



The Challenges of Agricultural Extension Workers in Coastal Area (Case Study at Lingga Regency)

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INFO ARTIKEL	ABSTRACT
Diterima 2 Oktober 2024 Direvisi 29 April 2025 Diterbitkan 31 Mei 2025	<i>The community of Lingga Regency are still unfamiliar to agriculture because the majority of their livelihood comes from the sea, so that agricultural commodities are imported from other provinces. To fulfill their own agriculture need, the knowledge and skills of agricultural sector are required that assisted by extension workers. The fact is agricultural extension workers in Lingga Regency is only seven people that should handle 75 villages. This research aims to analyze the challenges that faced by agricultural extension workers in carrying out their activities. The mixed methods is used for this reseacrh with a sequential explanatory strategy. Methods of sampling done using census method. Data was collected through in-depth interview, moderate participant observation, recording and documentation. Data analyze was carried out by data reduction, data interpretation and made conclusions. The result shows 1) challenge of facilities and infrastructure is the most felt by extension workers is the wide of working areas; 2) challenge of farmers as agriculture subject is the age of the farmers, the higher of farmer's age it will increase the challenge to extension workers; and 3) challenge of support and resources is the most felt by extension workers is personal capital. The agricultural extension workers in Lingga Regency hope that the government will add the extension worker, provide moral and material support and establish an Agricultural Extension Center (BPP) so that the information and extension activities in Lingga Regency will be organized very well.</i>
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ABSTRAK

Masyarakat Kabupaten Lingga masih awam dengan pertanian sebab mayoritas mata pencaharian mereka bersumber dari laut sehingga pasokan komoditi pertanian mayoritas didatangkan dari provinsi tetangga. Untuk memenuhi kebutuhan pertanian di daerah sendiri tentu memerlukan ilmu dan keterampilan di bidang pertanian yang dibantu oleh penyuluh. Faktanya, jumlah penyuluh pertanian yang ada di Kabupaten Lingga hanya tujuh orang dengan jumlah desa 75. Penelitian bertujuan untuk menganalisis tantangan yang dirasakan penyuluh pertanian dalam melaksanakan aktivitas penyuluhan. Metode yang digunakan adalah mixed method dengan strategi eksplorasi bertahap. Penentuan sampel dilakukan secara sensus yang berjumlah tujuh orang penyuluh. Data dikumpulkan melalui wawancara mendalam, observasi partisipatif moderat, pencatatan dan dokumentasi. Analisis data dilakukan dengan reduksi data, interpretasi data dan penarikan kesimpulan. Hasil penelitian menunjukkan 1) tantangan terkait sarana dan prasarana yang paling dirasakan oleh penyuluh yaitu cakupan wilayah kerja yang luas; 2) tantangan terkait petani sebagai subjek penyuluhan yaitu umur petani, semakin tinggi umur petani maka tantangan dalam melakukan aktivitas penyuluhan juga semakin meningkat; dan 3) tantangan terkait dukungan dan sumber daya yang paling dirasakan penyuluh yaitu modal finansial pribadi. Penyuluh pertanian Kabupaten Lingga berharap, pemerintah menambah jumlah penyuluh, memberikan dukungan moril dan materil serta mendirikan Balai Penyuluh Pertanian (BPP) sehingga informasi dan kegiatan penyuluhan di Kabupaten Lingga dapat teroganisir dengan baik.

Kata kunci:
Penyuluh
pertanian,
tantangan, pesisir,
Lingga

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INTRODUCTION

Lingga Regency is one of city/regency in Riau Island Province with 45,667.55 km² area that 95% is ocean and 5% is land (Lingga Regional Regulation No. 6 of 2021). It caused community in Lingga depend on marine products and lacks land for agriculture. The majority of community in Lingga Regency live in coastal areas with the majority working in the fisheries sector that relies on marine resources. Agriculture and fisheries have a different work systems that makes some of people in Lingga are still unfamiliar with agriculture. Nevertheless, agriculture has the great potential to be part of the coastal ecosystem. The community can take the advantages of the non-rice food potential that can be managed on land around the coastal areas. Agricultural and fisheries sectors have the potential to be developed for long term and support the sustainability of food security.

