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Agri-business incubation and innovation: Catalysts of agricultural transformation in south India

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Abstract

India is rich in biodiversity, traditional indigenous knowledge, and human capital, all of which have enormous potential for fostering agri-based innovation. As per the annual report of 2022-2023 by Department of Agriculture & Farmers Welfare, 54.6 of the total workforces is engaged in agriculture and allied sector activities and accounts for 18.6 % of India's GVA at current prices during 2021-22. The study was conducted in two states - Kerala and Tamil Nadu. The Agri-business incubators in these two states which are attached to the State Agricultural Universities (SAU) and Research Institutes under ICAR were selected. Two Agribusiness incubators each from Kerala and Tamil Nadu has been selected purposively for this study. This paper aims to infer the number of enterprises established after incubation and their survival rate, nature and extent of innovation-based agribusiness incubation undertaken by Agri-Business Incubators (ABIs) and the interventions made by the agribusiness incubators. Based on the literature review, opinion of the experts' and focused group discussion with the officials working in ABI, the items have been generated and the results are obtained.

Keywords: Number of enterprises, survival rate, nature of innovation, extent of innovation, interventions of agribusiness incubators

Introduction

India is one of the world's largest and oldest agrarian economies. Since economic liberalization in 1991-1992, the Indian agricultural industry has experienced a revival. The Indian economy is heavily reliant on the agricultural sector. As per the annual report of 2022-2023 by Department of Agriculture & Farmers Welfare, 54.6 of the total workforces is engaged in agriculture and allied sector activities and accounts for 18.6 % of India's GVA at current prices during 2021-22. India is rich in biodiversity, traditional indigenous knowledge, and human capital, all of which have enormous potential for fostering agri-based innovation. Innovation is the backbone of agro-entrepreneurship as it entails newer opportunities and higher profit for the entrepreneurs. The innovation can be commercialized only by transforming it into a marketable idea and in turn an enterprise. Many limitations like mismatch between the production and market demand, lack of technological support to address the production issues and lack of guidance for the farmers about the production still exists. To address these challenges, the long run solution is agribusiness. The lack of appropriate training, technological support, mentorship, credit and marketing facilities leads to the failure of the nascent agro-enterprises. Hence, there is a need of a system, which is dynamic and flexible, as it requires some kind of assistance, the agri-business incubators will provide opportunities to transcend the farming and involve in more meaningful mechanisms of economic contribution. Thus, Agri-Business Incubators (ABI) are seen as the 'magic bullet' that would arrest the failure of agribusiness enterprises and ensure them a soft launch in the society.

This paper aims to infer the number of enterprises established after incubation and their survival rate, nature and extent of innovation-based agribusiness incubation undertaken by Agri-Business Incubators (ABIs) and the interventions made by the agribusiness incubators.

Materials and Methods

The study was conducted in two states - Kerala and Tamil Nadu. The Agri-business incubators in these two states which are attached to the State Agricultural Universities (SAU)

and Research Institutes under ICAR were selected. Two Agribusiness incubators each from Kerala and Tamil Nadu has been selected purposively for this study. From Kerala, Agri-Business Incubator (ABI) of KAU at Thrissur and Technology Incubation Centre (TIC) of CTCRI at Thiruvananthapuram under ICAR has been selected purposively for the study, out of the six ABIs in the state. From Tamil Nadu, out of the nine ABIs, the Madurai Agri-Business Incubation Forum (MABIF) of NABARD at Madurai under TNAU and Agribusiness Incubator of ICAR Sugarcane Breeding Institute at Coimbatore under ICAR has been selected for the study. Thus, a total of four ABIs one each under the SAU and ICAR has been selected for the study from each state.

The respondents were ABI officials; the data was collected from five officials working with the ABIs. Thus, a total of

20 officials from the two states constitute the sample for the study. The data were collected through personal interview using a well-structured and pre-tested interview schedule. Appropriate statistical tools were used for interpretation of the data and generation of results.

