

# Exploring Banana Enterprises in Erode District – KVK Experiences...

## Introduction

ICAR KVK, MYRADA experiences on end to end interventions in banana enterprise was explored in this Good Practices Note. Here Dr.P.Alagesan, Mr.S.Saravanakumar, Mr.P.Pachiappan and Mrs.M.Siva describes the KVK interventions in Banana cultivation and values addition and how it impacts on productivity enhancement and entrepreneurship promotion in the banana food and fibre based products.

## Synopsis

*Banana is the major fruit crop cultivated over 15000 ha in Erode district. Being a major crop cultivated in the district, ICAR KVK Erode focused on end-end interventions in banana cultivation for improving crop productivity and process in value chain activities. During the past five years (2017-2023), KVK has demonstrated various technologies through series of KVK technical interventions in the form of capacity building, on farm trials, front line demonstration, exposure visit and entrepreneurship promotion. KVK provided **73 skill training** on crop production, value addition and handicrafts making to the farmers, rural youths, extension functionaries and SHGs. On improving crop productivity, KVK initiated production of “**Banana Special**” Micro nutrient mixture with the support of ICAR-IIHR, Bangalore and **bio control production unit** for the benefit of farmers. For the past five years 57.62 tons of Banana special produced and supplied to the farmers for timely adoption of technology which rectified the micro nutrient deficiency and enhanced the yield by 15 - 18%.*

*In order to develop entrepreneurship in Banana based enterprises, KVK promoted entrepreneur making products in the area of **banana fibre** and **food-based products**. As a result, over **50 value added products in banana fibre** and **20 value added food products** developed by entrepreneurs with the support of KVK and other institution. Currently, 20% of the entrepreneur's products are being exported to other countries lime lighting the potential of banana enterprise in future. The establishment of institutions at the grassroot level for banana enterprise ensures the development and sustainability of the enterprise.*

## Context

Erode is one among the 38 districts in TamilNadu, the climatic condition prevailing in the district is suitable for cultivating variety of crops in the district. Banana is one among the fruit crop cultivated over 15000 ha area with the average productivity of 38MT/ha. The farmers are generally not aware of the recent method of crop management practices which helps in increasing the productivity. Harvested banana plants / pseudo stem is right now underutilized or not utilized properly but it gives the natural fibre in turn helps in protecting the environment.

There is a scope for increasing the production potential up to 60MT/ha and ambient demand for value added products in banana-based products in the global market. Krishi Vigyan Kendra, MYRADA (Mysore Resettlement And Development Agency) working in Erode district is attempted to explore the avenues to increase the productivity in banana and enhance the natural fibre production through its technical activities over the period of the years.

## About KVK

KVK play a vital role in conducting on farm testing to demonstrate location specific agricultural technologies. KVK conducts demonstrations to prove the potential of various crops at farmers' fields. In addition, conduct need based training programmes for the benefit of farmers and farmwomen, rural youths. KVK creates awareness about improved agricultural technologies through extension programmes. Critical and quality

inputs like seeds, planting materials, organic products, bio fertilizers and livestock are produced by the KVK and made available to the farmers.

ICAR Krishi Vigyan Kendra (KVK), Erode managed by the renowned organization MYRADA has been serving to the farming community in Erode district since from 1991. MYRADA is pioneered in rural development, SHG movement, and participatory integrated watershed development activities and improving the livelihood status of the community in the unreached areas since from 1967. The strength and success of the KVK in reaching out to farmers is its participatory approach to work with community based organizations such as Self-Help Groups (SHGs), Joint Liability Groups (JLGs), Farmers Producer Organizations (FPOs), Community Managed Resource Centres (CMRCs) and AESC (Agri-Entrepreneurs Service Center). KVK, Erode pioneered in promotion of integrated farming system, soil and water conservation activities, crop diversification, livelihood promotion of tribals and hilly farmers, honey bee clusters and entrepreneurship promotion.