Sociologically, the characteristics of coastal communities are different from the characteristics of agrarian communities due to the differences of resources they have

(Arif, 2016). Coastal communities with livelihoods as fisherman or fishery workers tend to think that they can get money directly after they work, unlike farming, where they have to wait for several months to get money. In the fact, both fisherman and farmers have uncertainty about the results of their work because they rely on natural resources as a livelihood. In Lingga, the majority of community work in fisheries sector than agricultural sector. The number of workers in the fisheries sector reached 13,617 people, while in the agricultural sector only 2,060 people (Department of Community and Village Empowerment, Population and Civil Registration, Riau Island, 2021). People think they hard to work in agricultural sector because of the length of time required to harvest and get money.

The most of 5% land area in Lingga turns out that there is still has not been utilized optimally as evidenced by the large amount of land that has been left abandoned or become bush. This fact causes small land for farming, so that Lingga Regency depends on neighboring provinces to fulfill its agricultural commodity needs. According to Zhao (2007), many developing countries are facing challenges including population growth, low management mechanisms, agricultural resources scarcity. The agricultural resources scarcity includes human resources, capital, technical and natural resources. In the purpose to meet the agricultural need in its own region, it requires knowledge and skills in the field of agriculture. The effort to increase the agricultural production and solve some problems that farmers faced can be assisted by extension workers. To meet their regional even national food safety goals, some countries, such as China dan India have developed agricultural extension networks. A crucial role is played by agricultural extension in facilitating technology and knowledge transfer for the farmers (Rahman et al, 2021).

There is a connection between the successful extension activities carried out with the socio-cultural conditions of community or environmental elements as the barrier factors to implementation extension activities so extension or empowerment accordance to expectations (Fajar, S. A. et.al 2023). This is relate to Lingga Regency as a coastal area which unfamiliar to agriculture and separated by small island. The successful extension activities can only be carried out with good cooperation between government, extension workers, farmers and community in an area. Based on the survey and depth interview, it was known that there are only 7 extension workers in Lingga Regency and they don't have the good regulation in carrying out their duties. This is also made worse by the absence of Agricultural Extension Agency in Lingga Regency even though Agricultural Extension Agency has a very crucial role in agricultural development. It has crucial role in coordinating, synergizing and harmonizing the agricultural development activities.

In the Law on Protection and Empowerment of Farmers Indonesia No. 19 of 2013, it mandated that one village must be supported by one extension worker, either from government extension workers, independent extension workers or private extension workers. Lingga Regency as a coastal area has a distribution of five large island namely

Singkep Island, Lingga Island, Posek Island, Selayar Island and Senayang Island. The journey from one island to another takes 30 minutes to 150 minutes. Lingga Regency currently has 75 villages that spread across 10 sub-districts and only has seven agricultural extension workers. Amount of farmer as agricultural land user in Lingga reached 3,274 people (Result of Agricultural Census of Lingga Regency, 2023). By the amount of the farmers it means that one extension worker has to accompany about 437 farmers. This fact is certainly not ideal, coupled with the fact of one extension worker oversees ten to eleven villages, and has to take a long journey to visit his/her work village. Based on these facts, the researchers interested in seeing the challenges that faced by extension workers in carrying out agricultural extension activities in Lingga Regency which is a coastal area. Researchers tried to examine the challenges that faced by extension workers in Lingga Regency by grouping them into three variables obtained from previous research and went to the field with extension workers directly.

RESEARCH METHODOLOGY

Location of Research

Lingga Regency was the location of this research that chosen purposively because the ratio of the number of extension workers to assisted village was not ideal. On the other hand, the number of farmers in Lingga Regency reached 3.472. This became the challenges to extension workers to did their responsibility. Research was carried out on March to April 2024.

Type and Data Collection Methods

This research used mixed method with sequential exploratory design. Sequential exploratory strategy in mixed methods research involves a first phase of qualitative data collection and analysis followed by second phase of quantitative data collection and analysis that builds on the result of the first qualitative phase (Creswell, 2009). The determination of the sample was carried out by census. According to Sugiyono (2018), the census method or total sampling is a sampling technique where all members of the population are sampled. Research conducted on a population below 100 should be conducted by census, so that the sample of this study consisted of seven extension workers in Lingga Regency.

Methods of Data Analysis

Data gathered from different sources, were organized and analyzed by using qualitative and quantitative approach. Data were collected through in-depth interview as the first phase of qualitative data collection, moderate participant observation, recording and documentation. In-depth interview was conducted when researchers went to the field and conducted small group discussion with seven extension workers to find out the challenges they felt while doing agricultural extension. Then moderate participant observation was carried out by following several extension workers when visit villages or assisted groups then researchers did recording and documentation. The previous research by Allen, H.F et.al, they determined the challenges of extension workers into 4

variables: distance, transportation, infrastructure, and farmer participation. To make this research more meaningful, researchers used quantitative data were grouped into three variables namely 1) facilities and infrastructure; 2) farmers as agriculture subject and 3) support and resources, each variable was consisted of seven indicators. Samples were given a questionnaire then provided an assessment of each indicator using a likert scale from 1 to 5 where 1 means strongly disagree and 5 means strongly agree. After that, data was collected and analyzed by reduction, interpretation and then made conclusions.

