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Sustainability in Cotton & Cottonseed Supply Chain



5th SEA -AICOSCA Cottonseed, Oil and Meal Conclave – 2024
12th -13th July, 2024, Ahmedabad, (INDIA)

Harvesting Sustainability: Nurturing Growth in Cottonseed, Oil & Meal

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Regional Head Veg oil Solidaridad and General Secretary, Asian Palm Oil Alliance (APOA)

13th July, 2024

SOLIDARIDAD: PIONEER ORGANIZATION IN SUSTAINABLE SUPPLY CHAIN DEVELOPMENT SINCE 1969

WE WORK THROUGHOUT THE WHOLE SUPPLY CHAIN TO MAKE SUSTAINABILITY THE NORM

OVER 55 YEARS
OF EXPERIENCE IN WORKING TOWARDS PROMOTION OF SUSTAINABILITY SOLUTIONS

WORKING IN 52 COUNTRIES WORLDWIDE

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FOUNDERS OF FAIR TRADE

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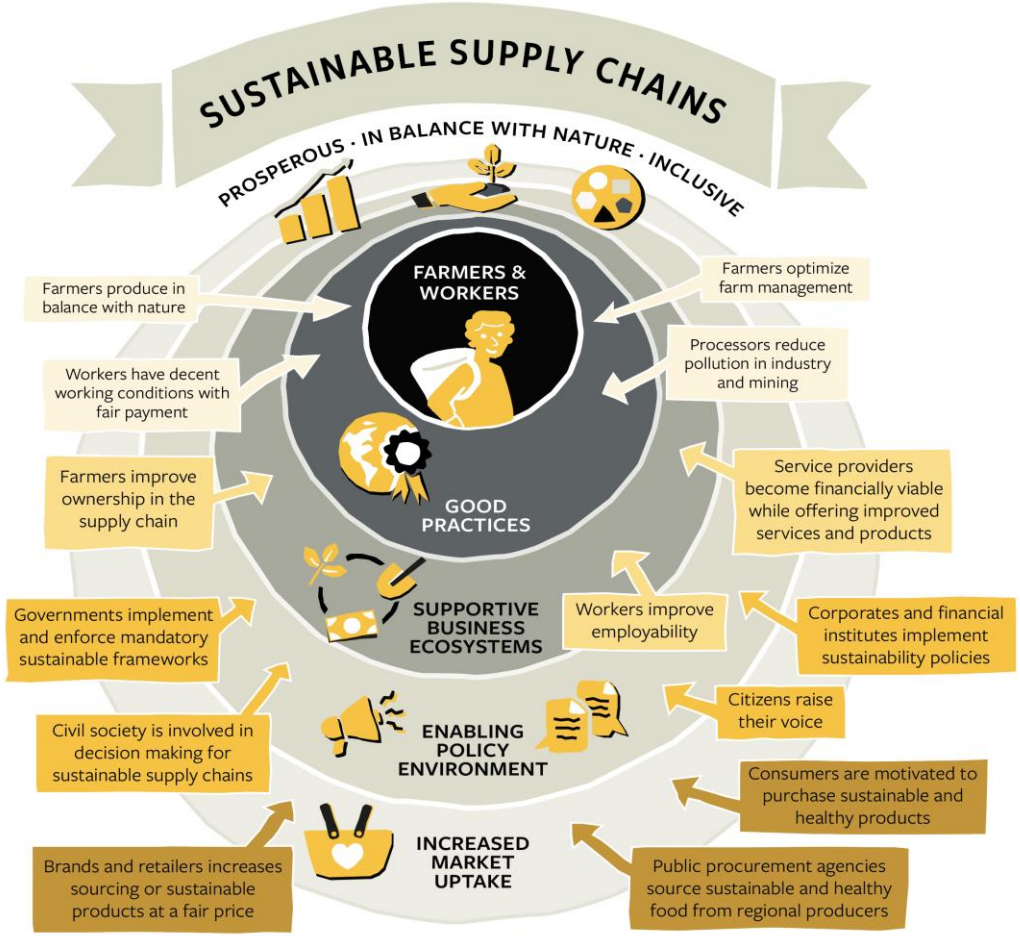
IMPLEMENTATION STRATEGY