To increase the crop productivity and enhance value chain activities, ICAR KVK, Erode has been actively involved in providing ***“end to end interventions in banana cultivation”***. The aim of these interventions is to increase the crop yields, and develop sustainable enterprises among youth and women.

#### GOOD AGRICULTURE PRACTICES IN BANANA ENTERPRISE:

- I. **Enhancing Agricultural Productivity:** KVK empowers farmers to optimize their yields by promoting cutting-edge agricultural practices like introducing **new crop varieties, precision nutrient management and effective pest and disease control strategies**. KVK identify and validate the most promising technologies from state and central research institutes through field testing, and then share these best practices with a wider audience through print and electronic media, ensuring maximum impact.

Sl.No.	Intervention	Technology popularized
1	Introduction of new varieties	• CO-2, CO-3, Udhayam
2	Weevil management	• Pseudo stem trap
3	Leafspot management and Erwinia Management	• Bio fungicide
4	Nematode management	• Bio nematicide
5	Nutrient management	• IIHR Arka Banana special – Micro nutrient mixture

#### II. *End to end Intervention in Promotion of Banana Enterprise by KVK*



#### **i. Promotion of New Varieties:**

The widespread cultivation of traditional banana varieties (Ney Poovan and Karpuravalli) had made crop vulnerable to Panama wilt disease, resulting in decreased yields. To address this challenge, KVK introduced and promoted three new varieties - Udhayam, CO-2 and CO-3 in 10 farmers' fields. This initiative has not only reduced the incidence of pests and diseases but also enhanced yields. To ensure the planting materials availability in Erode district, 5 farmers trained on suckers and mother plant production and distribution among the farming community. Currently, a total of 118 hectares of land are under cultivation with these new varieties in 240 farmer's field.

#### **ii. Promotion of micronutrients:**

On farm trial has been conducted during the year 2015-16 to assess the effectiveness of IIHR (Indian Institute of Horticultural Research) Arka Banana Special, a micronutrient technology developed by IIHR, Bangalore in 5 farmer's field. Since it was the innovative product of ICAR –IIHR, the farmers were not able to access the product in time. To ensure its availability, KVK Erode purchased the micronutrient technology from IIHR, Bangalore, to produce IIHR Arka Banana Special at KVK.

#### **iii. Establishment of bio control units:**

On farm trials conducted during the year 2015-16 in 10 farmers field to evaluate the efficacy of various bio control agents for controlling leaf spot, wilt, Erwinia rot and nematode infestations in banana plants. To ensure the availability of bio control agents throughout the year, KVK established decentralized Bio control Units at KVK and at village level, producing 75 quintals of high-quality bio-fungicides that empowered local banana growers to protect their crops and boost yields.

#### **iv. Skill Building Programme**

In order to convert the waste into wealth, harvested banana plants were utilized for the production of banana fiber-based products. KVK provided 15 skill training to rural youths on banana fibre based product preparation. Later, the volunteer youths were formers as SHG and involved in production of various banana fibre based products. KVK made an arrangement to the entrepreneurs to tie up with the National Research Centre for Banana (NRCB), Trichy, and Technology Business Incubator (TBI) at Tamil Nadu Agricultural University (TNAU), Coimbatore for product standardization since the KVK has no such facilities.

#### **v. Formation of various groups**

Two youth groups were formed in the Gobi and Bhavani clusters, focusing on banana fiber extraction, processing, rope making and handicraft production. Additionally, these groups produced and marketed by-products for textile, defence, and sanitary industries. Three trained SHGs at Sathyamangalam were involved in the production of handicrafts, including baskets, toys and yoga mats using banana fiber and bark.

## vi. Promotion of Entrepreneurship

Furthermore, the KVK promoted entrepreneurship in the production of food-based value-added products in two clusters. Entrepreneurs were exposed to various national-level institutes actively involved in value addition in banana based products preparation and standardization, including National Research Centre for Banana (NRCB), National Institute of Food Technology Entrepreneurship and Management (NIFTEM), Central Food Technological Research Institute (CFTRI), and TamilNadu Agricultural University (TNAU) for product development and quality assurance.

