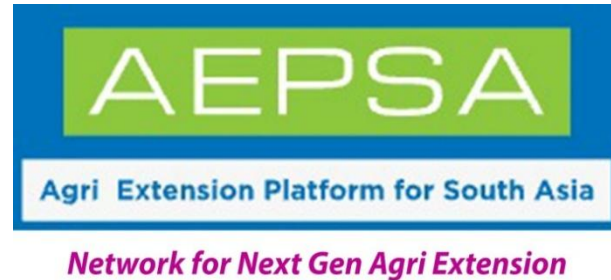


Success Stories of Innovative Farmers in India



Dr. N.V.Kumbhare

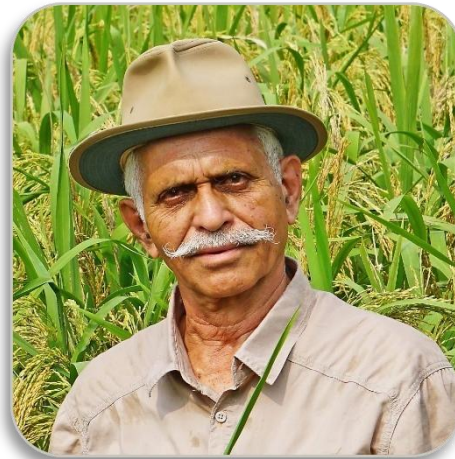
Principal Scientist (Agril.Extn) & Incharge, ATIC

ICAR-Indian Agricultural Research Institute,

New Delhi-110012

Email:nvkumbhare@iari.res.in

Saguna Regenerative Technique and Agro-tourism



Chandrashekhar Hari Bhadsavle

The ‘Success Story’ unfolds the story of how our innovative techniques and commitment to sustainable practices became a compelling force in enticing the youth back to the agricultural landscape.

Background & Initial Challenges

- Mr. Chandrashekhar, a **food scientist-turned-farmer** in village Neral (Karjat), Maharashtra (75 km from Mumbai).
- The story **began 45 years ago**, when a promising young man quits a lucrative career in the US after completing a Masters in Food Science & Tech. in California.
- He utilized his savings from employment to effectively double the property's size.
- Came back to his village and **developed 55 acres** of modest piece of land into the crown jewel of '**Agro-tourism**' – called '**Saguna Baug**'.
- Against the degraded backdrop, the seeds of Saguna Baug were sown.
- The years from **1977 to 1995** were marked by **conventional rice cultivation** methods, demanding labour- intensive processes.



Seed of Innovation- Saguna Baug- Agrotourism

- He has developed 55 acres of land for agrotourism & major attraction of Saguna Baug includes **fruit orchards**, **bamboo plantation**, field crops (SRT), **farm ponds**, natural vegetation, conservation agriculture, **vermicompost unit**, **dairy unit**, **biogas plant**, **apiary**, **market**, **boat house**, **food plaza etc.**
- Adventure camp activity also included for the visitors besides agriculture. The Adventure camp activity includes tour to the farm, buffalo riding, swimming, fishing, horse riding, bullock cart riding, archery etc.
- About 200 visitors including school children are visiting daily to Saguna Baug.



Saguna Regenerative Technique (SRT)

- He introduced Saguna Regenerative Technique (SRT) to a handful of farmers in village Neral (Karjat), Maharashtra in 2013.
- Once a degraded land, the 'Saguna Baug' is now a success story of tapping the natural resources to grow food crops, bamboo, also to rear livestock and fish, and promote biodiversity in and around his farm.
- SRT is a conservation agriculture (CA), 'no-till' method essentially a regenerative method of farming that does not involve the disruption of soil structure through tillage.
- Key features of SRT: 'No-till' farming, Permanent raised beds, Crop residue & Crop rotation.
- Zero till saves 30% to 40% cost of production in paddy. Not requiring transplanting saves 50% labour and 50 % water. Existing recom. dose of fertilizer can be brought down to half. Crop gets ready 8-10 days earlier with average yield of 5.0 t/ha



Prof. M. S. Swaminathan
5 April 2014

Dear Bhadsavleji,

It was a pleasure meeting you and your colleague and learning about the sustainable farming practices you have developed. I am grateful to you for your efforts to popularize Zero till in rice based cropping. You are a role model for all farmers and I wish you continued success.

