SOUTH ASIA BIOTECHNOLOGY CENTRE

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Innovating Agriculture!

SHAPING THE FUTURE

Empowering Farmers!

www.sabc.asia

INTRODUCTION

South Asia Biotechnology Centre (SABC), Jodhpur, is an independent scientific organization recognized as a Scientific and Industrial Research Organization (SIRO) by the DSIR, Ministry of Science and Technology, Government of India.

Over the last decade, it has spearheaded major scientific initiatives to address pressing challenges in agriculture through quality production systems, on-farm trials, technology evaluations, demonstrations, and the promotion of Good Agricultural Practices (GAP) with certification programs.

Working at the grassroots level across India, SABC through long-term MOUs with public & private sector organization has consistently contributed to improving both the quantity & quality of farm produce.

85% **India's 85% farmers' life means surviving on < ₹10,000 a month**

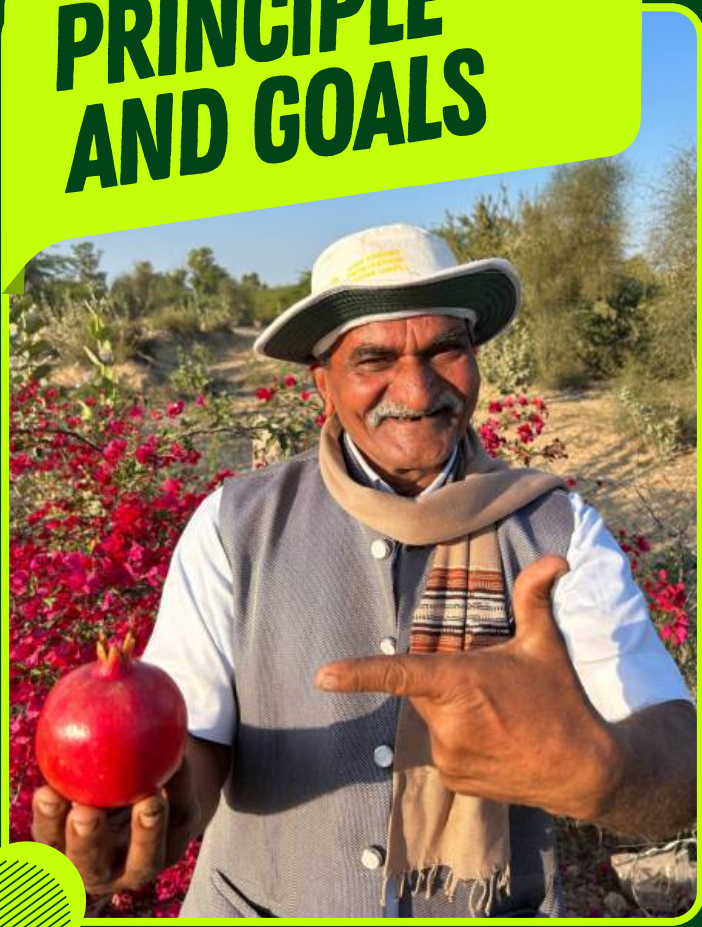
Amid this fragile backdrop, our journey began in 2015 to take science beyond the laboratory & delivering it directly to smallholder farmers' fields!

www.biotechkisan.org

VISION

Harnessing bio-innovation and its vitally important contribution to food, feed, fibre & fuel security while improving growth prospects for the bioeconomy of India

PRINCIPLE AND GOALS



MISSION

- **A knowledge hub on regenerative and sustainable agriculture production system**
- **A facilitator of bio-innovation from the lab to the land**
- **A bridge between science & society**
- **A champion of smallholder farmers**

STRATEGIC OBJECTIVES

- To facilitate the transfer of bio-innovation and biotechnological applications from the lab to the land and share credible information
- To deploy cutting-edge farm technologies, methods and practices to improve productivity, farmers' income & sustainability
- To help growers to adopt sustainable production systems, solid protocols & food safety norms for world-class quality farm produce
- Finally, to assist growers to develop capacity and improve realisation by establishing robust food supply chain linkages

www.nabard-aefc.org

LEADERSHIP EXCELLENCE & RECOGNITION

RAJASTHAN

Head Office &
R&D Laboratory:
Jodhpur, Rajasthan

HARYANA

High-Tech
R&D Station:
Sirsa, Haryana

LEADERSHIP EXCELLENCE & RECOGNITION

LEADERSHIP

Governed by a distinguished Board of Directors, comprising agricultural scientists and professionals of national and international repute

EXCELLENCE

Thrives on professional excellence guided by highly qualified leaders, a team of passionately trained scientists and motivated staffs

RECOGNITION

recognized as SIRO, FCRA compliant, registered for CSR activities, holds an Udyam MSME registration & tax exemptions and eligible for donation

COLLABORATION

signed long-term MoUs with premier national institutions including ICAR, DBT, APEDA, Spices Board of India, SAUs , KVKs, NABARD and private sector institutions

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PATHWAYS TO SUSTAINABLE AGRICULTURE?

