



An Applied Group-centric Approach for Empowering Banana Farmer's Agripreneurial Culture

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Agripreneurship is a dynamic strategy which enables farmers to generate sustainable income and thereby providing economic benefits to farmers. In the pursuit of sustainable agriculture, agripreneurship emerges as a dynamic strategy, empowering farmers to cultivate not only crops but also a reliable stream of income. This study explores the transformative impact of agripreneurship ventures on banana farming in Chirakkara Panchayat, Kerala. Through participatory action and learning, a heptalogical model was developed, addressing identified constraints in three phases: constraint identification, intervention, and market analysis. The study engaged 10 farmers with a minimum of three years of experience, strategically chosen from Krishi Bhavan clusters and VFPCCK groups. The intervention focused on value addition, introducing products like banana jam and pseudostem squash. Results indicate a positive shift in the economic landscape, with the sale of 355 bottles of squash and 260 bottles of jam generating a profit of Rs. 11,219 and a favorable

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Benefit-to-Cost ratio of 1.36 achieved in a short sales period (13 weeks). Market analysis demonstrated weekly, monthly, and cumulative sales trends. Simulation scenarios based on actual sales and a 20% increase in quantity, cost, and returns projected promising outcomes. Simulation based on the actual sales yielded a net return of Rs. 1,34,628 per year, while the simulation with increased parameters suggested potential net returns of Rs. 1,61,554 per year, emphasizing the agripreneurial success potential. The agripreneurial model, aligned with the heptalogical model of entrepreneurship, proved relevant in areas where banana prices are low. The success in Chirakkara inspired confidence in the farming community, fostering diversification and product expansion based on seasonal inputs. In conclusion, the study highlights the significant impact of participatory action and learning in transforming banana farming. The success achieved in Chirakkara provides a scalable blueprint for the broader implementation of agripreneurial models, showcasing the potential for holistic economic development and improved livelihoods for banana farmers.

Keywords: Agricultural enterprise; entrepreneurship; participation; action and learning; net returns; profit; agripreneur.

1. INTRODUCTION

Agripreneurship ventures facilitate farmers to empower themselves through improved returns and employment opportunities. Over time the farmers involved in agripreneurship ventures excel in various technical skills and the venture itself become the source of economic benefits to the farmers. Agripreneurship is a dynamic process for creating income from agriculture [1,2]. Agripreneurship is the powerful tool to change India and contribute for its sustainable economic development. Market demand, resource availability, technical support and policy support are essential for sustainable agripreneurship development [3].

Successful entrepreneurial activity generates various types and forms of new capital and decides the complex contradictions of economic development, provides changing economic environment, expand production capabilities of the society Smirnov [4]. Entrepreneurship is an activity capable of creating a new intellectual capital in form of technological capital [5]. Action research as a qualitative methodological option is a client -centered approach to study the social system by providing solutions to the particular social problem and there by bringing the change [6-8].

Consumer preferences have changed over the years where there is a great demand for safe and nutritious locally available products. Fruit based products like jam, puree, juices, milkshakes are the products which satisfy the changing consumer preferences [9].

2. METHODOLOGY

The study was conducted in Chirakkara Panchayath of Kollam district in Kerala .Banana is a common fruit cultivated in all households of Kollam district. Chirakkara was recognized for its dominant cultivation of bananas, making it a suitable site for investigating agripreneurial models related to banana farming. From chirakkara panchayath, 10 farmers were purposefully chosen from established Krishi Bhavan clusters or Vegetable and Fruit Promotion Council, Kerala (VFPCCK) groups. These farmers were carefully selected based on their expressed willingness to participate in the study. These 10 farmers formed a cluster of participant farmers. The farmers having a minimum of three years of hands-on experience in cultivating the specific crop or managing the enterprise under investigation was the criteria for selection of participant farmers. This criterion was set to ensure that the selected participants possessed substantial practical knowledge and experience, making them valuable sources of insights into the challenges and potentials of agripreneurship in their respective domains. The entrepreneurial model development was in line with the heptalogical model grounded in the conceptual history of entrepreneurship theory and education [10]. The Heptaological Model of Entrepreneurship is amenable to the radical diversities of entrepreneurial phenomena across sectors, industries, and cultures. proceeded through a series of steps including constraint analysis, preliminary understanding, participant farmer selection, stakeholder discussions and then the model development based on the identified constraints.

3. RESULTS AND DISCUSSION

The study, initiated in 2021, addressed significant challenges in banana farming in Chirakkara, such as bulk production issues and a lack of markets (Table 1), adversely impacting farmers' livelihoods.

