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PROBLEM CONFRONTATION OF THE GROWERS IN LAC CULTIVATION IN THE BARIND AREA OF CHAPAINAWABGANJ DISTRICT

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ABSTRACT

The reason is that lac farming is essential to the rural population in the Barind area of Chapainawabganj District, Bangladesh, because it helps sustain the rural population and maintain the area's ecological balance. Although Lac has the potential to drive the economy and the environment, lac growers face numerous challenges that limit productivity and sustainability. This paper will examine the level and factors of problem confrontation among lac growers in the Barind region. A multistage random sampling technique was used to sample 98 growers, and data were analysed using descriptive statistics and the Pearson Product-Moment Correlation Coefficient. The results showed that most growers (64.29%) faced medium levels of problems, most of which were associated with poor marketing facilities, inaccessibility to credit, pests, and poor-quality broodstock. The factors identified as playing a significant role in growers' ability to address problems were education, farm size, annual income, experience in lac cultivation, and cosmopolitanism ($p < 0.05$). Age, household size, media exposure, and social participation, in contrast, were not significantly related. The most common coping measures included arranging transport to the market, taking interest-free loans, and receiving training on the same from experienced growers. The paper concludes that improvements in educational opportunities, access to finance, institutional support, and market infrastructure are critical to enhancing the resilience and adaptive capacity of lac growers. The transfer of extension services and the encouragement of community action are also suggested to enable sustainable production of Lac and enhance the livelihoods of the rural population in the Barind region.

1. INTRODUCTION

Lac is a natural gift and the sole biological resin of commercial significance, biodegradable,

non-toxic, renewable, and safe to the environment (Ahuja & Rastogi, 2023). It is a tough, sticky substance excreted by Kerria lacca (Kerr.), a lac insect and a member of the family Lacciferidae in the order Hemiptera (Sharma, 2023). To produce 1 kilogram of lac resin, about 300,000 insects must go through their lifecycle (Bashir et al., 2022). A continuous encrustation is produced by the Lac insects on the tender shoots of the host plants, and the Lac used is later harvested, processed, and turned into commercial Lac. Applications of Lac are widely used in the manufacture of dyes, varnishes, polishes, electrical insulation, jewellery fillings, coatings, and several faux products in industries and pharmaceutical companies (Shaili et al., 2025).

The cultivation of Lac is an ancient practice in South Asian countries, especially in India and Bangladesh, and it contributes to the livelihood of the rural communities. India is the leading producer, but in Bangladesh lac is grown on approximately 1,200 hectares per year, with production of about 1,000 metric tons annually, which is relatively low compared to national requirements (M. T. Islam & Hossen, 2025). The cultivation of Lacs can offer significant economic and ecological benefits, and there is no need to establish a new farm, as the process can create jobs during cultivation, processing, and marketing (Sarker et al., 2025). Chapainawabganj district, especially the Barind area, is agro-climatically favourable for growing Lac, but growers face many problems related to inputs, climate, pests, finances, and marketing (Kabir et al., 2025). It is necessary to understand the nature and scope of these issues to enhance Lac production and its impact on growers' livelihoods. Consequently, the current research was conducted to evaluate the issue of confrontation among lac growers in the Barind region of Chapainawabganj district.

The cultivation of lac, once widely practiced in Chapainawabganj district, has steadily declined due to multiple constraints and inadequate support systems. Key challenges include poor marketing mechanisms, unfair pricing, inadequate transportation infrastructure, and weak institutional support—all contributing to reduced grower interest (Mahedi et al., 2025). Despite these technical, financial, and marketing obstacles, systematic research on lac growers' problems and coping strategies remains scarce. Consequently, many growers fail to achieve satisfactory returns despite lac's economic potential, necessitating a thorough understanding of these issues and adaptive approaches (Uddin et al., 2022).

This research, conducted in Nachole and Gomastapur upazilas, analyzes challenges confronting lac growers in the Barind region. Several assumptions guided the study: the researcher's familiarity with local socio-economic and environmental conditions ensured objective data collection; respondents could understand interview questions and provide accurate answers; findings could be partially generalized to similar agro-ecological regions; responses were valid; and variables were normally distributed and independent. Limitations include geographic restriction to two upazilas, focus on household decision-makers owning lac farms, and consideration of only 12 attributes despite growers possessing many characteristics.

On the same note, the analysis has been conducted based on 12 significant issues, although growers may face additional problems. In addition, the results and conclusions were based on information gathered in 2020 and reflect the state of affairs at that time (Fu, 2023). The paper at hand sought to establish the key issues faced by lac growers and to analyse how they address these issues in the process of growing Lac. It also examined how the nature of

growers chosen to adopt certain characteristics was related to their degree of problem confrontation. Specifically, the results apply to the Nachole and Gomastapur upazilas of the Chapainawabganj district (Md. Z. Islam & Mostafa, 2024). Nevertheless, the outcomes can also be extended to additional regions of Bangladesh where physical, economic, and social realities are comparable. It is anticipated that the findings of the Study will be relevant in helping researchers, planners, policymakers, and extension workers develop effective programs to enhance the production of Lac.

