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Sustainable Practices in Indian Agriculture: Organic and Zero-Budget Natural Farming

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Sustainable farming practices such as organic farming and Zero-Budget Natural Farming (ZBNF) are gaining momentum in India as alternatives to chemical-intensive agriculture. These methods emphasize soil health, natural inputs, and farmer self-reliance, offering solutions to challenges like soil degradation, climate change, and rising input costs. This article explores the principles, benefits, and challenges of organic and ZBNF systems, highlighting farmer success stories from Sikkim, Andhra Pradesh, and Maharashtra. The discussion underscores the potential of sustainable farming to transform Indian agriculture into a resilient, eco-friendly, and profitable sector.

Introduction

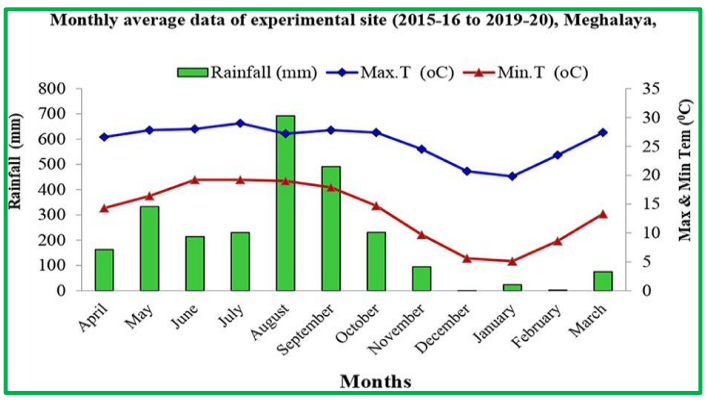
Agriculture is the backbone of India, but the sector faces severe challenges—soil degradation, falling water tables, rising input costs, and climate change. To overcome these issues, farmers are increasingly turning to sustainable practices. Among the most discussed approaches today are organic farming and Zero-Budget Natural Farming (ZBNF). Both focus on reducing dependency on chemical inputs, protecting soil health, and ensuring long-term food security.

What is Organic Farming?

Organic farming is a system that avoids synthetic fertilizers, pesticides, and genetically modified organisms (GMOs). Instead, it relies on natural inputs like compost, green manure, crop rotation, and biological pest control. Organic farming uses farmyard manure, biofertilizers, and compost; encourages biodiversity and crop rotation; and prohibits chemical fertilizers and pesticides. The benefits include improved soil fertility and structure, production of chemical-free, healthier food, and enhanced long-term farm sustainability. According to APEDA (2024), India ranks among the top 10 countries in organic farming, with 4.4 million hectares under organic certification. States like Sikkim have already gone 100% organic, inspiring others.

Case Story 1 – Sikkim's Success

In 2016, Sikkim became the world's first fully organic state. Farmers there shifted completely to natural manures and pest-control practices. Initially, yields dipped, but within three years, they bounced back. Today, Sikkim not only produces healthy food for its people but also attracts organic tourism, boosting farmer incomes through both agriculture and allied sectors.



What is Zero-Budget Natural Farming (ZBNF)?

ZBNF, popularized by Subhash Palekar, is a method that promises farming with "zero external cost." The idea is to produce crops without relying on purchased chemical fertilizers or pesticides. Instead, farmers use natural concoctions made from locally available materials. The core principles of ZBNF include: Jeevamrutha (a microbial culture made from cow dung, urine, jaggery, pulse flour, and water, used to enhance soil fertility), Beejamrutha (a seed treatment mixture to protect from seed-borne diseases), mulching (covering soil with crop residues to preserve moisture and improve fertility), and Whapasa (reducing irrigation by maintaining soil moisture and aeration balance). Its advantages are drastically reduced input costs, revived soil biology and fertility, and profitability even for small and marginal farmers. States like Andhra Pradesh and Karnataka have promoted ZBNF widely, with Andhra Pradesh aiming to scale ZBNF across 8 million hectares by 2030.

Case Story 2 – Andhra Pradesh's Natural Farming Drive

Ramaiah, a small farmer from Anantapur district, once struggled with debts due to high fertilizer and pesticide costs. After joining the state's ZBNF program, he began preparing Jeevamrutha using cow dung and urine from his two cows. Within two seasons, his costs dropped by 60%, and he reported better soil health and stable yields of groundnut. "For the first time in years, I saved money instead of borrowing," he says proudly.

Andhra Pradesh's Estimated Cost for Five Years

Categories	Cost per Gram Panchayat (In Rs)	Cost of converting one farmer household (In Rs)
Capacity building	50,80,000	12700
Institution building and finds to farmers' institutions	26,20,000	6550
one-time subsidy/support for access to inputs, tools etc, to farmers and farmers' institutions	4,00,000	1000
PGS Certification, Quality assurance, Tracking and Monitoring	11,60,000	2900
Marketing Capacity Building and Marketing Support	5,60,000	1400
Technical Support and Overall Programme	4,00,000	1000
Total	1,02,20,000	25,550

Data Source: Official Website of ZBNF Programme of Rythu Sadhikara Samstha, Government of Andhra Pradesh

Challenges of Organic and ZBNF

While promising, both practices face challenges. Initially, yields may drop when farmers shift from chemical-intensive to natural practices. Organic certification is lengthy and costly, limiting farmer access to premium markets. Many farmers still lack proper training on preparing bio-inputs or managing organic systems.