RESULTS AND DISCUSSIONS

1. Characteristics of Sample

Characteristics of sample are collected by interview with seven extension workers in Lingga Regency and showed on Table 1.

Tabel 1 Agricultural extension workers in Lingga

Characteristics	Number	Percentage (%)
Gender		
Male	5	71.5
Female	2	28.5
Total	7	100.00
Age (years)		
18-25	3	42.86
26-35	3	42.86
>45	1	14.28
Total	7	100.00
Last education		
Diploma/bachelor	6	14.28
Senior high school	1	85.72
Total	7	100.00

Source: Primary Data (2024)

Based on Table 1. the male extension workers are dominant than women extension worker it caused by the wide of working area and women have the physical limitation to reach their working area. The role of men is really needed for doing extension activities especially in Lingga Regency because of their large working areas. All of extension workers in Lingga Regency are productive age from 18 to over 45 years old. The productive age of workers usually have a higher level of productivity compared to older workers so that their physical abilities become weak and limited (Aprilyanti, 2017). For the last education, only one person that graduated from high school and six people were graduated from bachelor degree specifically on agricultural. Fitriana (2015) on her research showed that the higher a person's education, the better their human resources will be, because the education is a determining factor in developing and increasing the productivity of human resources. So these characteristics either directly or indirectly effected to extension workers in doing their responsibilities.

This research aimed to analyze the challenges that faced by agricultural extension workers in Lingga Regency that known as coastal area. Researchers went to the field and did small group discussion with all of extension workers then got information about things that they felt as the challenges in doing extension activities. The challenges are grouped into three, namely 1) challenges of facilities and infrastructure; 2) challenges of farmers as agriculture subject and 3) challenges of support and resources.

2. The Challenges of Facilities and Infrastructure

Agricultural extension facilities and infrastructure are physical equipment and buildings that used to carry out agricultural extension activities. The fundamental problem experienced in implementation of agricultural extension is the limited extension facilities and infrastructure (Arifin et al., 2020). Utilization of facilities and infrastructure optimally makes the effective and efficient extension activities (Irfan, S. et.al, 2018). In this research focused on seven challenges of facilities and infrastructure, 1) location can be reached easily; 2) wide of working area; 3) government facilitates the activities; 4) having an official vehicle; 5) having adequate vehicles; and 6) availability of tools and props from government. The questionnaire gave to all of samples and they had to choose based on they feel. Each question has score 1 to 5 and the result showed on Table 2.

Table 2 The Challenges of Facilities and Infrastructure

No	Indicators	Score	Percentage (%)
1	Location Easily Reachable	14	9.40
2	Wide of Working Area	28	18.79
3	Government Facilitates The Activities	21	14.09
4	Having An Official Vehicle	19	12.75
5	Having Adequate Vehicles	22	14.77
6	Availability of Tools and Props From Government	23	15.44
7	Road/street conditions	22	14.77
Total		149	100.00

Source: Primary Data Processing (2024)

Based on Table 2. the most challenges of facilities and infrastructure that felt by agricultural extension workers is wide of working area. The wide of working area is included in the challenges of facilities and infrastructure because to reach their working areas extension workers need facilities such as vehicle and street conditions. The larger working area the more challenges they faced. Lingga Regency has 10 sub-district 75 villages that spread across 10 sub-districts and 3,724 farmers. It means that one extension workers must oversees 10 to 11 villages and 437 farmers. Lingga Regency as a coastal area and has some subdistricts are separated by small islands make extension workers difficult to reach the location or village. This is also exacerbated by the lack of facilities and infrastructure from the government.

Even though the facilities and infrastructure are limited, the extension workers still did their work in Lingga Regency as good as they can. They used their own vehicle to their

working areas and bought the tools and props by themselves to support extension activity. They realized that they were responsible for the agricultural development in Lingga Regency.



