as a developing country that is implementing policies that drive sustainability, by for example committing to Sustainable Development Goal (SDG) awareness or by integrating SDGs into the national development agenda (Islam et al. 2020). Early in 2002, the government of Bangladesh prohibited the production, sale, and use of polythene, which led to an increased demand for jute and jute products on the domestic market (Afroz & Islam 2012).

In 2011, Bangladesh continued to support the jute industry further and published a National Jute Policy (NJP), with the following objectives:

(a) increase jute production in response to national and international demand; (b) land use planning for jute; (c) produce high quality jute seeds and distribute these to farmers; (d) develop modern varieties of jute and encourage adoption by farmers; (e) protect the market for jute and jute products to increase foreign exchange earnings; (f) develop modern equipment and improve existing jute processing mills; (g) encourage diversified use of jute; (h) increase interaction and institutional linkages amongst jute and jute seed producers, traders, jute industries, and the Bangladesh Jute Research Institute; and (i) strengthen the Management Information System (MIS) of the jute sector (Rahman et al. 2017, p.2)

Furthermore, to enhance the sector, the government has proposed a Draft NJP 2014, which has the following additional objectives:

(j) establish composite jute mills to produce high-quality fabric from jute; (k) establish professional design institute to develop various designs of jute and jute products to meet international demand; (l) automation of the MIS of the jute sector; and (m) prioritize the jute sector in the National Export Policy of Bangladesh (Rahman et al. 2017, p.3)

The vision of the Draft NJP 2014 additionally intends to reopen all closed jute mills, to modernise the mills, and to establish jute as the second most important export item by 2021 (Rahman et al. 2017). However, as latest studies suggest, the Draft NJP 2014 has still not been finalised (Rahman et al. 2017; Siddiqui 2018).

The government is showing some important proposals in the NJP, which are partly also directed at farmers. Examples are the distribution of seed, the encouragement of using new jute varieties, to increase interaction between market actors, and to offer easier access to information on the jute sector (Rahman et al. 2017).



Unfortunately, other authors indicate that continued economic development is partly prevented by general political instability and corruption (Mollah 2011; Helal & Hossain 2013). Due to the instability, value chains and business activities are under threat to be interrupted (Helal & Hossain 2013), and as the supply of inputs often cannot be guaranteed, delays in production may occur, which could lead to delayed exports (Akhter & Sumi 2014; Rahman 2015), which naturally poses a challenge for further economic development.

## 2.5 Organisational Background of the Jute Industry

The jute industry is coordinated by many different actors and businesses, which results in a highly complex supply chain construct (Rifath 2018; Rifath et al. 2019; Azad et al. 2020). Here, farmers are the most deprived actors as they are facing high prices on inputs and low prices on outputs, and sometimes production costs that exceed their profits (Rifath 2018).

### 2.5.1 Jute Supply Chain Construct

Before beginning the jute production, farmers are in need of land, inputs, and financing, which are offered by upstream suppliers (Rifath 2018; Rifath et al. 2019). If farmers do not own land, they lend an area from a landowner. After the harvest, they then share profits with the landowner (Rifath 2018). If farmers own land, they still need to finance important inputs, which is why they often take loans at high interest rates (Rifath 2018). If a loan is not given, farmers buy certain inputs on credit from the local supplier (Rifath 2018).

The downstream supply chain further is a highly complex one, as raw jute travels through several hands before reaching its final destination: the jute mills or foreign exporters (Rifath 2018; Rifath et al. 2019; Azad et al. 2020). In the supply chain, many traders play an important role to organise the jute market, but they use their market power to lower the profits of farmers (Rifath 2018). Here, it is not common that farmers sell jute directly to jute mills or to an exporter (Islam & Moniruzzaman 2017; Azad et al. 2020). This is due to mills and exporters not wanting to buy very small quantities, and because farmers buy inputs with a loan or on credit and are therefore in debt and in need of cash quickly (Rifath 2018). Therefore, farmers sell jute to traders that pay them directly, but at lower prices (Rifath 2018). Jute mills, instead, purchase on credit and thus do not offer direct payments (Azad et al. 2020). Usually, farmers sell their jute directly at their home or on a local market in the nearest village (Islam & Moniruzzaman 2017).

Rifath (2018) describes the jute supply chain as inefficient for farmers, traders, exporters, and jute mills. Examples of inefficiencies are the lack of storage facilities of farmers and smaller traders that can lead to a lower quality of jute if the jute is left outside (Hallam & Rapsomanikis 2006; Akter et al. 2020; Azad et al. 2020). Consequently, farmers receive lower prices, while traders' costs increase, as they need to rent a warehouse to store the jute if they do not own one (Rifath 2018). Traders also often wait a long time for the payment of buyers, who see no problem in taking their time in paying off credits (Rifath 2018). Another major problem is the dishonesty of traders regarding the quality or the amount of jute, as they sometimes mix low quality fibres with high quality fibres or add water to the jute to increase the weight (Rifath 2018; Azad et al. 2020), which affects other traders, exporters and jute mills negatively. A detailed overview of the different supply chain actors can be found in Appendix 1.

### 2.5.2 Relationship between Farmers & Traders

Jute prices are generally influenced by a changing market supply and demand (Sheheli & Roy 2014; Akter et al. 2020; Azad et al. 2020), as well as by governmental policies (Rahman et al. 2017). But the prices are further heavily influenced by the market power of different market actors (Moniruzzaman et al. 2008).

Mostly, farmers have low bargaining power, when entering a contract with a trader, as they are often untrained to grade their jute themselves, according to colour, size, weight, and quality, which determines pricing (Sheheli & Roy 2014). This inability makes them vulnerable to wrong grading, and traders gain here by demanding a lower price to pay (Sheheli & Roy 2014).

Traders are also the farmers' main entrance to the market and often their only option to sell their jute (Moniruzzaman et al. 2008). Moreover, they are frequently bound to a trader, as these hand out payments or loans in advance, and farmers then offer lower prices in order to sell their jute and pay off their loan as quickly as possible (Moniruzzaman et al. 2008).

Furthermore, any formation of groups of farmers or cooperatives does not exist, leading to farmers being mostly alone when negotiating prices (Moniruzzaman et al. 2008; Mondal 2010). Additionally, their jute needs to be sold quickly as the majority of farmers lack storage facilities (Sheheli & Roy 2014) or access to transportation modes (Moniruzzaman et al. 2008), which further lowers prices.

Also, farmers do not receive a lot of information about the jute market, even though this could help them optimise production, sales, and price of their products

(Moniruzzaman et al. 2008; Azad et al. 2020). A problem here is the high illiteracy of farmers, which limits them from reading about changes on the market, but also about new production practises (Rifath 2018). As a result, information asymmetry is used by traders to lower prices (Sheheli & Roy 2014). Farmers are therefore weak players in the supply chain and unable to receive a fair price for their jute (Moniruzzaman et al. 2008; Sheheli & Roy 2014).

## 2.6 Cultural & Governmental Solutions

Several authors suggest initiatives that have the potential to solve some of the above presented challenges on a cultural and governmental level (Moniruzzaman et al. 2008; Mondal 2010; Islam & Alauddin 2012; Islam & Ali 2017b; Rifath 2018).

### *Cultural initiatives*

Firstly, authors emphasise on the importance of training and educating jute farmers to gain or improve certain skills. Hence, farmers should be trained to use inputs more efficiently so they can increase their productivity (Islam & Alauddin 2012; Rifath 2018). Additionally, training should be given to farmers regarding the right retting and grading of jute (Islam & Ali 2017b). Also, market information should be accessible to farmers, so they can increase the profitability of their agri-business (Moniruzzaman et al. 2008; Islam & Ali 2017b). This could for example be implement through broadcasts or other communication modes (Rifath 2018).

### *Governmental initiatives*

Moreover, the government of Bangladesh is asked to implement an independent jute seed strategy, to decrease the dependency on India (Bhuyan 2019). The seed should then be offered at reasonable prices to jute farmers (Rifath 2018).

Furthermore, funds should be easily accessible for farmers, through loans at low interest rates (Rifath 2018). This would facilitate the purchasing of necessary inputs for jute farming. Additionally, the government should set price ranges to keep the price of jute stable and to decrease profit uncertainty (Rifath 2018). Lastly, the alarming loss of arable land needs to be addressed by the government, with an updated land use policy (Mondal 2010). A suggestion is here that land transformation plans that intend to turn agricultural land into land used for housing or further urbanisation, are abandoned and that agricultural land is instead distributed to landless farmers that are allowed to use it for agricultural purposes only (Mondal 2010).

Finally, several suggestions focus heavily on Research and Development (R&D). Examples are the introduction of modern jute varieties that can replace low yielding traditional varieties, to improve productivity (Rahman et al. 2017). Additionally, new seed and fertiliser variations can assist (Rifath 2018). All new varieties should be suited to changing climate conditions, to ensure competitiveness in the future (Mondal 2010; Rahman et al. 2017). Lastly, new jute products should be manufactured to meet global demands (Islam & Ali 2017b).

## 2.7 A Cooperative as an Organisational Solution

Many of the initiatives discussed by different authors also have the option to be implemented through a cooperative organisation of farmers (Moniruzzaman et al. 2008; Mondal 2010; Rifath 2018; Akter et al. 2020).

Cooperatives are organisations, that are described as:

an autonomous association of persons' united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise (Islam et al. 2014, p.1)

Furthermore, cooperatives intend to provide benefits to its members and act in their interest (Abdullah & Hossain 2013), while simultaneously operating at financial sustainability (Yadoo & Cruickshank 2010). Thus, profit-generation of agricultural cooperatives is conducted by farmers sharing resources and earnings (Sultana et al. 2020). Farmers therefore unite their small-scale farming businesses and share income and cooperative benefits, but continue to farm individually (Sultana et al. 2020). Hence, all members work towards the mutual benefit of everyone (Abdullah & Hossain 2013; Sultana et al. 2020).

Cooperatives need to generate profits to be able to offer certain services and benefits to their members, such as micro-financing schemes or training (Yadoo & Cruickshank 2010; Sultana et al. 2020). Other services include advising, market access and input access (Food & Agriculture Organisation of the United Nations (FAO) 2014 as cited in Sultana et al. 2020). Overall, cooperatives have the goal of offering an increased income to its members (Abdullah & Hossain 2013; Milovanovic & Smutka 2018; Sultana et al. 2020).

### *Advantages of Cooperatives*

Cooperatives have in the past and in different countries proved to be a successful alternative management model which can bring social benefits and lead to more market efficiency (Yadoo & Cruickshank 2010; Milovanovic & Smutka 2018). Firstly, cooperatives practise a democratic structure by holding elections and by

functioning on a one member, one vote basis (Yadoo & Cruickshank 2010). They therefore promote equal participation and rural empowerment through their decentralised and community led approach (Yadoo & Cruickshank 2010).

Another advantage is the easier procurement of funds for members due to little bureaucratic barriers and requirements (Mondal 2010; Yadoo & Cruickshank 2010). A cooperative model, which offers credit and repayment times that are adjusted to farmers needs are described as crucial tools to improve farmers livelihoods (Mondal 2010).

Lastly, by bringing parts of the supply chain under their control, a cooperative can prevent different market actors from pursuing self-interest on the cost of others (Sultana et al. 2020). This can in the end lead to better input and market access and can influence prices in the favour of members (Sultana et al. 2020). Some even speak of cooperatives that bring benefits to their members by abolishing middlemen from the supply chain (Siddique 2015).

### *Cooperatives in Bangladesh*

In Bangladesh, cooperatives have in the past assisted dairy farmers to increase their earnings (Milovanovic & Smutka 2018) and created employment opportunities (Yadoo & Cruickshank 2010). Hence, several cooperatives exist in Bangladesh, but their numbers are decreasing and most often, they only exist for a shorter period (Sultana et al. 2020).