Recognizing the urgency for interventions, the study aimed to alleviate the struggling situation. Prior to intervention, constraint identification involved multiple responses to identify strategies facilitating farmers to overcome existing challenges. Farmers were made aware of the process and the importance of pointing out critical difficulties. Both participants and non-participants were involved, and through ranking, it was recognized that low prices and lack of markets were the most crucial issues to tackle. Value addition, processing, and agripreneurship through groups emerged as the most effective strategy. A careful selection of value-added products was made based on farmer preferences through a checklist, where farmers preferred squash and jam.

In 2022, extensive research and consultations with farmers and stakeholders revealed the potential for value addition in banana farming. The innovative concept of transforming bananas into value-added products, particularly banana jam, emerged as a promising solution. Collaborations with successful banana processors and trainers showed that processing around 4 kilograms of bananas could yield 2 kilograms of jam, providing a significant opportunity to boost farmers' income with extended shelf life and improved marketing prospects.

Building on this success, further exploration led to the discovery of pseudostem squash, derived from the banana plant's pseudostem. This unique product became an additional source of income for farmers, offering a new and valuable utilization for a previously underutilized resource. The team was excited about the potential of pseudostem squash in addressing the challenges faced by farmers. Professional insights and enthusiasm were shared with the farmers in Chirakkara Panchayat, highlighting how the once-overlooked pseudostem, typically destined for composting, could now be turned into a more valuable and economically viable product.

During the training session, inputs were procured to motivate participant farmers, creating a source of inspiration. Identified participants underwent training to acquire the skills and knowledge necessary for producing banana jam and pseudostem squash. On the same day as the training, 75 bottles of squash and 80 bottles of jam were successfully produced. Farmers, recognizing the potential for increased income and stability, embraced these opportunities and continued their efforts. With linkages established, sales of banana jam and pseudostem squash were facilitated in the market, empowering farmers and providing them with a renewed opportunity for greater profit. The year 2022 marked a turning point as farmers experienced a sense of purpose and motivation, undergoing handholding in 3-4 production sequences. This effort resulted in the sale of 355 bottles of squash and 260 bottles of jam, supported by extension services, enabling them to overcome the constraints of unpredictable market forces. The details are mentioned in Table 2.

The profit from selling 355 bottles of squash and 260 bottles of jam amounted to Rs. 11,219 with a positive Benefit-to-Cost (B:C) ratio of 1.36, indicating the financial success of the venture. The intervention also proceeded through a detailed market analysis, studying the sales trends of the value-added banana products on a weekly and monthly basis. Also, the cumulated sales data was also analyzed to get a broader perspective on the enterprise's performance. The special marketing strategies in the process were also emphasised in the process of study. In the year 2022, the farmers were able to market their produce with the handholding support of the stakeholder institutions. Their journey, marked by hard work and a willingness of SHG members to adapt, offered hope for a brighter future in agripreneurship through more product diversification and value addition opportunities for Chirakkara Panchayat. The follow up studies revealed that the farmer group has diversified their products and still in pace with the agripreneurial development of their venture.

The Table 3 provides a comprehensive overview of the economic performance of a banana enterprise, both based on actual sales and through simulations depicting potential growth scenarios. The data showcases the financial outcomes of maintaining current sales trends for a year and the impact of a 20% increase in quantity, cost, and returns per year by expanding markets.

Table 1. Constraint identification before the intervention

Sl. No	Constraints	Participating farmers (n=15)	Others (n=4)	Total (N=19)
1	Low prices during times of glut.	12	4	16 (1)
2	Lack of markets	10	2	12 (2)
3	Crop loss in heavy rains and floods	7	3	10 (3)
4	Pests and diseases	5	2	7(4)

Table 2. Weekly, monthly, cumulative sales and B:C ratio of banana products

Weeks	Product (Quantity in number)			
	Squash	Jam	Squash cumulative	Jam cumulative
1	6	4	37	30
2	4	5		
3	5	4		
4	22	17		
5	7	10	55 (92)	43 (73)
6	13	13		
7	15	7		
8	20	13		
9	18	16	53 (145)	60 (133)
10	17	18		
11	12	10		
12	6	16		
13	8	10	48 (193)	48 (181)
14	15	16		
15	9	12		
16	16	10		
17	12	10	73 (266)	47 (228)
18	21	14		
19	20	12		
20	20	11		
21	25	5	58 (324)	20 (248)
22	18	7		
23	8	5		
24	7	3		
25	9	6	31 (355)	12 (260)
26	12	2		
27	10	4		
Economics				
Banana pseudo stem squash- 355 nos (500 ml bottle)	Total Cost (TC)- 31006	Profit = TC-TR	B: C Ratio= 1.36	
Banana jam- 260 nos (200g bottle)	Total Returns (TR)- 42225	Rs11219		

The actual results of the participatory research indicated that there is a positive returns from the banana enterprise with a significant gross returns of 42,225 and net returns being Rs. 11,219 from the sale of 615 bottles of squash and jam together in 13 weeks time.

