

Business Idea : Paper (Produced Using Hemp Stalks)

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Abstract:- As a sustainable and greener substitute for conventional paper products, hemp paper has the potential to revolutionise the paper industry. Hemp paper, which is made from hemp plant fibres, is more environmentally friendly than conventional paper made from trees and is by nature strong and resilient. Hemp paper offers a special business opportunity in light of the rising demand for eco-friendly products around the world and growing awareness of the negative environmental effects of traditional paper production. This abstract examines the advantages of hemp paper, the market's current state, and the difficulties that must be overcome to turn hemp paper into a lucrative business venture. Hemp paper has the potential to revolutionise the market by using cutting-edge production methods, addressing consumer concerns, and raising market awareness.

Keywords:- Hemp Paper, Eco-Friendly, Awareness, Business Opportunity.

I. INTRODUCTION

Cannabis Sativa cultivars specifically bred for industrial or therapeutic use are referred to as hemp industrial hemp in botany. It can be used to create a variety of goods. Hemp, also known as industrial hemp, is a non-narcotic cousin of the drug cannabis or marijuana and a member of the Cannabis Sativa L plant family, which also includes marijuana. Hemp paper is a type of paper made entirely or mostly from hemp fibres. Without first learning about its history, it can be challenging to understand how hemp paper is made because the process has evolved over the years. Due to its connection to plants, hemp was illegal in a large portion of the world in the twentieth century. Nature's answer to every issue raised by the use of wood paper is hemp. Hemp has a significantly higher capacity for renewal than trees. Additionally, the amount of paper produced from one acre of hemp is equivalent to the amount produced over the course of 20 years from 4 to 10 acres of trees. The greater cellulose content of hemp stalks is the primary cause of this productivity. For making paper,

cellulose is the primary material. Hemp stalks can contain up to 85% of the cellulose that is present in wood, compared to 30% in wood. Since nearly 70% of wood is non-cellulose, the use of chemicals to remove the non-cellulose contents is significantly higher in the case of wood. Another advantage of using hemp over wood is that it takes trees 20 to 80 years to mature. In contrast, hemp is ready for use in just 4 months. Unlike wood paper, hemp does not yellow and does not easily crack. Additionally, hemp paper is a great deal more resilient than paper made from wood pulp. Evidence of hemp paper's durability can be found in ancient artefacts. A natural alternative to the specialised acid paper used to preserve important documents is hemp paper.

➤ *Research Questions*

- What is the current demand for hemp paper products in the market and how is it projected to grow in the future?
- What are the potential legal and regulatory challenges that may arise when starting a hemp paper business and how can they be addressed?
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➤ *Statement of the Research Problem*

The goal of the research is to identify and remove any obstacles standing in the way of hemp paper becoming a successful, long-lasting industry. To achieve this, it will be necessary to investigate cutting-edge production techniques that lower costs and boost the quality of hemp paper, increase consumer awareness of the advantages of using hemp paper, and create marketing plans that effectively convey the product's distinctive selling points.

II. REVIEW OF LITERATURE

➤ *Industrial Hemp Fibers: An Overview*

By João P. Manaia I, Ana T. Manaia and Lúcia Rodrigues

This review is a comprehensive literature review on hemp fibers. It includes hemp fibers' chemical and mechanical properties, surface modifications, hybrid composites, as well as current and future applications.

➤ *Hemp as a potential raw material toward a sustainable world*

By A T M Faiz Ahmed, Md Zahidul Islam, Md Sultan Mahmud, Md Emdad Sarker, MdReajul Islam

In this essay, hemp is discussed as a very promising renewable resource, along with its potential applications in the paper, textile, composite, biofuel, and food industries. Due to its versatility, quick turnaround time, low capital requirement for cultivation, potential for carbon-negative transformation, and simplicity in carbon sequestration, *Cannabis sativa* L. (hemp) has drawn a lot of attention.