SUSTAINABLE SUPPLY CHAINS THROUGH FOUR INTERCONNECTED LEVELS



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- Aquaculture
- Castor
- Cotton
- Dairy and Livestock
- Fruits and Vegetables
- Gold (Minerals)
- Leather
- Medicinal Plants
- Palm Oil
- Sugarcane
- Soy
- Tea

Four Coherent Intervention Strategies

GOOD PRACTICES	SUPPORTIVE BUSINESS ECO-SYSTEM	ENABLING POLICY ENVIRONMENT	MARKET UPTAKE
Regenerative farming in 1.4 million ha of land	Disrupt existing supply chains with farmer-owned business	Regional cooperation on sustainable trade	Farm to fork Traceability through soli-trace
Decent work for 1 million workers	Affordability, availability and accesibility of suitable technologies for climate-smart farming	Fair data movement for farmers right over their own data	Fair payment for Eco-system services by the farmers
Pollution prevention at the source	Create 100,000 rural jobs(mainly women)	Improve governance of workers & smallholders organisations	Inclusive supply chain development

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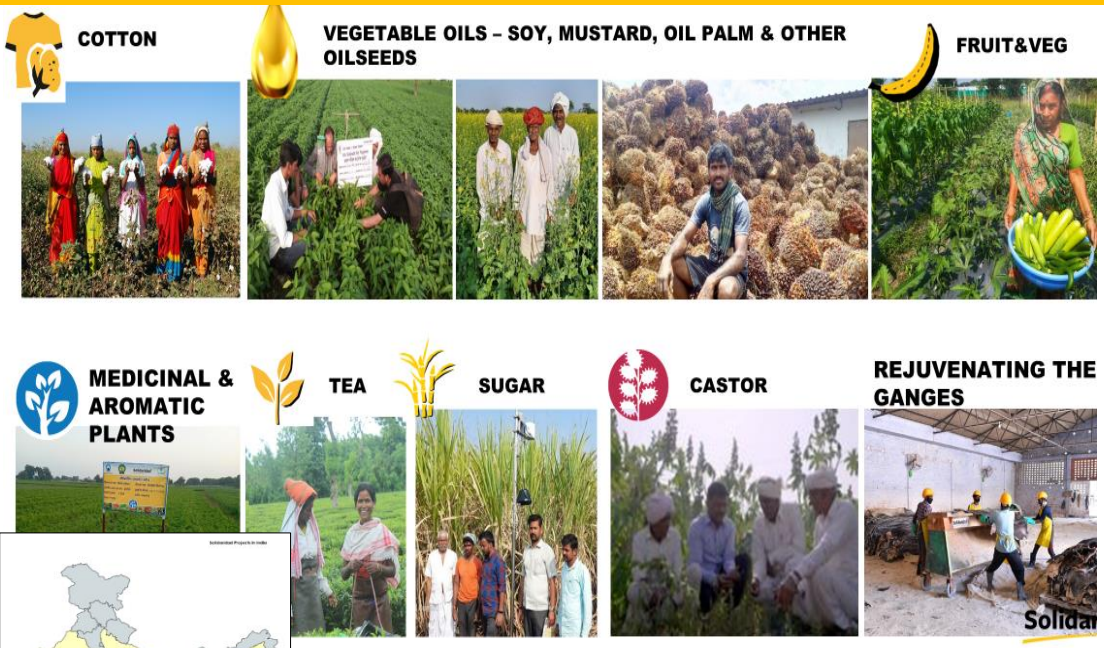
Solidaridad Promotes Sustainable Supply Chain Across Various Agri Commodities in India



- We are recognized as knowledge resource agency for sustainability solutions in the vegetable oil sector in the country
- We work towards improving supply chain efficiency and inclusivity of farmers in the supply chain through Farmer Producer Organizations (FPOs)
- We are expert in on-ground implementation of public-private partnerships programmes for sustainable agriculture and livelihood of smallholder farmers