Lac farming is a lucrative cash crop activity in various regions of Chapainawabganj district, especially in the Barind region, which contributes a large portion of rural household income and to the local economy. Although it has potential, lac growers face many limitations in management practices, technical constraints, input availability, marketing systems, environmental conditions, and so on, which lower productivity and benefits. The confrontation of problems should not be reduced to the identification of the problems only, but also be carried out in relation to the ways in which growers deal with or overcome them based on their knowledge, experience and resources. Despite the general adaptive nature of growers, they are facing the problem confrontation abilities that depend on individual, socio-economic, and farming-specific attributes. Thus, this research was conducted to define issues and discuss its connection with the nature of growers.

Three objectives guided the current Study to ensure it was focused and systematic. a) To identify and articulate the chosen characteristics of the lac growers, b) To identify the problem-confrontation strategies embraced by the lac growers, c) To investigate the correlation of the chosen characteristics of the lac growers and their problem confrontation in the cultivation of Lac.

At this point, the following research questions were posed to be answered to achieve the necessary objectives:

RQ1: What are the various attributes of the lac growers?

RQ2: What are the perceived problems in the growth of Lac by the growers?

RQ3: How do you know about various features of the lac growers?

RQ4: How do the attributes of the lac growers relate to their problem confrontation during the lac cultivation activities?

2.0 REVIEW OF LITERATURE

When seeking solutions to problems encountered by lac growers in the Barind region of Chapainawabganj District, the literature review reveals a number of barriers farmers face in agricultural activities. The Study mostly focuses on broad agricultural limitations, but the particular research focuses on problems in crop farming, aquaculture, and diversification, which provide valuable comparisons with lac farming in the Barind area.

Lac farmers in Chapainawabganj have encountered challenges similar to those reported in the rest of the agricultural sectors.

Chhattisgarh lac cultivation also indicated that there are serious challenges, including a lack of market structure, price fluctuations, insufficient training in harvesting and processing methods, and unfavourable environmental conditions. The case in the Barind region could be an indicator of the same. Specifically, three critical issues have been observed: climate

change and the unstable supply of broodlac to growers of this plant. These environmental issues are catastrophic to the final productivity of the lac farms, and it is crucial to consider climate adaptability and equip farmers with resources to overcome such threats.

Regarding demographic and socioeconomic factors, the research indicates that attributes such as age, education, and income levels affect the level of confrontation with agricultural problems. For example, Ncoyini et al. (2022) found that age was not a major factor in confronting the problems faced by sugarcane growers, whereas Shuvo et al. (2025) found that, in general, older farmers had fewer problems to encounter because of their experience. The results might not, however, be directly relevant to lac cultivation, since little research has been done on the connection between lac farming experience and the resolution of problems. However, problem confrontation has been consistently associated with education through a negative correlation (Batyra et al., 2023), which is why more educated farmers are less likely to confront challenges, given that they have better knowledge and access to resources. The same can apply to lac cultivation, where lack of education and training in lac farming processes may further complicate matters for farmers in Chapainawabganj.

One of the main lessons from the literature is the importance of social participation within the organisation. The research by Hanapi et al. (2025) found that farmers' participation in social organisations is negatively associated with their problem confrontation, suggesting that greater participation in organisations is associated with less difficulty. It is a significant finding for lac growers, as cooperation and group effort may be the way to overcome the challenges they may face in the market and the climate. In addition, media exposure is recognised as a decisive element, and research shows that increased exposure can help farmers stay updated and address the problem more efficiently (Billah et al., 2024).

These previous studies include challenges that determine the conceptual framework of the current Study. The problem confrontation of lac growers in Barind area is taken as the dependent variable in the research, whereas the socio-demographic traits of the farmers, such as age, education, household size, farm size, the area of cultivating Lac, annual household income, experience, knowledge on lac cultivation, media exposure, cosmopoliteness and social organisational participation is taken as the independent variables. These will be the variables that are likely to interact and affect the extent to which the problem is confronted among lac farmers in the area.