3.1 Simulation (Based on Actual Sales)

The simulation demonstrates the potential of scaling up the sales by maintaining the existing sales trend. The net returns for the banana enterprise show a positive increase compared to the actual results, indicating the possibility of higher profitability. The participatory research

reveals a positive outcome from the banana enterprise, emphasizing its profitability with a significant net return of Rs. 1,34,628 per year.

Simulation (20% Increase in Quantity, Cost, and Returns): Expanding markets and achieving a 20% increase in quantity, cost, and returns per year can lead to even higher net returns. The simulation suggests a significant boost in profitability. The simulation demonstrates the potential for higher profitability by expanding markets and increasing quantity, cost, and returns. The net returns show a substantial boost, reaching Rs. 1,61,554 per year. The substantial increases in net returns, is a clear

Table 3. Simulation and economic analysis of banana enterprise expansion strategies

Economics of the enterprise based on the actuals	
Parameters	Banana
	Squash-500 ml+Jam-200g
Quantity (Nos)	355+260
Total (Nos)	615
Cost (Rs.)	31006
Returns (Rs)	42225
Bottles sold per month (Nos)	87
Simulation for one year based on the actuals sales per month	
Sales per year (Nos).	1044
Cost per year (Rs.)	372072
Returns per year (Rs.)	506700
Net returns per year (Rs.)	134628
Simulation (for one year with 20% increase in quantity, cost and returns per year by expanding markets)	
Sales per year (Nos)	1253
Cost per year (Rs).	446486
Returns per year (Rs).	608040
Net returns per year (Rs.)	161554

indication of the potential for agripreneurial success.

The research ultimately came up with an agripreneurial model for the banana farmers through the participatory action and learning process where in the steps were:

- Phase 1- Identification of constraints
- Phase 2- Intervention
- Phase 3- Market analysis and Improvement

The model developed is in line with the heptalogical model of entrepreneurship [10]. The model becomes relevant in areas where the price of banana falls and farmers are unable to market their produce, at this point of time the inputs are available at low prices and hence the cost of enterprises naturally falls whereas the processed products has acceptability and better price realization. The demonstrated model was an inspiration to the farming community as they could directly experience the benefits and could continue the venture with product diversification with the seasonal availability of inputs. Through the participatory action and learning process, there was an involvement of the a group who were really affected by the problem but willing for a positive change, where in the groups have identified their problem, have come up with different ideas, they were also involved in finding out a solution to the problem, experienced the waves of change to a different strategy and experienced positives and pitfalls under facilitation. This have made them confident to take up new ventures or diversify the existing venture.

4. CONCLUSION

The success of agripreneurial interventions in Chirakkara Panchayat, as outlined in this study, highlights the transformative impact of participatory action and learning on banana farming. Through collaborative efforts and knowledge exchange, the lives of banana farmers have been uplifted, showcasing the potential for positive change in rural communities. Sustained prosperity is identified as contingent upon strategic activities, guided by the synergy of stakeholders and fortified by robust institutional support. The agripreneurial model developed for Chirakkara Panchayath serves as evidence of the efficacy of need-based training initiatives. Its scalability not only promises effective income generation for participating farmers but also serves as a blueprint for the broader state's banana farming community. The success story in Chirakkara serves as inspiration and a beacon of hope for other regions. It demonstrates that, with the right support and tailored strategies, agripreneurial endeavors can act as catalysts for holistic economic development. Participatory Action and Learning (PAL) holds the key to enhancing the entrepreneurial potential of banana farmers. By fostering entrepreneurial motivation and developing a synergy of management and social competencies through convergence and engagements, farmers can substantially elevate their capabilities as reported by Kaimal, et al. [11]. This approach aims to empower farmers, enabling them to provide not only sustainable but also healthy remuneration, creating a pathway for enhanced agripreneurial success in banana

farming. The transformative journey in Chirakkara emphasizes the potential of agriculture-based entrepreneurship to not only address local challenges but also contribute significantly to the broader socio-economic development of agricultural communities.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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