Results and Discussion

Number of enterprises established by the ABI incubatee agripreneurs and their survival rate

It refers to the number of enterprises established by the ABI incubatee agripreneurs excluding the present year which was collected from the ABI. The survival rate of enterprises established by ABI incubatee and non-incubatee agripreneurs was assessed by determining the number of agri-business units which are surviving till now and was calculated using percentage analysis.

Table 1: Number of enterprises established by the ABI incubatee agripreneurs of Kerala and their survival rate

Sl. No.	Year	KAU-ABI		TIC-CTCRI	
		Number of enterprises established after incubation	Number of enterprises surviving till now	Number of enterprises established after incubation	Number of enterprises surviving till now
1.	2022	19	19	9	6
2.	2021	20	18	9	8
3.	2020	13	12	5	4
4.	2019	16	15	5	3
Total		68	64	28	21
		Survival percentage	94.12	Survival percentage	75

From the Table 1, it was found that in 2019, the number of enterprises established after incubation and the number of enterprises surviving till now under KAU-ABI was 16 and 15 respectively and TIC-CTCRI has 5 and 3 respectively. In the year 2020, the number of enterprises established after incubation and the number of enterprises surviving till now under KAU-ABI was 13 and 12 respectively, but in TIC-CTCRI, it was 5 and 4 respectively.

For the year 2021, it was observed that the number of enterprises established after incubation and the number of enterprises surviving till now under KAU-ABI was 20 and 18 respectively, while TIC-CTCRI has 9 and 8 respectively.

Finally, in the year 2022, the number of enterprises established after incubation and the number of enterprises surviving till now under KAU-ABI was 19 and 19 respectively, whereas for TIC-CTCRI it was 9 and 6 respectively.

It can be inferred that the number of enterprises established has been gradually increasing every year and in 2021 it has reached maximum and in 2022 it decreased a little but the survival number has been increasing every year. Thus, the survival percentage in KAU-ABI and TIC-CTCRI were 94.12 and 75 respectively.

Table 2: Number of enterprises established by the ABI incubatee agripreneurs of Tamil Nadu and their survival rate

Sl. No.	Year	NABARD-MABIF		SBI-ABI	
		Number of enterprises established after incubation	Number of enterprises surviving till now	Number of enterprises established after incubation	Number of enterprises surviving till now
1.	2022	55	55	5	5
2.	2021	99	96	9	8
3.	2020	37	29	4	3
4.	2019	22	13	1	1
Total		213	193	19	17
		Survival percentage	90.61	Survival percentage	89.47

From the Table 2, it was found that in 2019, the number of enterprises established after incubation and the number of enterprises surviving till now under NABARD-MABIF was 22 and 13 respectively and SBI-ABI has 1 and 1 respectively.

In the year 2020, the number of enterprises established after incubation and the number of enterprises surviving till now under NABARD-MABIF was 37 and 29 respectively, but in SBI-ABI, it was 4 and 3 respectively.

For the year 2021, it was observed that the number of enterprises established after incubation and the number of enterprises surviving till now under NABARD-MABIF was 99 and 96 respectively, while SBI-ABI has 9 and 8 respectively.

Finally, in the year 2022, the number of enterprises established after incubation and the number of enterprises surviving till now under NABARD-MABIF was 55 and 55 respectively, whereas for SBI-ABI it was 5 and 5 respectively.

It can be inferred that the number of enterprises established has been gradually increasing every year and in 2021 it has reached maximum and in 2022 it decreased a little but the

survival number has been increasing every year. Thus, the survival percentage in NABARD-MABIF and SBI-ABI were 90.61 and 89.47 respectively.