With warm personal regards,

yours sincerely,

M S Swaminathan

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PROF M S SWAMINATHAN
Founder Chairman,
M S Swaminathan Research Foundation
Third Cross Street, Taramani Institutional Area
Chennai - 600 113 (India)

Impact of SRT



- Today, SRT is practiced by a number of farmers in different parts of Maharashtra. They are happy to have adopted SRT to raise different crops and save on labour, fertilisers, water, fuel etc., while increasing the income and improving their soil health.

Sale proceeds of Saguna Baug Agro-tourism

Sale proceeds (2021-22)		Sale proceeds (2022-23)	
Particulars	Amount (INR)	Particulars	Amount (INR)
Saguna Baug Agro-tourism sales	32,602,487.00	Saguna Baug Agro-tourism sales	47,622,939.43
Saguna shop sales	4,487,584.00	Saguna shop sales	8,665,421.00
Sales on Amazon	1,043,745.00	Sales on Amazon	1,520,083.70
Agriculture sales	628,100.00	Agriculture sales	3,859,484.01
Total Net sales	3,87,61,916.00	Total Net sales	6,16,67,928.14



Biofertilizers and Biopesticides for Enhancing Agricultural Production



Dr. Basavaraj Girennavar
Chairman, Criyagen Agri. and Biotech Pvt. Ltd. Bengaluru

Background & Initial Challenges

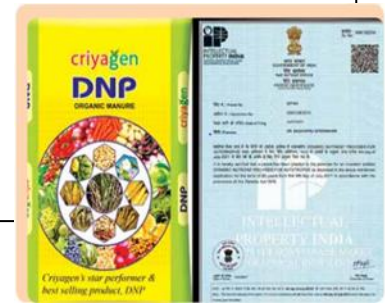
- Dr. Basavaraj Girennavar, born in Janamatti village, Karnataka, grew up in an agrarian setting.
- Faced perennial drought, poor cropping patterns, and heavy reliance on chemical fertilizers.
- Pursued B.Sc. and M.Sc. in Agriculture, followed by Ph.D. at Texas A&M University, USA.
- Launched Criyagen LLC in 2007 in the USA but faced sustainability issues.
- Returned to India in 2008 against family and societal opposition to serve farmers.
- Traditional farming and high chemical fertilizer use led to soil degradation and environmental pollution.
- Lacked initial business acumen, facing resistance from traders and staff issues.
- Encountered skepticism about organic products' efficacy compared to chemicals.
- Aimed to address low productivity (1 farmer feeds 2 vs. 150 in USA).



Establishment & Innovations



- Founded Criyagen in India in 2008, starting at UAS, Dharwad incubation center
- Launched Dynamic Nutrient Provider (DNP) in 2009, reaching 22,000 tons by 2019.
- Developed 50 products, including Bio-NPK, Zen-Bio Fertilizer, and Bio-Maxx.
- Introduced tablet and capsular fertilizer formulations for ease of use.
- Established state-of-the-art manufacturing facility in Doddaballapur near Bengaluru
- Launched Criyagen AgriApp, reaching 500,000 downloads, aiding farmer connectivity.
- Set up satellite units in Vijayapura, Anantapur, and Sonipat for localized production.
- Created R&D lab with automated soil testing for 13 parameters.
- Patented DNP, Zen-Bio Fertilizer, and Bio-Maxx.



Achievements & Economic Impact

- Revenue grew from ₹5.66 lakh in 2009 to ₹34.19 crore in 2018.
- In Sugarcane increased yield from 90 to 161t/acre using DNP.
- In Paddy yield rose from 2,925 to 4,225 kg/acre
- Potato farmer in Kolar achieved 12,500 kg/acre despite drought using DNP and foliar sprays.
- Areca plantation revived yielding 13 quintals/acre from 8.
- AgriApp won Agriculture Grand Challenge Award.
- Produces 25,000 tons of biofertilizers annually.
- Soil testing lab plans to scale to 300,000 samples/year under Global Soil Health Service.
- Employs 125 direct staff and 100 contract laborers, creating rural jobs.
- Dr. Girennavar received Udyoga Rattan Award for contributions to agriculture.





