

Local and Scientific Knowledge Dialogue in Rice Farming Practice in Aceh Besar District

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ABSTRACT

As government partners, it is appropriate that Keujruen blang and agricultural extension workers as facilitators of the government in the agricultural sector must have the same meaning in agricultural practice activities. It aims to achieve the mission of national development embodied into food security priorities through sustainable agricultural agitation. Collaboration between extension workers and customary institutions can create effective agricultural practices to increase the income and standard of living of farming communities. The focus of this study is to analyze the meaning of agricultural practices owned by extension workers and customary institutions in Sukamakmur Aceh Besar sub-district by understanding the role of each actor. To analyze the meaning of agricultural practices for extension workers and customary institutions, this study uses the concept of hierarchy of meaning contained in the theory of Coordinated Management of Meaning (CMM). This research is presented with qualitative methods with ethnographic design. The place of research was conducted in Sukamakmur District, Aceh Besar. This research was conducted from March to September 2023 through several stages. The determination of informants is done purposively. The analysis used is Ethnographic Content Analysis (ECA). Validity in this study was carried out using data triangulation. The results of the study explained that coordinating the meaning of agricultural practices between extension workers and traditional keujruen blang institutions can be assessed from the role of each actor. The coordination of the meaning of agricultural practices between keujruen blang and extension workers with CMM theory shows the similarity of the meaning of agricultural practices by extension workers and keujruen blang, namely realizing sustainable agriculture through the roles of each actor. The role of keujruen blang to realize sustainable agriculture is by maintaining customs in rice field activities, while the role of extension workers to realize sustainable agriculture is by focusing on organic farming.

INTRODUCTION

Agricultural development has a very strategic meaning, not only for developing countries but also for developed countries. Agricultural development still receives very serious attention and protection, which has been proven by developed countries (Fikriman, 2017). Sustainable agriculture is emerging as an alternative agricultural system to address the many obstacles farmers face who need more resources and time and ensure environmental sustainability (Rukmana, 2012). Sustainable agriculture

is an agricultural system based on using natural resources (land, water, and other biodiversity) (Kumar et al., 2022; Rana & Moniruzzaman, 2021).

One of the factors determining the success of the agricultural sector is the role of disseminating agricultural technological innovations in agricultural development (Indraningsih, 2017). Agricultural technology innovation aims to provide convenience in the agricultural process, but this is inseparable from the ability of farmers to apply these agricultural innovations (Jones et al., 2023; Kamara et al., 2023). Therefore, the importance of the role of agricultural extension workers acts as a bridge and, at the same time, a conductor of agricultural technology innovation (Anwarudin et al., 2019). This sustainable agricultural development practice gave birth to a movement to re-implement traditional agriculture that had been done by previous ancestors (Hasanawi et al., 2021). Usually, the ancestors used local resources without applying artificial fertilizers and chemical pesticides, instead emphasizing the provision of organic fertilizers (natural) and biological pesticides, as well as other cultivation methods that remain based on the preservation of agricultural lands (Avermaete et al., 2022; Hill et al., 2020).

As a party that can interact directly with farmers, extension workers will not be separated from being related to farmers' local wisdom in their agricultural practices (Anwarudin et al., 2019). To carry out the role and maintain good relations with farmers, the understanding of agricultural practices between the two parties must be interpreted with the same meaning. Traditional farming communities provide food from one generation to the next through traditional agricultural practices. Local wisdom is the most important aspect of traditional agricultural practices (Ray et al., 2021; Rogers et al., 2023; Sari & Zuber, 2020).

Local wisdom is often interpreted as local knowledge in which knowledge and various strategies are contained in answering various problems related to the environment, meeting food needs, and community adaptation strategies in facing changes in the natural and social environment (Frimpong Boamah et al., 2020; Houma et al., 2021). Likewise, Acehnese farming communities still carry out agricultural practices in accordance with local wisdom. This local wisdom then becomes a custom implemented and obeyed as an obligation to carry out planting (David et al., 2022).