A concern is that most agricultural cooperatives are formed with the support of the government (approximately 80%) or NGOs (approximately 19%), which limits their autonomous abilities (Sultana et al. 2020). Agricultural cooperatives are here mainly created on a project basis, and when a project finishes, the support activities also end and the cooperative stops existing (Sultana et al. 2020). Therefore, members are not supported in the long-run (Sultana et al. 2020). Another problem that often occurs due to government involvement, is an over-regulation by the government, which results in a cooperative with poor internal governance (Das 2016). Political interference can therefore disturb a cooperative and lead to an organisation, that is entirely dependent on external stakeholders (Sultana et al. 2020).

Nonetheless, government involvement is seen as a common and wanted source of help in Bangladesh when it comes to forming and guiding cooperatives (Islam et al. 2014). Reasons for this could be internal conflict between members, which, together with a lack of professional management, can lead to disruptions within a cooperative (Islam et al. 2014).

In 2010, Bangladesh' Prime Minister Sheikh Hasina expressed her intention to grow the cooperative movement across the country to strengthen the economy and cultural emancipation of people (Islam et al. 2014). However, cooperatives face major challenges, such as the inability to register a cooperative due to high bureaucratic barriers (Islam et al. 2014). Further, female participation is low, which limits socio-economic development (Islam et al. 2014; Das 2016). Unawareness about cooperatives additionally limits the nationwide spread of cooperative organisations in Bangladesh (Islam et al. 2014). Lastly, a lack of trust towards cooperatives as well as corruption constrains the formation (Islam et al. 2014).

The jute industry is currently lacking cooperative movements (Islam & Moniruzzaman 2017; Rifath 2018), which also explains the complicated jute supply chain. Options to sell jute directly to traders at fair prices could here easier be ensured in a cooperative movement (Rifath 2018). Additionally, less dishonesty among market actors might occur with a cooperative on the market (Rifath 2018). Therefore, the government is asked to spread knowledge about cooperatives, and to decrease bureaucratic barriers (Yadoo & Cruickshank 2010; Islam et al. 2014).

### 3. Theoretical Framework

*This chapter discusses the chosen theories New Institutional Economics, Agency Theory and Power Distribution, which is followed by a presentation of the conceptual framework.*

#### 3.1 New Institutional Economics

‘We are still very ignorant of institutions’ (Williamson 2000, p.1).

Williamson (2000) is often seen as the main moderniser of institutional economics. According to him, institutions matter and affect all businesses extensively. Institutions are activities with cultural-cognitive, normative, and regulative aspects that give stability and importance to social life (Bijman 2018).

Williamson (2000) argues for four institutional levels in total, which shape not only the market, but also society. He argues that a higher level always influences a lower level in New Institutional Economics, as can be seen in Figure 8.

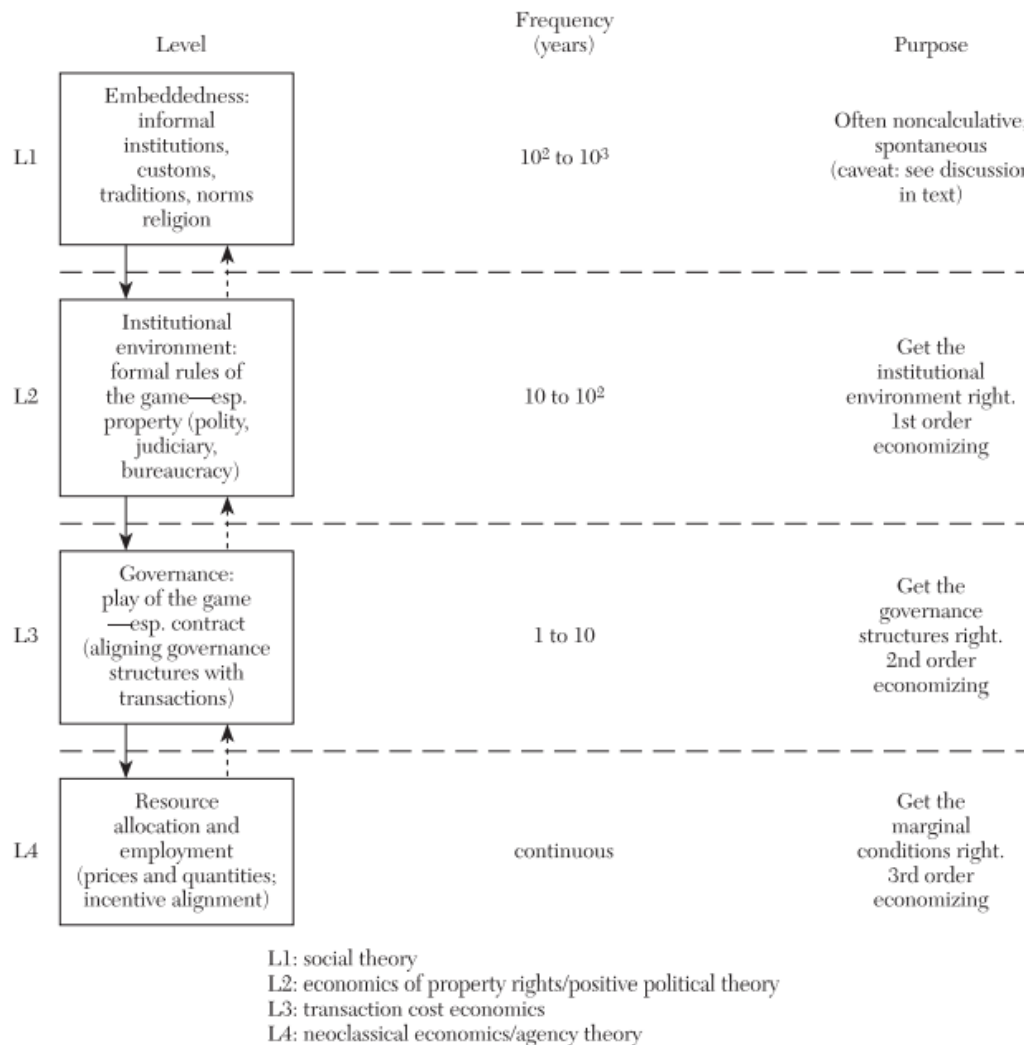


Figure 8. Williamson: *The New Institutional Economics*. (Williamson 2000).  
<https://pubs.aeaweb.org/doi/pdfplus/10.1257/jel.38.3.595>

### Level 1

On the first level, informal rules are imposed by the institutions, such as norms, values, traditions, customs, and religion. These affect society and all its actors (Williamson 2000). The level is seen as the top level, which affects all three levels below (Williamson 2000). It exercises a high amount of influence whilst only some feedback finds its way from the second level to the first level (Williamson 2000). Level one is taken as given by many economists, as it is very slow to change, but continues to shape and constrain business and business development (Williamson 2000).

### Level 2

On the second level, informal rules from level one, are transformed to formal rules (Williamson 2000). By imposing formal rules, the so-called market game is



established (Williamson 2000). The market game deals with interactions between individuals in an economy (Giraud 2003), and how these interactions might change according to changes in supply, demand and price (Brozik & Zapalska 1999). Generally, the overall goal of participants of the market game is, to 'gather as much wealth as possible' (Brozik & Zapalska 1999, p.279).

Constitutions, laws, policies, and bureaucracy established on this level, guide the market game and influence all businesses and business actors (Williamson 2000). Here, governments decide on judicial, executive, and legislative structure of their national market, the power distribution of different actors on the market, as well as on their own bureaucratic function (Williamson 2000).

Further, property rights are established (Williamson 2000). Property rights are defined as a 'socially enforced right to select uses of an economic good' (Alchian 1989, p.232). A property right can be sold and assigned to another person, while the strength of the property right is measured by the 'probability and cost of enforcement which depends on the government, informal social actions and prevailing ethical and moral norms' (Alchian 1989, p.232). Here, institutions on both the first and the second level influence property rights of business actors. In conclusion, property rights are seen as crucial for a market to work well, as products need be tradeable at mutually agreed prices and without extremely high transaction costs (Alchian 1989).

This second level changes faster than the top level but remains nonetheless difficult to change in a day (Williamson 2000). Extreme events, such as occupations, civil wars, financial crises or a breakdown of a country are some examples for sudden change (Williamson 2000). Often, countries are developing their formal rules over decades and continue to do so (Williamson 2000).

### *Level 3*

Governance structures on the third level answer to the above formal rules (Williamson 2000). These governance structures are organisational constructions and a starting point for the formation of businesses (Williamson 1998). Due to the resulting complexity of the market, integrating forces are needed, and organisations are formed (Coase 1937). Here, businesses are only one organisation within a larger organism, the market (Coase 1937). Further, transaction costs occur in the market, which is a trading environment, due to selfish behaviour of market actors (Moschandreas 1997). Coordination is carried out by an organisation to save marketing and transaction costs (Coase 1937).

Businesses on the third level adjust to the formal rules from level two, by enforcing contracts and property rights, which intend to limit conflict and impose mutual gains between business actors, or between governments and business actors (Williamson 2000). The three main activities of governance structures are therefore to maintain order, mutuality, and to limit conflict (Commons 1932 as cited in Williamson 1998). A governance structure or contract intends to align incentives and should be re-examined on a regular basis and reorganised if deemed necessary (Williamson 2000).

#### *Level 4*

The third level then defines the resource allocation, employment and the level of price and output on the fourth level, which is continuously assessed and changed (Williamson 2000).

## 3.2 Agency Theory

The Agency Theory is a well-established theory used to describe the sometimes-conflicting relationship between a principal and an agent. In the agency theory, the principal has hired the agent to conduct specific tasks for him or her (Eisenhardt 1989).

Problems tend to arise when the goals and desires are not aligned between the two actors. Both are driven by self-interest, which means that the agent might not perform the way he or she is expected by the principal (Eisenhardt 1989). The principal faces monitoring costs when having to verify that the agent is working in the principal's best interest (Eisenhardt 1989).

Different attitudes shape the goals and desires of the actors. The principal could be more risk averse than the agent, which means that both actors desire different actions in a specific situation (Eisenhardt 1989). Additionally, human actions are influenced by bounded rationality, meaning that one cannot assess or understand everything another person is communicating, which additionally leads to higher costs (Eisenhardt 1989). Another source of bounded rationality is the inability to forecast behaviour (Coase 1937).

Often, contracts are used to specify procedures (Coase 1937; Eisenhardt 1989). Due to bounded rationality, contracts are by nature incomplete and continue to do so at higher rates, the more long-term the contract is (Coase 1937).

Lastly, moral hazard and adverse selection influence the principal-agent relationship (Eisenhardt 1989). Moral hazard refers to ex post contracting, meaning

that the agent, which often has more information about a process or business part, can act inappropriately without the principal knowing (Eisenhardt 1989). Adverse selection refers to ex ante contracting, meaning that the agent could lie about his or her qualifications in an interview (Eisenhardt 1989). In both situations, opportunism occurs (Williamson 1998), which is the practise of pursuing self-interest in deceitful ways, which raises transaction costs (Moschandreas 1997).

The above problems often arise with contractual incompleteness, which can be avoided by estimating future scenarios in connection with the above-described behavioural aspects (Williamson 2000). Contracts can be completed as much as possible, by for example including consequences for certain actions (Williamson 2000). Nonetheless, a contract without credible commitments will not be self-enforcing and cannot avoid selfish behaviour and bounded rationality altogether (Williamson 2000).

### 3.3 Power Distribution

The distribution of power between different market actors is less of a focus in literature on New Institutional Economics and Agency Theory. Both theories do not actively consider that market actors can use their market power to gain profit, especially when it comes to supply chain relationships.

