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Perception study on the impact of the DAESI program on trained agricultural input dealers of Malda District

[1]Victor Sarkar, [2]S Chakraborty, [1]R Roy, [1]BC Rudra, [2]B Maity, [2]K Pradhan, [2]PK Pal, [2]PN Harshavardhan and [1]Md Shajahan

[1]Malda Krishi Vigyan Kendra, Uttar Banga Krishi Viswavidyalaya, Ratua, Malda, West Bengal, India

[2]Depertment of Agricultural Extension, Uttar Banga Krishi Viswavidyalaya, Pundibari, Cooch Behar, West Bengal, India

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Corresponding Author: Victor Sarkar

Abstract

The National Institute of Agricultural Extension Management (MANAGE) introduced the "Diploma in Agricultural Extension Services for Input Dealers (DAESI)" to improve the technical expertise of input dealers across various states. This initiative was launched to address a significant gap—most input dealers in India lack formal agricultural education and technical knowledge, despite being a primary source of farming advice for the agricultural community. Farmers in India frequently turn to input dealers for guidance on agricultural practices (MANAGE, 2012). To bridge this gap, MANAGE designed the DAESI program to equip dealers with the necessary skills to offer more informed and reliable support to farmers.In the Malda district, the DAESI program was implemented during the years 2017-18 and 2018-19. A study was conducted to evaluate the impact of the program on trained input dealers in the region. The findings revealed that a majority of the dealers had changed their approach to diagnosing and solving field-related problems after completing the DAESI program. Many respondents expressed the need for refresher training to keep their technical knowledge updated and maintain their businesses' competitiveness. Notably, most input dealers were willing to pay for these refresher sessions.The study also identified several challenges faced by agro-input dealers, including price fluctuations due to seasonal demand, high transportation costs, and a lack of need-based training opportunities. The DAESI course enhances communication skills, technical knowledge, and agricultural practical skill.This Respondents provided valuable suggestions for improving the DAESI program, particularly regarding the course's duration, scheduling, number of field visits, study materials, and teaching methods. These insights highlight the importance of continuous evaluation and program refinement to better meet the evolving needs of input dealers and the agricultural sector.

Keywords: Agricultural extension, input dealers, field visits, communicational behaviour, daesi programme, diploma course knowledge and skill development

Introduction

The National Institute of Agricultural Extension Management (MANAGE) introduced the "Diploma in Agricultural Extension Services for Input Dealers (DAESI)" in 2003 to enhance the technical expertise of agricultural input dealers. In India, with approximately 2.82 lakh input dealers, many lack specialized knowledge in agribusiness. Given their pivotal role in disseminating innovations to farmers, it became essential to equip them with skills that would enable them to act as para-extension professionals. The DAESI program, now a Central Sector Plan Scheme, is implemented by Nodal Training Institutes (NTIs) such as Agricultural Colleges, Krishi Vigyan Kendras (KVKs), Farmers' Training Centres, and the Agricultural Technology Management Agency (ATMA). It covers diverse topics, including agriculture, business ethics, extension methods, agricultural inputs, and regulatory frameworks. The program plays a crucial role in enhancing communication channels—such as cosmopolitan, mass media, local, and interpersonal networks—used by input dealers to acquire and spread agricultural knowledge.

Input dealers, through their communicational behaviors, are key drivers of change in Indian agriculture. The DAESI program aims to transform these input sellers into "Para-Extension Professionals" who can provide farmers with more effective, field-specific advice. To achieve this, it offers a one-year, regionally tailored curriculum, preparing dealers to better address the complex challenges faced by farmers today. Recognizing its significance, the Government of India extended the DAESI program nationwide in 2015. In West Bengal, for instance, it is implemented through the State Agricultural Management and Extension Training Institute (SAMETI) in Narendrapur. Since its nationwide expansion, assessing the program's impact has become important. It is critical to evaluate how input dealers analyze field problems, identify the need for refresher training, and address the challenges they face. Feedback and suggestions from participants also help improve the program's structure. Regular program evaluations at the district level revealed that input dealers highly value practical exposure, such as home visits and demonstrations, which significantly enhance their technical understanding. A study conducted in 2023-24 involving DAESI program participants aimed to assess the

communicational behaviors of input dealers. The findings showed that most dealers regularly used media such as phones, newspapers, and online platforms to stay updated and access information about the program. In Malda, West Bengal, a sample of 40 dealers was randomly selected for the study. Results revealed a strong positive association between the communicational approach—particularly the use of online channels during the COVID-19 pandemic—and the successful acquisition of skills and knowledge. These insights underscore the need for continued assessments to refine the DAESI program and ensure it remains responsive to the evolving needs of input dealers and the agricultural extension system.