### Various uses of Banana and its products



## OUTCOMES AND IMPACT

Good practices on banana cultivation and enterprise has yielded impressive results, with significant benefits to the farmers, entrepreneurs and the local community.

- The new varieties in banana reached 118 ha area by covering 240 farmers.
- For the past five years (2017-2023), KVK successfully produced 57.62 ton of IHR Arka Banana Special micro nutrient and supplied to the farmers. 30 percent of the total banana cultivation area reached this micro nutrient technology (4610 ha) in Erode district.
- Decentralized bio input production unit established and produced 75 quintal of bio inputs reached 3750 ha area in the district.
- 73 skill training programmes conducted during the past five years on production, post-harvest management and value addition in banana based products. 2450 farmers, rural youth and womens participated and benefitted through this programmes.
- 350 rural youths and SHG members trained on value addition in Banana. As a result, 174 entrepreneurs developed in banana fibre production and value addition. Over 50 value added products in banana fibre and 20 value added food products are prepared and marketed their products through digital platform.
- Two rural youth groups and 3 SHGs involved in Banana fibre based products preparation. One federation covering 272 members involved in value added food product preparation and marketing. Value added food products developed a common brand name and marketed in the name of SBGF (Sustainable Banana Growers Federation)
- 174 rural youths and 3 SHG members covering 56 women involved in the production of value added food products in banana based products and banana fibre based products.

Further, KVK conducted extension study by using ex post facto research method to study the overall impact of KVK interventions in banana enterprise. 100 farmers selected from 4 blocks (Gobichettipalayam, TN Palayam, Anthiyur and Sathyamangalam) of Erode district. The overall impact of the interventions are hereunder

- 70% of farmers gained knowledge on banana specialization, enhancing their skills and expertise
- 9.8% increase in yield, resulting in higher profits for farmers
- Incremental income of Rs. 80,000 per hectare realized by farmers who adopted the integrated crop management practices
- 40 tons of banana fiber produced by the group members and entrepreneurs per year
- 15,000 liters of SAP water-based value-added products produced per year
- Established network with international market outlets in Japan, Sri Lanka, and other countries

**Brand:** TRUE GREEN FABRIC

**Entrepreneur:** V. Utharakkannan

**Innovative Venture:** Banana Fibre based Handicrafts

**Achievements:**

- Produces over 1000 kgs of fiber and 100 tonnes of products per month
- Develops innovative automatic machine for extracting fiber at banana field with ARYA Scheme support
- Successfully markets products domestically and internationally
- Showcases products at 'One Station One Product' (OSOP) at Coimbatore Railway Junction, promoting marketing networking



**Impact:**

- Environment-friendly technologies adopted for value chain activities
- Increased production and sales of eco-friendly handicrafts
- Enhanced marketing opportunities through OSOP platform

**Quote:**

*"I'm thrilled to have developed a sustainable business model that not only promotes eco-friendly products but also supports local communities. The ARYA Scheme has been instrumental in helping me achieve this success." - V. Utharakkannan, Founder, EPIC GREEN Pvt. Ltd*

**Brand:** SP GRACE NATURAL

**Entrepreneur:** Mr. Prasath

**Innovative Venture:** Banana Fibre based fabric

**Achievements:**

- Developed innovative products from banana including rope, handicraft materials, and banana pith blocks
- Created bio growth promoter from crop sap water and cleaning materials for floor and cloth wash
- Achieved impressive production volumes:
  - + 16 tons/year of banana fibre extracted
  - + 6000 liters/year of SAP water-based value-added products
  - + 40,000 meters/year of mats produced and marketed by youths
  - + 2000 handicrafts/year produced and marketed
- Established a network with international market outlets in Japan and Sri Lanka