Generally, power can be defined as ‘one party’s ability to enforce its will on another party’ (Reimann & Ketchen Jr. 2017, p.3). A higher power of a market actor can occur due to a high dependency on him or her, while one actor may need the other more than the other way around (Belaya et al. 2009; Reimann & Ketchen Jr. 2017). How values are distributed depends therefore to a high degree on the power distribution between different actors (Reimann & Ketchen Jr. 2017).

### 3.4 Conceptual Framework

In line with the literature review and the theoretical framework, the author constructed the following conceptual framework:

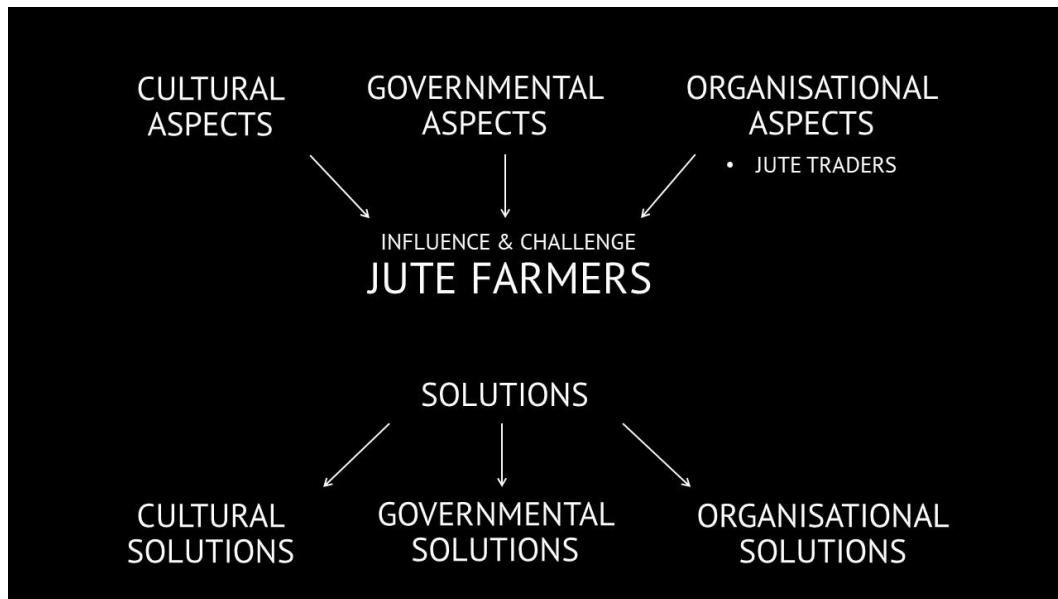


Figure 9. Conceptual framework. (Authors illustration).

The Conceptual Framework presented in Figure 9, combines the first three levels of the *New Institutional Economics* theory with the actors mainly studied in this thesis: the jute farmers. The three types of institutions, here labelled as cultural, governmental, and organisational aspects, are assumed to influence, and challenge farmers, and are thus studied within the empirical context of this thesis.

Moreover, to fully understand the organisational aspects, the relationship between jute traders and jute farmers is studied. Here, parts of the *Agency Theory* and an uneven *Power Distribution* are used to analyse the relationship. The Conceptual Framework is until here used to identify common challenges that jute farmers face, to answer the first research question.

The solutions part of the Conceptual Framework intends to help answer the second research question while the solutions are also categorised into the first three levels of the *New Institutional Economics* theory. Some potential cultural, governmental, and organisational solutions have already been presented in section 2.6 and in section 2.7, which are later combined with the empirical findings.

## 4. Methodology

*This chapter presents the chosen research philosophy and design, as well as data collection and data analysis methods. Lastly, quality criteria and ethical considerations are discussed.*

### 4.1 Research Philosophy

When choosing the methodology for a study, one firstly needs to consider the research philosophy, which is formed by the researcher's paradigm. A paradigm consists of the basic beliefs of a researcher regarding his or her worldview (Guba & Lincoln 1994). A paradigm is further heavily influenced by the researcher's ontological and epistemological views (Guba & Lincoln 1994).

The nature and form of reality, meaning what the researcher views as real and what can be known about it, is described by the researchers ontological views (Guba & Lincoln 1994). According to Guba and Lincoln (1994), only ontological questions that relate to what the researcher perceives as real, are accepted in a study.

The epistemological question, on the other hand, deals with 'the nature of the relationship between the knower or would-be knower and what can be known' (Guba & Lincoln 1994, p.108). Here, epistemological views need to be aligned with the ontological views of the researcher (Guba & Lincoln 1994).

The ontological approach used in this study, is the research philosophy of interpretivism, which opposes positivism (Bryman & Bell 2011). Positivists advocate the application of the methods of natural sciences to the study of social sciences (Bryman & Bell 2011). Interpretivists, on the other hand, believe that social sciences are fundamentally different from natural sciences and state therefore the opposite (Bryman & Bell 2011). The social setting and phenomena of this thesis are thus studied without applying methods from natural science.

## 4.2 Research Design

In line with the research philosophy of this study, qualitative research that intends to understand the nature of a research problem, based on the researchers' perception that social reality is a man-made creation (Denzin & Lincoln 2011), is conducted. Qualitative research further enables the researcher to gain an in-depth understanding of a phenomena in its real-world setting as it focuses on social constructions and meanings created by humans (Robson 2011).

The theory development of this research is inductive, meaning that no previous theory is tested, but rather is new context-specific knowledge developed from the collected data and observations (Bryman & Bell 2011). The author nonetheless makes use of the chosen theories *New Institutional Economics*, *Agency Theory* and *Power Distribution* while adjusting them to the specific context and using them as a theoretical base. Therefore, this study is a qualitative study of explorative nature, which also fits to the proposed research questions. Within a deductive approach, common in quantitative studies, the opposite would be done, as previous theory would be tested by forming one or several hypotheses, which are then either confirmed or rejected according to the findings from the data collection (Bryman & Bell 2011). As a comprehensive conceptual framework explicitly focusing on jute farmers and their cultural, governmental, and organisational environment is currently lacking, a qualitative approach of explorative nature was deemed suitable.

### *Multiple Case Study Design*

To gain a contextual understanding of the phenomenon of this study, a multiple case study design was chosen. Within qualitative research, case studies are the most popular method (Rashid et al. 2019). As this thesis intends to generate context-specific knowledge of certain phenomena that are relevant to the study, a case study design was deemed suitable. Further, case studies often relate to 'how questions' (Yin 2009), which is in line with the research questions of this study. Case studies are additionally described to facilitate the understanding of a real-world setting in detail (Yin 2009).

In line with the above, this thesis interprets the cultural, governmental, and organisational environment of jute farmers by contextualising arguments from individuals' beliefs and practises, as suggested by Denzin and Lincoln (2011). The chosen research philosophy of interpretivism is here practical, as it allows the author to see arguments and perceptions from several perspectives, which in turn makes it easier to see the world through the eyes of the individuals participating in the case studies (Rashid et al. 2019). The subjectivity of participants is here used to understand the social phenomenon (Rashid et al. 2019).

## 4.3 Literature Review

A literature review is used for the researcher to deepen her knowledge regarding the empirical and theoretical problem of a study (Given 2008). Here, empirical problems that fit to the aim of the study are identified, in addition to several theoretical aspects regarding cultural, governmental, and organisational structures. The literature review further helps the author to identify research gaps and appropriate research questions. Lastly, it helps to construct a conceptual framework.

The literature review was conducted using the search engines Google, Google Scholar, and the online library of the Swedish University of Agricultural Sciences (SLU). The author used relevant keywords to delimit the search and to find concepts among the results. There were no year specifications for the search applied as the author wanted to get a broader picture of changes in the jute industry over the years. Nonetheless, recent publications were prioritised to understand the current situation of jute farmers in Bangladesh. Apart from journal articles and book sections, company websites, brochures and newspaper articles were included in this study. The keywords used, consisted of ‘jute farmers’, ‘jute industry’, ‘institutional influences’, and ‘Bangladesh’.

## 4.4 Data Collection Techniques

To gain a broad picture of the study area, secondary data was collected through a literature review, as described above. Further, primary data was collected through semi-structured interviews, as this study wants to dig deeper into the unique perspectives of actors in the jute industry to provide context-specific knowledge.

### 4.4.1 Sampling Techniques

The author makes use of a purposive sampling technique, to be able to answer the chosen research questions. Purposive sampling is defined as a non-probability form of sampling, in which individuals are selected based on their relevance to the study (Bryman & Bell 2011). As a result, all participants are active in the jute industry in Bangladesh. This type of sampling method will not allow for a generalisation of a population, but rather study a smaller sample in depth (Bryman & Bell 2011).

Due to the ongoing pandemic, a trip to the country of study is impossible, which partly limits the ability of the author to reach a high number of respondents that are active in the jute industry in Bangladesh.

#### 4.4.2 Semi-structured Interviews

There are several different strategies that can be used when conducting interviews, as they can either be structured, totally unstructured or semi-structured (Bryman & Bell 2011). Structured interviews, which are most commonly used for quantitative research, intend to maximise reliability and clearly answer the research questions that are to be investigated (Bryman & Bell 2011). Unstructured interviews, on the other hand, are almost like a conversation that allows the interviewee to answer entirely freely (Bryman & Bell 2011). Lastly, semi-structured interviews consist of an interview guide that includes a list of topics that need to be covered, but which nonetheless allows for some flexibility when forming or answering questions (Bryman & Bell 2011).

For this study, semi-structured interviews were chosen, as they come with several advantages compared to structured or unstructured interviews (Bryman & Bell 2011). They firstly allow the author to prepare some questions that focus on specific key areas which are necessary to answer the proposed research questions, but they also give the respondent the necessary space to express their opinion more freely, by allowing him or her to dive into a related topic or to go into detail (Bryman & Bell 2011). Lastly, follow-up questions for additional understanding of the author pose no problem in semi-structured interviews (Bryman & Bell 2011). Generally, the researcher is more likely to see the world in a way that the participant sees it, by allowing for flexibility (Bryman & Bell 2011). The interview guide, including all questions, can be found in Appendix 3.

#### 4.5 Data Analysis

The interviews were conducted online, via Zoom, which is convenient as it decreases travel costs and makes it possible to be able to reach participants globally. As all interviews took place in English, no translation needed to be conducted, which facilitated the data analysis.

There are few well-established rules for the analysis of qualitative data, opposing the analysis of quantitative data, for which clear guidelines exist (Bryman & Bell 2011). Therefore, data analysis is often described as more time-consuming in qualitative research (Bryman & Bell 2011). A common problem with qualitative data analysis is the generation of large amounts of textual data, which of course contributes to a richness in data, but can simultaneously lead to a failure of the author to give the data significant meaning (Bryman & Bell 2011).

In this study, a grounded theory approach is followed to analyse the qualitative data. This means, that context-specific grounded theory is derived during the research process, from data that was systematically gathered and analysed (Strauss & Corbin



1998 as cited in Bryman & Bell 2011). This approach is recommended for authors that intend to both form new knowledge, whilst also connecting the new knowledge derived in the interviews to previously presented theories and concepts (Bryman & Bell 2011).

Another common strategy to analyse data includes analytic induction, which is mainly used to find consistent data that can be used to confirm a hypothesis (Bryman & Bell 2011). As this research does not include hypotheses and is rather of descriptive nature, a grounded theory approach is deemed to be more fitting.

After receiving consent from the interviewees, the interviews were recorded and later transcribed in its entirety and coded when deemed applicable. A crucial part for the successful data analysis is coding. Coding qualitative data is defined as the process of transferring ideas and concepts from qualitative raw data into systematic categories by labelling the data to be able to find similarities and differences (Given 2008). Coding is generally used to label, separate, compile and organise data (Charmaz 1983 as cited in Bryman & Bell 2011). Within qualitative data analysis, it is a first step towards the generation of theory (Bryman & Bell 2011).