- We are working with around **1.5 million farmers** Across Various Cropping Systems in 15 States of India and preparing them for Regenerative & Climate Smart Production

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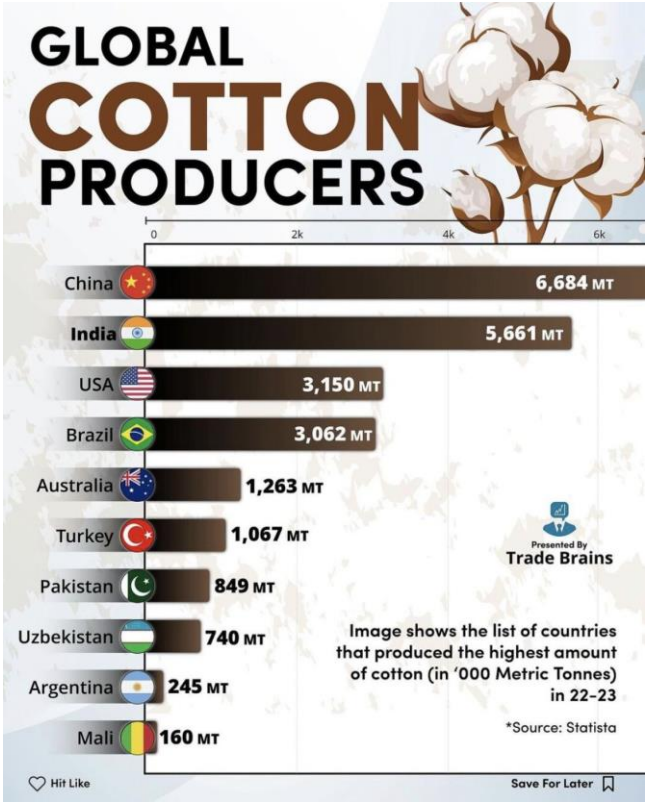
GLOBAL COTTON SCENARIO



- More than 350 million people work in the cotton textile sector around the world, from farming to processing to logistics. Some 250 million people around the world live from cotton production
- Cotton is grown and produced in 80 countries, above all in the Global South
- Cotton cultivation is the livelihood of millions of small farmers and their families
- Cotton is a critical export commodity for many developing countries including India
- Efforts are needed to make cotton sustainable for all, from farm to fashion
- The cotton sector can play a significant role towards transforming the way we produce, consume and protect our environment and ecosystems

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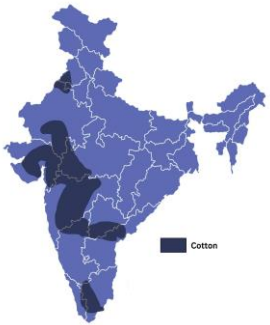
COTTON PRODUCTION SCENARIO IN INDIA



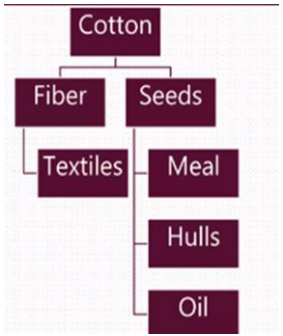


Table-1: Cotton Acreage and yield in last 5 years

Cotton Year	Cotton Acreage (in lakh hectares)	Cotton Yield (Lint in Kg/ha)
2017-18	125.86	500
2018-19	126.14	449
2019-20	134.77	460
2020-21	132.85	451
2021-22	123.71	428
2022-23(P)	130.61	447

Source: As per Meeting of the Committee on Cotton Production and Consumption(COCPC) held on 01.06.2023. P-Provisional.

- Cotton is one of the most important commercial crops cultivated in India and accounts for around 23% of the total global cotton production
- Crop plays a major role in sustaining the livelihood of an estimated 6 million cotton farmers and 40-50 million people engaged in related activity such as cotton processing & trade
- Due to its economic importance in India, Cotton is also termed as “White-Gold”
- India got 1st place in the world in cotton acreage with 130.61 lakh hectares area under cotton cultivation i.e. around 40% of world area of 324.16 lakh hectares.
- Approximately 67% of Indian’s cotton is produced on rain-fed areas and 33% on irrigated lands.
- In terms of productivity, India is on 39th rank with yield of 447 kg/ha.