Table 3: Number of enterprises established by the ABI incubatee agripreneurs of Kerala and Tamil Nadu and their survival rate

Sl. No.	Year	Kerala		Tamil Nadu	
		Number of enterprises established after incubation	Number of enterprises surviving till now	Number of enterprises established after incubation	Number of enterprises surviving till now
1.	2022	28	25	60	60
2.	2021	29	26	108	104
3.	2020	18	16	41	32
4.	2019	21	18	23	14
Total		96	85	232	210
		Survival percentage	88.54	Survival percentage	90.52

From the Table 3, it was found that in 2019, the number of enterprises established after incubation and the number of enterprises surviving till now in Kerala was 21 and 18 respectively and in Tamil Nadu was 23 and 14 respectively. In the year 2020, the number of enterprises established after incubation and the number of enterprises surviving till now under Kerala was 18 and 16 respectively, but in Tamil Nadu, it was 41 and 32 respectively.

For the year 2021, it was observed that the number of enterprises established after incubation and the number of enterprises surviving till now under Kerala was 29 and 26 respectively, while Tamil Nadu has 108 and 104 respectively.

Finally, in the year 2022, the number of enterprises established after incubation and the number of enterprises surviving till now under Kerala was 28 and 25 respectively, whereas for Tamil Nadu it was 60 and 60 respectively.

It can be inferred that the number of enterprises established has been gradually increasing every year and in 2021 it has

reached maximum and in 2022 it decreased a little because due to the unemployment in the lockdown, many entered into agribusiness in 2022 to secure self-employment, but the survival number has been increasing every year. Thus, the survival percentage in Kerala and Tamil Nadu were 88.54 and 90.52 respectively.

Nature and extent of innovation-based agribusiness incubation undertaken by ABIs

It refers to the nature of innovation-based agribusiness activity incubated by the incubator for the purpose of establishing an agribusiness unit. It was collected from the ABIs by asking the frequency of innovation-based incubation undertaken in each category.

Extent of innovation refers to the extent to which the innovation-based agribusiness undertaken by the ABIs and incubated for the purpose of establishing an agribusiness unit. It was measured using percentage of response obtained in each category.

Table 4: Nature and extent of innovation-based agribusiness incubation undertaken in Kerala

Sl. No.	Nature of innovation	Extent (KAU-ABI) N=68		Extent (TIC-CTCRI) N=19	
		Frequency	Percentage	Frequency	Percentage
1.	Production	22	32.25	7	36.84
2.	Processing/Value addition	43	63.24	11	57.89
3.	Packaging	-	-	-	-
4.	Marketing and distribution	1	1.47	-	-
5.	Agricultural consultancy	-	-	-	-
6.	Agricultural services	2	2.94	1	5.26
7.	Combination of any	-	-	-	-
8.	Others	-	-	-	-

It is evident from the Table 4 that maximum percentage of innovation-based agri-business activities were undertaken in the processing/value addition sector in both KAU-ABI (63.24%) and TIC-CTCRI (57.89%). The next major category in which innovation agri-business activities were undertaken was production with 32.25 in KAU-ABI and

36.84 per cent in TIC-CTCRI. Agricultural services were another major area of innovation that has 2.94 and 5.26 per cent entrepreneurs in KAU-ABI and TIC-CTCRI respectively. Innovative agri-business ventures were found in the marketing and distribution sector only in KAU-ABI with 1.47 per cent of the agripreneurs.