Strauss and Corbin (1990), as cited in Bryman and Bell (2011), identify three different types of coding. Firstly, *open coding*, which is used to conceptualise and categorise data. Secondly, *axial coding*, which connects the different categories that came up during open coding, and thirdly, *selective coding*, which is used when one wants to connect a core category with other categories. The author of this thesis conducts *open coding*. Here, Bryman and Bells (2011) steps are followed, in which data is broken down into component parts, which are then given names or labels to identify concepts. These concepts are then transferred into new categories or become a part of existing categories. Categories, that emerged from previously presented theories or from the literature review, are compared and if applicable connected to the new categories that emerged in the interviews. A category is in this case on a higher level of abstraction than a concept (Bryman & Bell 2011). For qualitative data, coding is subject to constant potential revision throughout the analysis (Bryman & Bell 2011). Therefore, interview transcripts are reviewed many times, to identify concepts that seem to be of theoretical and empirical significance.

The data analysis is considered to be finished when theoretical saturation is reached, meaning that no new knowledge or no new knowledge of interest, is derived from the data (Bryman & Bell 2011). Here, relevant context specific knowledge is identified and developed, and connected to previously presented theories and categories. To fulfill the last step of the data analysis, a revision of previously set concepts, categories, and theories is conducted.

## 4.6 Quality Criteria

Differences between quantitative and qualitative research have developed and shaped the quality criteria for the two different types of research over the years (Bryman & Bell 2011). Today, slightly different concepts are used to ensure a high quality of qualitative research, compared to quantitative research, which mainly considers the concepts of *reliability* and *validity* (Bryman & Bell 2011).

Guba (1985) and Guba and Lincoln (1994), as cited in Bryman and Bell (2011), stress the importance of four concepts that can be used to ensure high quality of a qualitative study: *credibility*, *transferability*, *dependability*, and *confirmability*.

*Credibility* deals with the level of congruency of the findings towards reality (Bryman & Bell 2011). To guarantee *credibility*, triangulation is practised, which means that data is derived from different sources, such as websites, newspaper articles, and journal articles (Bryman & Bell 2011). The data derived from the interview coding is additionally compared to the above-named sources. To further ensure *credibility*, respondent validation is practised, by sending the transcribed interview and the coding to the respondent, to ensure that the researcher received the right impressions and findings according to the respondent (Bryman & Bell 2011).

*Transferability* describes the degree to which the findings of the study can be transferred to other contexts (Bryman & Bell 2011). Lincoln and Guba (1985), as cited in Bryman and Bell (2011), argue that *transferability* of context-specific qualitative studies is an empirical question, and that *transferability* can only be judged if the author provides an extensive description on the specific context. To ensure *transferability*, the specific methods are described in-depth, while the interview guide is added in Appendix 3. Further, the chosen empirical background and sample is described in *Chapter 5*, to enable other authors to see in what environment the interviewees are situated in. This is done to ensure that interested researchers can decide if the results of a context-specific study might be able to be transferred to their context of interest.

*Dependability* describes the likeliness of the same results being obtained if the study would be carried out a second time, using the same context, sample, and method (Bryman & Bell 2011). The findings of this study intend to be highly consistent due to the recording and full transcription interviews. To ensure further *dependability*, all records of the study will be kept accessible for peer review.

*Confirmability* describes the risk of the researchers' personal opinions and ambitions influencing the findings and objectivity of the study (Bryman & Bell

2011). Generally, it is known that complete objectivity is impossible in business research (Bryman & Bell 2011). The author nonetheless guarantees to work extensively on ensuring that the results are free of bias and not influenced by personal motivations and interest, to ensure *confirmability*. She will further search and ask for feedback regarding the *confirmability* of the study, by her supervisor. The author is also aware that bias can occur because she is not coming from Bangladesh and might be unfamiliar with some aspects of the jute industry. Certain aspects cannot be learned over secondary data or by having direct contact with business actors in the jute industry in Bangladesh. The inability to travel to Bangladesh further limits the objectivity of this study, as the author is physically far away from the context specific setting of this study.

Lastly, it has to be added here that the *generalisation* of context specific case-studies is highly challenging (Yin 2013). As this aspect is not the focus of qualitative case-studies, no absolute and generalisable laws will be created, which can question the study's value for overall research. Instead, context specific knowledge will be gained. One way of ensuring a certain degree of *generalisation* is to conduct conceptual abstraction of the results, which enables the results to be used in similar contexts even if some aspects remain unique to the specific case study (Yin 2013). This is done by connecting the findings from the interviews to the above presented theories.

## 4.7 Ethical Considerations

According to Bryman & Bell (2011) different ethical aspects need to be considered, for the study to be ethically acceptable. Four ethical aspects seem to be of particular relevance due to the chosen research design. They are: (1) harm to participants, (2) lack of informed consent, (3) invasion of privacy and (4) deception (Diener & Crandall 1978 as cited in Bryman & Bell 2011).

Different measures are implemented by the author to avoid these issues. Firstly, the research and its motives are explained in detail to the participants, by sending information about the research topic via email or by discussing the study on the phone. Additionally, the interview guide is sent to all participants, so they can become familiar with the questions and ensure that they are willing to answer the open-ended questions. Secondly, before the interview, it is explained to the interviewees how the data from the interviews will be used, and consent is asked for, before recording the interviews. Thirdly, participation is entirely voluntarily and a dropout from the interview without any punishment is possible. Also, anonymity is ensured, by not mentioning any names of the participants. Lastly,

transcript and coding material of the interviews is sent to participants to ensure that the authors' interpretations are accepted by the respondents. This thesis is further based on the concept of reciprocity, meaning that both the researcher and the participant should benefit from it (Bryman & Bell 2011).

## 5. Empirical Background & Findings

*This chapter presents context-specific information about the empirical background of this study, using secondary data. Afterwards, the unit of analysis is discussed, and the sample of this study is presented. Lastly, empirical findings from the semi-structured interviews are presented.*

### 5.1 Jute Production in Faridpur

The area of Bangladesh that is to be investigated in depth in this study is the agricultural region around the city of Faridpur. Faridpur is located in the south-central part of Bangladesh, close to the river Ganges (Turza 2021), as can be seen in Figure 9. It is a city of growing importance in the Dhaka division, while facing rapid urban growth since the 2010s (Turza 2021). An infrastructure project including a bridge over the Ganges river is predicted to increase urbanisation further (Turza 2021).

Bangladesh forms with its river Ganges the largest river delta in the world (Islam & Ali 2017a). The country regularly faces tropical monsoon rain that is drenching land and rivers (Islam & Ali 2017a). The region around the Ganges river delta is known to be the centre of global jute production, as the heavy rainfall during the monsoon season highly benefits jute growth (Razzaque Jute Industries Ltd. 2022). Further, 85% of world production of jute is cultivated in the Ganges delta, of which Bangladesh has the major portion (Razzaque Jute Industries Ltd. 2022). Due to the regular flooding in the Faridpur region, soils are highly fertile and a diversity of crops can be grown in the area, out of which jute and rice cultivation are the most common ones (Mostafizur et al. 2017). The Faridpur region is thus known as one of the best quality jute growing areas (Razzaque Jute Industries Ltd. 2022).

A study which compared five different jute cultivation regions in Bangladesh, suggests that Faridpur is especially well suited for raw jute production, as the highest yield and the highest gross return are found in Faridpur (Hossain et al. 2014). Further, prices are the highest for jute fibres from Faridpur (Hossain et al. 2014).



Figure 10. Political map of Bangladesh. (Nationsonline.org 2017).  
<https://www.nationsonline.org/oneworld/map/Political-Map-of-Bangladesh.htm>

Overall, farmers in Faridpur are facing less jute farming challenges than farmers in other regions, due good weather conditions, good soil and sufficient retting facilities (Hossain et al. 2014). Further, farmers in Faridpur themselves indicate that they face fewer barriers regarding low prices of jute, no availability of jute seed, no retting facilities, and a lack of technical knowledge, as compared to their counterparts in others regions (Hossain et al. 2014). Hence, all four problems are less present in Faridpur than in other regions (Hossain et al. 2014).



## 5.2 Unit of Analysis & Sample

The unit of analysis of this study consists of jute farmers that are based in Bangladesh. To be able to investigate the chosen unit of analysis in depth, secondary data, as well as primary data that relates to the empirical context of this study, is collected. For the collection of primary data, semi-structured interviews are held with business actors that are engaged in the jute industry in Faridpur. Three interviewees were chosen, out of which two are based in Sweden, whilst one is based in Bangladesh.

Due to language barriers and due to an inability to travel to Bangladesh, interviews cannot be held directly with jute farmers conducting farming activities for a living. Hence, a fair representation of farmers through the interviewees can be questioned.

In line with the above, the sample consists of representatives from three different companies that are active in the jute industry in Faridpur. The companies collaborate and are shortly introduced below.

### 5.2.1 Razzaque Jute Industries

Razzaque Jute Industries Ltd. (RJIL) is an important market actor within the jute industry in Bangladesh, as it transforms raw jute into finished jute products. RJIL owns a jute mill plant in the district of Faridpur and has an office in the capital Dhaka (Razzaque Jute Industries Ltd. 2022). The company is a major producer of jute yarn and twine, while using modern imported machinery. Products produced are mats, rugs, and carpets (Razzaque Jute Industries Ltd. 2022).

The company puts an emphasis on R&D, to be able to create new jute related products. RJIL is further active on the global market as it is 100% export oriented (Razzaque Jute Industries Ltd. 2022).

### 5.2.2 Juteborg AB

Juteborg AB (Juteborg) is based in Gothenburg, Sweden and was founded in 2013. The company takes part in the development, as well as in entrepreneurial and innovative activities surrounding jute fibre high-tech products (Juteborg AB 2019). Juteborg further aims to provide jute products for the textile, automotive and construction industry, while simultaneously creating a more sustainable economy (Juteborg AB 2019).

Juteborg is in close collaboration with RJIL and invented the so-called Farmer-to-Factory model™ (F2F™), a jute supply chain model, that intends to make the jute supply chain more sustainable (Juteborg AB 2019). The F2F™ model further

intends to ensure certification and traceability along the jute supply chain from seed to finished jute high-tech product, while also ensuring fair prices to jute farmers (Juteborg AB 2019). The F2F™ model thus suggests a supply chain model in which farmers sell their raw jute directly to the jute mills, to secure higher prices (Inclusive Business Sweden et al. 2022).

### 5.2.3 Inclusive Business Sweden

Inclusive Business Sweden (IBS) is a not-for-profit centre founded in 2013, with the mission to support businesses meet global development needs. The company engages in supporting businesses to develop sustainable, inclusive, and innovative business models that can reduce poverty and improve living conditions for the poor (Inclusive Business Sweden 2022).

IBS is in close collaboration with Juteborg and RJIL and intends to improve the livelihoods of farmers in Faridpur, Bangladesh, while simultaneously reducing CO<sub>2</sub> emissions and improving soil productivity in the area by supporting Juteborg (Inclusive Business Sweden 2022).

## 5.3 Empirical Findings

### 5.3.1 Background of the Participants

*Participant 1* works as an advisor for RJIL and is currently involved in setting up a Joint Venture between RJIL and Juteborg. He further uses his educational background within finance and investments to conduct internal audits for RJIL. When he first started working at RJIL, he worked as a jute accountant and kept track of how much jute was coming into the jute mill in Faridpur, partly even directly from farmers. In addition, he led a data collection and analysis project about jute farming in Faridpur for Juteborg and IBS, which included having interviews with jute farmers and conducting his own jute cultivation and harvesting. This work led to close contact with jute farmers in the area (Advisor RJIL).

*Participant 2* is the CEO of Juteborg, a company which intends to transform jute products from low-value products to high-tech products. Juteborg further is the initiator of the F2F™ model, which was developed further with actors from RJIL, IBS and other organisations. Moreover, Juteborg intends to act as a direct purchaser of jute yarn, jute fibres and maybe even jute sticks in the Joint Venture with RJIL. *Participant 2* has started exploring business options in Bangladesh since 2014 and met many different jute-mill owners. After deciding to partner up with RJIL due to their closer relationship to jute farmers, she met actors all along the jute value chain.