Related to the practice of rice paddy farming, the people of Aceh actually already have a customary institution called *keujruen blang*. *Keujruen blang* is the traditional chairman, the central figure who plays an important role in agricultural activities in Aceh (Putra & Hariadi, 2016) The role of *keujruen blang* is not only to manage irrigation, but *keujruen blang* also has a role in advancing and increasing community agricultural output. But in reality, the actions of farmers to get water on a certain scale often cause chaos because farmers break dikes to get water. The existence of fraud committed by one party to another is appropriate for an institution with the power and competence customarily in Aceh to intervene (Dominici et al., 2022; Matthews et al., 2022; Sultana et al., 2023).

As government partners, it is appropriate that *Keujruen blang* and agricultural extension workers as government facilitators in the agricultural sector must have the same meaning in agricultural practice activities. It aims to achieve the national development mission embodied into food security priorities through sustainable agricultural agitation (SDGs.bappenas). Collaboration between extension workers and customary institutions can create effective agricultural practices to increase the income and standard of living of farming communities (Ardo, 2022; Budi & Wardah, 2021; Malik & Kaliky, 2019).

Previous research still only explains the role of institutional actors: extension and customary institutions. In addition to the role of each actor, the relationship between actors is also very important to be examined, considering the frequent interactions between actors, the meaning and coordination of dialogue carried out by actors must be paid more attention to reduce negative friction between actors. Therefore, the purpose of this study is to explain the role of customary institutions (*Keujruen blang*) and the role of agricultural extension workers in agricultural practices and analyze the coordination of the meaning of agricultural practices between extension workers and customary institutions in

Sukamakmur Aceh Besar sub-district. To analyze the meaning of agricultural practices for extension workers and customary institutions, this study uses the concept of hierarchy of meaning contained in the theory of Coordinated Management of Meaning (CMM) (Harijati & Mastuti, 2014; Orlando et al., 2020). This theory explains that humans organize meaning hierarchically. This theory also explains the process of organizing meaning can be felt if a person can determine the emphasis on the message conveyed by others to himself (Yuriawan, 2021).

There are six levels of meaning hierarchy in CMM theory, including content levels, speech acts, episodes, relationships, life scripts, and cultural patterns. According to Pearce and Cronen (1980), using a hierarchy of meaning in this theory is not a definite sequencing. Still, it only makes a model that helps understand the sorting of meaning that occurs in different people. They believe there is no definite ordering because everyone interprets meaning differently. Therefore, through this study, researchers tried to analyze the role of Keujrun blang and extension workers in agricultural practices and continued with an analysis of coordinating the meaning of agricultural practices for Keujrun blang and extension workers related to rice cultivation in Sukamakmur Aceh Besar District.

METHODS

In line with the formulation of the problem and the goals to be achieved, the researcher uses the constructivist paradigm in this study. This study uses qualitative methods to explain the purpose of the study. The object of this study is the analysis of conversations between extension workers and Keujrun blang related to rice farming practices starting from rice pre-planting, planting period, and post-harvest. Conversations discussed by extension workers and Keujrun blang are carried out offline, such as face-to-face, or online via social media/telephone.

This research is presented with qualitative methods with ethnographic design. The place of research was conducted in Sukamakmur District, Aceh Besar. This place was chosen because of the existence of agricultural extension institutions and active agricultural customary institutions. One of the agricultural extension institutions is the Sukamakmur Agricultural Extension Center (BPP), Aceh Besar Regency. This institution is also a place of connection between extension workers, main actors, and agricultural business actors. This research was conducted from March to September 2023 through several stages. Data collection stage, observation stage, and in-depth interview stage.

The informants were determined purposively, namely actors involved in agricultural practices of rice cultivation in the Sukamakmur Aceh Besar sub-district. Sukamakmur Aceh Besar sub-district consists of 35 villages grouped into four *mukim* namely Sibreh, Lam Lheu, Aneuk Bate, Sungai Limpah mukim. In each *mukim* there are Keujrun blang and agricultural extension workers as government facilitators. Therefore, informants in this study are divided into two, namely key informants and supporting informants.

This study used primary and secondary data sources. Data collection techniques in this study were carried out through observation and interviews. The data analysis technique used is Ethnographic Content analysis (ECA). The data analysis process in this study begins with the secondary data collection stage. Furthermore, researchers made observations through activities between extension workers and Keujruen blang. The authors also collected data through semi-structured interviews with each informant. The next process is to code. The final stage is the stage of concluding. Validity in this study was carried out using data triangulation. The validity of the data in this study is carried out through source triangulation and research method triangulation.

