



**HIMALAYAN HEMP®-HIGH IMPACT
CONSULTING**

HEMP AND THE CIRCULAR ECONOMY IN INDIA: A COMPREHENSIVE REPORT

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INTRODUCTION AND OVERVIEW

Hemp is uniquely positioned to support India's circular economy and sustainability goals by enabling zero-waste product development from fiber, seeds, and stalk.

With high-value applications spanning textiles, nutrition, construction, and bioenergy, hemp's multipurpose use drives rural income, climate resilience through carbon sequestration, and fosters a new green industrial ecosystem.

This report details the full hemp value chain, market projections, regulatory landscape, social impact, innovation, and policy recommendations to scale scalable circular economy models by 2030 and beyond.



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Full Utilization of Hemp Plant in Circular Economy

Fiber Applications

- Textiles & Apparels: Sustainable alternatives to cotton and synthetics
- Eco-friendly Construction: Hempcrete and sustainable building solutions
- Bioplastics & Composites: Renewable materials for packaging and automotive

Seed Applications

- Food Products: Oils, protein powders, flours, and snacks
- Nutraceuticals: Wellness supplements and health-focused products
- Animal Feed: From processing byproducts, ensuring further circularity

Stalk & Hurd Applications

- Food Products: Oils, protein powders, flours, and snacks
- Nutraceuticals: Wellness supplements and health-focused products
- Animal Feed: From processing byproducts, ensuring further circularity

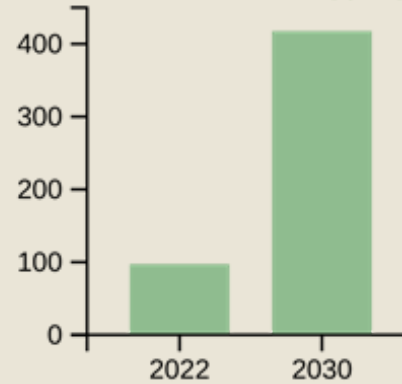


Market Landscape & Value Chain

↑ Market Size & Growth

- **Current Market Value:** \$97.3 million (2022)
- **Projected Value:** \$417.6 million (2030)
- **CAGR:** 20%
- **Market Share:** Fiber dominates, seeds & oils fastest-growing

Market Growth (\$M)



● Export Potential

- **Global Positioning:** Rising as global supply
- **Key Markets:** Europe, North America, Asia
- **Driving Force:** International demand for green-certified materials

↔ Cultivation Regions

- Uttarakhand : Leading state
- Other States: Himachal Pradesh, Madhya Pradesh, Manipur and Uttar Pradesh
- Regulation: 0.3% THC limit nationwide and no limit THC seeds for himachal Pradesh designated medical purposes and research labs

⚙ Supply Chain Dynamics

Aggregators & Cooperatives



Processors



Brands

MSME startups spearheading decentralized processing

Environmental Benefits & Carbon Impact

Water Conservation

- Hemp uses 50-70% less water than cotton
- Crucial for water-stressed regions in India

Reduced Pesticide Use

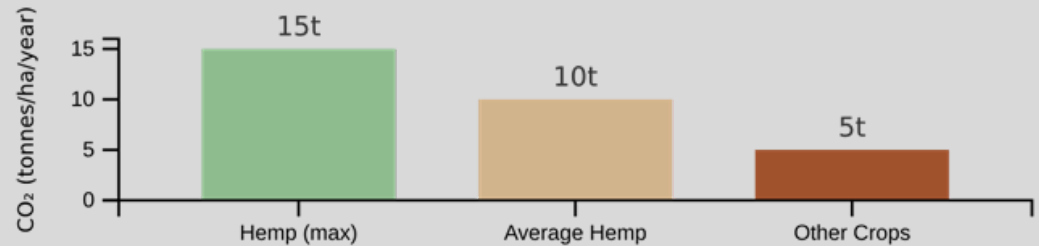
- Negligible pesticide requirements
- Healthier ecosystems and reduced runoff

Soil Health Enhancement

- Phytoremediation improves soil health
- Supports crop rotation and land restoration

Carbon Sequestration

- Hemp can sequester 8 to 15+ tonnes of CO₂ per hectare annually



Carbon Credit Integration

- Indian regulations now permit carbon credits from hemp projects
- New climate financing stream for farmers
- Incentivizes sustainable agricultural practices

Social Impact & Rural Development

Employment Generation

Hemp cultivation, processing, and product management create diverse employment opportunities across all stages of the value chain in rural areas, providing stable income sources

SHGs & Cooperatives

Many Self-Help Groups and cooperatives, particularly women-led ones, are actively involved in the hemp industry. These groups foster rural entrepreneurship and ensure equitable income distribution.

Economic Resilience

Hemp-based value chains contribute to the economic resilience of agricultural communities by providing diversified income streams, reducing vulnerability to market fluctuations, and supporting local economies.



Rural Empowerment

Hemp cultivation fosters rural entrepreneurship and strengthens local economies, contributing to the overall economic resilience of rural communities across India.