She also met different jute industry actors, including jute farmers, during workshops held by IBS and Juteborg in Faridpur (CEO Juteborg).

*Participant 3* works as a project manager for IBS and is responsible for supporting their member Juteborg. IBS's focus area is within supporting the private sector to develop inclusive business models in low-income markets. Therefore, *Participant 3* took part in developing the F2F™ model, to address and evolve challenges in the jute industry. IBS further supports Juteborg in securing connections and funding opportunities. Due to workshops held by IBS and Juteborg in Faridpur, *Participant 3* had the opportunity to meet jute farmers and other actors within the jute industry (Project Manager IBS). Additional information about the workshops and their purpose can be found in Appendix 2.

An overview of all conducted interviews can be found in Table 1.

*Table 1. Interviews conducted.*

	RJIL	Juteborg	IBS
Interview conducted	15.02.22	04.03.22	21.02.22
Interview length	51 minutes	76 minutes	40 minutes
Interviewee's position	Advisor	CEO	Project Manager
Method	Zoom	Zoom	Zoom
Based in	Bangladesh	Sweden	Sweden

### 5.3.2 The Faridpur Location

For several reasons, Faridpur is a special place for jute farmers and the jute industry. Firstly, the region comes with a unique supply chain aspect, as the RJIL jute mill offers to purchase jute directly from farmers at fair prices. 'I would say no other jute mill in Bangladesh buys jute directly from farmers' (Advisor RJIL). RJIL further has a history of buying from farmers, even before any collaboration with Juteborg took place (Advisor RJIL). Additionally, Faridpur offers a natural uniqueness due to its weather and soil, which is particularly well-suited for jute farming (Advisor RJIL). As a result, the quality of jute fibre is higher than in other regions in Bangladesh (Advisor RJIL; CEO Juteborg).

Jute as a crop is further of particular interest as jute farming in Faridpur is conducted at a time of the year (during the monsoon season) when few other crops can be grown, which means that most farmers either grow jute or leave the ground barren (Advisor RJIL). *Participant 1* adds that 'in some areas, you might try to do something else. But in most cases, you cannot cultivate anything but jute'.

*Participant 2* further argues that due to heavy rainfall during the monsoon season, many other crops would flush away, but jute offers a ‘very sturdy and robust root system that prevents the soil from eroding’. Therefore, the growing of other crops is perceived as too risky during the monsoon season, leading to jute crops being preferred (CEO Juteborg).

To continue, the current situation of farmers in Faridpur is described rather positively by *Participant 1*: ‘I would say that the farmers are better off right now, because in the last few years, the price of jute has shot up tremendously’. *Participant 1* adds that in 2017 ‘farmers could get around 1.800 to 2.200 BDT, Bangladeshi Taka. But right now, it is more than 3.000 BDT per 40 kilograms’. <sup>1</sup>

Nonetheless, a problem that remains is the high demand for seasonal labour. Here, the labour-intensive nature of jute farming, but also the lack of agricultural technology, which could lower the need for manual labour, drives labour prices up and leaves farmers in debt to pay their workers (Advisor RJIL). The situation is described as follows:

Jute farming is not like rice (cultivation), where you just sow it. One person can (...) put pesticides (...), and fertilisers (...) and then you just harvest at the end of the year. Jute farming is quite labour intensive, and since it requires a lot of labour, the cost is also high, and the margin of profit is quite low (Advisor RJIL).

*Participant 3* further raises concerns about farmers’ profitability, as many profit calculations do not account for the personal wage of farmers. Often, it is only calculated if farmers can cover the costs of their inputs, whilst everything above these costs is described as profit. A big problem here is that farmers do not consider the costs of their own time and are therefore working without a wage (Project Manager IBS). *Participant 2* adds that jute farmers are indeed very poor, but that they nonetheless grow jute as it is a very robust crop that also offers nutrition, as jute leaves are eatable. Therefore, farmers’ agricultural risks are lowered in the monsoon season, and their nutrition is somewhat secured. Nonetheless, if farmers ‘could have been growing another crop, such as vegetables or rice (...) it would bring even more (money) into their pockets’ (CEO Juteborg).

Lastly, several jute farmers state in a survey conducted by *Participant 1*, that they are rather unhappy with their situation as jute farmers. Thus, jute farmers face a lack of finance and resources, which also result in a lack of innovation that could develop jute production, as ‘there is no profit (...), and there is no extra time, no extra money, and no time to rethink things’ (Project Manager IBS).

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<sup>1</sup> 3.000 BDT equals approximately 32 Euros

## 6. Results

*This chapter presents the results from the interviews related to the conceptual framework of this thesis. Therefore, cultural, governmental, and organisational influences on jute farmers are discussed. The chapter ends with a presentation of potential solutions and a future-outlook of the jute industry.*

### 6.1 Cultural Aspects

#### *Positive Aspects*

Jute farming is described as a traditional practise that comes with wide-ranging historical context: ‘jute farming is done in Bangladesh for years, even before Bangladesh was Bangladesh, even before our independence’ (Advisor RJIL). Moreover, jute farmers are described as individuals that enjoy their work, as they see jute farming as an ongoing process that is worth protecting (Advisor RJIL). Hence, pride plays an important role, as it makes farmers want to continue working with jute, even though it is not very profitable (Project Manager IBS). *Participant 2* additionally describes a strong emotional connection to jute, where certain locals in Bangladesh speak of jute that is *flowing in their veins*, and where one is very proud to produce the finest jute in the world.

Another positive aspect is that life in rural areas is perceived as something desirable, as opposed to a life in the city:

If you are living in a big city, like Dhaka for instance, you might not ever be able to see your children, if you are a man (...). You have to leave for work very, very early in the morning. It might take you four hours to commute to your workplace (...). And the air is so bad and there is no vegetation, and no fresh food. The countryside is (...) luxurious (...). Think about the freshness, the water and the greenery, and the fruits and the vegetables. You have space, and it takes you ten minutes to commute to work. It is a totally different lifestyle. You can be with your loved ones (...). You can see your children growing up in a nice area (CEO Juteborg).

Here, the norm that family members take care of each other is of utmost importance, as the closeness to the family provides a big source of support for farmers (CEO Juteborg). *Participant 2* nonetheless also points out that you most likely need to travel further for your children to receive higher education if you live in rural areas.

However, many jute mills and other employers in rural areas build schools for their workers and respective families, which cover basic education (CEO Juteborg).

Lastly, despite their strong traditional background, jute farmers are very interested in new opportunities for the *jute industry*, as was discovered in the workshops: ‘their (the jute farmers) eyes were opening, they were so, so interested’ (CEO Juteborg). The option to use jute for building cars instead of ropes and sacks, was raising a high amount of interest among farmers (CEO Juteborg).

### *Negative Aspects*

Due to difficult perceptions and traditions, but also due to a lower level of education, jute farmers often prefer to not change the way they conduct jute farming, which in the end also limits the development of the jute industry (Advisor RJIL). *Participant 1* adds that farmers are very sceptical towards any innovation presented to them that could improve their yield, as ‘their educational limitation sort of binds them into not accepting something that is not common’.

Here, an example is the usage of natural fertiliser. Most often, farmers are refusing to switch from chemical to natural fertiliser, as a lot of continuous persuasion is needed, to change farmers behaviour (Advisor RJIL). *Participant 1* speaks of an extraordinarily high usage of chemical fertiliser, as jute farmers believe that the more chemical fertiliser they use, the higher the yield will be. Here, *Participant 2* adds that the high usage of chemical fertilisers is caused by smart salesmen that make farmers believe that chemical fertilisers are necessary. Unfortunately, ‘a lot of it goes to waste, washes away with rain and damages our ecological balance by killing a lot of good insects and bacteria’ (Advisor RJIL). *Participant 1* continues, stating that even though he personally conducted jute farming, using only natural fertiliser, which showed better results, farmers remain sceptical of changing their approach. Here, ‘one years’ worth of example is not enough to change decades worth of perceptions and traditions’ (Advisor RJIL). Thus, changes within jute farming are difficult to administer (Advisor RJIL).

Another major cultural barrier that affects the profitability of jute farmers is gender bias, as it not only limits women to earn money independently, but it also means that a potential source of income for a household is lost (Project Manager IBS). *Participant 3* adds that women often work as unpaid family workers on the farm as well, but that they are not very involved in jute farming activities.

Lastly, the jute industry struggles to attract a new generation of farmers (Project Manager IBS; CEO Juteborg). One reason for this is that students in Bangladesh are taught that jute is a low-value product, that is not economically wise to grow

(CEO Juteborg). *Participant 3* adds that young people do not see jute farming ‘as attractive, as profitable, as interesting’, which results in farmers becoming older and older. *Participant 2* describes the situation as follows: ‘there is a young population (...) and they are looking at their parents, asking themselves *do I want to do this? (...) is that a dream of my life?*’. For most, the answer is no (CEO Juteborg).

## 6.2 Governmental Aspects

### *Positive Aspects*

The government of Bangladesh is indeed very involved in sustainability initiatives, especially on the top level. *Participant 2* points out that the current prime minister Sheikh Hasina is presently the chair of the global Climate Vulnerable Forum (CVF).<sup>2</sup> Hence, it is suggested that Bangladesh could take a lead in climate action, by further strengthening the jute industry (CEO Juteborg).

Overall, politicians of Bangladesh understand how important the jute industry is for the country’s economy and for climate action (CEO Juteborg). As a result, the government of Bangladesh appointed a jute-minister, who further showed interest in jute industry development, by visiting the workshops hosted by Juteborg and IBS (Project Manager IBS). This additionally led to direct contact between jute farmers and a government official. *Participant 2* describes the relationship between farmers and the jute minister at the workshop quite positively, as there were no informal barriers between the minister and jute farmers. The different participants instead interacted with one another through greetings and discussions (CEO Juteborg).

### *Negative Aspects*

Unfortunately, scepticism remains regarding the effectiveness of governmental support initiatives. *Participant 1* explains that ‘in pen and paper, they (the government) are present’, but otherwise, the government remains distant.

*Participant 1* continues stating that there are governmental regulations and initiatives, but no one to enforce them. An example are artificial jute shortages, created by traders that stock jute and therefore raise the price. Here, the government has published a regulation which allows only a certain amount to be kept by traders, but traders barely follow the regulation. As a result, jute mills have urged the government to act, but the stocking continues (Advisor RJIL). Another example are

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<sup>2</sup> The CVF is a forum for countries that are exceptionally vulnerable to the consequences of climate change (Climate Vulnerable Forum 2022).

service stations, run by local government officers, that are intended to help jute farmers to improve their farming activities through advice, new technologies and fertilisers. Unfortunately, service stations are hardly accessible, and often help is not given, as directly experienced by *Participant 1*.

*Participant 2* speaks of research projects regarding jute crops and jute farming as a source of governmental support for jute industry. These research projects study for example jute seed production, jute farming with lower levels of fertiliser, or jute that can be grown in salty lands. This could potentially help farmers to improve their yield and profitability. But a major problem is that researchers, farmers, and industry actors do not interact, and most often research is not actively used by farmers, but rather by other researchers (CEO Juteborg).

Lastly, one form of active governmental support is mentioned by *Participant 1* and *Participant 2*. It is the policy that jute mills receive financial support when they qualify as exporters: ‘we (the jute mills) get a subsidy if we export 1 dollar worth of jute (...). It is a good thing. But it is for us. Does it trickle down to the farmers? I do not think so’ (Advisor RJIL).