➤ *Benefits of Cultivating Industrial Hemp (Cannabis sativa ssp. sativa) - A Versatile Plant for a Sustainable Future*

By Mausum Kumar Nath

The essay describes how the hemp plant is not only a treasure for industry but also a respectable plant for ecologically sound farming practises. The advantages of industrial hemp cultivation will improve the socioeconomic standing of farmers all over the world and may even significantly raise the GDP per capita of countries. The market's demand for the plant's bio-based products, which will aid in the plant's emergence as a deserving sustainable crop, will have a significant impact on its future.

➤ *Industrial Hemp (Cannabis sativa subsp. sativa) as an Emerging Source for Value- Added Functional Food Ingredients and Nutraceuticals*

By H. P. Vasantha Rupasinghe, Amy Davis, Shanthanu K. Kumar, Beth Murray and Valtcho

D. Zheljzkov In addition to highlighting gaps in our current understanding and potential directions for future research, this review aims to compile recent advances in the science of industrial hemp, with regard to its use as value-added functional food ingredients and nutraceuticals and its health benefits. Industrial hemp is a highly valuable plant with numerous uses for the global food chain.

➤ *Applications of hemp in textiles, paper industry, insulation and building materials, horticulture, animal nutrition, food and beverages, nutraceuticals, cosmetics and hygiene, medicine, agrochemistry, energy production and environment*

By Grégorio Crini, Eric Lichtfouse, Gilles Chanet, Nadia Morin-Crini

The conventional and novel uses of industrial hemp are presented and discussed in this review. Clothing, fabrics, papers, cordages, and construction materials have all been made from hemp, a fibre plant. Hurds, a waste by-product of the fibre industry, were used for animal bedding, seeds for human nutrition, such as flour, and oil for a variety of uses, including cooking and cosmetics. Throughout human history, hemp has also been a significant crop for the production of medicine. Materials for insulation and furniture, automotive composites for interior applications and vehicle parts, bioplastics, the jewellery and fashion industries, animal feed and animal bedding, and the production of energy and fuel are some of the more recent applications.

➤ *Exploring the Marketing Potential of Hemp-based Paper Products*

By Alan D. Smith

The paper focuses on creating a practical marketing strategy. Future product lines for Hemisphere, particularly those centred on its paper-based goods. As the government of the United States loosens its regulations due to the low marijuana content of hemp, more and more farmers are switching to its production. It represents a significant business opportunity as a new market for green, environmentally friendly products is quickly emerging and becoming more popular with consumers.

III. SUMMARY OF REVIEW

The literature review indicates that due to the high quality and sustainability of hemp fibres, there is growing interest in using them to make paper. According to studies, hemp paper is more sustainable and kinder to the environment than conventional paper made from trees. Hemp paper has a lot of benefits, but the industry is still facing a lot of obstacles.

The lack of infrastructure for hemp production and processing is one of the major issues, which can make it challenging for companies to source raw materials and increase production. In addition, there are still issues with law and order, such as limitations on hemp production and processing in some areas.

Additionally crucial factors for a successful hemp paper business startup are branding and marketing. Businesses can distinguish themselves from rivals and build strong brand identities by having a clear understanding of the target market and employing effective marketing strategies.

Last but not least, there are financial rewards and risks to take into account when starting a hemp paper business. Although the industry has a lot of room for expansion, there are some questions about pricing and market demand. To reduce risks and guarantee long-term success, businesses must carefully consider these factors and create a solid business plan.

Overall, the review of the literature indicates that there are numerous opportunities for the launch of a successful hemp paper company, but it is crucial to carefully consider the difficulties and devise a plan of action for handling them.

➤ *Identification of Research Gap*

The creation of scalable, cost-efficient production techniques that preserve the product's high quality and sustainability may fill the research gap this paper has identified. This might entail finding ways to minimise waste and boost manufacturing efficiency as well as optimising the pulping and refinement of hemp fibres. To make hemp paper more competitive with conventional paper goods, research may also be needed to improve its qualities like strength, durability, and printability.