RESULTS

A. The Role of Keujruen Blang Customary Institutions in Agricultural Practices

1. Overview of Keujruen Blang Customary Institutions

Customary institutions function and act as vehicles for community participation in the administration of the Government of Aceh in the fields of security, peace, harmony, and public order. Furthermore, Aceh Qanun Number 10 of 2008 concerning Customary Institutions has reaffirmed the existence of *keujruen blang* and its functions and authorities in Article 24, Article 25 and Article 26. Various parties (extension workers, farmer groups, and the government in agriculture) have long collaborated with the Keujruen Blang institution. This is based on mutual interests in carrying out the roles of each party. Keujruen blang is a person who leads and regulates activities in the field of rice field business. This means that in carrying out its duties, Keujruen Blang is to assist Keuchik in the area of regulating and using irrigation for rice fields. Figure 1. Showing the position of *keujrun blang* in customary institutions that developed in Aceh.

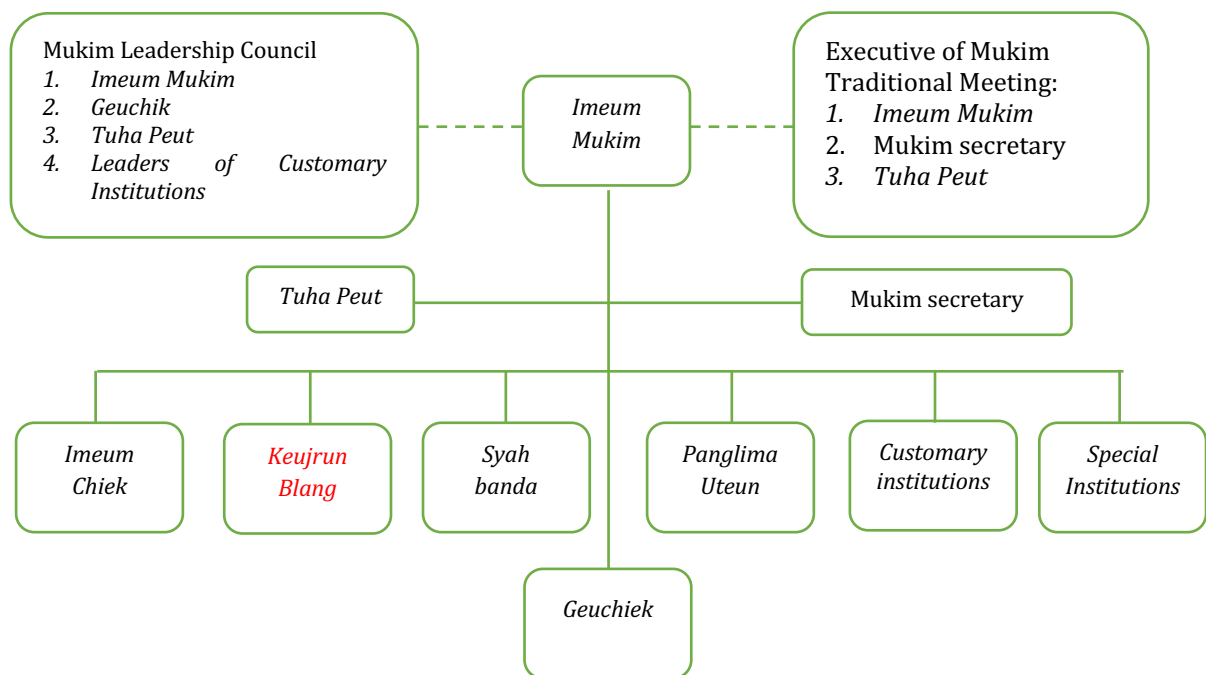


Figure 1. Customary Institutions in Aceh

The arrangement of duties, functions, authorities, and requirements of *keujruen blang* is determined in the deliberations of *keujruen blang*. Likewise, in carrying out its duties in coordination with other related parties. In accordance with the mandate of Aceh Qanun Number 10 of 2008 concerning Customary Institutions. The duties and authorities of *keujruen blang* are as follows:

- 1) Determine and coordinate procedures for going down to the fields.
- 2) Organize the distribution of water to farmers' fields.
- 3) Assist the government in agriculture.
- 4) Coordinate khanduri or other ceremonies related to customs in the rice field farming business.
- 5) Give reprimands and sanctions to farmers who violate the customary rules of Meugoe (paddy fields) or do not carry out other obligations in the customary rice farming implementation system.
- 6) Resolve disputes between farmers related to the implementation of rice field farming business.