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Key Sustainability Issues in Cotton Sector in India

1

Challenges of Conventional Cotton Cultivation

Conventional cotton production often comes with negative environmental impacts associated with the misuse of pesticides, fertilizers and water. Social challenges include poor working conditions and lack of living income, with concerns about the incidences of child labour and forced labour in some major cotton-producing countries.

2

Global Market Volatility

Global trade structures are generally unfavourable for cotton farmers whose incomes come further under the threat of global market volatility. In addition, the garment factories and workers are then caught between volatile raw materials prices and stagnant retail cost prices for their work.

3

Environmental Degradation

The environmental impact of the dyeing and finishing in the production of garments and textiles is huge. Inefficient and unsustainable practices mean that water, energy and chemicals are used irresponsibly and cause immense pollution and health risks, affecting the workers, environment and communities.

4

Poor and Unsafe Working Conditions

The textiles industry is also known for inadequate working conditions with excessive overtime, lack of fire and building safety, bonded and forced labour, restriction of freedom of association, and low wages, compounding already widespread poverty.

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Key Sustainability Issues in Cotton Sector in India

Environmental

Pest and Pesticide Management	Water Management	Soil Management	Biodiversity and Land Use	Climate Change
• Environmental contamination by pesticides • Pest management and crop production • Human exposure to pesticides	• Water depletion • Crop water management • Soil salinization • Water quality	• Soil fertility • Soil erosion	• Land conservation • Land productivity	• Greenhouse gas (GHG) emissions • Decomposition and mineralization • Energy use • Carbon stock changes

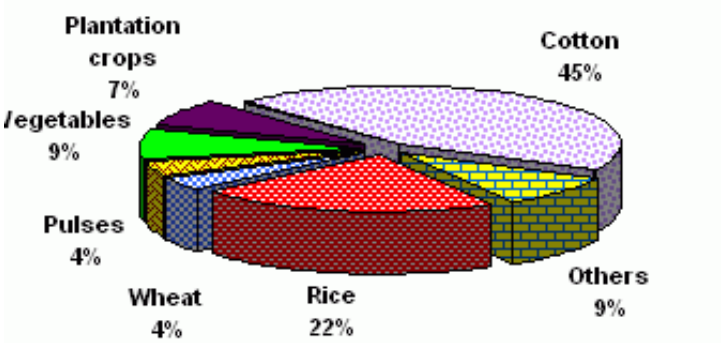
Economic

Economic Viability, Poverty Reduction and Food Security	Economic Risk Management

Social

Labour Rights and Standards	Worker Health and Safety	Equity and Gender	Farmer Organization
• Child labour • Employment conditions • Freedom of association • Social protection			

Pesticide Consumption by different crops in India



- Cotton consumes around 45% of the total pesticides used in country
- Cotton accounts for about 6% of the total fertilizer consumption in India
- Excessive use of chemical fertilizers in cotton production has led to soil degradation
- Losses of nitrogen to the atmosphere and nitrate leaching have high global warming potential