## 6.3 Organisational Aspects

### 6.3.1 Power Distribution in the Jute Supply Chain

Farmers are without a doubt the weakest actors in the raw jute supply chain, as confirmed by all interviewees. A distinction was made between farmers that own land, and therefore do not need to pay for land as a resource, and landless farmers, who are even less advantaged (Project Manager IBS).

The most powerful actors in the jute supply chain are on the other hand the jute traders, as they can create price instability by stocking jute (Advisor RJIL). Moreover, traders are powerful enough to resist governmental regulations while directly affecting jute mills negatively (Advisor RJIL). The resulting price instability additionally threatens farmers livelihoods as they depend on jute as an income, while it also threatens the price security of companies that intend to sell jute products at a certain price to their customers (CEO Juteborg). Lastly, it was pointed out that jute traders are making the most profit within the raw jute supply chain, and not the jute mills (Advisor RJIL).

### 6.3.2 Jute Traders & Jute Farmers

#### *Positive Aspects*

Overall, jute traders intend to maintain a good relationship with jute farmers (Advisor RJIL). Therefore, the traders visit the farmers and offer to lend them money in advance, right before the jute sowing season begins:

Farmers who are financially weak would take this offer with a promise to sell their total crop after it is harvested to these particular traders, who offered them, or lend them money (Advisor RJIL).

*Participant 1* points out that traders are thus also helping farmers to shortly solve their financial concerns. Moreover, farmers are used to sell, whenever they need money and traders act here as a farmers' bank account. Often, farmers do not sell their entire harvest at once, but rather from time to time, whenever they are out of money (Advisor RJIL). A disadvantage with this practise is that traders often take 1 to 2 kilograms of jute for free, whenever they buy a batch of jute, which is usually 40 kilograms. This is also described as a form of taxation by *Participant 1*.

To conclude, traders are not described entirely negative:

I think there are good middleman. I am sure (...) many are trying to do their business. Whose head they are walking on, some do not care and some care. Just like people in the rest of the world, there are good people and bad people everywhere (CEO Juteborg).

#### *Negative Aspects*

Overall, farmers are depended on the traders and often do not have a choice about whom they are selling to (Advisor RJIL; Project Manager IBS). Due to their economic situation, they need money quickly and therefore do not keep their jute longer, even though this could earn them higher prices (CEO Juteborg). Consequently, farmers want to have a good relationship with the traders (Project Manager IBS). Overall, the relationship between jute farmers and jute traders is illustrated as follows:

If you talk about farmers' relationship with middlemen, I would not say it is bad. But farmers are taken advantage of (Advisor RJIL).

Very asymmetrical, in terms of power, in terms of knowledge, in terms of resources, connections, and so on (Project Manager IBS).

I understood really, how the farmers are in the hands of the middleman. If they (the farmers) come in with their jute that they need to sell and they say, 'here is 50 kilos of jute', and then the middleman says, 'no, it is only 43' (...). They cannot do anything about it.

## 6.4 Potential Solutions

### 6.4.1 Cultural Solutions

#### *Educating farmers*

To offer basic education to farmers regarding business and farming practises is described as crucial to improve farmers' livelihoods (CEO Juteborg; Project Manager IBS). That this solution is needed is underlined by the fact that many farmers have never heard about the climate crisis until taking part in the workshops. They have instead, directly experienced it (CEO Juteborg). *Participant 3* concludes that NGOs could here offer different training sessions to farmers.

### 6.4.2 Governmental Solutions

No governmental solutions are discussed by the interviewees. *Participant 1* argues instead that the biggest opportunity to support jute farmers originates from privately driven jute mills, and not from public organisations, due to a high amount of bureaucracy within governmental institutions.

### 6.4.3 Organisational Solutions

#### *The Farmer-to-Factory™ model*

A major organisational solution to improve farmers livelihoods is the opportunity for private jute mills to buy jute directly from farmers at fair prices (Advisor RJIL). The solution is complicated to implement on a larger scale as 'jute mills do not have time to invest in purchasing small quantities of jute' (Advisor RJIL). Therefore, problems firstly arise on the jute mills' side:

When we (the jute mill) purchase jute, we purchase in trucks full; one truck that holds nearly five or ten tons of jute. Jute comes at a time in one truck. It saves us a lot of labour. But if we would cater each and every farmer, we would require a lot of manpower (Advisor RJIL).

Most jute mills, they want volume (...) and they do not want to be dealing with these small farmers. So, we need to find a way to gather these volumes that they need (Project Manager IBS).

Hence, a solution needs to be found to gather larger volumes or to be able to handle several smaller amounts from farmers (Advisor RJIL). Secondly, perceptions of farmers need to be changed:

Even though we (the jute mill) are open to purchase jute directly from the farmers, a lot of farmers feel hesitant to sell. Because it is not the norm (...). They are used to selling it in open markets (Advisor RJIL).



Additionally, farmers fear that their relationship with the traders is negatively affected if they choose to sell directly to the jute mill, and that this could in the future lead to them not being able to sell their jute to anyone:

If they (the farmers) come directly to the mill, the traders will see that (...) they are bypassing them and sell to the mill directly. And what if the mill stops? We cannot give enough promises, or enough convincing promises, that we are going to continue purchasing directly from the farmers for the rest of their lives (Advisor RJIL).

Therefore, persistence is crucial to convince farmers to sell directly to the jute mill and employees are needed that approach the farmers and encourage them to sell their jute to the mill (Advisor RJIL). Another problem is the direct payment of farmers. As the jute mill owners do not keep large amounts of cash in the mill for safety reasons, farmers sometimes cannot be paid directly (Advisor RJIL). *Participant 1* nonetheless points out that farmers mostly receive their payment directly from the jute mill and that they additionally receive higher prices compared to the prices received by traders.

Thus, the biggest opportunity for the improvement of farmers livelihoods originates from jute mills that organise themselves to buy directly from farmers throughout Bangladesh (Advisor RJIL). This organisation is needed due to a diversity of products, which leads to RJIL also buying jute from farmers that live up to 800 kilometres away. Buying directly from farmers is in this case impossible but buying from other jute mills that bought jute directly from farmers is possible. Hence, other jute mills need to be convinced to buy directly from farmers to improve farmers' income throughout Bangladesh (Advisor RJIL).

#### *A new role for traders*

Due to their high number, and due to their importance for the organisation of the jute supply chain, entirely cutting out traders is impossible (CEO Juteborg). Therefore, giving traders another role in the supply chain, such as certifying the jute that arrives directly from the farmers in the jute mill within to the F2F™ model (CEO Juteborg), could be a solution to strengthen farmers general market position, without compromising the needs of traders.

#### *A farmer cooperative*

Different opinions are brought up regarding a farmer cooperative as a solution, and if a third party should be involved in it. *Participant 1* mainly expresses negative opinions towards a farmer cooperative, as 'any sort of organisation, such as a cooperative, is not that successful in Bangladesh's context. The history is not good (...). Farmers would not want to take that extra hassle'. Furthermore, a farmer

cooperative is described as a ‘headache’ to farmers as they are not used to organisations of this nature (Advisor RJIL).

Another opinion is raised by *Participant 3*: ‘I do think that a cooperative would be a good idea. A well-organised cooperative’. *Participant 3* adds that a cooperative would be a lot of work, but that the F2F™ model, in which farmers sell directly to the jute mill in Faridpur, already is a type of a cooperative, but without the drawback of it taking plenty of time, efforts, skills, and resources from the farmers. Instead, different parties plan and organise the initiative. Thus, the involvement of a third party, such as an NGO that helps farmers organise themselves, is described as an option that can be considered as an opportunity to improve jute farmers livelihoods within a cooperative model (Project Manager IBS). An NGO could additionally give access to services, resources, and the market (Project Manager IBS). Also, the government could act as a supporter of a cooperative, by enabling ‘conversations and negotiations of price and of conditions’, between different market actors (Project Manager IBS).

*Participant 2* also speaks positively about the idea of a farmer cooperative: ‘together you can negotiate prices, you can work together to overcome challenges, and you can find new methods and try them out on a bigger scale’. Further, an NGO is seen as a possible aid in a cooperative model, but it was also pointed out, that the cooperative members should remain independent and own their cooperative, and that it should also be governed like a small democracy. Therefore, the involvement of third parties is seen with some scepticism.

#### 6.4.4 Innovative Solutions

##### *Agricultural technology and innovation*

Farmer’s livelihoods could generally be improved through good seed, soil, and technology (Project Manager IBS). Overall, innovation could make jute farming less labour-intensive, less time-intensive, cut down costs, and lastly, also lead to a lower usage of chemical fertilisers (Project Manager IBS). Also, if an innovation proves to be successful, it will lead to higher yield and later to further development:

‘The higher yield will increase the profitability. And then once you have that, then you can start earning more money and reinvest (...)’ (Project Manager IBS).

Furthermore, a natural and cheap agricultural innovation mentioned is duck cultivation, in which ducks are used in the fields to eat the weed around crops and to simultaneously fertilise the land (CEO Juteborg; CANSA Secretariat 2018). This approach could potentially decrease the need for chemical fertilisers and for labour resources needed for weeding (CEO Juteborg). As can be seen in Figure 11, ducks

are currently being used within rice cultivation, but *Participant 2* states that she would love to test the model within jute cultivation as well.



Figure 11. Ducks in a rice field. (CANSA Secretariat 2018). [cansouthasia.net/rice-duck-farming-in-nepal-a-community-based-adaptation-for-combating-climate-change/](https://cansouthasia.net/rice-duck-farming-in-nepal-a-community-based-adaptation-for-combating-climate-change/)

Another potential aid for farmers can be weather apps that warn farmers about extreme weather events, such as heavy rainfall (CEO Juteborg). This could assist them especially when it comes to deciding about the time for harvesting and sowing (CEO Juteborg).

#### *High-quality and sustainable jute products*

The possibility to offer better prices to farmers and to grow the jute industry further, can further be realised through an improved quality and an increased sustainability of different jute products, that are then marketed internationally:

If we can increase the quality of the product we produce, and not just the yarn, I am talking about the crop itself by producing jute in an environmentally friendly way, we can always market it as the sustainable and environmentally friendly product. By marketing jute under that caption (...) we can charge our customers a little bit more than what the price is right now (Advisor RJIL).

We could connect the farmers in Bangladesh to international players that can pay more, that are interested in paying more for products. And (...) then it can trickle down to the whole value chain (Product Manager IBS).

The markets of interest are developed nations, such as Europe and North America, who are open to ‘environmental-friendly products at a premium price’ (Advisor RJIL). Currently, jute is a low-value product, but it has the potential ‘to be a very sustainable product that can replace other products’ (Project Manager IBS). Furthermore, certification, which states the sourcing of the material, is described as crucial, as companies are then able to sell jute at a higher price (CEO Juteborg). Then, one needs to ensure that this profit also trickles down to the farmers (CEO Juteborg). Here, *Participant 1* assures that the higher prices on jute products would encourage jute mill owners to also pay a higher price to farmers for their raw jute.

## 6.5 Future-Outlook

### *The Faridpur region*

The jute industry is currently flourishing and is expected to do so in the future, according to the owners of RJIL (Advisor RJIL). Moreover, as jute mills are run very profitably, RJIL works on expanding their jute production (Advisor RJIL). *Participant 1* emphasises that this expansion would not be done if the jute mill owners would not believe in the future of the jute industry. Additionally, due to the advantageous position of Faridpur, *Participant 2* believes in the potential of further sustainable development in the future, where ‘Faridpur could be a change agent (...), a real role model to other regions and to other countries’, by producing the best quality of the most sustainable material in the world. Moreover, *Participant 1* is convinced that farmers in Faridpur will continue to produce jute, as ‘you have two options, either do jute, or do nothing. So, even if you are making one dollar worth of profit, it is worth cultivating, as you are getting that one-dollar profit’.