2. Agricultural Practice Activities by Keujruen Blang

The traditional procession of Meugoe (Rice Fields) is several activities carried out by farming communities to meet their needs by going down to the fields and plowing their fields to produce rice as a staple for consumption and other needs. This traditional procession begins with initial rituals before descending to the rice fields carried out by residents until the arrival of the rice is brought back to the storage area to be stored in its place (beurandang). The traditional Meugoe processions are classified into pre-Meugoe, Meugoe activities, and post-Meugoe. The following picture shows the role of *keujruen blang* in *meugoe* activities that develop in Acehnese farming communities, namely:

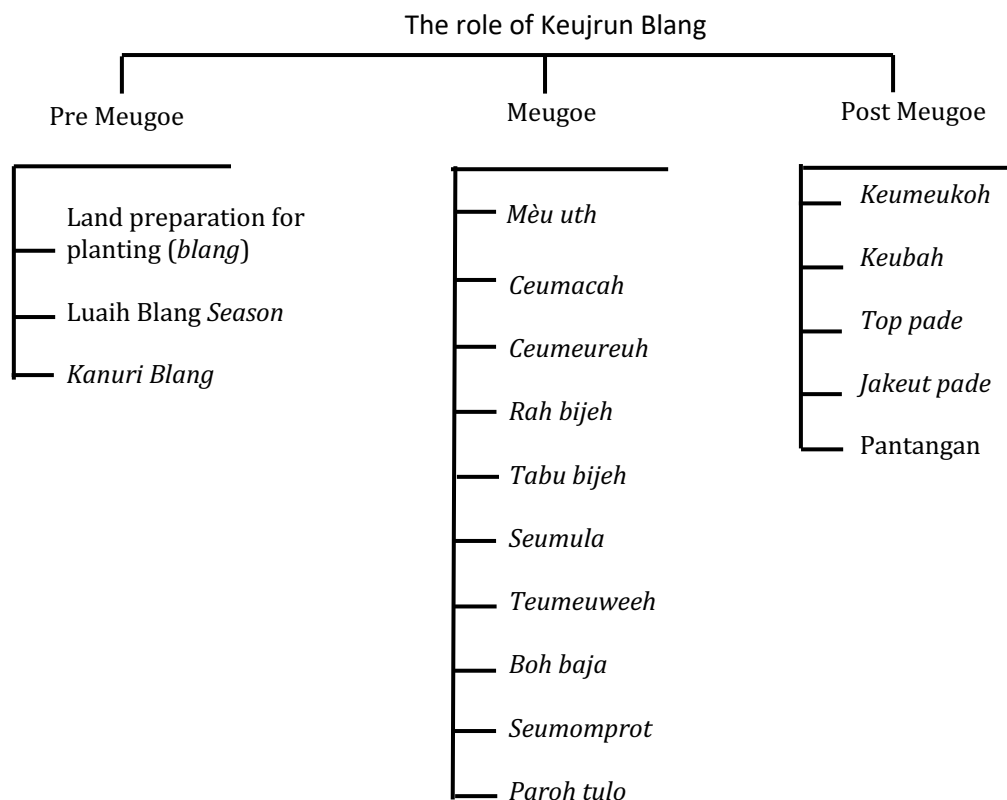


Figure 2. The role of *keujruen blang* in meugoe activities

It is clearly visible from Figure 1. That *keujruen blang* plays an active role in every paddy field activity, starting from the pre-meugoe period (activities before paddy fields), the *meugoe* period (rice field activities), and the post-meugoe period (activities after paddy fields). In every part of the rice field, *keujruen blang* has various obligations. The obligation of *keujruen blang* in supervising paddy field activities is the main task imposed on customary stakeholders in the agricultural sector in Aceh. The important role of *keujruen blang* is one factor determining the success of rice fields at the research site.