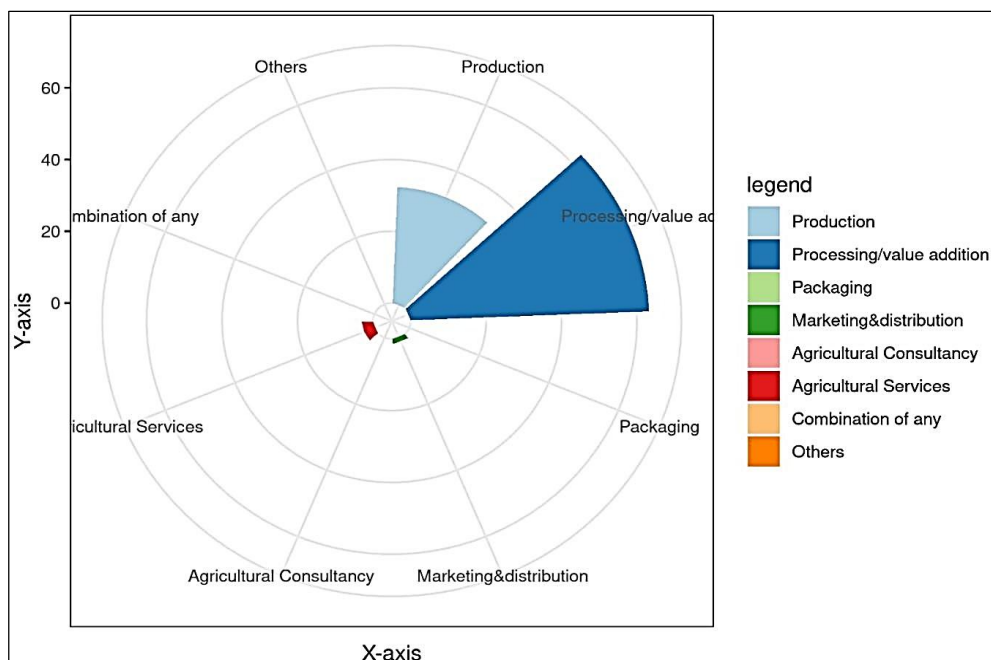


Fig 1: Distribution of the nature and extent of innovation-based agribusiness incubation undertaken in KAU-ABI

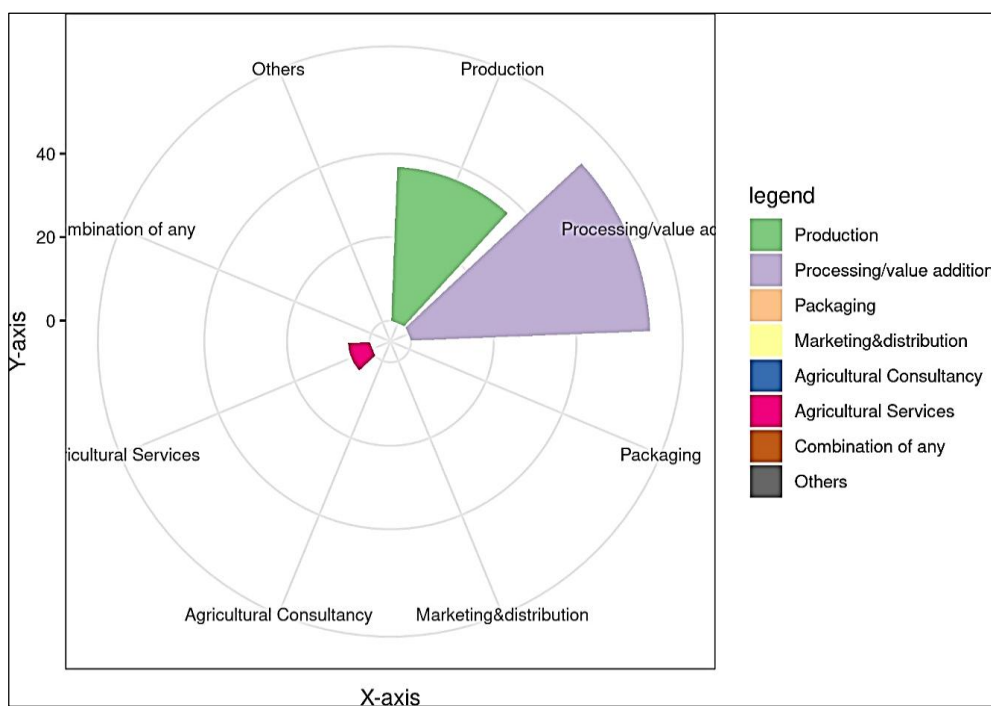


Fig 2: Distribution of the nature and extent of innovation-based agribusiness incubation undertaken in TIC-CTCRI