- LAB TO LAND - TRANSLATING RESEARCH
- FARM TO FORK - LINKING FARMERS WITH MARKET
- TECHNOLOGY - HARNESSING BIO-INNOVATION
- CLIMATE-SMART & SUSTAINABLE PRODUCTION
- KNOWLEDGE, SKILLS & CAPACITY BUILDING

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LAB TO LAND : TRANSLATING RESEARCH

NEW IDEAS MEAN LITTLE IF THEY STAY IN LABORATORIES

SABC through its work with India's leading agricultural research institutes, state agricultural universities and private sector undertakes due diligence and tests innovations in real farm conditions, making them usable for smallholders. By turning discoveries into practical tools, it ensures science delivers results in the soil and in farmers' hands.

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FARM TO FORK : LINKING FARMERS WITH MARKETS

GROWING GOOD FOOD & MORE FOOD IS NOT ENOUGH IF FARMERS CANNOT SELL IT FAIRLY

SABC builds bridges between producers and markets, ensuring that farmers earn better returns while consumers get safe, pesticide residue-free and sustainable food. By developing value chains, backward-forward integration and supporting progressive farmers & FPOs, it brings farmers closer to buyers, processors, exporters and global demand.

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TECHNOLOGY : HARNESSING BIO-INNOVATION

TECHNOLOGY CAN TRANSFORM FARMING WHEN IT REACHES THE RIGHT HANDS AT THE RIGHT TIME

SABC carries out technological due diligence and introduces tools & techniques that are practical, affordable and effective for smallholder farmers throughout the cropping cycle. From microbial, botanical and pheromone to biotechnology and genome editing, it makes innovation accessible where it matters the most – in the field.

CLIMATE-SMART & SUSTAINABLE PRODUCTION

FOOD SAFETY

FARMERS MUST PRODUCE QUALITY FOOD TODAY WITHOUT HARMING THE FUTURE

SABC implements field-based programs to promote innovative & sustainable practices and methods that enable farmers to access and adopt quality seeds & planting material, judicious use of crop protection tools and protect crops through eco-friendly approaches. By encouraging GAP, IPM and climate-smart practices, it helps farmers grow healthy food while safeguarding the environment.

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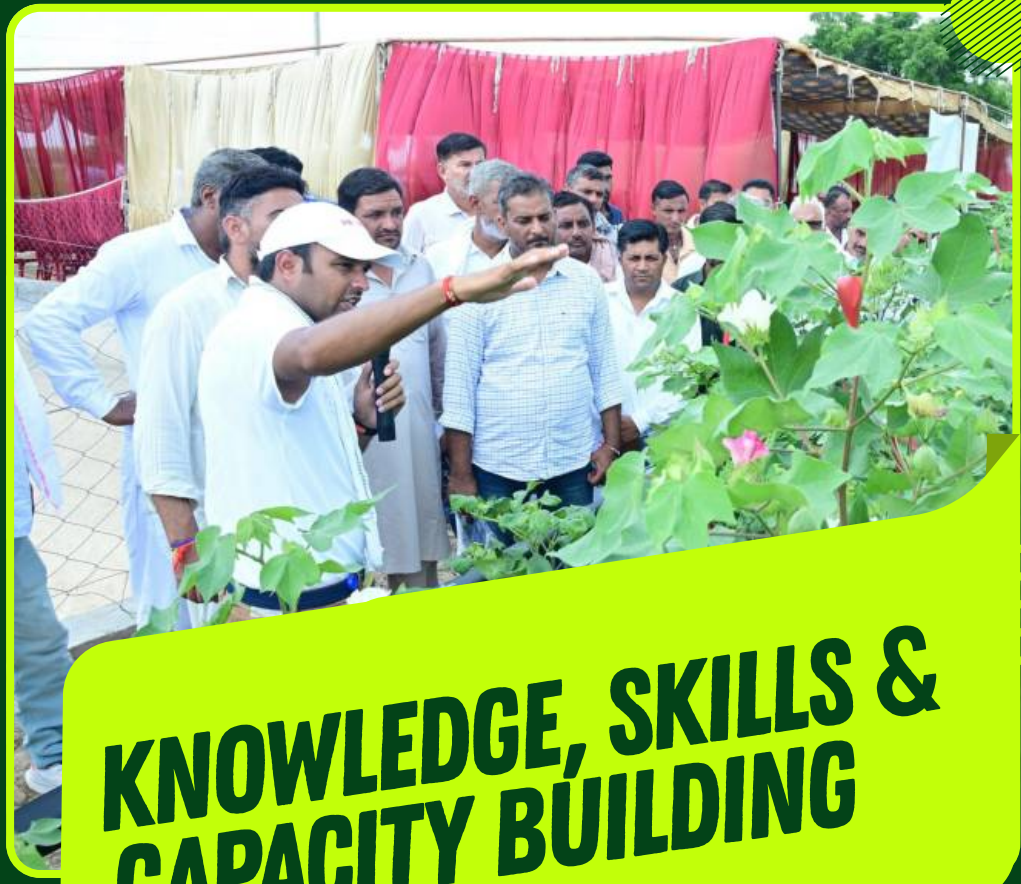