3. Application of Agricultural Practices by *Keujruen Blang*

Keujruen blang is a customary institution that is deeply rooted in the lives of farmers in Aceh Province. Its existence is a strategic partner of the government in development activities, especially the empowerment of rice farmers. The role of *keujruen blang* institutions rooted in the farming community at the research location is difficult to replace its role with government-formed institutions such as P3A (association of water user farmers) that apply throughout the archipelago. Today, the application of agricultural practices carried out by *keujruen blang*, especially in research locations, is more or less influenced by the times. One of them is conducting deliberation and coordination with government agricultural institutions

(agricultural extension center of Sukamakmur District). The following table shows the applications of the role of *kejrun blang* in the practice of agriculture in Sukamakmur District.

Table 1. Application of the role of *kejrun blang* in Pertnian Practice

No	Hierarchy of Meaning		Interpretation of the Role of Keujurun Blang
	(contents)	Activities (episodes)	
1	Pre-meugoe (activities before paddy fields)	Land preparation for planting (blang)	<ul style="list-style-type: none"> - Supervise each rice field area - Deliberation with a weatherman - Determine the date of descent to the rice fields - Giving signals to farmers to work their fields
		Luaih Blang Season	<ul style="list-style-type: none"> - Releasing irrigation water to farmers rice fields - Ensure that farmers' rice fields are filled with enough water
		Kanuri Blang	<ul style="list-style-type: none"> - Coordinating the Kanuri Blang Ceremony
2	Meugoe activities (rice field activities)	Mèu uè, Ceumacah, Ceumeureuh, Rah bijeh, Tabu bijeh, Seumula, Teumeuweeh, Boh baja, Seumomprot, Paroh tulo	<ul style="list-style-type: none"> - Conduct deliberations, coordination and consultations with extension workers - Solving problems for farmers - Sanction farmers who violate customary law
		Keumeukoh, Keubah, Top pade, Jakeut pade, Abstinence	<ul style="list-style-type: none"> - Socialize and sanction farmers who violate customary law - Warning farmers to do zakat

Source: primary data processing

Partially, the role of Kuejrueen blang, which is considered by parties who intersect with *keujruen blang*, has a very good impact on agricultural practices in Sukamakmur sub-district. Its role in setting the date of descending rice fields, regulating the distribution of rice field water, coordinating the implementation of *blang kanduri*, socializing and sanctioning farmers who violate customary law, and warning farmers to do zakat is still needed by farmers. In addition, his cooperation with agricultural extension workers is considered to have a very good impact on the sustainability of agricultural practice activities in the Sukamakmur Aceh Besar sub-district.

B. The Role of Agricultural Extension Workers in Agricultural Practices

1. Overview of Sukamakmur Agricultural Extension Workers

The Sukamakmur Agricultural Extension Center was established in 2011, under the auspices of the Fisheries and Forestry Agricultural Extension Agency or BP4KP Aceh Besar Regency with a working area covering one sub-district, namely Sukamakmur District, with a total of 35 assisted villages and divided into four target work areas. As Nurmayasari et al. (2022) explained, Agricultural extension workers are the spearhead of development because they are directly at the field level, which also determines the development of the farming system run by farmers or farmer groups. Therefore, through the assisted villages of the Agricultural Extension Center compile a strategic design to improve the performance of agricultural sector development. Among the indicators of the role of agricultural extension workers is the development of farmer groups which are shown by the ability both in technical terms and management of the farmer business being run.