➤ *Research Methodology Research Objective*

- To evaluate the market demand and feasibility of producing and selling hemp based paper products
- To analyse the competition in the market and identify opportunities for differentiation
- To assess the economic viability of the business
- To determine the best production processes and materials for producing high quality hemppaper and
- To develop a strategic plan for marketing and distribution of the products.

➤ *Research Design*

- Research Design: Exploratory and descriptive research designs were used in the study.
- Sample size - 5 countries
- Time frame - Between 2020 and 2022 is the timeframe.
- Sources of data: Secondary data from – Google scholar, Research gate

➤ *Hypothesis*

- There is a considerable market opportunity for hemp paper companies that can set themselves apart from traditional paper products and successfully market their goods to environmentally conscious consumers as the demand for sustainable paper products is rising.
- The legal and regulatory climate for hemp cultivation and processing is improving, and as a result, the price and accessibility of raw materials for the production of hemp paper will decrease, making it simpler and more affordable for businesses to enter the industry.
- An increase in consumer awareness of the harmful effects of conventional paper products on the environment, coupled with the environmental benefits of hemp paper, will cause a shift towards more environmentally friendly paper products, such as hemp paper. The demand for hemp paper products will increase as a result of this trend, opening up new business opportunities.

➤ *Expected outcome*

By looking at its anticipated results, the paper seeks to analyse the viability of a hemp paper business. Due to the rising demand for environmentally friendly and sustainable products, the hemp paper industry has experienced significant growth in recent years. As a result, starting a hemp paper company can be a successful business venture for those seeking to break into the industry.

- Sustainability in the environment: Hemp paper is an environmentally responsible and sustainable substitute for conventional paper made from wood pulp. Businesses can contribute to lowering their carbon footprint, reducing water use, and reducing deforestation by using hemp paper.
- Hemp plants take in more carbon dioxide from the atmosphere as they grow than other types of crops, which results in greater carbon sequestration. Producing hemp paper can therefore aid in lowering carbon emissions and reducing the effects of climate change.
- Economic Benefits: The production of hemp paper can result in the creation of jobs and the generation of income for farmers, processors, and other supply chain participants. The hemp paper market has the potential to significantly impact the world economy as the demand for eco-friendly products rises.
- Innovation in Products: Hemp paper can be used to make a variety of goods, including packaging materials, textiles, and printing paper. Businesses that make hemp paper can help create new sustainable products that can address societal and environmental problems by encouraging product innovation.
- Production Effectiveness: As long as businesses continue to invest in R&D, hemp paper production effectiveness is anticipated to increase. In addition to looking at potential innovations that might result in more efficient and cost-effective production processes, this paper also looks at the current production techniques. It demonstrates how a new hemp paper enterprise can take advantage of these developments to boost output, cut costs, and enhance product quality.
- In general, hemp paper holds great promise for advancing environmental sustainability, reducing climate change, and spurring economic growth. We can work towards a more resilient and sustainable future by supporting sustainable practises and investing in the hemp paper industry.

IV. INDUSTRY ANALYSIS

In 2021, the advertise for mechanical hemp was esteemed at USD 4.13 billion, and from 2022 to 2030, it is expected to extend at a CAGR of 16.8%. Worldwide request for mechanical hemp from application businesses, counting the nourishment and refreshment, individual care, and creature care divisions, is what is driving the advertise. As a result of the COVID- 19 pandemic's financial subsidence, which has diminished fabricating action, the worldwide showcase is as it were encountering humble development. The showcase has thus endured a disastrous misfortune.

Geographically, North America is anticipated to dominate the global hemp paper market as a result of the region's expanding legalisation of cannabis and hemp farming. Since many of the nations in the region have strict regulations regarding the use of non-sustainable paper products, Europe is also anticipated to be a significant market for hemp paper.