Objectives

- To concentrate on the profile of information sellers prepared under DAESI.
- To comprehend the impression of prepared input sellers about DAESI program.
- To break down the apparent effect of DAESI program on prepared input sellers.

Methodology

The study was conducted at Malda K.V.K. carried out. Among the respondents, 40 agricultural input dealers were randomly selected. Criteria for selecting respondents included that agricultural input dealers must have completed the Diploma in Agricultural Extension Services for Input Dealers (DAESI) program, and that dealers must regularly renew their dealer licenses. Dealer role performance was operationally defined as the way in which input providers perform or exercise their perceived roles as agricultural extension services. Appropriate modifications were made to the scheme developed by Ganiger (2012) [2] and used to measure the role performance of agricultural input distributors in agricultural extension services. The schedule consisted of 24 items, validated with the help of experts, and measured at five consecutive points. H. Most of the time (MO), often (O), sometimes (ST), rarely (S), never (N). Possible scores for respondents ranged from 24 to 140 and were then normalized. Using the cumulative square root frequency method, respondents were categorized into high, medium, and low performance roles. Data from respondents were collected using face-to-face interview method. This study used an "exploratory" research design. After extensive literature review and consultation with experts, appropriate variables were selected for this study. Independent variables were selected in the categories of personal and socio-economic variables, psychological variables, and communication variables. Correlation analysis was used to measure the relationship between selected independent variables and the role performance of agricultural input distributors in agricultural extension services. We then performed multiple linear regressions to determine the relative contributions of the selected independent variables and their combined impact on the role. Path coefficient analysis was used to examine the channelling effects of independent variables on role performance of agricultural input distributors.

Results and Discussion

The socio-personal characteristics of the input dealers were analyzed, focusing on various factors such as age, education, experience, dealership type, types of agricultural inputs sold, number of villages served, sources of information regarding the DAESI program, and motivation to join the program. The results are summarized in Table 1.

Table 1: Profile of Input Dealers (N=40)

Sl. No.	Variable	Category	Number	Percent
1	Age	Age Young (<35 years)	26	65
		Middle (36-45 years)	08	20
		Old (> 45 years)	06	15
2	Education	10th Standard	06	15
		PUC (11-12) / Intermediate	11	27.5
		Graduate (Arts or Science)	12	30
		Post Graduate	10	25
		Any other (technical course)	01	2.5
3	Experience	Low (0 - 4 years)	35	87.5
		Medium (5-21 years)	05	12.5
		High (22-48 years)	00	00
4	Type of Dealership	Retailer	21	52.5
		Wholesaler	19	47.5
		Wholesaler & Retailer	00	00
5	Type of Agri-input Sold	Seeds	00	00
		Fertilisers	05	12.5
		Pesticides	00	00
		More than one input	35	87.5
6	Number of Villages Covered	1-10	00	00
		11-25	08	20
		26-50	11	27.5
		51-100	14	35
		101-500	07	17.5
		>500	00	00
7	Number of Farmers Covered	1-100	00	00
		101-250	00	00
		251-500	00	00
		501-1000	35	87.5
		>1000	05	12.5
8	Information Source of DAESI program	Print media	00	00
		Electronic media	07	17.5
		MANAGE website	00	00
		Extension officers	00	00
		Trained input dealers	03	12
		Other sources / More than one source	30	75
9	Source of Motivation to join DAESI program	To gain knowledge in Agriculture	03	7.5
		To obtain diploma certificate	02	05
		To become a para-extension worker to help farming community	07	17.5
		To have an efficient business	28	70
		Other sources / More than one source	00	00