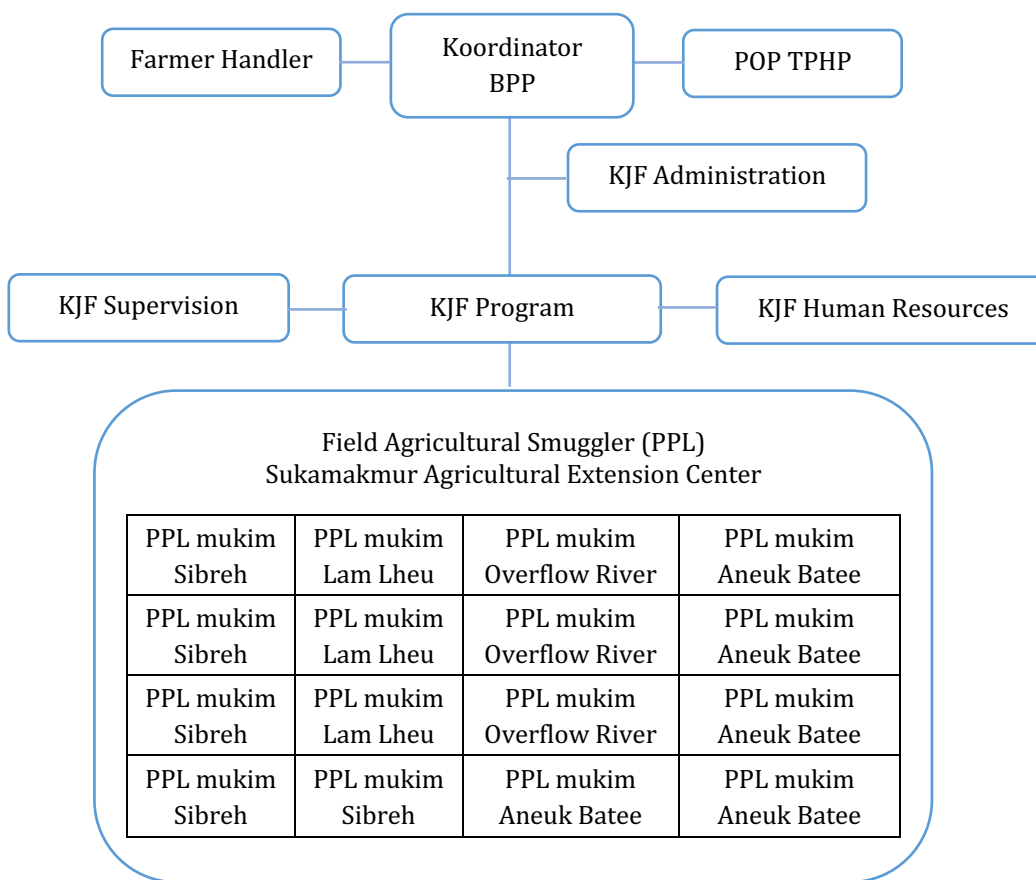


Figure 3. BPP Sukamakmur Organizational Structure

There are 16 extension workers at the Sukamakmur Agricultural Extension Center carrying out their duties in four working areas (mukim) consisting of 35 assisted villages. The table shows that Sukamakmur Aceh Besar sub-district consists of four mukim. Each mukim consists of several villages (gampong) and has certain territorial boundaries. This area boundary is used by the farmer institution (keujruen blang) in Sukamakmur sub-district as its working area. Furthermore, farmer institutions that developed in Sukamakmur sub-district are as follows:

Table 2. Name and number of farmer institutions in Sukamakmur sub-district

No	Mukim	Farmer Group	Peasant Women	Poktan	Keujruen blang	RPH PT	KTNA District	Farmer Cooperative
1	Sibreh	11	3	1	1	1	1	-
2	Sungai Limpah	10	5	1	1	-	-	1
3	Lam Lheu	9	2	2	1	-	-	-
4	Aneuk bate	17	4	3	1	-	-	1
	Sum	47	14	7	4	1	1	2

Source : Secondary data

Farmer Institutions that developed in the Agricultural Extension Center of the Sukamakmur region Based on customary institutions in the region consisting of 17 farmer groups. One of the customary institutions that is still active today is the keujruen blang institution which is determined based on mukim. Mukim is a legal community unit under the sub-district consisting of a combination of several gampong that have certain territorial boundaries led by Imeum Mukim or other names and are directly under the sub-district (Mursyidin et al., 2023) As for The main tasks and functions of the Agricultural Extension Center of Sukamakmur District, Aceh Besar Regency on institutional aspects are:

- 1) Develop counseling programs at the sub-district level in line with the urban district extension programs
 - 2) provide and disseminate information on technology, means of production, financing, and markets
 - 3) Carry out counseling based on counseling programs
 - 4) Carry out the learning process through pilots
 - 5) Carry out monitoring, evaluation and reporting on the implementation of extension programs.
 - 6) Facilitating institutional development and partnerships between key actors and business actors
1. Agricultural Practice Activities by Sukamakmur Agricultural Extension Officers

Agricultural extension workers have a role in agricultural practices at the research site. All agricultural extension activities in Sukamakmur sub-district are regulated by the Agricultural Extension Center. The main tasks and functions of extension workers are evenly distributed in every part of rice field activities carried out by farmers at the research site.