Nevertheless, despite the hemp paper industry's potential for growth, there are a number of obstacles to overcome. The lack of technology and infrastructure for industrial-scale hemp paper production is one of the biggest obstacles. Furthermore, there is still a dearth of knowledge and instruction regarding the advantages of hemp paper, which may prevent its widespread use in some markets.

By type, the hemp fibre segment is projected to account for the largest market share during the forecast period. The hemp fibre segment is projected to dominate the market during the forecast period. Hemp has two types of fibres: bast (outer long fibres) and hurds (inner short fibres).

Hurds, or the short fibres, are about 0.5 mm long and account for 70–80% of the hemp stalk. They are employed in the construction, furniture, livestock, agricultural, and automotive industries, as well as in bedding for pets. As more people learn that hemp fibres can be used to create biofuels and bioplastics from a renewable source, the demand for these fibres is expected to rise globally. The market for hemp paper is anticipated to grow at a 36.90% CAGR from 2022 to 2029. Data Bridge Market Research's report on the hemp paper market provides analysis and insights into the various factors that are anticipated to be present during the forecast period as well as their effects on the market's growth. Rapid urbanization is accelerating the market expansion for hemp paper. Based on the source, type, and application, there are different segments of the hemp paper market. Utilizing the growth within the various segments to discover the various growth factors anticipated to be present across the market, you can develop various strategies to assist in identifying key application areas and the differences in your target markets.

➤ *On the Basis of Source, the Hemp Paper Market is Segmented into Organic and Conventional*

- On the basis of type, the hemp paper market is segmented into stationery, filter paper, and cigarette paper.
- On the basis of application, the hemp paper market is segmented into stationary, tea bags, filter paper, bible paper, blending and others.

➤ *Hemp Industry in India*

The global industrial hemp business has grown significantly over the past few years as a result of regulatory easing in many different nations. We look at the potential for developing a hemp-related business in India.

➤ *Market Gap*

- Very little of India's potential for hemp production is being used.
- More than 20,000 industrial uses for hemp exist, including those for textiles and fibres, fuel, paper, building materials, plastic, proteins, and pharmaceuticals.
- Can be grown in more than 60% of Indian districts.
- Uses 50% less water than cotton, aids in the removal of heavy metals and pesticides from the soil, and has the capacity to absorb significant amounts of CO₂ from the atmosphere.
- In the past three to four years, hemp-derived products have seen a significant increase on international markets.

➤ *Market Size*

2019 saw a market value of \$4.6 billion for industrial hemp worldwide. Currently, the Indian market is worth less than \$1 million (roughly 7 crores INR), according to industry insiders.

➤ *Players*

Trade Associations

- Indian Industrial Hemp Association: Awarded funding totalling Rs. 1,100 crore and 1,000 ha of pilot cultivation land in Uttarakhand.
- Hemp Foundation

V. FINDINGS

- As consumers become more aware of the negative effects that traditional paper products have on the environment, there is an increasing demand for sustainable paper products, including hemp paper.
- The hemp paper market is still in its early stages, and businesses looking to break into it face many obstacles, including a lack of infrastructure for processing and production, obstacles arising from laws and regulations, and risks associated with their investments.
- The market, however, also offers enormous opportunities for companies that can set themselves apart from conventional paper products, create cutting-edge, sustainable production processes, and successfully market their goods to environmentally conscious customers.
- In general, consumer attitudes towards hemp paper products are favourable, and many consumers are willing to pay more for products that are more environmentally friendly. To succeed in the market, businesses must still be able to compete on both price and quality.
- The hemp paper industry has a lot of room for innovation, including the creation of new manufacturing techniques, the use of substitute fibres, and the development of new product lines and applications.

Overall, the results of the research on the hemp paper industry suggest that, even though the sector is still in its infant stages, there are numerous opportunities for businesses to prosper through the development of creative and sustainable production techniques, successful product marketing, and exploitation of the expanding market for environmentally friendly paper products.