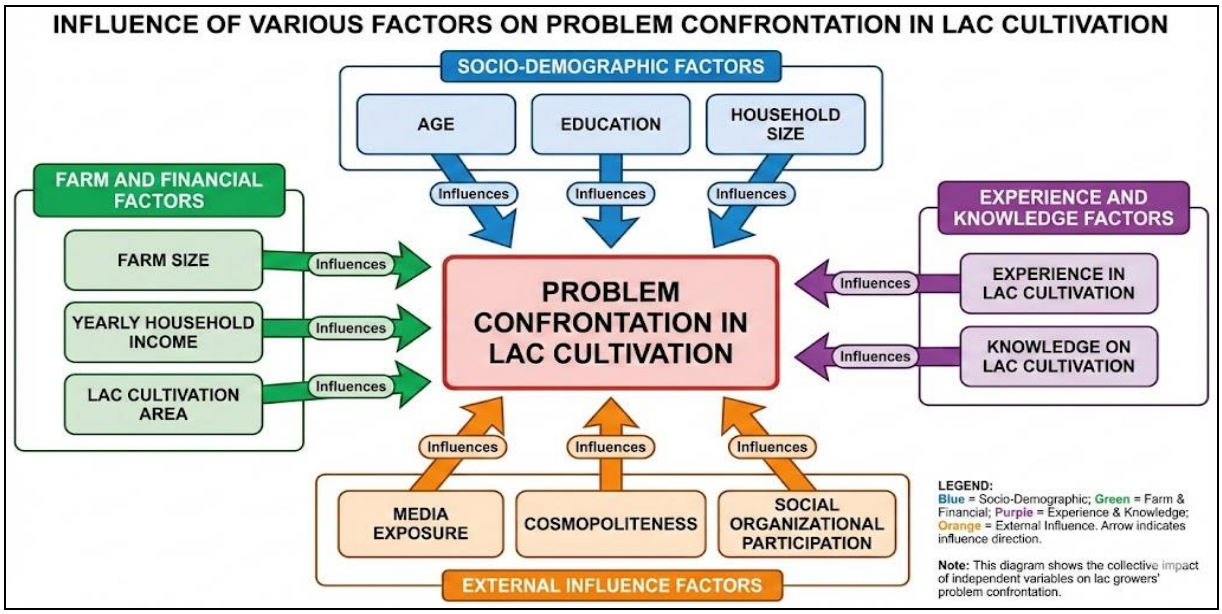

Figure 1: The conceptual framework of the Study.

3.0 METHODOLOGY

3.1 Study Area and Sampling Design

The Study was carried out in the Barind tract of Chapainawabganj district, an ecologically isolated area where Lac may be cultivated. Nachole and Gomastapur upazilas were selected based on the concentration of lac growers, as lac-based livelihoods are relevant in these regions (Chakraborty & Choudhury, 2023). A union representing each upazila was randomly picked, followed by the random picking of two villages representing the union. In this way, the multistage random sampling method was used to identify the Study's location to ensure sufficient coverage of lac growers in the chosen regions.