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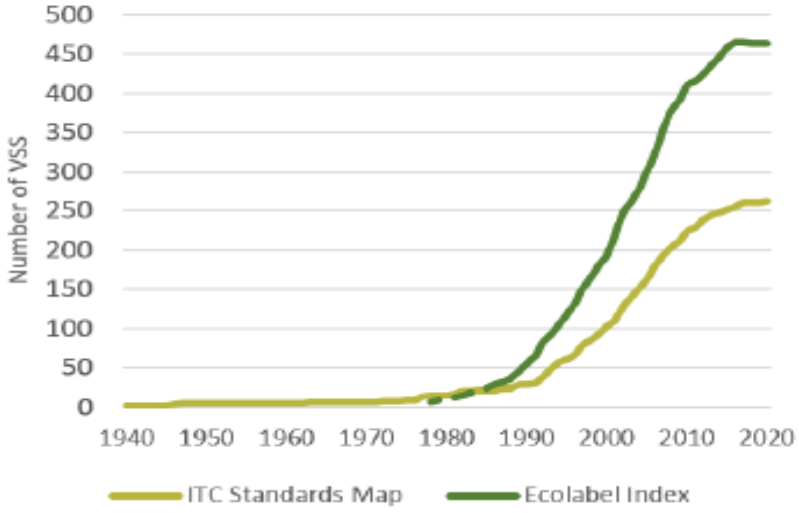
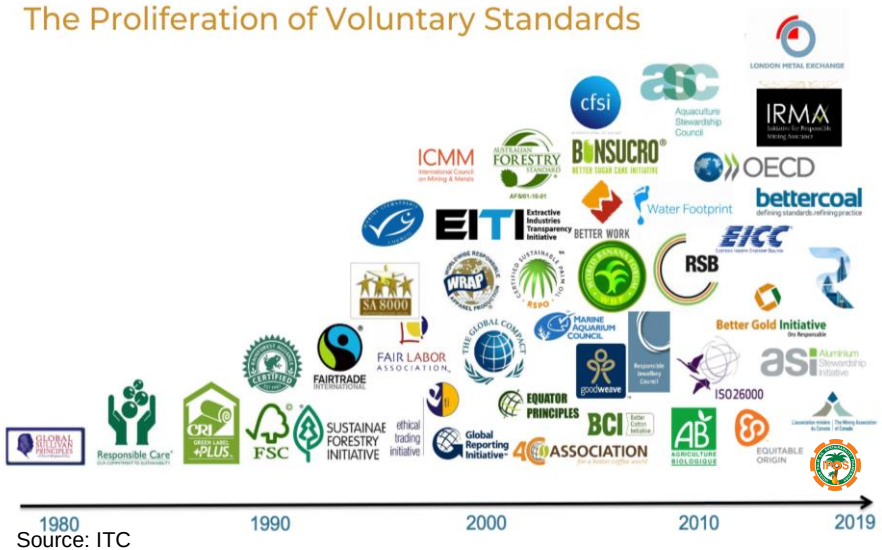
EMERGENCE OF SUSTAINABILITY STANDARDS IN AGRICULTURE

- Hundreds of sustainability standards have emerged over the last three decades as market tools that enhance sustainable development in the agriculture sector
- Sustainability standards first came to the forefront in the 1980s, with standards like Organic (IFOAM) and the Rainforest Alliance
- The first VSS with global reach was launched in the fields of agriculture, forestry, as well as in the fair-trade arena
- VSS are widely used to govern environmental, social and ethical issues in global supply chains

Evolution of Number of Standards





Source: ITC

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TYPES OF VOLUNTARY SUSTAINABILITY STANDARDS

Some Examples

Standard designer	Standard	Monitoring	Example
Private sector	Company led standards/ codes of conduct	First, Second party	Starbucks – CAFÉ, Unilever - Sustainable Agriculture Code
Industry consortium of private companies	Industry association or group led	First, second and third party	Global GAP
NGOs	NGO led	Third party	Fairtrade, Rainforest Alliance, Organic

Standard designer	Standard	Monitoring	Example
Alliance of NGOs	Group of NGOs come together to develop a standard	Third party	Clean clothes campaign (CCC)
Public sector led standards	Government led standards with support from NGOs and business	Third party	USDA Organic
Collaborative agreements/ multi stakeholder	Jointly governed by NGOs and business	Second and third party	Forest Stewardship Council; RoundTable on sustain-able palm oil (RSPO)

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VOLUNTARY SUSTAINABILITY STANDARDS FOR COTTON

Voluntary sustainable initiatives (specific to cotton production)

- # Better cotton initiative (BCI)
- # Cotton made in africa (CmiA)
- # Fairtrade cotton
- # Organic cotton
- # myBMP (australian best management practices programme)