VI. LIMITATIONS OF RESEARCH

- **Limited data:** Because the hemp paper industry is still in its infancy, it's possible that there isn't much knowledge about consumer trends, market trends, or industry best practises. This can make it difficult to draw firm conclusions or make accurate projections about the industry.
- **Lack of diversity in sample:** Depending on the specifications of the study, the analysis might only include a small sample of customers or businesses. Because of this, it may be harder to generalise the results and they might not accurately represent the variety of perspectives and experiences within the sector.
- **Reliance on self-reported data:** A significant portion of the data gathered for studies on the hemp paper industry may be based on self-reported questionnaires or interviews, which may be skewed or inaccurate.
- **External factors:** There may be external factors that have an impact on the hemp paper industry, though they are outside the purview of this study. These could be adjustments to legislative requirements, modifications to consumer behaviour, or unexpected effects of the economy on the industry.
- **Time sensitivity:** Because the hemp paper market is expanding so quickly, research findings could quickly become outdated as new rivals emerge, new technologies are developed, and consumer preferences change. Research into the hemp paper industry may therefore only be pertinent for a limited period of time.

VII. SCOPE FOR FUTURE RESEARCH

- **Better production techniques:** Hemp paper can now be produced in more efficient and economical ways.
- **Market expansion:** examining potential for extending the reach of hemp paper products and identifying new market opportunities.
- **Product innovation:** Creating fresh, cutting-edge hemp paper products to satisfy changing consumer demands.
- **Sustainability:** Investigating how to lessen the environmental impact of producing hemp paper's carbon footprint.
- **Competition analysis:** Tracking the industry's competition and locating opportunities for improvement and differentiation
- **Consumer behavior:** Conducting research on consumer behavior and preferences, and using this information to guide product development and marketing strategies.

- **Supply chain management:** Evaluating the current supply chain for hemp paper and finding ways to improve its efficiency and sustainability.
- **Legal and regulatory environment:** Monitoring the legal and regulatory environment for hemp-based products and advocating for favorable policies to support the industry.

These areas of research could help the hemp paper industry to improve its operations, remain competitive, and meet the changing needs of consumers.

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VIII. CONCLUSION

In conclusion, businesses looking to enter India's sustainable paper market have a sizable opportunity thanks to the hemp paper market. Even though the market is still developing, there is a rising demand for environmentally friendly goods, such as paper made from hemp fibres. Businesses must also be able to differentiate themselves from traditional paper products, develop environmentally friendly production methods, and market their products to consumers who share their concern for the environment. Although the Indian hemp paper market faces many challenges, there is still a lot of room for innovation and growth. Other paper mills must modify their machinery to produce more hemp paper if we don't want to run out of trees to cut down. We want to grow into more products after we have a regular income in our primary product-that is paper.