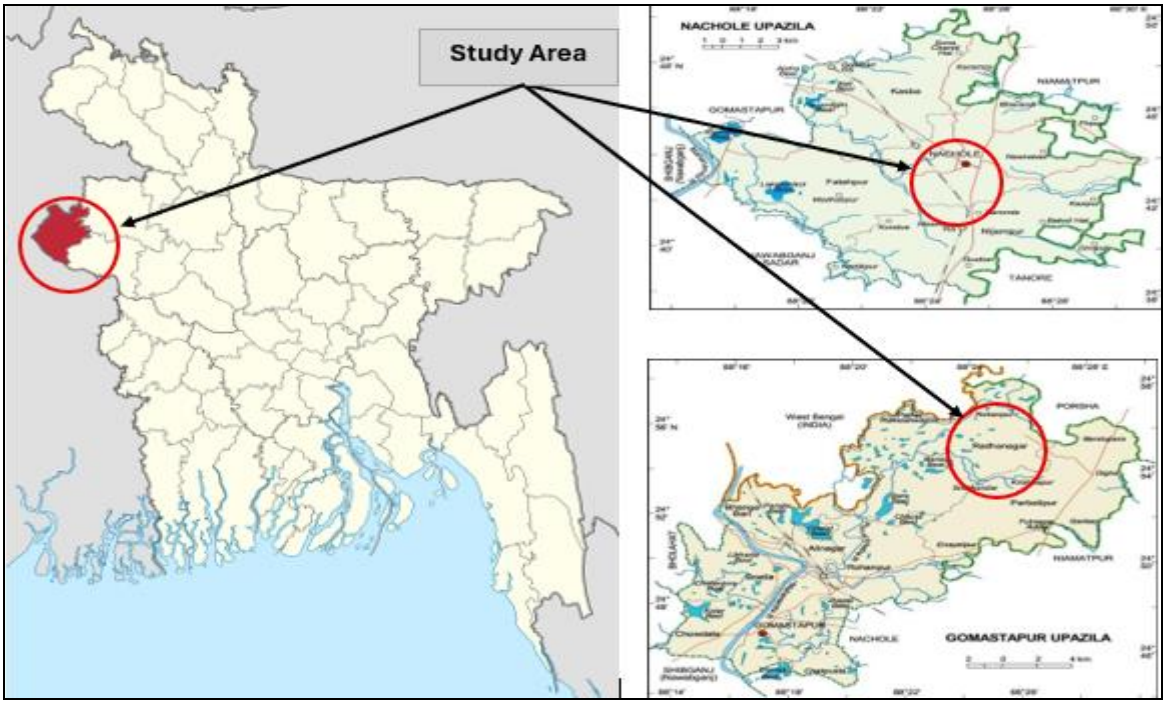

Figure 2: Map of the Study Area.

3.2 Population and Sample Size

The study population comprised lac growers in Maktapur and Abdalpur villages of Nachole upazila, and in Akelpur and Brahmangram villages of Gomastapur upazila. The names of 978 lac growers were updated with the help of the concerned Upazila Agricultural offices. As is expected in traditional social science research, 10% of the population was randomly selected as the sample, yielding 98 respondents. A reserve list of 15 growers was also compiled to address the possibility of non-responders when collecting data.

Table 1: Distribution of the population sample and number of lac growers in the reserve list.

SI. No.	Name of the Upazilas	Name of unions	Name of villages	No. of lac growers		
				Population	Sample	Reserve list
1	Nachole	Nachole	Maktapur	291	29	5
			Abdalpur	238	24	4
2	Gomastapur	Radhanagar	Brahmangram	220	22	3
			Akelpur	229	23	3
Total	02	02	04	978	98	15

3.4 Research Instrument and Data Collection

The structured interview schedule was developed in line with the Study's goals, and primary data were collected using the schedule (Ahmad & Wilkins, 2025). The questionnaire included open- and closed-ended questions and used appropriate scales to measure the independent and dependent variables. Before finalisation, the instrument was pre-tested with 10 lakh growers outside the sample area to ensure it was clear, relevant, and reliable. The pre-test outcomes were used to make the necessary changes before administering the final questionnaire.

Face-to-face interviews were conducted by the researcher between April and June 2020 to gather data. Respondents were put at ease with rapport, and the study objective was well articulated in the local language to enable respondents to respond appropriately. Field observation and examination of the pertinent records were used to supplement secondary information.

3.5 Measurement of Variables

The Study examined 12 independent variables and 1 dependent variable. The independent variables were: age, education, household size, farm size, area of lac cultivation, annual household income, experience in lac cultivation, knowledge of lac cultivation, media exposure, cosmopolitanism, social organisational participation, and problems in lac cultivation. The issue of lac growers' confrontation was the dependent variable. Different methods of measurement were used, including years of schooling, household income, land area in hectares, a knowledge test, an experience scale, a media exposure scale, and a problem severity scale.

3.6 Measurement of Problem Confrontation

Problem confrontation was quantified by evaluating the extent to which coping strategies were adopted by lac growers to address 12 identified problems associated with brood lac availability, pest control, marketing, finance, training, processing, transportation, and environmental constraints. The rating of each strategy was based on a five-point continuum, ranging from a very low to a very great extent of confrontation. Each problem was assessed using a Problem Confrontation Index (PCI) to rank the severity and intensity of the

confrontation strategies used by the growers (Fazal Choudhary et al., 2025).

3.7 Data Processing and Analysis: The data processing and analysis will be performed using quantitative research methods. The data obtained were edited, coded, tabulated, and analysed systematically. Quantitative scores were developed out of qualitative responses where required. Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS). The frequency distribution, mean, percentage, standard deviation, and rank order are descriptive statistics that were used to describe the properties of the respondents and the study variables. To evaluate a correlation between independent variables and problem confrontation at the 5 per cent level of significance, the Pearson Product-Moment Correlation Coefficient was used to analyse the relationships between the independent variables and problem confrontation (Puth et al., 2014).

4.0 RESULTS

4.1 Lac growers' characteristics

Table 2 presents the socio-demographic information of the sampled respondents, listing all factors related to their background and farming experience. The table will classify the respondents according to age, education level, household size, farm size, the area under lac cultivation, yearly household income, experience and knowledge in lac cultivation, media exposure, cosmopolitanism, social organisational participation, and problems encountered in the cultivation of Lac.