Table 5: Nature and extent of innovation-based agribusiness incubation undertaken in Tamil Nadu

Sl. No.	Nature of innovation	Extent (NABARD-MABIF) N=67		Extent (SBI-ABI) N=13	
		Frequency	Percentage	Frequency	Percentage
1.	Production	16	23.18	3	23.08
2.	Processing/Value addition	24	35.29	9	69.23
3.	Packaging	3	4.34	-	-
4.	Marketing and distribution	7	10.14	1	7.69
5.	Agricultural consultancy	3	4.34	-	-
6.	Agricultural services	10	14.49	-	-
7.	Combination of any	4	5.79	-	-
8.	Others	-	-	-	-

It is evident from the Table 5 that the maximum percentage of innovation-based agri-business activities were undertaken in the processing/value addition in both NABARD-MABIF (35.29%) and SBI-ABI (69.23%). The next major category

of innovation-based agri-business was production with 23.18 and 23.08 per cent in NABARD-MABIF and SBI-ABI respectively. Marketing and distribution were another major area of innovation in the agri-business sector with

10.14 of the ventures under NABARD-MABIF and 7.69 per cent under SBI-ABI respectively. Other categories of innovation-based agri-business ventures were not being incubated under the SBI-ABI, whereas agricultural services,

packaging and agricultural consultancy were found only in NABARD-MABIF to the extent of 14.49, 4.34 and 4.34 per cent respectively.

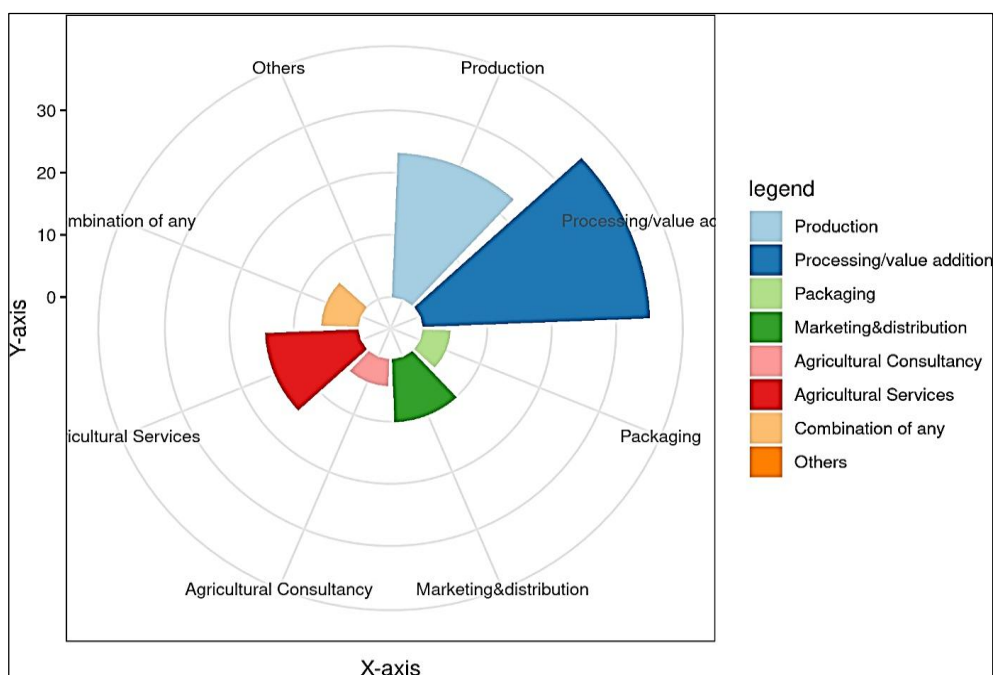


Fig 3: Distribution of the nature and extent of innovation-based agribusiness incubation undertaken in NABARD-MABIF