KNOWLEDGE, SKILLS & CAPACITY BUILDING

KNOWLEDGE IS THE FOUNDATION OF LASTING CHANGE IN AGRICULTURE

SABC invests in skill building for farmers, farm workers, extension professionals and institutions so they can lead improvements themselves. Through curated knowledge resources, interactive online modules, on-field training programs, field schools, social media platforms and exchange programs, it empowers people to learn, share and grow together.

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PLANTING THE SEEDS: A GRASSROOTS SCIENCE ORGANISATION

- Since its inception, SABC has grown from a grassroots initiative to a trusted partner, empowering India's agricultural ecosystem by transferring bio-innovations and technologies from lab to land, empowering rural communities, revitalizing indigenous bio-solutions and shaping a resilient bioeconomy across India.
- Its work spans sustainable food production systems, technology transfer, integrated production management strategies, upskilling farmers, certification programs, value-chain development and global collaborations.
- As SABC marks a decade of grassroots impact, its mission remains clear; to connect discovery with delivery, ensuring smallholders have the practical tools, knowledge and market access needed to strengthen their income & livelihoods.

ENABLING & SCALING UP SUSTAINABLE FARMING

- Since 2016, SABC spearheaded the “Maize Yield Maximization” program across the dryland regions of Aurangabad, Jalna, and Jalgaon in Maharashtra. By driving large-scale adoption of high-yielding maize hybrids, the program not only boosted productivity but also uplifted farm incomes, transforming the way smallholders cultivate maize in dryland regions

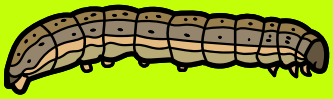
- Building on this momentum, a 2024 scoping study has evolved into the “Sustainable Isabgol Production” mega project in Rajasthan. This initiative positions Isabgol as a high-value, export-oriented crop, creating new wealth opportunities for farmers while strengthening agro-economic resilience across Western Rajasthan.

ENABLING & SCALING UP SUSTAINABLE FARMING

Looking ahead, the 2025 “Sustainable Guar Initiative” is accelerating responsible sourcing of guar. By equipping farmers with modern technologies, on-farm training and technical advisory services and enabling compliance with global certification standards, the program ensures sustainable guar supply chains that meet the rising global demand—empowering farmers and advancing India’s leadership in sustainable agriculture.

ON THE FRONTLINE: PEST CRISES TURNED INTO LARGE-SCALE ACTION

"Upon the invasive Fall Armyworm (*Spodoptera frugiperda*) infestation in 2018, Pink Bollworm (*Pectinophora gossypiella*) occurrence in 2019, Desert Locust (*Schistocerca gregaria*) outbreak in 2020, and Black thrips (*Thrips pervispinus*) invasion in 2021, SABC collaborated with local, regional and national institutions responding with large, coordinated field campaigns".



PROJECT SAFFAL

SAFEGUARING AGRICULTURE & FARMERS AGAINST FALL ARMYWORM

Project Safeguarding Agriculture and Farmers against Fall Armyworm (Project SAFFAL) spearheaded by SABC, collaborated with ICAR institutions, SAUs, KVKs and State Agricultural Departments to actively involve key stakeholders in delivering massive training programs and on-farm demonstrations. These efforts relayed actionable pest-management knowledge to more than hundred thousand maize farmers. These efforts successfully limited pest damage and helped meet maize production targets in the years following the massive productivity drop in 2018-19.