The age description indicates that 56.12 per cent of the respondents belong to the middle age group (35 -50 years), 22.45 per cent to the young age group (<35 years), and 21.43 per cent to the old age group (>50 years). This indicates that most respondents are in the productive age group for farming. Regarding education, the illiterate population (52.04%) is high, indicating low literacy levels. Secondary education has been undertaken by 24.49% of the respondents, with higher education levels being limited to secondary education only (7.14%). This implies that the majority of respondents will face difficulties in knowledge acquisition and agronomy. The household size category shows that 41.84 per cent of respondents have medium-sized families (5-7 members), 40.81 per cent have small families (up to 4 members), and 17.35 per cent have large families (more than 7 members), which are fairly average family sizes in rural areas.

In the case of the farm size, 69.39% of the respondents have small farming (0.21-1 ha), 18.37% have medium-sized farming (1.01-3 ha), and a negligible percentage (12.24) have marginal agriculture (up to 0.20 ha). None of the respondents has large farms (>3 ha), which also points to the existence of small-scale agriculture in the study area. The same can be said of the area under Lac cultivation, where the majority of respondents (61.22%) have small lac farms (<0.20 ha), medium-sized (24.49%) and large (>0.40 ha) lac farms. These data indicate that lac farming in the area is mostly on a small-scale basis.

The data on annual household income show that 48.98% of participants are in the low-income category (<180), 41.84% in the medium-income bracket (180-310), and only 9.18% in the high-income category (>310). The mean income of 204.92 and the standard deviation of 8.82 indicate that the respondents are concentrated in the lower- and middle-income groups. Regarding experience with growing Lac, 63.26% of respondents have medium experience

(12-16 years). There are respondents with low experience (1216 years) and high experience (16 years), but each has less experience than the median. The average experience is 13.57, and the standard deviation is 3.03, indicating an average of 13.57 years among the lactate growers.

Knowledge of lac cultivation also plays a significant role, with the highest percentage (71.43%) of respondents having medium knowledge (17-21), and 11.22% having high knowledge (>21). The percentage with low knowledge (<17) is only 3.4%, indicating that a substantial number of respondents have sufficient knowledge of lac cultivation. The media exposure is divided into low, medium, and high, with most (57.14) experiencing medium (17-22), 37.76 experiencing low, and only 5.10 experiencing high. The cosmopolitanism that defines how involved one is with external influences indicates that 55.10 per cent of respondents are medium cosmopolitans (12-18), 39.80 per cent are lowly cosmopolitans, and 5.10 per cent are highly cosmopolitans.

The level of social organisational participation is rather low, with 40.82% of respondents having a medium level of participation (2-4) and 28.57% having no participation whatsoever. The lowest percentage of individuals (4.08 per cent) participate in high social organisational activities, meaning they are not involved in social groups. Lastly, the most reported problem is high (73.47%), followed by medium (20.41%) and low (6.12%). The average problem severity score of 43.44 and a standard deviation of 3.85 indicate that the majority of respondents have serious problems with lac farming.

Overall, the data reflect a picture of a small-scale agricultural community with low to medium income, limited education, and varying degrees of experience and knowledge of lac cultivation. The problem confrontation is high, which means that the challenges encountered by lac farmers in this region are many and are also curbed by a lack of media exposure, low cosmopolitanism, and low social organisation. The solutions to these problems might lead to better farming practices and improved performance among lac growers in the Barind region.

Table 2: Socio-Demographic Characteristics of respondents.

Characteristics of respondents	**Measuring unit**	**Frequency**	**Percentage (%)**	**Mean**	**Standard Deviation (SD)**
Age	Young age (<35 years)	22	22.45	43.20	10.19
	Middle age (35-50 years)	55	56.12		
	Old age (>50 years)	21	21.43		
Education Level	Illiterate (0)	51	52.04	3.96	4.45
	Primary level (1-5)	16	16.33		
	Secondary level (6-10)	24	24.49		
	Above secondary education (> 10)	7	7.14		
Household size	Small family (up to 4)	40	40.81	5.26	2.13
	Medium family (5-7)	41	41.84		
	Large family (>7)	17	17.35		
Farm Size	Marginal (up to 0.20 ha)	12	12.24	0.66	0.52
	Small (.21-1 ha)	68	69.39		
	Medium (1.01-3 ha)	18	18.37		

	Large (>3)	0	0		
Lac cultivation area	Small lac farm (<0.20 ha)	60	61.22	0.219	0.298
	Medium	24	24.49		
	Large lac farm (>0.40 ha)	14	14.29		
Yearly household income	Low income (<180)	48	48.98	204.92	8.82
	Medium income (180-310)	41	41.84		
	High income (>310)	9	9.18		
Experience in lac cultivation	Low experience (<12)	20	20.41	13.57	3.03
	Medium	62	63.26		
	High experience (>16)	16	16.33		
Knowledge on lac cultivation	Low knowledge (<17)	11	3.4	18.62	2.29
	Medium knowledge (17-21)	70	71.43		
	High knowledge (>21)	11	11.22		
Media exposure	Low media exposure (<17)	37	37.76	17.48	3.24
	Medium media exposure (17-22)	56	57.14		
	High media exposure (>22)	5	5.10		
Cosmopoliteness	Low cosmopoliteness (<12)	39	39.80	12.87	3.28
	Medium cosmopoliteness (12-18)	54	55.10		
	High cosmopoliteness (>18)	5	5.10		
Social organisational participation	No participation (0)	28	28.57	1.49	1.43
	Low participation (<2)	26	26.53		
	Medium participation (2-4)	40	40.82		
	High participation (>4)	4	4.08		
Problems in lac cultivation	Low problems (<36)	6	6.12	43.44	3.85
	Medium problems (36-42)	20	20.41		
	High problems (>42)	72	73.47		