Lessons Learned & Future Vision



- Initial failures taught resilience, turning challenges into opportunities for growth.
- Farmer education on organic products is key to overcoming chemical fertilizer reliance.
- Technology integration (AgriApp) enhances farmer decision-making and profitability.
- Strong mentorship from Dr. Borlaug, Dr. Swaminathan, and Dr. Patil shaped success.
- Plans to promote Agriculture, Meditation, and Yoga (AMY) diploma program.
- Advocates solar energy use in farming to reduce carbon footprints in agriculture.
- Envisions integrating crop, animal, and human nutrition for holistic sustainability.
- Suggests **empowering farmers as entrepreneurs with market-led pricing** and insurance.
- Aims to collaborate on extension innovation with **ICAR's 730 KVKs** to reach more farmers.
- Promotes nutraceuticals and millets to position India as a global food pharmacy.

Resilience in Dairy Farming A Success Story



Nikki Pilania Chaudhary

From Urban Roots to Rural Dairy
Leadership

Background & Initial Challenges



- **Nikki, educated in Delhi and UK**, married Gaurav, a third-generation farmer, in 2011.
- Moved to Tanda Vijaisi, **Pilibhit (UP)** with no prior agriculture exposure.
- India's dairy sector: largest milk producer (198.4 mt, 2019-20) but low yield (987 kg/cow/year).
- Observed poor, unhygienic dairies in Pilibhit's *terai* region.
- **Started backyard dairy with 6 cows** yielded surplus milk sold at a loss to cooperatives.
- Lacked local modern dairy farms for learning efficient practices.
- Faced high cattle transport costs from Haryana and limited internet access.
- Encountered skepticism about dairy's viability from experts and community.
- Struggled with cow selection due to inexperience in identifying good genetics.
- Balanced new motherhood with demanding dairy tasks, leaving no free time.

Establishment & Innovations

- Established **Mango Dairies** (initially Chaudhary Farms) in 2014 in Pilibhit.
- Built **modern dairy shed for 70 heads** with open housing for cow comfort.
- Purchased 30 HF cross cows from Karnal, ensuring direct farmer transactions.
- Introduced semen from high-yield bulls (HF-168, Jersey, Sahiwal) for breeding.
- Planted rye grass and oats under poplar trees for cost-effective fodder.
- Developed paddy straw silage to reduce costs and prevent straw burning.
- Installed in-house feed unit for cost-effective, nutritious cattle feed.
- Adopted conservation practices: Direct Seeded Rice (DSR) and Zero Tillage.
- **Launched Mango Dairies Creamery in 2022 for curd, ghee, and fresh milk.**
- **Formed Terai Farmer Producer Organization (TFPO) in 2021 for collaboration.**

Nikki invited as a young dairy farmer to speak on “Growing Young-agripreneur” at Committee on World Food Security - 46, FAO, Rome in 2019



Achievements & Economic Impact

- Mango Dairies produces 300–400 liters/day from 20–30 cows, averaging 15–20 liters/cow.
- Net profit for a 10-cow farm: ₹32,750/month (₹3.93 lakh/year).
- Trained 500+ farmers annually, inspiring 10 modern dairy farms in the region.
- Farmer Shanti earns ₹1.5 lakh/year from 5 cows, improving family health.
- Sanjay's milk retail in Uttarakhand sells 400 liters/day, including value-added products.
- Sakattar Singh's farm yields 125 liters/day, adding ₹20,000/month income.
- Sold 6 cows to Haryana farmers in 2018, reversing regional trends.
- Pilibhit FPOs Organic Hub launched in 2022 with Mango Dairies as a partner.
- Reduced carbon footprint via fodder integration and sustainable practices.
- Recognized by ICRAF (2014) and GFAR (2016) for agroforestry and dairy work.