Lastly, if the F2F™ model ‘gets very well established in Faridpur’, then it would be a good place to cultivate jute and to produce sustainable jute products in the future (Project Manager IBS). To convince more farmers to sell directly to the jute mill, a change of strategy is planned, where the jute mill is opening purchase points in the open market in Faridpur: ‘instead of them coming to us, we are going to the market’ (Project Manager IBS).

### *Livelihoods of farmers in the future*

The jute prices that farmers receive have already today increased significantly (Advisor RJIL), but a lot of work remains to be done to improve jute farmers livelihoods (Project Manager IBS). The above presented solutions that intend to increase farmers’ income, could in the future further lead to farmers being more independent from certain market actors (CEO Juteborg). Hence, jute farming could become more attractive to younger generations again (Project Manager IBS).

Nonetheless, the challenge of a low income of farmers is likely to remain and needs to be further addressed (CEO Juteborg).

### *Climate change*

One of the biggest challenges for jute farmers, already today and especially in the future, is climate change, according to all interviewees:

Before, nature was not this unpredictable, but right now, it is absolutely unpredictable. We are having rain in the middle of the winter in Bangladesh. We never had this amount of rain in the middle of the winter. We are having a big drought spill in the middle of the monsoon season, when we are supposed to be having floods (Advisor RJIL).

They (the farmers) could see all these storms are heavier, the rainfall is so much worse, the sea level is rising. They can see everything (CEO Juteborg).

They are going to lose more crops; they are going to be more desperate. They are going to be in loans that they cannot pay if they lose their crops (Project Manager IBS).

*Participant 1* adds that within jute farming, fifty per cent of control lies in the hands of the farmer, but the other fifty per cent is under the control of nature. Thus, if the water during the monsoon season comes only ‘fifteen days too early, or fifteen days too late, farmers are bound to suffer’ (Advisor RJIL).

### *Loss of agricultural land*

Additionally, the loss of agricultural land is threatening the viability of jute farming in Bangladesh, because ‘whatever land we have, we have to produce jute on that’ (Advisor RJIL). A problem is here that, due to a lack of enforcement of regulations by the government, urbanisation continues to expand, and the loss of agricultural land continues to grow (Advisor RJIL). Furthermore, agricultural land is lost due to rising sea levels, which brings salt water onto the soil, that most often transforms soil, into dead soil, which results in an inability of the farmers to grow crops (CEO Juteborg). However, hope is given, as researchers argue that certain jute crops can grow in lands that were contaminated by salt water (CEO Juteborg). *Participant 3* adds that the fertility of the soil is decreasing due to a lack of organic matter, which is threatening productivity. This phenomenon is caused by a high usage of chemical fertilisers (Advisor RJIL).

A last problematic aspect is the seed production which takes a long time and prevents agricultural land to be used for other crops. As Bangladesh is suffering from land scarcity, all land needs to be used for productive cash crops and not for seed which can be bought from other countries (Advisor RJIL). An independent seed strategy to increase the quality of seed and to decrease costs, will therefore be difficult to follow in the future (Advisor RJIL).

## 7. Discussion

*This chapter begins by presenting the application of the chosen theories, which is followed by an empirical and theoretical discussion of the main findings from secondary and primary sources.*

### 7.1 Theory Application

The chosen theories provide a thorough theoretical base for this study, whilst especially the *New Institutional Theory* is highly applicable to the empirical context of jute farmers in Bangladesh. Challenges and influences towards jute farmers, as well as potential solutions to improve farmers' livelihoods, are in this thesis categorised and analysed according to the first three levels of the theory. Moreover, the *Agency Theory* proved to be challenging to apply due to the extreme power and knowledge differences between farmer and trader. As a result, the farmer is unable to act in any way different to what the traders expects, and thus, different attitudes and goals are not of interest when studying the relationship, as the trader dictates the terms and conditions. Nonetheless, opportunism as well as bounded rationality are interesting aspects to consider when studying the challenges that jute farmers face due to the jute traders. The *Power Distribution* proved here to be an excellent theoretical extension to the *Agency Theory*.

### 7.2 Main Findings

#### *Cultural influences*

All interviewees speak of norms and perceptions that on the one hand limit the development of the jute industry, but that on the other hand also protect it. Cultural *challenges* often described to limit industry development, are a low level of education, as well as gender bias, which is in line with the findings of Akhter and Sumi (2014). In addition, the interviewees describe the challenging belief that a high usage of chemical fertilisers leads to higher jute yields. On the other hand, authors and interviewees speak of a certain amount of pride to produce jute (Rahman et al. 2017), while one interviewee adds that jute production is seen as something worth protecting, despite the economic concerns (Advisor RJIL). Hence,

the industry is highly affected by cultural institutions, as suggested by Williamson (2000), both positively and negatively, while it was further confirmed that beliefs and perceptions are slow and difficult to change (Advisor RJIL).

An interesting aspect to consider is the fact that someone once must have convinced farmers that chemical fertiliser is a needed tool. At first, this must also have been difficult, as farming norms had to be changed. But nowadays, farmers are highly convinced of chemical fertiliser, which is a perception that, according to the interviewees, needs to be changed, to prevent further ecological damage.

Overall, consent exists among interviewees and authors regarding the fact that education is a needed *solution* to develop farmers' livelihoods and the jute industry (Moniruzzaman et al. 2008; Islam & Alauddin 2012; Rifath 2018), as only through education, beliefs and norms can be challenged and later changed. A concern is here that a higher level of education could also lead to a loss of tradition if many new aspects are taught. Thus, a loss of pride to produce jute could occur if an educational focus lies for example only on economic aspects. Hence, the education should be aiming at protecting the viability of the industry, by for example educating farmers about the positive environmental aspects of jute, and the possibility to receive higher jute prices in the future. Another concern of the author is that only little guidance is given on who exactly is to provide education for farmers and in what way this education can be offered on a regular scale. Thus, the actual implementation of this solution in the nearby future can be questioned.

#### *Governmental influences*

Secondary (Mollah 2011; Helal & Hossain 2013) and primary sources (Advisor RJIL) speak of a high amount of bureaucracy that occurs within governmental institutions, which, according to Helal and Hossain (2013) also leads to an inability of the government to support business and investment. In addition, Mollah (2011) and Islam et al. (2014), define the occurrence of corruption as a barrier to business development. Nonetheless, several positive aspects, such as the government's commitment to sustainability initiatives (Islam et al. 2020; CEO Juteborg), as well as promising policy initiatives aimed at developing the jute industry (Afroz & Islam 2012; Rahman et al. 2017), were found. Moreover, two interviewees argue that the government showed its support for the development of the jute industry, by sending government officials to the workshops in Faridpur (CEO Juteborg; Project Manager IBS). Lastly, it must be emphasised that no active governmental barriers on jute farmers or the jute industry were identified in this study.

A negative sign is that none of the interviewees could think of a functioning policy that actively supports jute farmers, even though several such policies are presented



by secondary sources (Afroz & Islam 2012; Rahman et al. 2017). While assuming that the interviewees are sufficiently familiar with the governmental support that jute farmers receive, a big problem seems to be the actual *enforcement* of policies and regulations. A functioning policy known, on the other hand, includes the support payments directed at jute mills that qualify as exporters (CEO Juteborg; Advisor RJIL). A focus of governmental support thus seems to be on international market actors and less on local jute farmers.

To conclude, the government of Bangladesh shows a willingness to support jute farmers and to develop the jute industry. But to make a positive impact, support policies also need to be actively applied and enforced. Therefore, policymakers are asked to ensure that their support also reaches the farmers, by for example imposing enforcement controls on a farm level. Moreover, governmental institutions should address their bureaucratic structures, with the aim of easier being able to support economic development. Luckily, institutional influences change faster than cultural ones (Williamson 2000) and can thus easier be adjusted to current needs.

Interestingly, no *solutions* to improve farmers' livelihoods are presented by the interviewees, involving the government, whilst several authors present solutions that involve the government as the main initiator (Mondal 2010; Islam et al. 2014; Bhuyan 2019; Rifath et al. 2019). The interviewees focus instead on private actors as drivers of organisational and innovative *solutions*, which could be explained by them being active in the private sector.

#### *Organisational influences*

All interviewees and several authors (Sheheli & Roy 2014; Rifath 2018) state that jute farmers are the weakest actors in the raw jute supply chain. The interviewees further propose an extreme power asymmetry between farmers and traders, which results in traders taking advantage of farmers. Here, authors add that traders even take advantage of jute mills and exporters (Rifath 2018). However, it must also be emphasised that traders facilitate the work of jute mills and exporters, as they collect and deliver the necessary jute volumes (Rifath 2018; Advisor RJIL). Moreover, traders offer a certain service to farmers, through direct payments (Advisor RJIL; CEO Juteborg), transportation, and storage of jute (Rifath 2018).

Nonetheless, traders practise *opportunism* and often do not behave in a way that positively affects farmers, other traders, jute mills or exporters, as they follow their own goals and attitudes, using their knowledge and power. The result is a rather confusing and inefficient supply chain organisation for all actors, but especially for jute farmers, who are never able to receive fair prices. Here, farmers can



additionally suffer from *bounded rationality*, as they do not understand everything the trader says about their jute and its pricing, due to knowledge asymmetry.

Organisational structures change faster than cultural and governmental ones (Williamson 2000). Thus, a thorough organisation that leads to bigger businesses, in which different actors work together instead of against each other, could help lower *opportunism* fast. Here, a *solution* described by both authors (Moniruzzaman et al. 2008; Mondal 2010; Rifath 2018) and two interviewees, includes a farmer cooperative (CEO Juteborg; Project Manager IBS). Further *solutions* include governance mechanisms, such as contracts, that align incentives between different actors (Williamson 2000). Lastly, as businesses also answer to governmental institutions (Williamson 2000), laws and regulations need to be introduced and applied, that positively influence the behaviour of traders.

#### *F2F™ model & Farmer cooperatives*

As statements about the possibility of farmers to sell directly to the jute mills are lacking in secondary sources, the knowledge of this solution needs to be increased. Of course, the F2F™ model still faces challenges due to the farmers' hesitation to sell directly to the jute mill and due to the lack of volume that farmers can provide (Advisor RJIL). But it is nonetheless a *solution* that increases farmers' income and that could fast be implemented by jute mill owners on a smaller scale.

To continue, the discussion of a farmer cooperative proved to be very interesting. While the interviewee based in Bangladesh states that a cooperative would not be a good *solution*, due to negative perceptions of the cooperative model, the two participants based in Sweden state that it would be a good idea. Thus, before any implementation of the suggested *solution* can take place, national perceptions regarding a cooperative need to be changed. As Williamson (2000) states that perceptions are difficult and slow to change, it must be emphasised that it is likely to be very challenging to implement this *solution* anytime soon. Moreover, secondary sources present several positive cooperative results in Bangladesh (Yadoo & Cruickshank 2010; Milovanovic & Smutka 2018), but it is also stated that cooperative *challenges* often seem too big to continue such a model in the long run (Sultana et al. 2020). Here, a common reason for failure is a high involvement of third parties, which often results in an overregulation of the cooperative (Sultana et al. 2020). Nonetheless, the involvement of the government (Islam et al. 2014), or an NGO is seen as helpful for the formation of a farmer cooperative in Bangladesh (Project Manager IBS). As a result, the author questions that a cooperative in the context of Bangladesh really is a 'jointly-owned and democratically controlled enterprise' (Islam et al. 2014, p.1), which raises further concerns about a farmer cooperative being a valid *solution* to improve farmers' livelihoods.

In both models, the role of traders is yet to be decided, but they seem to be needed when it comes to collecting the necessary jute volumes in the F2F™ model. As jute mills lack employees for this task, an option could be to hire jute traders. This would simultaneously lower the fear of farmers to sell to the jute mills, as they would not be actively bypassing traders. Overall, traders' influence and power should not be forgotten when it comes to the F2F™ model and the formation of a cooperative. Both models could lower power asymmetry, help align incentives and thereby lower *opportunism*, but traders need to be heavily considered and maybe even given a role within such an organisation. A concern is the willingness of traders to give up on their personal business to participate in a larger one, in which they cannot use their power and knowledge in an unregulated way. Therefore, different *solutions* on how deal with traders need to be further explored, so that farmers' incomes can be improved without threatening the needs of traders.