4.2 Problem confrontation of lac growers

The dependent variable of the Study was problem confrontation in lac cultivation, which was measured using a composite problem confrontation score based on growers' responses to a set of 12 problem statements chosen regarding the practice of lac cultivation. The scores for problem confrontation ranged from 19 to 42, with a mean of 30.40 and a standard deviation of

4.59, indicating moderate variability among respondents. The lac growers were categorised on the basis of their scores into three groups: low, medium, and high problem confrontation. The findings showed that most of the growers (64.29) were in the medium problem confrontation category, and a small percentage of 19.38% were in the high problem confrontation category and a minimal percentage (16.33) were in the low problem confrontation category. In general, almost 84 per cent of respondents were observed to have middle- and high-level problem confrontation in lac cultivation. This observation indicates that lac growers experience significant difficulties. Still, the majority will be able to solve these issues because of extensive experience, adaptability, and experience gained through their continued participation in lac cultivation.

Table 3: Distribution of the lac growers according to their problem confrontation.

Characteristics of respondents	Measuring unit	Frequency	Percentage (%)	Mean	Standard Deviation (SD)
Problem confrontation of lac growers	Low problem confrontation (<26))	16	16.33	30.14	4.59
	Medium problem confrontation (26-33)	63	64.29		
	High problem confrontation (>33)	19	19.38		

The recorded Problem Confrontation Index (PCI) ranged from 105 to 481. Ranking of the 12 strategies of problem confrontation as indicated in Table 4.14. Problem Confrontation Index (PCI) arrangement of van and rickshaws as marketing means in 1st position, arrangement of interest free loan in 2nd position, arrangement of loan in 3rd position, Having training in 4th position, taking effective control measures against enemies of Lac in 5th position, in 6th position, taking effective control measures against enemies of Lac in 5th position, in 7th position, in 8th position, in 9th position, in 10th position, in 11th position, in 12th position.

Table 4: Rank order of problem confrontation.

Problem confrontation strategies	Problem Confrontation Index (PCI)	Rank
Arrangement of vans and rickshaws as transport facilities for marketing	481	1
Arrangement of an interest-free loan from neighbors, relatives, etc.	379	2
Arrangement of loans from the Bank, Samity, NGOs, etc.	341	3
Having training from experienced growers and hiring skilled labour	304	4
Taken effective control measures for enemies of Lac	263	5
Arrangement of sufficient machines for lac processing	253	6
Acquire knowledge through conversation with extension officers, local leaders, and other lac growers	203	7
Taken effective measures for adverse environmental conditions	198	8
Incessant contact with extension staff at an advantageous time	164	9
Collection of good-quality brood lac from recognised sources	155	10
The government steps for proper marketing	108	11

The government has taken steps to stop the illegal entry of Lac at the border	105	12

4.3 Relationship between selected characteristics of the lac growers and their problem confrontation in lac cultivation

The Pearson Product-Moment Correlation Coefficient was used to investigate the relationships between the socio-economic and psychological features selected among lac growers and their behaviour in confronting the problems encountered in lac cultivation. Table 4.15 displays the results, and they are discussed below. The age of the lac growers showed an insignificant positive correlation with problem confrontation ($r = 0.019$), with the difference not significant at the 5% level. This observation means that age did not play a significant role in determining the extent to which growers faced issues in the development of Lac, implying that the degree of problem-confrontation behaviour is not always dependent on chronological maturity. Problem confrontation had a strong positive correlation with education ($r = 0.203$, $p < 0.05$). This means that more educated growers could easily identify, analyse, and overcome issues related to the cultivation of Lac. It is also possible that education improves cognitive abilities, decision-making, and information accessibility, thereby expanding growers' problem-solving capacity.

Household size showed a non-significant negative correlation with problem confrontation ($r = 0.024$). This indicates that family size was not a determining factor in growers' reactions to issues in lac cultivation. The availability of family labour is unlikely to be sufficient to overcome the technical and institutional limitations of growers.