PROJECT SAFFAL

uarding Agriculture and Farmers Against Fall Armyworm

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e of invasive
Armyworm

Mobilizing Nation-wide Extension System to Implement Grassroots Action

onstrating
rategic
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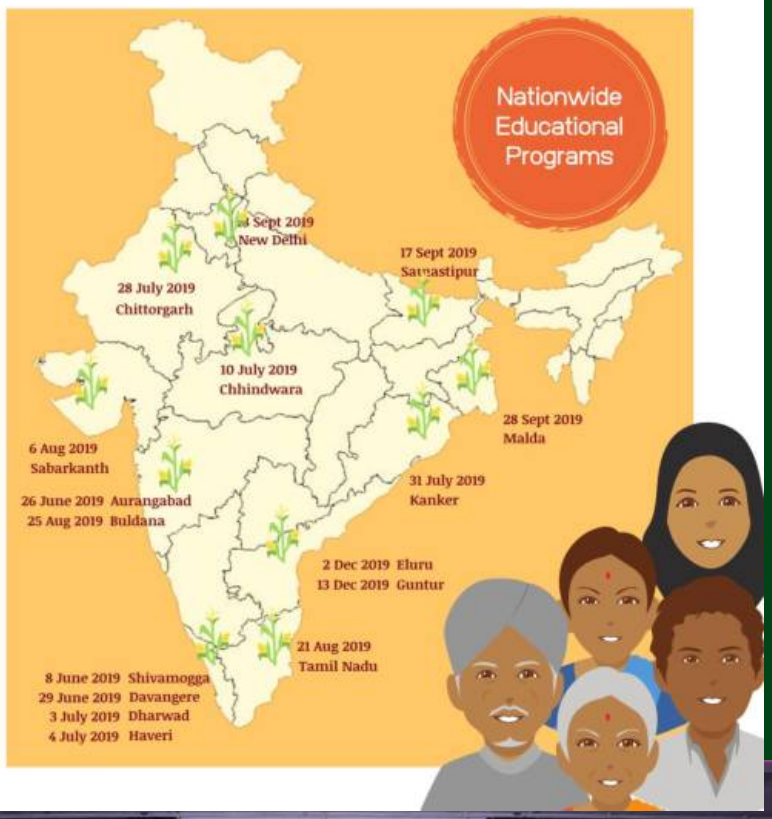
nership in
Agriculture

GRASSROOT IMPACT

Sharp approach to blunt FAW infestation



Location : Sabarkanth, Gujarat

Date: August 6, 2019

Department of Agriculture, Gujarat

Sardarkrushinagar Dantiwada Agricultural University

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Location : Dharwad, Karnataka

Date: July 3, 2019

Department of Agriculture, Karnataka

University of Agricultural Sciences, Dharwad

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PROJECT BANDHAN: A KNOT OF PBW PROTECTION
PINK BOLLWORM MANAGEMENT IN COTTON IN INDIA

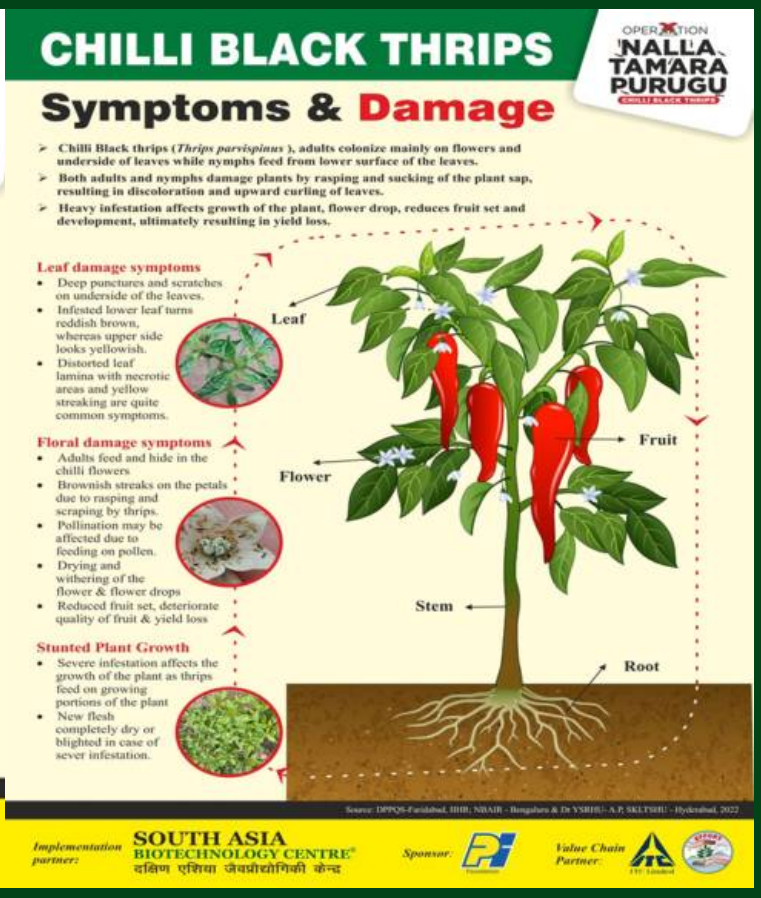
SABC empowered farmers in the fight against devastating Pink Bollworm by conducting grassroot activities in Vidarbha, Maharashtra, for three consecutive years 2018-2020. However, an unusual outbreak of PBW during Kharif 2020 severely impacted cotton growers in Maharashtra, Andhra Pradesh, and Telangana. It subsequently spread into Northern cotton growing zones in 2021. In response, SABC with PI Foundation co-created Project Bandhan, a multi-year effort embracing the cutting-edge, innovative PBW mating disruption technology to protect the cotton.