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SOLIDARIDAD SOLUTIONS FOR SUSTAINABILITY IN COTTON

- Training on Good (Agricultural and Industry) Practices
- Decent work and gender inclusion
- Working with sustainability standards
- Connecting with supply chain actors
- Engaging through multi-stakeholder dialogue
- Supporting brands and retailers with their due diligence process
- Creating an enabling environment

SUPPLY CHAIN TRANSPARENCY

- **Traceability:** Implement robust traceability systems to track cotton and cottonseed from farm to finished product, ensuring transparency and accountability.
- **Stakeholder Engagement:** Collaborate with farmers, processors, and customers to identify and address sustainability challenges throughout the supply chain.
- **Certifications:** Encourage the adoption of sustainability certifications, such as organic, Regenagri fair trade, to verify and communicate sustainability efforts

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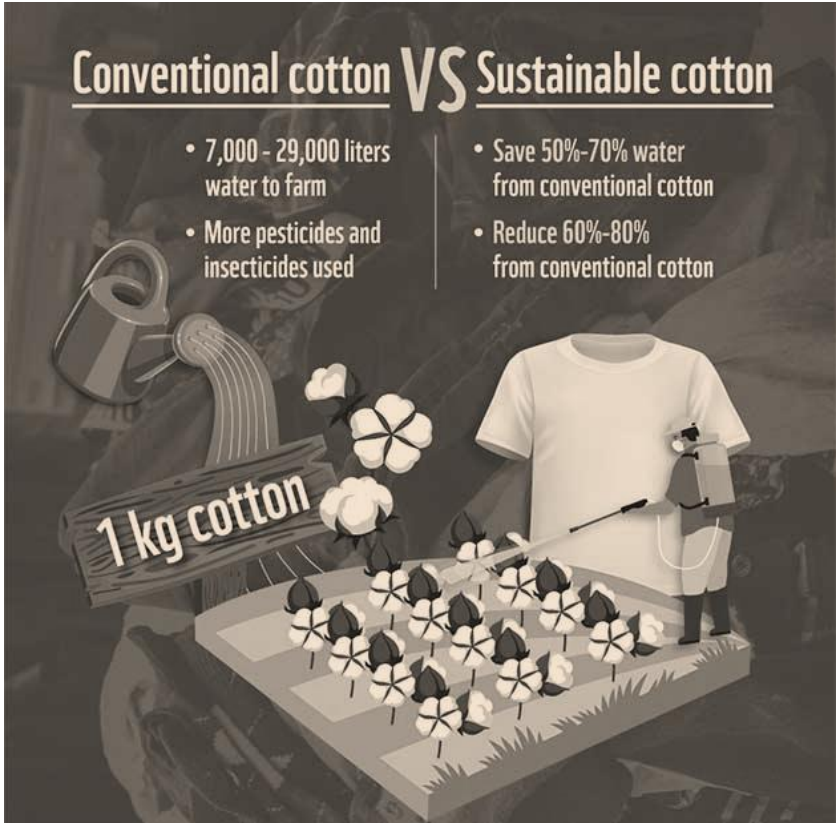
Conventional V/S Sustainable Cotton



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Alliance of Cotton and Textile Stakeholders on Regenerative Agriculture (ACRE)

WORLD'S FIRST REGENERATIVE COTTON PLATFORM

The Alliance aims to promote regenerative agricultural practices by:

•Support the scaling up of regenerative agriculture in cotton with a vision of making India the world's largest producer of certified regenerative cotton;

•Enable collaboration among cotton and textile value chain actors on regenerative agriculture across various cotton landscapes in India;

•Advance tools/mechanism(s) that balance smallholder benefits with conservation of nature, and augment soil health in different agro-climatic regions and landscapes growing cotton in India;

•Create awareness among national and international consumers/users to demand regenerative cotton;

•Document and communicate success stories on regenerative agriculture in cotton;

•Engage on policy issues related to regenerative agriculture

•Build capacity and expertise among cotton and textile sector buyers and brands for wider adoption of regenerative practices in cotton and textile industries; and

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NICO ROOZEN
International Centre of Excellence for
REGENERATIVE AGRICULTURE