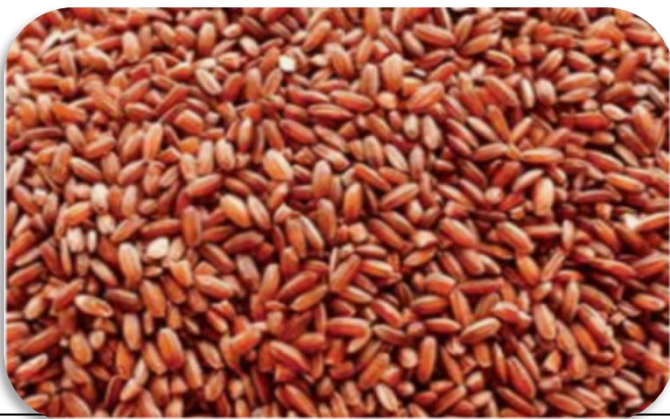
Lessons Learned & Future Vision

- Resilience and daily engagement turned challenges into opportunities.
- Education's purpose is to solve problems, not just seek urban comfort.
- Balanced breeding (30% indigenous blood) ensures heat resilience and yield.
- Cost-effective nutrition via fodder (70–80%) is critical for profitability.
- Collaboration with FPOs and experts builds a supportive ecosystem.
- Envisions a farmer-owned dairy company for high-quality milk production.
- Plans Centre of Excellence (COE) for research, breeding, and processing.
- Advocates lifting cattle sale bans to support small farmers' viability.
- Aims to scale partner farms (20–100 cows) with training and market access.
- Promotes youth involvement in dairy for sustainable rural development.

Navara Rice A Success Story



P. Narayanan Unny
Palghat, Kerala



Navara Rice



- *Navara* rice having numerous **nutritional & medicinal** properties in various Ayurvedic treatments.
- Unlike other rice varieties, which are white in colour, *Navara* is deep red and cultivated in the Palghat region for more than 2,000 years.
- The product was **registered as GI** and this initiative was purely a farmer- led initiative.
- **Scaling-up Navara Rice Cultivation in Palakkad district.**
- Low yield of Navara Rice due to organic method of cultivation (300 kg of paddy per acre).
- Sale price of rice is @Rs.520/- per kg., Rice flakes @Rs. 720/- per kg and Rice powder @ Rs. 640/- per kg.
- Protection of Plant Varieties and Farmers' Rights Authority, MoA&FW, Government of India Plant Genome Savior Community Recognition conferred to Mr. Unny.

Navara Eco Farm



- Mr. P. Narayanan Unny, a **third generation marketing executive-turned-farmer**, left his good job to save and conserve this valuable landrace.
- After years of strenuous efforts, he could evaluate, purify the seeds and gradually moved into large scale cultivation of pure Navara rice in his 115 year old 18 acre farm, popularly known as '**Navara Eco Farm**'.
- This farm is now getting wider recognition both nationally and globally.
- Mr. P Narayanan Unny was able to take leadership to form Navara Rice Farmers' Society (NRFS).



Navara Rice: Attracting Tourism

- Navara Eco Farm (NEF) is being showcased as a destination for visitors of varied tastes. It has become a **good tourist destination** for students from schools, colleges, universities, IPR and GI experts, agricultural scientists, farmers, conservationists, travellers, media persons, environmentalists, and celebrities.
- NEF is **featured in Kerala Tourism's official website www.keralatourism.org**. NEF is also a recognized unit under the Responsible Tourism (RT) Mission, an initiative by the **Department of Tourism, Government of Kerala**.





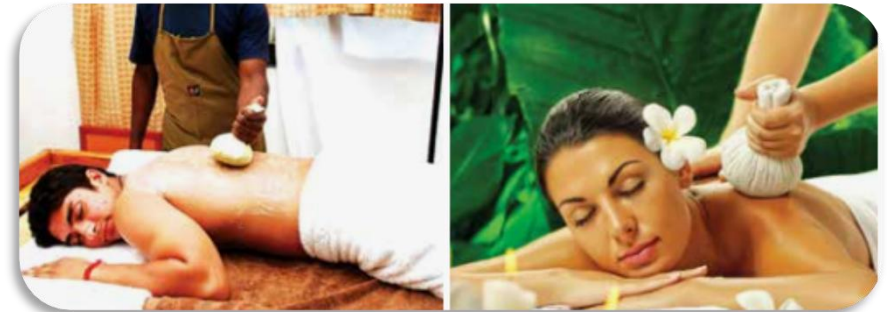
Navara Kizhi (Navara Potli) Therapy



- It is an **Ayurvedic treatment**, and is one of the most popular sweat inducing therapies which is **used to relieve pain and stiffness in the muscles and soft tissues, nourish and strengthen the joints, muscles while providing relief from pain.**