Following the success of PBKnot, Project Bandhan was launched during Kharif 2022-23. It became country's largest demo cum experiment using mating disruption which recorded ~90% reduction in PBW losses with yield gains of 1.5–2 quintals/acre - a clear, quantifiable win for farmers.

The project has expanded across the North, Central, and South cotton growing zones over the last five consecutive years, in collaboration with numerous public sector institutions, progressive farmers and farmer producer organisation (FPOs).

OPERATION NALLA TAMARA PURUGU (ONTP)
INTEGRATED MANAGEMENT OF CHILLI BLACK THRIPS

In 2022-23, an integrated initiative was undertaken to combat invasive Black Thrips in chilli across Andhra Pradesh and Telangana under Operation Nalla Tamara Purugu (ONTP). Through drone-based solutions, microbial agents and innovative cultural practices, SABC reached 34 clusters in 6 districts, trained 2,000+ farmers and conducted a baseline survey with 250+ stakeholders including farmers, nursery retailers and dealers. Knowledge materials were simplified and translated into local languages, making sustainable chilli pest management more accessible than ever.



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CREDIBILITY, SCALE AND MARKET LINKAGES

By 2021, SABC's impact earned it national recognition as a Scientific and Industrial Research Organization (SIRO) by DSIR of the Ministry of Science & Technology of Govt of India. It has 12A & 80G tax registration in 2021 and obtained CSR registration and MSME Udyam certificate in 2023.

It is also registered on NITI Aayog's NGO Darpan and FCRA registration in 2024. These credentials underpin SABC's ability to mobilize public, philanthropic and corporate support.

Govt of India's DBT established the "Biotech Kisan Hub for Western Dry Region" at SABC, Jodhpur, where SABC runs a tinkering laboratory cum modern training & skill development centre to promote GAP, IPM and biocontrol for seed spices, medicinal and aromatic plants. As part of the Hub, SABC extended MOUs with APEDA, the Spices Board, ICAR-NRCSS, State Agricultural Universities and KVK networks and has worked in tandem with the Spice Board to implement STDF activities in Western Rajasthan.

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VALUE CHAINS, EXPORTS AND INTERNATIONAL EXCHANGE

SABC's programs now combine sustainable production and integrated pest management with market pathways. This links farmers to aggregators such as FPOs, processors and exporters enabling certified quality food produce, pesticide residue-free spices and climate-smart sustainably produced crops to access higher-value markets.

With NABARD, SABC hosts the Agri Export Facilitation Centre (AEFC), a one-stop-shop platform to incubate agri-entrepreneurs, startups, FPOs, processors and exporters. AEFC works to develop export protocols and improve the agri-export ecosystem for high-value products such as spices, millets, guar gum, oilseeds, pomegranate, medicinal & aromatic plants of Rajasthan.

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AIMING FOR SYSTEMIC CHANGE : THE NEXT DECADE

- Charting out a strategic path to accelerate adoption of GAP and certification programs
- Intensifying sustainable isabgol production in Rajasthan
- launching Sustainable Guar Initiative (SGI) to integrate growers into global sustainable sourcing
- Initiating regenerative, climate-smart farming system in North India

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THE FUTURE OF FOOD

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