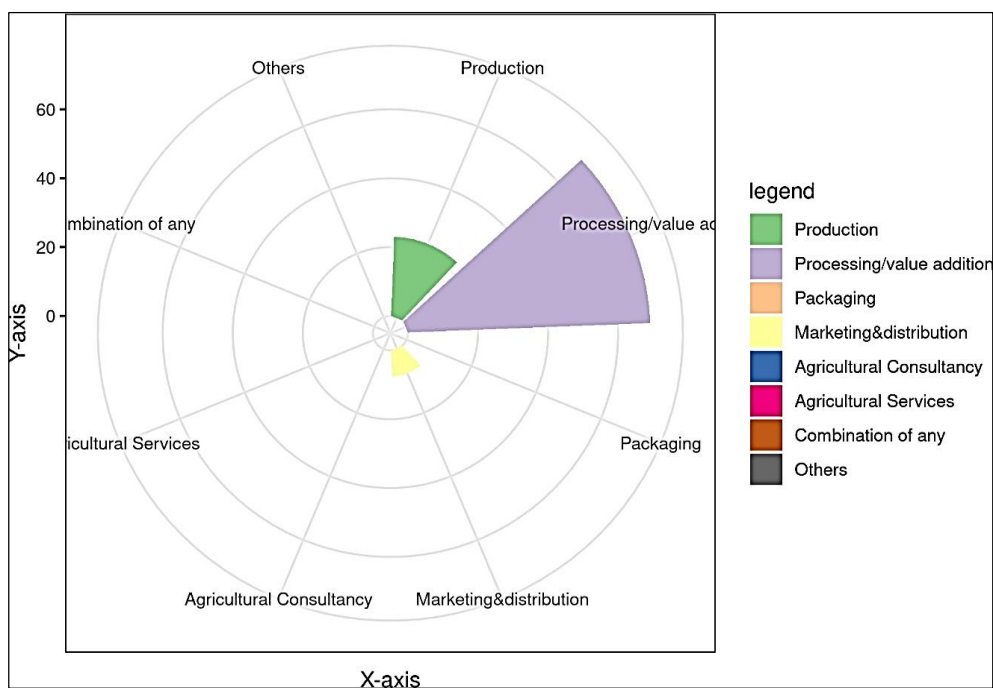


Fig 4: Distribution of the nature and extent of innovation-based agribusiness incubation undertaken in SBI-ABI

Table 6: Nature and extent of innovation-based agribusiness incubation undertaken in Kerala and Tamil Nadu

Sl. No.	Nature of innovation	Extent (Kerala) N=87		Extent (Tamil Nadu) N=80	
		Frequency	Percentage	Frequency	Percentage
1.	Production	29	33.33	19	23.75
2.	Processing/Value addition	54	80.60	33	41.25
3.	Packaging	-	-	3	3.66
4.	Marketing and distribution	1	1.15	8	9.76
5.	Agricultural consultancy	-	-	3	3.66
6.	Agricultural services	3	3.45	10	12.19
7.	Combination of any	-	-	4	4.88
8.	Others	-	-	-	-

It is evident from the Table 6 that the processing/value addition sector has the highest share among the innovation-based agri-business activities in both Kerala (80.60%) and Tamil Nadu (41.25%) with Kerala showing almost double the extent of innovation-based agri-business incubation. The next major category of innovation-based agri-business was production with 33.33 and 23.75 per cent in Kerala and

Tamil Nadu respectively, followed by agricultural services with 3.45 and 12.19 per cent in Kerala and Tamil Nadu respectively. Marketing and distribution were another major nature of innovation that has 1.15 and 9.76 per cent in Kerala and Tamil Nadu respectively. Innovative ventures in packaging and agricultural consultancy were found only in Tamil Nadu to the extent of 3.66 per cent each.