Key Impact Areas

- Job creation across all value chain stages
- Support for women-led SHGs and cooperatives
- Enhanced rural economic resilience

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Innovations & Product Development



Advanced Materials

- **Bioplastics:** Renewable alternatives for packaging
- **Hempcrete:** Sustainable construction material
- **Automotive Composites:** Lightweight, durable parts

Nutraceuticals & Wellness

- **Ayurvedic Blends:** Traditional medicine applications
- **Protein-Rich Foods:** Plant-based nutrition
- **CBD Products:** Wellness solutions (THC-compliant)

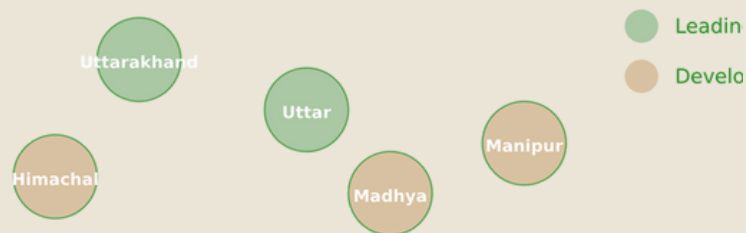
Tech-Enabled Circularity

- **Blockchain:** Supply chain traceability
- **Remote Sensing:** Carbon MRV monitoring
- **AI Genetics:** Crop improvement technologies



Regulatory Landscape & Challenges

Regulatory Framework



- **Uttarakhand & Uttar Pradesh:** Pioneering policies with clear THC standards
- **Other States:** Developing policies (Himachal Pradesh, Madhya Pradesh, Manipur)
- **Central NDPS Act:** Sets nationwide THC limit at 0.3% for legal cultivation

Key Challenges

Fragmented Markets–Disjointed markets and regulatory ambiguity hinder farmer participation

Seed Quality–Inconsistent access to high-quality seeds requires further R&D investment

Processing Infrastructure–Insufficient infrastructure for decentralized processing limits efficiency

Consumer Awareness–General lack of public understanding requires education and marketing

Infrastructure Gaps

- Aggregators and cooperatives need improved connections between farmers and processors
- MSME startups require better access to capital and technology

Case Studies & Success Stories



Canvaloop

Business Model

Specializes in converting hemp stalk waste into textile fiber

Innovation

Transforms agricultural waste into valuable resource
Provides eco-conscious fashion brands with traceable supply chains

Circular Impact

Creates a closed-loop system where waste from one process becomes input for another



Indian Hemp Store

Business Model

Full-stack platform connecting farmers, processors, and consumers

Innovation

Digital marketplace for ethical hemp products
Transparent supply chain tracking from farm to consumer

Circular Impact

Promotes ethical consumption and supports farmer income through direct connections



BOHECO

Business Model

Corporate hemp farming and wellness sector focus

Innovation

Integrated farming and processing operations
Robust supply chain engagement with wellness brands

Circular Impact

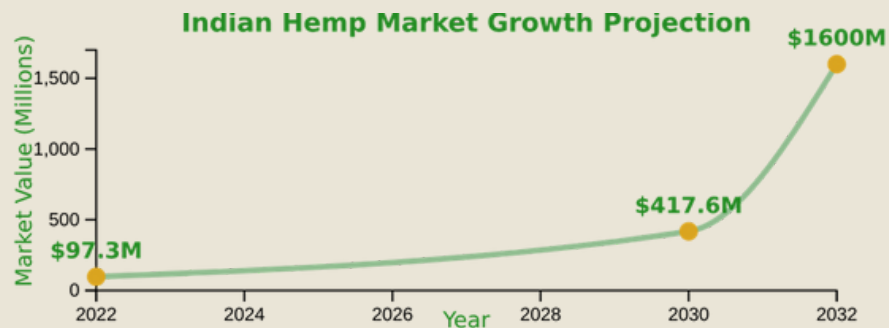
Creates local employment through corporate farming and processing initiatives

Innovative Indian hemp enterprises driving circular economy models

These enterprises demonstrate how hemp can be integrated into circular economy models, creating sustainable business opportunities across India

Future Outlook & Recommendations

Market Projections



- Market value to exceed \$1.6 billion by 2032
- Driven by innovations in bioplastics, sustainable textiles, and green construction
- Expansion of carbon credit markets rewarding India's low-carbon hemp production
- Technology clusters driving breakthroughs in crop genetics and process automation

Key Recommendations

- **Align state and central regulations** for hemp cultivation and processing
- **Invest in farmer education** on hemp agronomy and circular value chains
- **Promote decentralized processing units** to reduce costs and increase rural employment
- **Facilitate MSME access** to capital, technology, and export markets
- **Integrate hemp carbon projects** into India's carbon markets
- **Foster social inclusion** through women's entrepreneurship and SHGs

Curious to Know more about Hemp and its Opportunities?



Connect with **Himalayan Hemp®** and **High Impact Consulting** to explore unparalleled hemp opportunities and secure expert consultation for your sustainable Hemp ventures.