The analysis indicates that a significant majority (65%) of the trained input dealers are young or middle-aged individuals, under the age of 45, who have developed agricultural technical knowledge through the DAESI program. While the minimum educational requirement for admission is completion of the 10th grade, it is noteworthy that 30% of respondents hold university degrees, and 27.5% have completed their intermediate education. Those with advanced qualifications and extensive experience in the agricultural sector possess a deeper understanding of the

program's content. Most input dealers operate as small to medium-sized retailers, selling a range of agricultural inputs. Specifically, 27.5% cover between 26 and 50 villages, while 87.5% serve between 501 and 1,000 farmers. The primary source of information about the DAESI program for these dealers is the Department of Agriculture. Notably, 70% of input dealers perceive participation in the program as an opportunity to enhance their business efficiency, obtain a diploma for license renewal, and improve their technical skills. They also view their role as associate extension agents, enabling them to pass on knowledge to farmers.

Table 2: Perception of Input Dealers about DAESI Program (N=40)

Sl. No.	Perception Item	Category	Number	Percent
1	**About Topics Covered and Study Material**			
A	Relevance of the topics covered in classroom	Most Relevant	37	92.5
		Relevant	03	7.5
		Not relevant	00	00
B	Relevance of study material	Most Relevant	34	85
		Relevant	06	15
		Not relevant	00	00
C	Relevance of the field visits conducted	Most Relevant	38	95
		Relevant	02	05
		Not relevant	00	00
2	About Resource Persons and Facilitators			
A	Quality of resource persons in delivering the sessions	Very good	35	87.5
		Good	05	12.5
		Poor	00	00
B	Quality of Facilitator in coordinating / conducting the program	Very good	36	90
		Good	04	10
		Poor	00	00
3	**About Level of Satisfaction of Classroom Sessions and Exposure Visits**			
A	Classroom sessions	Very good	37	92.5
		Satisfactory	03	7.5
		Not satisfactory	00	00
B	Visit to research stations / SAUs	Very good	34	85
		Satisfactory	06	15
		Not satisfactory	00	00
C	Visit to labs	Very good	38	95
		Satisfactory	02	05
		Not satisfactory	00	00
D	Visit to Farmers' field	Very good	39	97.5
		Satisfactory	01	2.5
		Not satisfactory	00	00
E	Demonstrations / Field trials/ Hands-on experience	Very good	37	92.5
		Satisfactory	03	7.5
		Not satisfactory	00	00
4	**About Records and Assignments**			
A	Problem-solution register	Very useful	32	80
		Useful	08	20
		Not useful	00	00
B	Field visit register	Very useful	26	65
		Useful	14	15
		Not useful	00	00
C	Record for sketches	Very useful	16	40
		Useful	24	60
		Not useful	00	00
D	Assignment and presentation	Very useful	31	77.5
		Useful	09	22.5
		Not useful	00	00
5	**About Facilities and Procedure Adopted**			
A	Maintenance of attendance and time management adopted	Most sufficient	26	65
		Sufficient	14	35
		Insufficient	00	00
B	Facilities in the classroom	Most sufficient	32	80

		Sufficient	08	20
		Insufficient	00	00
C	Assessment of program	Most sufficient	28	70
		Sufficient	12	30
		Insufficient	00	00
6	**About Perceived Changes among Trained Input Dealers**			
A	Gained Knowledge and Skill in Crop Production Technologies	Fully	12	30
		Partially	28	70
		Not at all	00	00
B	Gained knowledge and skill in pest and disease management	Fully	11	27.5
		Partially	29	72.5
		Not at all	00	00
C	Gained knowledge and skill in soil health management	Fully	15	37.5
		Partially	25	62.5
		Not at all	00	00
D	Gained knowledge and skill in water management	Fully	17	42.5
		Partially	23	57.5
		Not at all	00	00
E	Gained knowledge and skill in farm machinery	Fully	21	52.5
		Partially	19	47.5
		Not at all	00	00
F	Gained knowledge and skill in extension management	Fully	15	37.5
		Partially	25	62.5
		Not at all	00	00
G	Change in orientation towards business ethics	Fully	28	70
		Partially	12	30
		Not at all	00	00
H	Overall knowledge and skill gained in DAESI program is sufficient to give suitable advice to the field level problems of farmers	Fully	11	27.5
		Partially	29	72.5
		Not at all	00	00