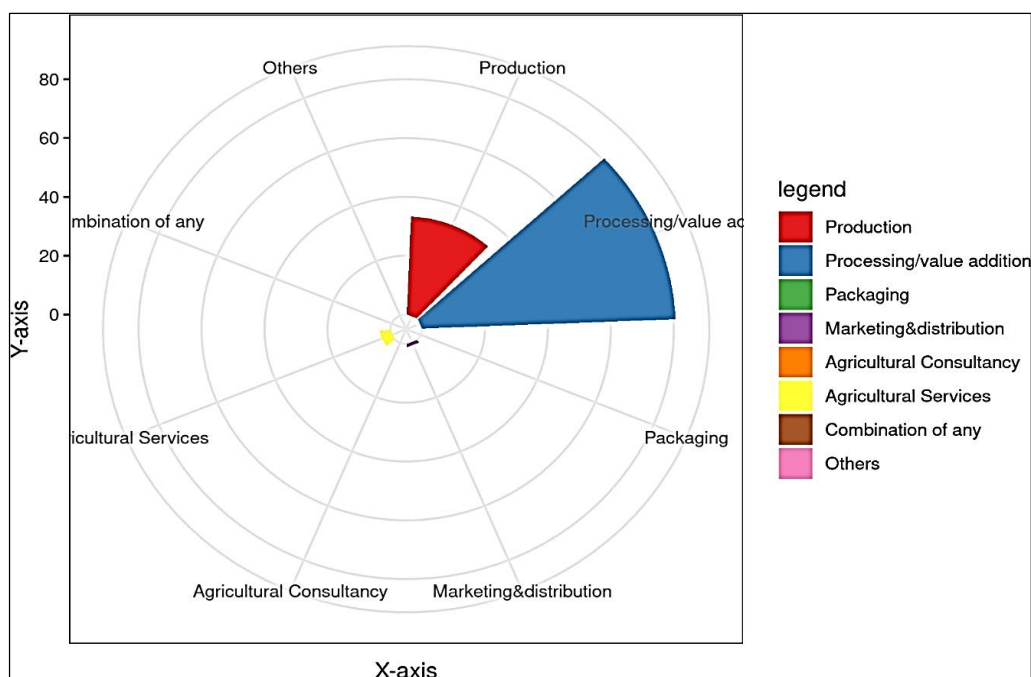


Fig 5: Distribution of the nature and extent of innovation-based agribusiness incubation undertaken in Kerala