Picture 1. Observation with extension workers (Documentation, 2024)

Provision of facilities and infrastructure in the form of physical building is very necessary as a place to transfer and exchange the knowledge and information between extension workers and farmers, and become a hub to encourage collaboration between farmers and include with other stakeholders like government and private sector (Arifin et. al, 2023). In Indonesia, Agricultural Extension Centre (BPP) is one of the key to make a better agriculture sector. Agricultural Extension Centre is Technical Implementation Unit (UPT) for extension implementing in city/regency or an institution that handles extension that carries out extension functions at sub-district level. The functions of Agricultural Extension Centre (BPP) are facilitate to arrange extension program; do extension activity; provide and disseminate the information of technology, production facilities, financial and market; facilitate to develop farmers' institution and partnership; facilitate the capacity building of extension workers and carry out the learning process. As the key of successful agriculture, government should pay more attention to the presence of Agricultural Extension Centre (BPP) and the extension workers in their city/regency. Extension workers must have the higher competence and better home from sub-district level, regency level and to national level. Many regional governments don't pay attention to the agricultural sector so that is dangerous for agriculture in the future (Tanjung, 2024). The same thing is happened in Lingga Regency, since became a regency for 20 years, Lingga has no Agricultural Extension Centre (BPP). The orientation or priority of regional development goals varies in terms of seeing the urgency of extension workers that causes extension activities hard to achieve their true portion (Amanah, 2024).

3. Challenges of Farmers as Agriculture Subject

Agricultural extension is non-formal education aimed to help farmers and their family to make them capable, being able and self sufficient in improving their own business, then increase their income and welfare in particular and even general (Rusdy and Sunartomo, 2020). Extension activity is a communication process where extension worker and farmer can both has source of information although often the extension worker has the source of information. The varies of farmers are also being the challenges to the extension workers doing their activity. The older farmers the more time they need to adopt new innovation. In other hand, age also affects people work ability (Noviyanti, et.al., 2020). Age is also affects how people confirm and accept new farming system. This research focused on seven indicators of challenges of farmers as agriculture subject, 1) age of farmers; 2) farmers' curiosity about materials/innovation; 3) farmers' language; 4) farmers' education background; 5) there is a community leader; 6) farmers' participation and 7) farmers' motivation. The result showed in Table 3.

Table 3 The Challenges of Farmers as Agriculture Subject

No	Indicators	Score	Percentage (%)
1	Age of farmers	32	16.93
2	Farmers' curiosity about materials/innovation	23	12.17
3	Farmers' language	30	15.87
4	Farmers' education background	27	14.29
5	There's a community leader	18	9.52
6	Farmers' participation	30	15.87
7	Farmers' motivation	29	15.34
Total		189	100.00

Source: Primary Data Processing (2024)

The most indicator that felt by extension workers as challenge is age of farmers. Age will be effected to someone to make a decision and be the measure of success in farming (Prasetyo et.al., 2021). Agricultural extension workers in Lingga confirmed that majority the older farmers the greater challenges in carrying out extension activities. Mostly, the older farmers have difficulty in hearing and seeing that influences their capability to understand what extension workers' said so it hampered the effectiveness of the extension activities. To deal with this situation, extension workers must have tricks to make farmers understand the information and innovation that given by extension workers. The tricks extension workers did in Lingga were used audio-visual technology to transfer the information and innovation then they also asked farmers to provide technical guidance by inviting the stakeholder from other institution and implementing farmer field school. In other hand, the younger farmers in Lingga Regency have a little experience in farming and tend to follow because it is their family job. They did farming not because they wanted but because it has been a job for generations so they had no choice.

Despite there are some older farmers can encourage and support extension activities. It happened in three villages named Resun, Batu Kacang and Lanjut, the older farmers or group leaders can motivate and encourage their group members to actively participate. The older farmers relatively have more mature in farm processing capacity and have much experiences to they influenced and asked the other farmers to work together. Jaswani, the older farmer and also the leader of farmer group said that he becomes the farmer since thirty years ago and he knew that challenges in farming in Lingga Regency from his experience. In his group he always motivated and shared his knowledge to other farmer about how to manage agricultural land in coastal area (Lingga Regency). The role of group leader has made their group successful in farming. Resun has succeeded in developing agritourism with salak as its typical commodity and beautiful waterfall so caused Resun got top 300 of the Indonesian Tourist Village Awards (ADWI) in 2023 (Kemenparekraf, 2023). Batu Kacang has succeeded in cultivating horticultural crops such as cucumber, long bean and cayenne pepper and became the most successful farmer group in Singkep Subdistrict. Batu Kacang also became the top supplier for horticultural crops in traditional market in Lingga Regency. Lanjut has succeeded as a pilot village of rice field which produced three tons of rice. Despite the age of farmers is the most challenges that felt by extension workers, the presence of community leader helps extension workers to do their extension activity. The successful of three farmer groups were supported by their group leader, their willing to work together and common goals. The role of farmer group can also be played at any time by the group leader or by other members. The leaders have a role as coordinator, where they explain or demonstrate relationship between various opinions and suggestions. Apart from that, the group leaders were also a energizer, they drive group to act or make decisions and carry out the activities which has been set together.