#### *Agricultural innovations*

As Bangladesh lacks behind in jute yield per hectare compared to other countries (Sharna & Kamruzzaman 2020), agricultural innovations are needed. As a result, both authors and interviewees speak of agricultural technology and innovation to develop the jute industry and to improve jute farmers livelihoods. But while the authors focus more on R&D that could lead to better seed, fertiliser and jute varieties (Mondal 2010; Rahman et al. 2017; Rifath 2018), an emphasis of all interviewees lies on farming practises that take nature into consideration, by for example applying only natural fertiliser. These suggested practises further offer benefits for the environment, and simultaneously lower farmers' input costs.

#### *Future-Outlook*

The interviewees provide a positive future-outlook, in which private organisations drive higher jute prices, due to an innovation of jute production and jute products, which will then lead to a higher income of jute farmers. Additionally, if farmers see selling directly to the jute mill as a viable option, the power asymmetry between jute farmer and trader will decrease, which ultimately increases their income further. As a result, the attraction of a new generation of jute farmers can easier be ensured. Several authors remain slightly more sceptical, and put an emphasis on higher government involvement, which is needed to develop jute supply chain efficiency (Islam et al. 2014; Rifath 2018) and to increase jute production, yield, and area (Mondal 2010; Rahman et al. 2017; Bhuyan 2019). Thus, without this engagement, positive future developments remain insecure. Lastly, several future challenges are described by both interviewees and authors, such as climate change (Helal & Hossain 2013) and the loss of agricultural land (Mondal 2010), which will threaten jute production more and more in the future.

## 8. Conclusions

*This chapter answers the chosen research questions and offers final conclusions about the jute industry. Lastly, limitations are presented, and combined with suggestions for future research.*

### 8.1 Challenges

As suggested by the findings of this study, jute farmers face a vast number of challenges that negatively affect their livelihoods. To further explore the challenges faced by jute farmers in Bangladesh, the following research question was formed:

*How are jute farmers challenged by their surrounding cultural, governmental, and organisational environment?*

This thesis concludes that jute farmers are partly challenged by their *cultural environment* and fully by their *organisational environment*. They are, on the other hand, not actively challenged by their *governmental environment*.

The author concludes that *cultural challenges* are mainly caused by a low level of education. As a result, farmers are unwilling to accept change and innovation while they firmly hold on to norms that prevent their personal and economic development. However, a positive cultural influence is that jute farming is conducted with pride, which supports its viability. Jute farmers further encounter many *organisational challenges*, caused by knowledge and power asymmetry, which leaves them in near constant debt and as the weakest supply-chain actor. Lastly, jute farmers currently face no *governmental challenges*, but they do not receive any direct support from the government either. Furthermore, the government chooses to ignore challenges that will be increasing in the future, such as the loss of agricultural land. The result of this ignorance will in the future affect farmers negatively.

## 8.2 Solutions

While a lot of challenges are presented in this thesis, this study is not short of suggested solutions. To further explore the solutions presented by authors and interviewees, the following research question was formed:

*How can the cultural, governmental, and organisational environment be changed to improve jute farmers' livelihoods?*

A crucial tool to improve jute farmers' livelihoods is education, so that damaging *cultural* norms can be challenged and changed. Moreover, education could lead to better farming and agri-business practises, lower knowledge and power asymmetry, and thus lower debt. Organisations now need to become active, and offer regular classes, to ensure that jute farmers receive the necessary education. In addition, jute farmers themselves should show initiative to receive and use relevant education by being open-minded towards change and innovation. Further, the *government* needs to ensure that support policies directed at jute farmers are actively applied. In addition, as farmers' livelihoods will be more and more threatened by the loss of agricultural land and climate change, the government needs to publish and exercise policies that protect farmers now, and in the future, so they can continue farming. This would additionally lead to more agricultural security for coming generations. Lastly, *organisational* solutions that result in a different supply chain construct are desperately needed, so farmers can drive profitable agri-businesses. Unfortunately, the solutions presented in this thesis currently face several challenges. A suggestion is therefore to test different organisational models to identify what helps farmers the most, without compromising the needs of other actors. Overall, a bigger organisation of different actors could be helpful to lower power asymmetry, align incentives and drive collaboration.

## 8.3 Final Conclusions

The jute industry produces the most sustainable material in the world, but the industry itself is not sustainable until all actors in it are living secure livelihoods. Thus, different actors within the jute industry need to show a willingness to change and become active by testing or using the initiatives and solutions presented above. As I presented several potential solutions in this thesis, I now hope for direct action to support jute farmers, so Bangladesh can enjoy a sustainable jute industry and the world a sustainable future without the need for plastic products.

## 8.4 Limitations & Future Research

Even though the interviewees showed an excellent understanding of the jute industry and the challenges that jute farmers face, it must be pointed out that none of them is a jute farmer whose economic situation is dependent on selling jute. Therefore, the quality of the primary data can be questioned as jute farmers were not actively involved in contributing to the empirical results of this study. Thus, the author suggests that further research about jute farmers' institutional environment should be conducted on a farm level, to ensure that jute farmers' opinions are included and to receive first-hand data on the livelihoods of jute farmers.

Furthermore, the effects of an implementation of one or several solutions presented in this thesis, such as regular classes given to jute farmers on sustainable farming or business administration, would be interesting to study on a farm level. Lastly, as numerous organisational challenges were identified, and additionally organisational solutions that still face challenging aspects regarding their implementation, further research on such organisational challenges and solutions within the jute industry is needed.

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## Popular science summary

Jute is the most sustainable fibre material in the world, and luckily, awareness about and demand for jute products is growing! In Bangladesh, a developing jute industry could lead to a growth in GDP and a decrease in local poverty. Simultaneously, global sustainability could increase due to more jute products on the market. But unfortunately, the main actors of the jute industry, the jute farmers, are facing tremendous challenges to remain financially stable.

As the jute industry can only develop sustainably if all actors are benefiting from participating in it, jute farmers need to receive more attention and support. This thesis presents the major challenges faced by jute farmers and further offers potential solutions to these challenges. If you want to know how to develop this promising sustainable industry, have a look!

## Acknowledgements

This thesis is dedicated to all proud jute farmers of Bangladesh, who produce the most sustainable material in the world, despite all the challenges that you face.

Firstly, I would like to thank the interviewees of this study, without whom this project could not have been fulfilled. Thank you for your very interesting insights, personal thoughts, and ideas, which I was allowed to share in this study.

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Moreover, I would like to thank my thesis-supervisor Karin Hakelius for her inputs on my study, and the interesting discussions we had about cooperatives in Bangladesh and Sweden!

## Appendix 1

In the downstream raw jute supply chain, many different channels and actors exist (Rifath 2018). This Appendix presents an overview of the most common actors, that buy and sell jute.

### *Farias*

Traders that purchase smaller quantities, so-called Farias, purchase loose jute directly from farmers and sell it then to another trader handling larger volumes (Islam & Moniruzzaman 2017; Rifath 2018). They are often seasonal traders with a rather small business (Rifath 2018).

### *Baparis*

Traders buying from both Farias and farmers are called Baparis. They buy bigger quantities that they either sell to other intermediaries or directly to the jute mills or to exporters (Islam & Moniruzzaman 2017; Rifath 2018).

### *Kutcha balers*

Kutcha balers purchase higher amounts of loose jute from either farmer, Farias or Baparis and then sort the jute based on colour (Rifath 2018). Then, the loose jute is pressed in a bale of raw jut, which weights between 120 kilograms and 150 kilograms (Rifath 2018). The processed jute is then sold to further intermediaries, or to exporters and jute mills (Islam & Moniruzzaman 2017).

### *Pucca balers*

Pucca balers are the intermediaries mainly selling directly to either jute mills or to exporters (Islam & Moniruzzaman 2017). They buy from either Baparis or Kutcha balers, and conduct further sorting and processing of the jute, by turning jute into pucca bales (Rifath 2018). These bales are pressed very tightly and pose a lot of work for jute mills to entangle, which is why they are mainly bought by exporters (Rifath 2018).

### *Aratdars*

Additionally, so-called Aratdars, which are the biggest traders in the supply chain, operate with different traders, balers, and mills. They are commission agents with

fixed commissions and act as a connection between supply chain actors (Islam & Moniruzzaman 2017). Rifath (2018) speaks of private mill agents that operate between farmers and mills, having direct communication with farmers and working for commissions.

#### *Government centres*

Further, a few government centres exist that buy directly from farmers or Baparis at standard price and then sell jute to jute mills or to exporters (Rifath 2018). A problem is here that farmers often do not meet procurement requirements, which limits them from selling directly to the government and receiving fair prices (Mondal 2010).

#### *Exporters and jute mills*

The exporters, selling to foreign buyers, or the jute mills, which conduct further processing, are then said to be the end of the raw jute supply chain (Rifath 2018).

The most common construct of a raw jute supply chain is pictured in Figure 11. As Aratdars and government centres are less common supply chain actors, they are not included in Figure 11 (Rifath 2018). It is emphasised that certain intermediaries sometimes also do not occur in a supply chain, and that some supply chains consist of less actors (Islam & Moniruzzaman 2017; Rifath 2018).



Figure 12. Standard jute supply chain channel. (Rifath 2018). <http://hdl.handle.net/10361/11045>

## Appendix 2

This Appendix presents additional information about the Farmer-to-Factory™ Jute Supply Chain Co-Creation Workshops, held by IBS and Juteborg.

The workshops had the purpose of exploring ‘challenges and solutions connected to climate change, environmental impact productivity, and incomes of farmers’ (Inclusive Business Sweden et al. 2022, p.13). To fulfil this purpose, jute supply chain actors and supporters, such as jute farmers, traders, the RJIL jute mill owner, project representatives and development organisations were gathered in the factory of RJIL in 2019 (Inclusive Business Sweden et al. 2022).

During the workshops, the different stakeholders were asked to identify common challenges in the jute supply chain as well as to present their views on selected solutions from the F2F™ model (Inclusive Business Sweden et al. 2022). Here, it was further intended to validate the solutions from the F2F™ model, and to identify partners that could support the implementation of the solutions (Inclusive Business Sweden et al. 2022).

## Appendix 3

### Background Questions

- What is your position in the jute industry?
- Are you in direct contact with jute farmers?
- What makes jute farming in Faridpur different from jute farming in other parts of Bangladesh?
- How would you describe the situation of jute farmers in Faridpur?
- Is jute farming profitable for jute farmers?
- How do jute farmers perceive their profitability?

### Theoretical Questions

- Are there cultural barriers that challenge jute farmers?
- Is there cultural support for jute farmers?
- Does the government challenge jute farmers?
- Does the government support jute farmers?
- Is there a specific policy that supports or challenges jute farmers?
- Are jute farmers the weakest market actors in the jute industry?
- How would you describe the relationship between farmers and traders?
- What do you consider to be challenging aspects of the jute market?
- Are there any sources of market support?
- Do you consider farmer cooperatives to be a potential solution?
- Should NGOs or the government be involved in farmer cooperatives?
- What other solutions do you see to improve farmers livelihoods?

### Future-Outlook Questions

- What do you consider to be the biggest challenges for jute farmers?
- What do you consider to be the biggest source of support for farmers?
- What do you consider to be the biggest opportunity for the support of farmers?
- What do you consider to be the biggest opportunity for the jute industry?
- Where do you see jute farmers in Faridpur in the future?
- Where do you see the jute industry Bangladesh in the future?
- Where do you see the jute industry in Faridpur in the future?

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