The DAESI program launched by MANAGE in 2003 has proven to be the most suitable for input traders using this program. The curriculum has been refined over time and focused on site-specific cultures and issues. The quality of the facilitators who coordinate the program is highly praised. 55% of the respondents indicated that they have a graduate or postgraduate degree in agriculture and have extensive field experience and good knowledge of agricultural activities in the district. Input traders were also highly satisfied with the classes, laboratories, laboratory tours, innovative farms, and demonstrations. Although most of the respondents did not attend her KVK or agricultural university, the eight site visits providedexposure to various research institutions. Although program records such as problem-solving records, field visit records, sketch records, and task presentations are very useful, problem-solving records are the most useful. The facilities and procedures provided under the program are considered to be sufficient as most of the activities will be organized at agricultural universities, KrishiVigyanKendras (KVKs) and other agriculture-related training institutes. The DAESI program requires at least 80% class attendance and an on-site visit for the final exam. Candidates' performance will be assessed through quizzes, mid-term exams, final exams, and practical exercises conducted by external examiners. Most respondents believe they have acquired knowledge and skills in crop production techniques, pest and disease management, soil health management, water management, farm machinery, extension management, and business ethics. This year-long program is comprehensively covered by experienced resource experts and includes weekly capsule topics. Candidates will be familiar with both kharif and rabi crops and will be able to grasp classroom learning quickly. Immediate practice of learning has deepened my understanding of agriculture.

Perceived Impact of DAESI Program

Perceived impact of DAESI program in terms of confidence in technology dissemination, increase in customer base, volume of business were assessed and presented in the Table 3.

The survey found that 92.5% of respondents felt more confide tint echo logy adoption through classroom sessions, in person visits, and tours. They now have contacts for resource officers and facilitators who can advise and pass on advice to farmers. The majority of input dealers (95%) reported an increase in their customer base after the DAESI program, with 16-25% seeing an increase of 27%. The advice-seeking and purchasing input customer bases increased to 81.57% and 53%, respectively. He also saw his repeat rate of consulting clients rise to 62%. The study also found that input sales increased by 1-20% after DAESI.

Table 3: Perceived Impact of Program (N=40)

Sl. No.	Category	Number	Percent
1	**Confidence in Technology Dissemination after DAESI Program**		

A	Gained confidence in technology dissemination	37		92.5
B	Not gained confidence in technology dissemination	03		7.5
2	**Customer Base after DAESI Program**			
A	Increased	36		90
B	Not Increased	04		10
2.1	**Extent of Increase in Customer Base after DAESI program**			
A	Up to 10%	00		00
B	11-15%	00		00
C	16-25%	06		15
D	26-50%	12		30
E	More than 50%	22		55
2.2	**Change in Customer Base after DAESI Program**			
	Category	**Before DAESI**	**After DAESI**	**Percentage change**
A	For advice	55	80	35
B	For Purchase of Inputs	60	80	20
C	Level of adoption of suggested recommendations in the field by the farmers	50	75	25
D	Repeat customers for advice	60	80	20
Sl. No.	**Category**	**Number**	**Percent**	**Sl. No.**
3	**Sales Status**			
A	Increased	38		95
B	Not Increased	02		05
3.1	**Extent of Increase in Sales / Volume of Business**			
A	1-20%	00		00
B	21-40%	02		05
C	41-60%	05		12.5
D	61-80%	25		62.5
E	81-100%	08		20

Status of Field Problem Analysis Approach after DAESI Program

The approach of input dealers in analysing the field problem after DAESI program was assessed and presented in Table 4.