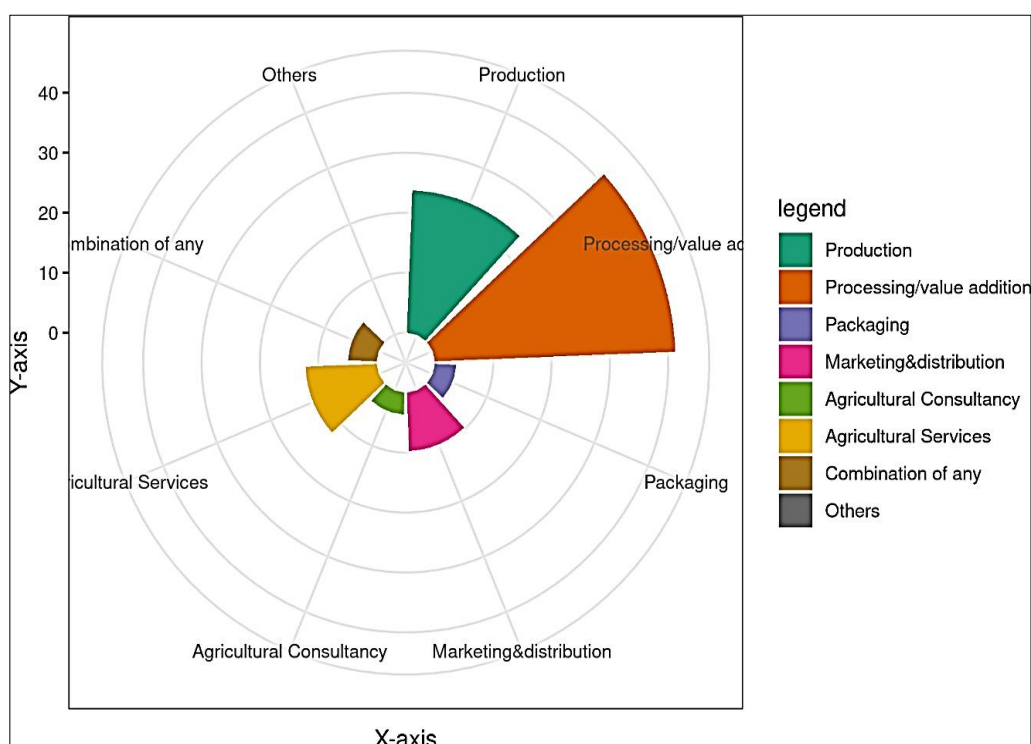


Fig 6: Distribution of the nature and extent of innovation-based agribusiness incubation undertaken in Tamil Nadu

Interventions / facilities provided by the incubators

Interventions / facilities provided by the incubators was collected from the ABI officials using interview schedule. It was recorded by directly asking the officials as every ABI provides different interventions to the agripreneurs.

Interventions / facilities provided by the KAU- ABI

- Food analysis laboratory, food microbiology laboratory, quality control laboratory
- Coconut processing line, spice processing line, fruits and vegetable processing line

- DPR preparation
- Capacity building programme
- Technology transfer
- Mentorship
- Product standardisation
- Consultancy services
- Financial support (Grant-in-aid)

Interventions / facilities provided by the TIC- CTCRI

- Hands on trainings
- Regulatory and advisory services
- Assistance for establishment
- Business mentoring and networking
- Technology development and transfer
- Chips, noodles and other snacks preparation and packaging machineries
- Technology consultancy
- Access to funding

Interventions / facilities provided by the NABARD-MABIF

- Technology development and transfer
- Networking and market linkages
- Mentoring and coaching
- Product standardisation
- DPR preparation
- MSME - Intellectual Property Facilitation Centre (IPFC)
- Assistance with navigating regulatory requirements, standards, and compliance
- Financial management skills and access to appropriate financing products
- Financial support
- Working space for 15 incubatees inside the ABI with cafe facility
- Business outlet for the incubatees
- Food analysis laboratory, food microbiology laboratory, quality control laboratory
- Access to Milk and value added products machineries, noodles making, cold storage with generator facility, groundnut processing machineries, etc for the incubatees on shift basis.

Interventions / facilities provided by the SBI- ABI

- Technical consultancy services
- Market linkages/ intra incubatee linkages/ inter face meets
- Capacity building programmes for business promotion
- Assistance for patent filing for innovative process and products
- Access to seminars/ conferences/ workshops/ laboratories
- Quality testing of samples and certification services at concession rates
- Financial advice
- Facilitation of loans and grants

Conclusion

This research evaluates the working of each ABIs that is selected for the study. The number of enterprises established after incubation and their survival rate was collected from the ABIs and it was found that in Kerala (KAU-ABI and

TIC-CTCRI), the agro-enterprises has a survival percentage of 94.12 per cent, whereas in case of Tamil Nadu (NABARD-MABIF and SBI-ABI), the agro-enterprises has a survival percentage of 90.52 per cent. The nature of innovations undertaken by the agripreneurs were classified under the broad areas as production, processing/value addition, packaging, marketing and distribution, agricultural consultancy, agricultural services and combination of any. Majority of the incubatees in Kerala (80.60) and Tamil Nadu (41.25) were found to undertake innovative agri-business enterprises related to processing/value addition. The data indicates that incubators play a vital role in the establishment and survival of agro-enterprises by fostering innovation. Their support has proven effective in enabling agripreneurs to launch and sustain their ventures, particularly through innovative approaches in various aspects of agri-business. However, there are differences in the mindset of agripreneurs in each district, funding and policies of each incubator.

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