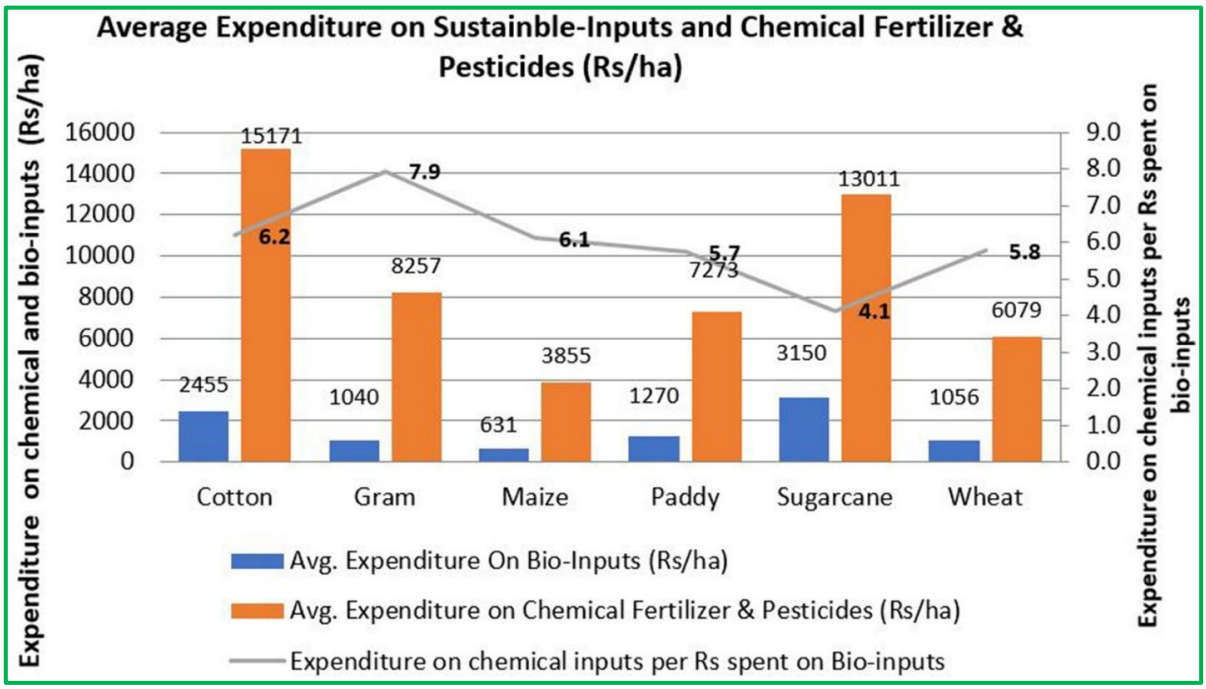
Case Story 3 – Organic Cotton in Maharashtra

In Yavatmal, Maharashtra—often known for farmer distress—some cotton farmers switched to organic cultivation with NGO support. By pooling together and selling directly to textile companies, they now earn 20–25% higher prices compared to conventional cotton. Though

certification was tough, collective marketing helped them overcome the challenge, offering hope in a region once dominated by debt and despair.

Future of Sustainable Farming in India

Despite challenges, the demand for sustainable food is growing rapidly. Urban consumers are increasingly willing to pay higher prices for organic produce. Government initiatives such as Paramparagat Krishi Vikas Yojana (PKVY) and Bhartiya Prakritik Krishi Paddhati (BPKP) are supporting farmers with subsidies, training, and market linkages. Experts believe a hybrid model—integrating the best of organic, natural, and modern scientific practices—could shape the future of Indian agriculture.



Conclusion

Organic farming and ZBNF are more than just techniques—they represent a movement toward ecological balance, farmer self-reliance, and healthy food production. If given proper policy support, training, and market access, these practices can transform Indian agriculture into a sustainable, resilient, and profitable system for generations to come. Sustainable agriculture is not just an alternative—it is a necessity for India's future. Organic farming and ZBNF empower farmers to reduce costs, regenerate soil, and produce healthier food. The experiences from Sikkim, Andhra Pradesh, and Maharashtra demonstrate that with proper policy support, training, and marketing linkages, these practices can deliver both ecological and economic benefits. The path ahead may involve integrating the best of traditional knowledge with modern innovations to create a hybrid, resilient model of farming. If scaled properly, sustainable practices could ensure food security, farmer prosperity, and environmental balance for generations to come.

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