Table 4: Change in Input Dealers' Field Problem Analysis Approach after DAESI program (N=40)

Sl. No.	Category	Before DAESI		After DAESI	
		Number	Percent	Number	Percent
1	Before giving advice, I analyse the problem duly discussing with farmers about the symptoms, the previous practices / inputs applied	20		85	
2	I ask the farmers to bring specimens for diagnosis	22		88	
3	I consult the other trained input dealers before advising the farmers	36		92	
4	I consult the resource persons and facilitators before giving advice to the farmers	29		80	
5	I visit farmers' field to understand the actual problem and suggest remedies	34		89	
6	I refer relevant study material given in DAESI program	07		78	
7	I advise farmers to go for soil test and apply fertilisers as per the Soil Test Result	28		82	
8	I advise farmers to encourage beneficial insects in their fields	22		81	
9	I advise farmers on the importance of biofertilisers and bio-pesticides to ensure eco-friendly and quality produce to consumers	22		80	
10	I update the farmers about the programs and schemes of Dept. of Agriculture and guide them to consult the Department officials to avail the benefits	40		92	

The DAESI program has revolutionized farmers' approach to analysing field problems. Here 98% of respondents changed their approach. They are now discussing practices with farmers, asking questions about specimens affected by the disease, and visiting farmers' fields to monitor symptoms. They formed a WhatsApp group to share their symptoms and get suggestions from trained traders. We provide contact numbers for support personnel who took classes during the program. They now advise farmers to use soil testing, soil test-based fertilizers, and bio-pesticides to ensure an environmentally friendly and high-quality product. Whereas it once relied on agricultural representatives to gather information, it now focuses on analysing issues at the field level.

Need for Refresher Training Program

The need for a refresher training program and the areas of training required for the trained input dealers were assessed and are presented in Table 5.

Table 5: Areas of Training Needs of Trained Input Dealers in Refresher Training Program (N=40)

Sl. No.	Category	Most Needed		Needed		Not Needed	
		Number	Percent	Number	Percent	Number	Percent
1	Agricultural inputs	19	47.5	17	42.5	04	10
2	Pest and disease management	25	62.5	12	30	03	7.5
3	Crop diversification	18	45	20	50	02	05
4	Soil health management	23	57.5	15	37.5	02	05
5	Irrigation / Water management	21	52.5	16	40	03	7.5
6	Weed management	24	60	12	30	04	10
7	Processing and value addition	26	65	12	30	02	05
8	Marketing	18	45	18	45	04	10
9	Bio-control agents / Bio-pesticides	22	55	15	37.5	03	7.5
10	Precautions in handling, storing and use of antidotes in case of accidents	21	52.5	17	42.5	02	05
11	Schemes and Programs	23	57.5	14	35	03	7.5
12	Weather information	19	47.5	17	42.5	04	10
13	Credit information	24	60	14	35	02	05
14	Farm machinery / implements	18	45	18	45	04	10
15	Consumer behaviour	23	57.5	14	35	03	7.5
16	Record Keeping	21	52.5	17	42.5	02	05
17	Computer application in file and business management	20	50	19	47.5	01	2.5

Table 5 clearly shows that the majority of respondents (57.5%) expressed the need for a refresher training program. They recognize the importance of regular training to keep their technical knowledge up to date and future-proof their business. Most of them are willing to pay for their education. Thus, district-level organizations such as KVK, ATMA, or state-level organizations such as SAMETI can organize 2-3 day training programs on recent agricultural advances every year. Also, the topics most needed for refresher training programs are pest and disease management (62.5%), biological control agents, bio-pesticides (55%), computer applications in records and business management (50%). It also showed that weeds management (60%) was included, soil health management (57.5%), record keeping (52.5%), agricultural inputs (47.5%), precautions for handling, storage, and use of antidotes in case of accidents (52.5%), weather information (47.5%), Such. Training institutions can consider the above topics while organizing retraining to meet the needs of input traders.

Reasons for Farmer's Access to Input Dealers

The reasons why farmers are coming to the input dealers as their customers are analysed and presented in Table 6.