**Impact:**

*Mr. Prasath's entrepreneurial venture has not only generated employment opportunities for local youths but has also promoted sustainable and eco-friendly products, contributing to the growth of the local economy.*

**Quote:**

*"With KVK's support, I was able to unlock the potential of banana fibre and create a sustainable business model that benefits both people and the planet." - Mr. Prasath, Founder, SP GRACE NATURAL*

## ❖ Challenges

- The expectations from the farmers on KVK is high in terms of technology dissemination for enhancing productivity by using different techniques, whereas KVK is not in a position to develop the varieties and technologies. Therefore KVK, partnered with various resource institutions like NRCB, IIHR, TNAU for promoting high yielding varieties and yield increasing technologies. KVK identified 5 progressive farmers and trained them as masters in production of mother plant materials in the recent varieties.
- KVK faced the challenges on ensuring the timely availability of inputs to the farmers. To access the inputs in time KVK made a tie up with IIHR for producing Arka Banana special micronutrient and bio inputs production. KVK established decentralized bio input production unit at KVK and also in the village level for continuous production and supply of the bio inputs in time.
- Networking the entrepreneurs and under one umbrella is a difficult process, KVK established Agri Entrepreneurs Service Centre (AESC), where all the entrepreneurs and SHGs involved in value addition in banana and fibre production enrolled as a member. KVK also promoted the federation for marketing the value added products in common brand name.

## SUSTAINABILITY AND SCALING UP

To enhance and sustain banana productivity, KVK has promoted a range of institutions, including the Agri-Entrepreneurs Service Center (AESC), Community Managed Resource Center (CMRC), and Farmer Producer Organizations (FPOs). These decentralized units ensure a steady supply of micro nutrients and bio control products to farmers in the district and nearby. Technology expertise available with Erode KVK is shared with farmers in other districts having more than 10000 ha area under banana cultivation like Salem, Namakkal, Krishnagiri, Theni, Madurai, Cuddalore, Thirunelveli, Tuticorin and Palakkad, Idukki (Kerala), promoting regional development and growth

Furthermore, KVK has launched the Integrated Banana Growers Federation (IBGF), a networking platform that connects entrepreneurs involved in value-added banana-based food products. These products are marketed under the common brand name "B Fruit", enabling them to reach a wider consumer base in a shorter timeframe. KVK has empowered SHG members by training them in banana fibre extraction and handicraft production. These products are marketed as a cluster, providing a sustainable source of income for the enterprise. Technologies related to Banana fiber extraction and value-added food products expertise to other countries (Japan, Malaysia, Sri Lanka and few European Countries)

To ensure the establishment and sustaining of enterprise is essential to build appropriate institutional arrangement at the grassroot level. This will help the entrepreneurs to network among themselves, help in managing their routine activities and resources convergence for their sustainable development.

## LESSONS LEARNED

1. **Identify local strengths:** KVK Erode recognized the potential of banana cultivation in their region and built upon it. Similarly, others can identify their local strengths and resources in their area and develop initiatives around them.
2. **Diversify and add value:** By promoting value addition in banana by-products, KVK Erode demonstrated the importance of diversifying and adding value to existing crops.
3. **Entrepreneurship development:** KVK, Erode focused on the underutilized or plant waste based products preparation. This will help to farmers to maintain their farm in clean and entrepreneurs also got an opportunity to effectively utilize the plant wastes into valuable products. Other development interveners can aim to create entrepreneurs in their respective regions, leading to sustainable livelihoods and economic growth
4. **Market-oriented approach:** The success of KVK Erode's initiative is likely due to its market-oriented approach, where the focus was on developing products (food and fibre based products) that have a market demand.
5. **Linkages and collaborations:** The initiative's success might have been facilitated by linkages and collaborations with various stakeholders, such as farmers, entrepreneurs, and industry experts. Others can foster similar partnerships to leverage resources and expertise.

By adopting these experiences, others can promote similar initiatives that encourages entrepreneurship, value addition, and rural development in their respective regions.

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