Impact of the Work

- Adoption of *Navara* Cultivation in large area.
- Establishment of *Navara* rice Farmers society
- Registering as Authorized User



Revenue generated

- Production: Approx. 300 kg paddy/acre
- *Navara* rice : 180 kg rice and value added products
- Sale price: Rs.1,10,200/- Cost of cultivation:Rs.1,00,275/-
- **Net profit (Rs./acre): Rs. 9,925/-**

A Woman Entrepreneur's Journey from Adversity to Prosperity



Sanaha Sharma

Background & Initial Challenges

- Born in **Taraur village, Mandi, Himachal Pradesh**, in a resource-scarce setting.
- Married at 20 in 2007, faced financial hardships and gender-based discrimination.
- **Traditional farming (maize, wheat)** on 0.48 ha yielded only ₹65,000 annually.
- Limited access to education and entrepreneurial opportunities in rural area.
- Household chores and societal norms added to time and energy constraints.
- Completed 12th standard, aspired to continue education despite early marriage.
- Faced high input costs in traditional farming, limiting savings and profits.
- Lacked initial knowledge of modern agricultural technologies and practices.
- **Encountered social stigma as a woman venturing into non-traditional roles.**



Adoption of Integrated Farming System (IFS)

- Connected with KVK, Mandi in 2016 via Mera Gaon Mera Gaurav scheme.
- Adopted IFS: crop production, dairy, vegetable nursery, mushroom, value addition.
- Trained in ZBNF, mushroom cultivation, and processing at KVK Mandi.
- Introduced millets, pulses, oilseeds, and intercropping for diversification.
- Used multi-purpose processing machine for value-added products like jams, pickles.
- Completed 200-hrs skill training as Agril. Extension Service Provider (2016-17).
- Adopted improved dairy practices, replacing low-yield cattle with better breeds.
- Learned nursery management for cauliflower, cabbage, brinjal, and capsicum.
- Utilized farm crop residues for cost-effective oyster mushroom compost.



Achievements & Economic Impact



- Annual income rose from ₹65,000 to ₹5,10,400, a 674.74% increase through IFS.
- Oyster mushroom (₹2,70,000) and value addition (₹1,20,000) major contributors.
- Trained 1,747 women in 230 SHGs, each earning ₹8,000-10,000 monthly.
- Received awards, including best oral presentation at Seminar (2023).
- Sales of products at local fairs, Sunday Kisan Mandi, and via Brooke India.
- Leads 30 SHGs under *Chachyot Krishak Society*, empowering 240-300 women.
- Produces 2,400 kg of oyster mushrooms annually from 1,200 bags.
- Contributed to nutritional security through millet-based products like *laddoos*, biscuits.
- Featured on *Doordarshan* (2023) for sharing natural farming experiences.

Lessons Learned & Future Vision

- **Success drivers:** Hard work, optimism, risk-taking, and interpersonal skills.
- SHGs and KVK support crucial for empowering women farmers.
- Advocates IFS for sustainable income and reduced drudgery in hill farming.
- Plans to establish a mushroom processing unit and brand for products.
- Aims to create a model farm to demonstrate IFS and inspire others.
- Emphasizes institutional backstopping and direct market linkages for success.
- Promotes women's self-sufficiency through cooperatives and MSMEs.
- Envisions a network of SHGs for collaborative women's empowerment.
- Believes creative thinking and teamwork are key to entrepreneurial success.