4. Challenges of Support and Resources

To do their activities, extension workers must have support system and good resources because they have high mobility. Agricultural extension institutions has unique trait. Extension workers must have a good connection to the government who has a power to make decision and responsibility about agriculture development in other hand extension workers must carry out educational function as far as possible that free from all forms of regulation or coercion (Arifin et.al, 2023). Researchers went to the field with extension workers to observe what they felt while they work. Then this research focused on seven indicators of challenges of support and resources that felt by extension workers, 1) support from regional government; 2) support from central government; 3) Support from other institutions; 4) support from family; 5) sense of attachment to farmers; 6) personal financial capital and 7) information Technology. The result showed in Table 4.

Table 4 The Challenges of Support and Resources

No	Indicators	Score	Percentage (%)
1	Support from regional government	26	13.76
2	Support from central government	27	14.29
3	Support from other institutions	24	12.70
4	Support from family	22	11.64
5	Sense of attachment to farmers	27	14.29
6	Personal financial capital	32	16.93
7	Information Technology	31	16.40
Total		189	100.00

Source: Primary Data Processing (2024)

The challenges of support and resources that most felt by extension workers in Lingga Regency was personal financial capital. Only one extension worker is civil servant and six extension workers are daily freelancer – agricultural extension assistant (THL-TBPP). Directly or indirectly the status of extension workers in Lingga Regency caused the performance and effected to their activities. Six agricultural extension workers in Lingga Regency are waiting to be appointed as civil servant. Researchers asked about the salary that they got every month and it was only Rp 1,500,000 without allowance. Their salaries are far below the minimum wage Lingga Rp 3,402,492 (Pemerintah Provinsi Kepulauan Riau, 2023). They have to pay by themselves when they went to the field or villages. Three of them are far from the working area, have to cover a distance about 5-10 kilometers and use their own vehicle to reach village. The minimum salary and have to give more effort with their job sometimes make them want to stop.

One agricultural extension worker has to cover one sub-district, not one village and it was not ideal. Referring to the current number of extension workers, it still requires up to 28 thousand extension workers. That number will reach the ideal ratio. To realize that, he encouraged the regional government to mobilize the existing extension workers to increase agricultural productivity. The not ideal ratio between extension workers and working areas or the number of farmers has a significant impact. The extension workers whose work to change the mindset and behavior or farmers, foster and introduce the innovation and disseminate the newest agricultural technology. If extension workers are successful in their work the farmers' welfare will automatically increase.



Picture 2. Interview and Discussion (Documentation, 2024)

In Table 4. the lowest indicator is support from family. All of the agricultural extension workers agreed that their family is the reason to stay although they have to cover a long distance, pay some extension's need by themselves, salary is below the minimum wage and uncertainty of appointment. Khan et al. (2008) and Farooq et al. (2010) has reported that extension field staff had an extensive workload followed by numerous additional duties while there was no rewards and incentives for them. Extension workers in Lingga are not enriched by the latest knowledge, training, resources and had communication problem among farmers. Other study from Pakistan found agricultural extension workers are confused about their roles. They have no career growth, rewards, awards and promotions to the next grade agricultural extension are directed to expedite their performance without any roadmap and conducive environment based on synergy (Ashraf and Hasan, 2021). The limited budget affected to the performance of extension worker (Wastutiningsih, 2024), which indirectly also become a challenge for them doing extension activities.

CONCLUSION

This research apprehended the interpretive accounts of Lingga extension workers' challenges in doing their extension activities. The result suggests 1) challenge of facilities and infrastructure is the most felt by extension workers is the wide of working areas; 2) challenge of farmers as agriculture subject is the age of the farmers, the higher of farmer's age it will increase the challenge to extension workers; and 3) challenge of support and resources is the most felt by extension workers is personal capital. As coastal area, Lingga government should provide attention and moral and material support to agricultural extension workers in Lingga. Government should build

Agricultural Extension Center, support the extension workers by providing adequate facilities and infrastructure. When extension workers are prosperous, they will give good performance then impact on farmers' business. The well organized farmers' business will be impacted to local productivity.

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