The International Centre of Excellence for Regenerative Agriculture has been established in Madhya Pradesh, India for large scale promotion of regenerative agriculture

KEY OBJECTIVES

- Training, capacity building, demonstrations as well as educational programmes-aound Regenerative Practices to facilitate transition towards regenerative agriculture
- Advisories and assistance in adoption of regenerative agricultural practices
- Research and innovations around affordable regenerative agriculture
- Develop and implement a viable business model around regenerative agriculture for the long-term sustainability and scalability
- Verification models to confirm the amount of carbon reduced or sequestered and create opportunities around green financing
- Coordination with the brands and businesses to become the part of regenerative farming projects
- Access to Global specialty markets Carbon, Organic/Natural/Herbal Products Markets etc.

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Recycling and Reuse of Farm Residues and Waste













Preparation and application of Bio-fertilizers and growth promoters using farm waste

Key benefits realized by farmers

- ❑ Increased soil moisture level has contributed towards less water use for irrigation
- ❑ Reduced dependency on synthetic fertilizers has contributed towards reduction in cost of cultivation by around 15-20 %
- ❑ Increased productivity by 20% and farmers are expecting better market prices for their produce

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Soil Health Improvement Through Vermicompost and Application of Vermi Wash

Vermicompost and Application of Vermi Wash Application

Key Benefits of Vermi composting

- ❑ It acts as biofertilizers, restores soil nutrients, stabilizes soil, and enhances soil fertility at a long-term period
- ❑ Helps to recycles the farm waste
- ❑ Proven to be a profitable enterprise as a circular economy. Many rural youth have started their own enterprises and selling vermi composts and earth worms to farmers

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IPM and INM Practices to reduce agro-chemicals

INM Practices to reduce fertilizer use

- Low cost innovative indigenous methods becoming popular like Kanda tonic, vermiwash , Jivamrut , Nariyal tonic ,Saunf tonic which provides essential plant nutrients and promote growth
- Organic amendments like animal manure, dry husk, straw ,pond silt etc is added to improve soil fertility
- Vermicomposting with vermibags , use of microbial culture like, Azatobacter, PSB and Rhizobium

IPM Practices to reduce chemical pesticide use

- Promoting use of bio-pesticide like Trichoderma, Neem oil, Pseudomonas for biological pest control .Use of botanical pesticide like Dashparni Ark (leaves extract), cow urine,
- Seed treatment with bio-pestidicide to prevent seed and soil borne disease
- Use of Mechanical traps and Crop monitoring system with IoT based sensor

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Outreach of Solidaridad Sustainable Cotton Initiative

34,775

workers under improved working conditions

290,738

cotton hectares under sustainable management

219,146

farmers trained

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KEY CHALLENGES: SUSTAINABILITY STANDARDS

- Sustainability complaint production is increasing but there is lack of market uptake
- Sustainable production is skewed towards more developed countries
- Farmers income is increasing however more improvement is needed & Price Premium related issues
- The high cost of implementation and certification results into exclusion of smallholders
- Lack of Mandatory Regulations and Enforcement
- Multiple standards for single commodity leads towards duplication of efforts
- Sustainability standards often address farm labor practices, but working conditions can be very diverse and hard monitor
- Lack of use of traceability solutions and enabling Government policies

RECOMMENDATIONS

TO BOOST THE UPTAKE OF SUSTAINABILITY STANDARDS

1. **A Smart mix of measures - legislation, voluntary initiatives, supporting government policies are needed**

2. **Sustainability issues need to be integrated or aligned with-in the relevant international and national public priorities and policies**

3. **Standards should not be developed in the direction of immediate dis-engagement especially smallholders; it should create a level-playing field for all**

4. **Facilitate gradual shift from Voluntary to Regulatory Standards**

5. **Mutual recognition/harmonization between standards to avoid a "standard war" due to multiple standards**

6. **Robust mechanism for Credibility and Transparency in the implementation and certification process**

7. **Incentive mechanism is needed for sustainable production and trade and for upscaling**

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CHANGE
THAT MATTERS

Questions/Suggestions/Additional Information

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