Fish Farming in North India



Shri Sultan Singh (Padma Shri Awardee)

Sultan Fish Seed Farm, Karnal, Haryana

Background & Initial Challenges



- Started in 1983 by Shri Sultan Singh, a farmer from Butana, Karnal, Haryana.
- Innovated in a vegetarian state with no fish seed hatcheries in North India.
- Overcame social taboos and lack of family support for fish farming.
- Faced high seed mortality (60-70%) due to transportation from Kolkata.
- Leased community ponds for Rs. 500/year, earning Rs.1,62,000 in 18 months.
- Born in a farming family, initially uninterested in traditional crops like rice and wheat.
- Inspired by a village boy earning from fishing in a community pond.
- Invested personal savings of Rs. 28,000 to start fish farming in 1983.
- Faced resistance due to cultural perceptions of fishing as a lower-caste job.
- Received initial training from Dr. Jagdish Chander Markandey at KVK, Karnal.



Innovations & Infrastructure Development



- Established North India's first fish hatchery in 1986 on 5 acres of barren land.
- Adopted advanced technologies: Recirculatory Aquaculture System (RAS) and In-Pond Raceway System (IPRS).
- Introduced new fish species: Pangasius, Shingi, Desi Magur, and Chitala.
- Built India's first freshwater fish processing plant in 2011 for value-added products.
- Launched “Fish Bite” retail stores for ready-to-eat fish products.
- Trained at CIFE, CIFT, CIFRI, CIFA, CIBA, and NACA (China) for advanced techniques.
- Introduced freshwater prawn and endangered Shinghada fish in Haryana.
- Developed aquaponics and hydroponics for organic vegetable production.
- Established a quality control lab in 2016 for testing fish products.
- Integrated dairy, poultry, and stud farming to utilize waste for fish feed.





Achievements & Impact



- Increased fish production from 65.4 tons (2016) to 122.2 tons (2019) using RAS.
- Revenue grew from Rs. 1.86 crore (2014-15) to Rs. 3.97 crore (2018-19).
- Trained 20,000 farmers and 761 students (2018-19) in fish farming techniques.
- Received Padma Shri (2019) and multiple national/international awards.
- Transformed village ponds, boosting *Gram Panchayat* lease income from Rs. 500 to Rs. 15 lakh annually.
- Produced 35 value-added fish products, increasing from 3.6 tons (2016) to 22.1 tons (2019).
- Bred Chitala fish in captivity, a first in India, using innovative hideout techniques.
- Initiated reservoir farming in Rajasthan, generating crores in revenue.
- Supported 70 farmers from reserved categories to adopt fish farming.
- Provided free research facilities and fish seeds to Ph.D. students.

Lessons Learned & Future Suggestions



- Key Success Factors: Hard work, patience, advance planning, and self-confidence.
- Overcame challenges like seed mortality, lack of expertise, and vegetarian culture.
- Suggestions: Youth should adopt fish farming as a profession using innovative technologies.
- Encouraged farmer groups for processing and exporting to increase income.
- Offers free training and support to aspiring fish farmers.
- Emphasizes never giving up despite daily challenges in fish farming.
- Advocates knowledge sharing to build confidence and recognition.
- Recommends adopting RAS for year-round production and water conservation.
- Suggests students form networks to reduce investment and stress in fish farming.
- Promoted fish farming as a sustainable livelihood for non-science graduates.



Way Forward

- The immense potential and growth opportunities in Rural India and South Asian countries in agro-tourism and promoting regenerative agriculture (SRT).
- Fish farming is an important sector to enhance the farm profitability of the farming community. The success story of Padama Shri Sultan Singh needs to be replicated in the neighboring countries on consortium mode.
- The success story of Ms. Saneha Sharma is an excellent example of women empowerment on entrepreneurial journey from adversity to prosperity.

Way Forward...

- The success story of P. Narayanan Unny is an example of conserving and cultivating Navara rice organically and using its medicinal value for people's welfare. This type of successful model needs to be promoted and scaled-up for the economic empowerment of the farming community.
- The success story of Dr. Basavaraj an innovative entrepreneur who started farmers –friendly initiatives of developing Biofertilizers and Biopesticides to ensure sustainability and enhancing agricultural production.
- The success story of Ms. Nikki P Chaudhary a woman entrepreneur in dairy farming is an example of strong purpose and vision to transform lives of people and meaningfully contributed to attain social, economic and environmental sustainability.

THANKS