➤ *Figures*

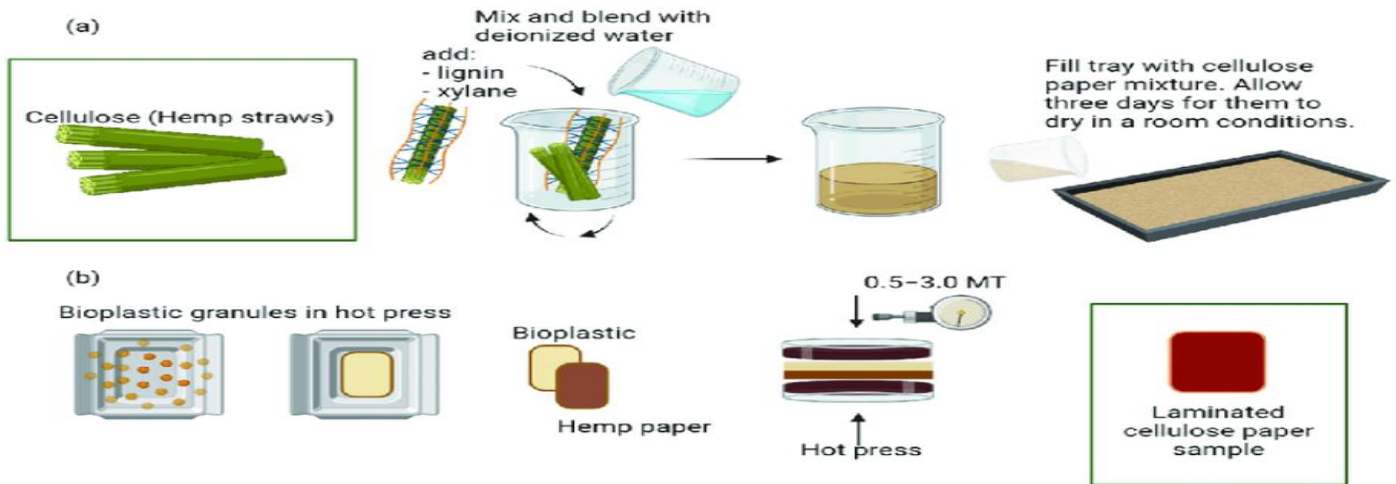


Fig 1 Scheme of (a) Hemp Paper Preparation, (b) Paper Lamination Process

Source: https://www.researchgate.net/figure/Scheme-of-a-hemp-paper-preparation-b-paper-lamination-process_fig1_362915246

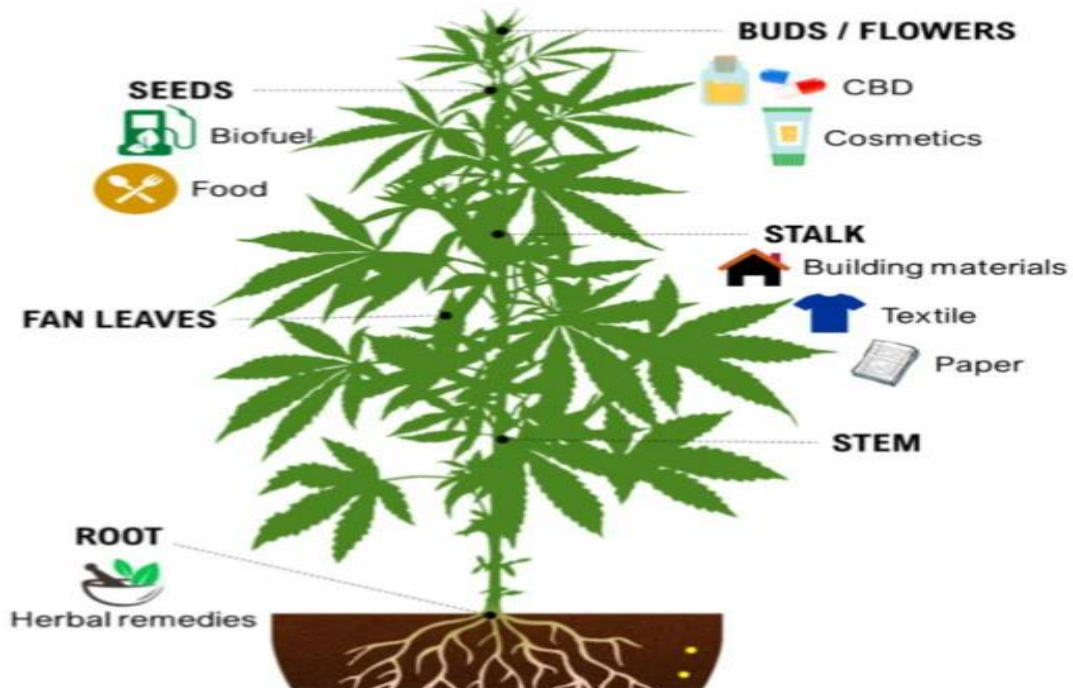


Fig 2 Some Industrial Properties of Cannabis

Source: <https://www.mdpi.com/1422-0067/22/11/5671>



Fig 3 Industrial Hemp Market

Source: <https://www.gminsights.com/industry-analysis/industrial-hemp-market>

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