Table 6: Reasons for Farmer's Access to Input Dealers (N=40)

Sl. No.	Categories	Number	Percent
1	Proximity	26	65
2	Low price	30	75
3	Easy accessibility	36	90
4	Quality of input	38	95
5	Timely availability	37	92.5
6	Relevant and practical solution	38	95
7	No alternative available	17	42.5
8	Visiting field	35	87.5

The table above shows the reasons why farmers approach or visit the shops of input dealers. 95% of respondents said that relevant and practical solutions provided by retailers are the main reason farmers visit stores. There are various other reasons why farmers visit a particular input dealer, such as input quality (95%), timely availability (92.5%), and ease of access (90%).

Constraints Faced by Agro-input Dealers

Various constraints faced by the input dealers are collected, analysed and presented in Table 7.

Table 7: Constraints Faced by Agro-input Dealers (N=250)

Sl. No.	Constraints	Number	Percent
1	Lack of capital	21	52.5
2	Non-availability of bank loan	17	42.5
3	Fluctuation of selling price of input due to seasonal demand	31	77.5
4	High cost in transportation	30	75
5	Lack of need-based training	26	65
6	Inadequate knowledge in maintaining stock book and sales register of the product	24	60
7	Lack of technical knowledge of the retailers about brands of product	21	52.5
8	Delay in renewal of license	13	32.5

Table 7 shows that 77.5% of respondents believe that fluctuations in the selling price of raw materials due to seasonal demand are one of the main problems. Most of the cultivated area is rain-fed and the harvest period is short, 3 to 4 months, so the business can only be operated during the main growing season. During the remaining months, irrigation farmers are the only ones who buy inputs, so there is no good business during the off-season, about eight to nine months. High transportation costs, lack of proper training, etc. are other problems faced by input traders.

Suggestions for Improvement of DAESI Program

The respondents' suggestions for improving the DAESI program in terms of duration, timing, number of site visits, research materials, methodology, etc. were evaluated and are presented in Table 8.

Table 8: Suggestions to Improve DAESI Program (N=40)

Sl. No.	Suggestion	Category	Number	Percent
1	Duration of Program	Increase	11	27.5
		Decrease	03	7.5
		No change	26	65
2	Timings of program	Increase	31	77.5
		Decrease	05	12.5
		No change	04	10
3	Interval of classes	Increase	30	75
		Decrease	04	10
		No change	06	15
4	Number of sessions per day	Increase	29	72.5
		Decrease	07	17.5
		No change	04	10
5	Number of practical classes	Increase	21	52.5
		Decrease	01	2.5
		No change	18	45
6	Number of field visits	Increase	22	55
		Decrease	09	22.5
		No change	09	22.5
7	Study material	Require more	19	47.5
		Require less	04	10
		No change	17	42.5
8	Methodology of program	Require change	07	17.5
		Slight change is required	10	25
		No change	23	57.5
9	Content and curriculum/ syllabus	Require modification	07	17.5
		Slight modification is required	12	30
		No change	21	52.5

As can be seen from the table above, the majority of respondents were interested in the program's duration and timing, class spacing, number of sessions per day, program methodology, content and syllabus/syllabus. However, his 22.5% of respondents suggested an increase in the number of site visits, 52.5% suggested an increase in the number of practical courses, and 47.5% suggested that a little more learning material is needed.

Conclusion

The study reveals that improving farm advisory services necessitates increasing input dealers' technical proficiency. The DAESI program has assisted input vendors with acquiring trust in innovation dispersal, and consistent preparation is expected to keep them refreshed with the most recent advancements and developments. Most info vendors consistently use papers and cell phones, which are fundamental in the present way of life. Over portion of these vendors are under medium to elevated degree of broad communications use, probable because of their elevated degree of schooling and interest in finding out about farming advancements. Additionally, the media provides a platform for business growth. Cell phones are the most involved medium-level media for acquiring data about the DAESI program in their territory. Most Agri-input sellers have expanded their insight level in the medium reach, while they have likewise acquired medium-range abilities. This recommends that more accentuation ought to be put on field visits and exhibits to zero in on ability advancement. A connection coefficient was processed to decide the job of communicational characteristics in information and expertise improvement. The use of mass media contributed positively and significantly to the program's outcome, indicating that input dealers were able to increase their knowledge and skills through online classes.

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