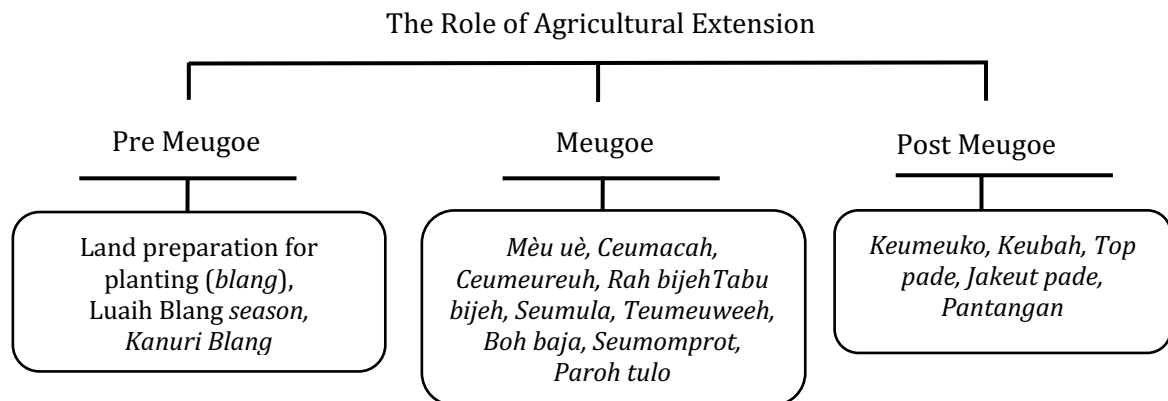


Figure 4. The role of agricultural extension workers in Sukamakmur sub-district

Figure 4. Displaying the role of extension workers in every agricultural practice activity at the research site. Agricultural extension workers play an active role in every paddy field activity, starting from the pre-meugoe period (pre-rice field activities), the meugoe period (rice field activities), and the post-meugoe period (activities after paddy fields). In each part of the rice field, extension workers have various roles. Extension workers as partners of the government in the agricultural sector are a factor that determines the success of rice fields at the research site.

3. Application of Agricultural Practices by Sukamakmur Agricultural Extension Officers

The application of agricultural practices carried out by extension workers at the research location is carried out with an approach through customary activities that develop at the

research site. This is supported by Harijati's opinion (2014) that agricultural extension applies an approach that is in accordance with current community conditions by considering the variety of areas (local specific), local needs, and potentials. This approach is carried out so that all activities carried out by agricultural extension workers can be accepted by farmers.

Table 3. Application of the Role of Agricultural Extension Workers in Sukamakmur District

No	Hierarchy of Meaning		Interpretation of the Role of Extension Workers
	(contents)	Activities (episodes)	
1	Pre-meugoe (activities before paddy fields)	Land preparation for planting (blang) Season Luaih Blang Kanuri Blang	- Develop counseling programs at the sub-district level in line with the urban district extension programs - provide and disseminate information on technology, means of production, financing, and markets
2	Meugoe activities (rice field activities)	Mèu uè, Ceumacah, Ceumeureuh, Rah bijeh, Tabu bijeh, Seumula, Teumeuweeh, Boh baja, Seumomprot, Paroh tulo	- Carry out counseling based on counseling programs - Carry out the learning process through pilots
3	Post meugoe (activities after paddy fields)	Keumeukoh, Keubah, Top pade, Jakeut pade, Abstinence	- Carry out monitoring, evaluation and reporting on the implementation of extension programs. - Facilitating institutional development and partnerships between key actors and business actors

Source: primary data processing

The application of extension program activities is proportionally arranged in each rice field activity at the research site. In every part of paddy field activities, extension workers have an important role. This is in line with the idea conveyed by Harijati (2014) that agricultural extension services are expected to apply an approach that is in accordance with current community conditions by taking into account the variety of areas (local specific), local needs, and potentials.

C. Coordination of the meaning of agricultural practices between extension workers and Keujruen blang customary institutions

The dialogue on the meaning of agricultural practices between *keujrun blang* and extension workers is coordinated through the Coordinated Management of Meaning Theory by W. Barnett Pearce and Vernon Cronen (1980), with a hierarchy of meaning. As Aminuddin et al. (2021) Reiterate, meaning in interaction is achieved by applying various rules based on the hierarchy of meaning. The coordination of the meaning of agricultural practices by *keujrun blang* and extension workers is classified based on the hierarchy of meaning at the content level. The content in question is divided into three, namely: Pre-meugoe (activities before paddy fields), Meugoe activities (rice field activities), and Post meugoe (activities after paddy fields).