The farm size data showed a significant negative correlation between problem confrontation and farm size ($r = -0.211$, $p < 0.05$). This outcome shows that growers with large farm holdings had fewer limitations and were in a better position to handle production and marketing issues, so they had to confront fewer problems. The same was also observed in the lac cultivation area, which showed a negative yet insignificant relationship with the problem confrontation ($r = -0.097$). This observation indicates that the size of the land area under lac cultivation was not a crucial variable in determining growers' capacity to address issues, perhaps because both small- and large-scale lac growers were constrained in similar ways. Household income per year was also shown to have a negative relationship with problem confrontation ($r = -0.217$, $p <0.05$). It means that more financially advantaged growers were less problematic or could better endure problems by mobilising resources, accessing inputs, and pursuing other livelihood options.

Lac cultivation experience had a strong, highly significant negative relationship with problem confrontation ($r = -0.396$, $p < 0.01$). This result demonstrates the need for practical exposure to mitigating vulnerabilities in production and marketing. Experienced growers are more likely to have better technical knowledge, adaptive skills, and risk management capacity. Lac cultivation knowledge revealed that the relationship with problem confrontation was very weak and not significant ($r = 0.008$). This implies that purely theoretical knowledge, in the absence of proper institutional backing and practical implementation, might not have a profound effect on growers' ability to perceive real issues in the production of Lac. It was also found that media exposure was positively, but insignificantly, associated with problem confrontation ($r = 0.109$). It means that exposure to information sources might not translate into problem-solving without extension services and contextual relevance.

Problem confrontation had a strong positive association with cosmopoliteness ($r = 0.229$, $p < 0.05$). Those growers who were more exposed to the larger social system were more active in addressing lac cultivation issues, probably because they had greater access to information, markets, and institutional networks. The relationship between social organisational participation and problem confrontation was positive, but the value of this relationship was non-significant ($r = 0.095$), which implies that organisational participation was not sufficient to increase problem confrontation, perhaps because the functionality of these organisations was too low. Lastly, problem confrontation did not relate significantly with the extent of problems in the cultivation of Lac ($r = 0.076$). This implies that the magnitude of issues did not necessarily lead to more coping strategies, indicating potential issues with growers' adaptive capacity and the support mechanisms at the institutional level.

Table 5: Pearson's product moment co-efficient of correlation coefficient showing the relationship between dependent and independent variables (N=98)

Dependent variable	**Independent variables**	**Tabulated value**		**Value of coefficient of correlation**
		0.05 level	**0.01 level**	
Problem Confrontation of the Growers in Lac Cultivation in the Barind Area of Chapainawabganj District	Age	0.198	0.254	0.019^{NS}
	Education			0.203^{*}
	Household size			-0.024^{NS}
	Farm size			-0.211^{*}
	Lac cultivation area			-0.097^{NS}
	Yearly household income			-0.217^{*}
	Experience in Lac cultivation			-0.396^{**}
	Knowledge on lac cultivation			0.008^{NS}
	Media exposure			0.107^{NS}
	Cosmopoliteness			0.229^{*}
	Social organisational participation			0.095^{NS}
	Problems in lac cultivation			0.076^{NS}

****:** Significant at the 0.01 level;
***:** Significant at the 0.05 level;
NS: Non-Significant

5.0 DISCUSSION

This paper presents important findings on the socio-demographic profile of lac farmers in the Barind region of Chapainawabganj District and on how they can address issues in the lac culture. One key result is that most respondents (64.29) faced moderate problems, suggesting

that although problems in lac farming are prevalent, most growers are able to manage them through experience operating the business and adaptive responses. Nevertheless, high levels of problem confrontation were also noted in a significant percentage (19.38) indicating the harshness of the problems some growers have to deal with.

5.1 Socio-Demographic Characteristics and Confrontation of Problems

The socio-demographic analysis revealed several significant trends. Age, for example, had a very weak positive correlation with problem confrontation, indicating that age does not play a major role in confronting problems. This observation indicates that the more mature growers may not be more competent at handling problems in lac farming, perhaps because they have not undergone formal education or have no institutional backing. This runs counter to certain expectations that older farmers are supposed to be more practical, with knowledge and experience that might help solve problems.

Education of growers, however, was positively correlated with problem confrontation, meaning that more educated growers were better able to recognise and solve problems. This is in agreement with the overall hypothesis that education improves cognitive capacity, information availability, and decision-making. In this regard, therefore, educational interventions might be essential in ensuring that lac growers have the necessary knowledge to improve their farming methods and resolve issues more efficiently.

Another significant factor that could be used to understand problem confrontation was family size and farm size. Household size did not significantly relate to problem confrontation, indicating that the supply of family labour may not be a strong contributor to growers' ability to address problems in lactating farming. This could be attributed to the fact that, due to the challenges facing the cultivation of Lac-like inputs, market accessibility, etc., these are more of an external factor than household labour supply. Even then, the size of farms was found to have a significant negative correlation with problem confrontation, indicating that farmers with larger farms are in a better position to cope with the challenges, perhaps because of economies of scale or the availability of resources.

5.2 Lac Cultivation Experience and Knowledge

The most important predictor of problem confrontation was the experience in the lac cultivation. The positive and significant relationship between experience and problem confrontation ($r = -0.396$, $p < 0.01$) indicates that experienced growers have greater skills in overcoming problems related to lac farming. The observation reinforces the importance of practical experience in developing adaptive skills and approaches to address problems in lac cultivation. The more experienced growers will have probably established superior ways of managing pests on the farm, crop management, and market shocks, which, in the end, will make them confront their issues less intensively.

Surprisingly, knowledge about lac cultivation had a very low and insignificant relationship with problem confrontation. This observation indicates that knowledge is significant but not sufficient to solve real-life issues in lac farming. Practical training or access to extension services may be essential as institutional support to supplement the theoretical knowledge and enrich problem-solving skills.

5.3 Financial and Socio-Psychological Factors

Annual household income was also associated with problem confrontation in a significantly negative manner, indicating that the richer the farmers are, the higher the likelihood that they

will be able to address the problems they encounter in the process of lac cultivation. Increased revenue allows growers to invest in required inputs, machinery, and technologies that may help address issues such as low yields or insufficient pest management. The relationship between cosmopolitanism and problem-solving was also very high, as more cosmopolitan growers who have been exposed to wider social networks and external information can overcome problems better. This implies that growers who communicate with wider networks have more resources, knowledge, and market opportunities, which positively affect their ability to address challenges.

Conversely, there were non-significant correlations between problem confrontation, media exposure, and social participation in organisations. This might be because media exposure alone may not be sufficient to affect problem-solving behaviour unless there are specific, local interventions. On the same note, although involvement in social organisations can help, their disorganisation or operational inefficiency may undermine their ability to influence problem-solving.

5.4 Problem Confrontation Strategies.

The prioritisation of problem-confrontation strategies revealed that practical, immediate solutions, including organising transport facilities to market the products, accessing interest-free loans from neighbours, and access to skilled labour, were perceived as the most efficient methods of dealing with issues in lac cultivation. These empirical solutions focus on the role of social networks, financial support, and access to resources in addressing problems. On the other hand, government intervention strategies, such as regulating illegal access to the Lac or properly marketing the product, were at the bottom of the list, and it may appear that institutional backup may be inefficient or less significant for the on-the-ground problems of lac growers.

6.0 CONCLUSION AND RECOMMENDATIONS

In summary, this paper illustrates the high level of problem confrontation among lac growers in the Barind region of Chapainawabganj District, with most of them reporting medium to high levels of problem confrontation. Such barriers, comprising pest control problems, financial limitations, a lack of marketing infrastructure, and poor knowledge, have far-reaching consequences, impacting their livelihoods and productivity. The results indicate that Lac's advertisers implement adaptive strategies depending on their experience and the resources at their disposal, though a large portion of them cannot completely overcome these issues. Education and income, experience, and farm size were observed to be important socio-demographic variables that determine the level of challenges growers face with these issues. For example, higher levels of education and more experience in lac cultivation were associated with greater problem-solving ability.

In contrast, individuals with larger farmlands or higher income were better positioned to address the challenges appropriately. These results, in any case, highlight the significance of focusing on these issues to assist lac growers. The situation can be improved with several suggestions. To begin with, it is important to increase the level of education and technical training for growers. Literacy improvement programs and specialised training in lac farming techniques will provide farmers with the knowledge to address various cultivation challenges.

Moreover, the availability of financial resources in the form of low-interest loans, subsidies, or microcredit programs may provide the necessary financial aid to get through situations such as bad harvests or pest infestations. Secondly, there is a need to enhance marketing infrastructure. The growers can achieve good prices for their products by organising transport to market their Lac and establishing structured market systems. They should also encourage social networks and participation in community organisations because they are good avenues for sharing knowledge and solving problems in groups. The intervention by the government is essential to ensure the availability of quality broodstock, fair prices, market regulation, and the provision of climate-smart farming strategies focused on tackling environmental problems. Lastly, media exposure needs to be enhanced to raise awareness of best practices and inform growers about recent developments in lac cultivation. These are interdependent problems; hence, educational, financial, marketing infrastructure, social networks, and institutional support are the issues that need to be addressed to enhance the growth of Lac in the Barind region and result in increased production and improved livelihoods for cultivators. Such an integrative strategy will also drive the region's overall economic growth.

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