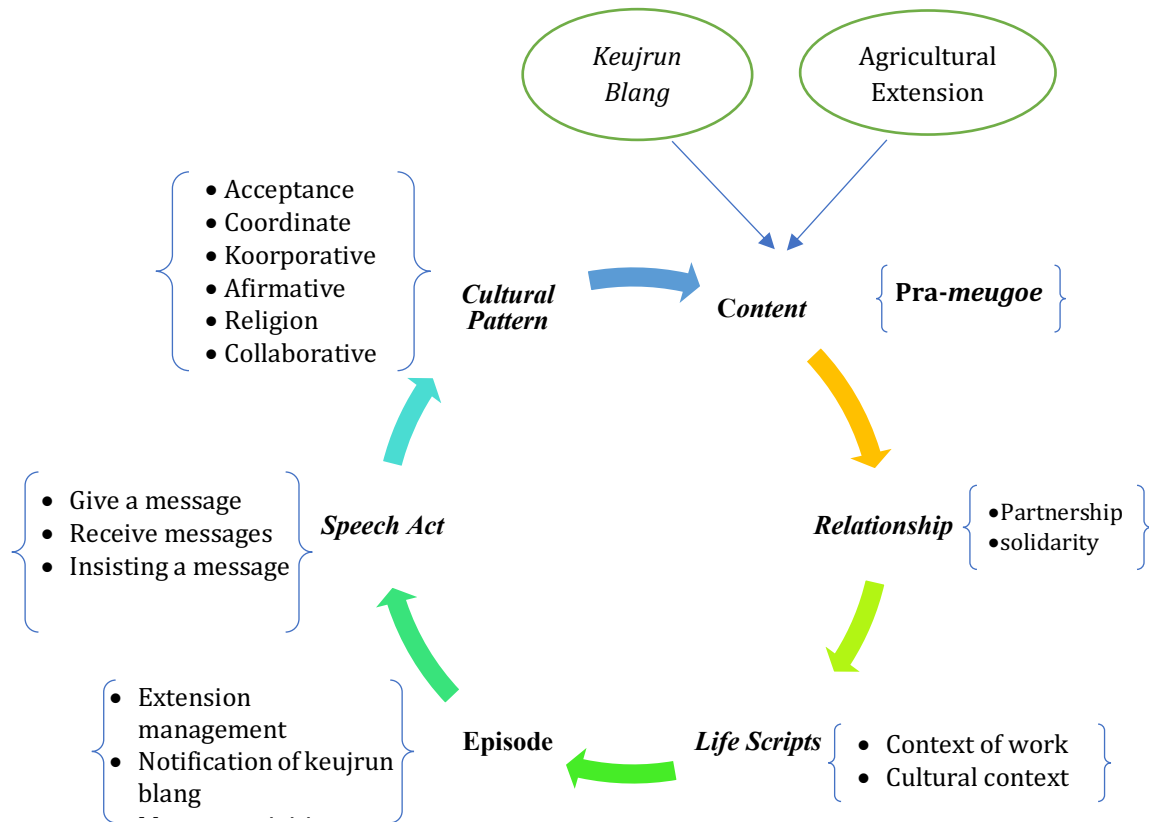


Figure 5. Coordination of the meaning of content-level agricultural practices, pre-meugoe categories

Process depicted dialogue between actors in the Pre-meugoe period occurred cyclically. Both actors give and receive messages periodically until mutual understanding is achieved regarding agricultural practices in the pre-meugoe period. There was no divergence of meaning in this period. In this period, the two actors gave and received messages related to agricultural practices. It was found that, keujrun blang often informed that if agricultural practices do not follow customary rules, it will have many negative impacts. Likewise with extension workers, informing environmentally friendly agricultural practices. This is so that agricultural practices at the research site experience sustainability.

This similarity of meaning is achieved through a process of hierarchy of meanings where the meaning of agricultural practices referred to between these two actors is to realize sustainable agricultural practices. However, it turns out that during the Meugoe Activity, there was a divergence of meaning between the two actors. The following is an overview of the flow of coordination of the meaning of meugoe activity categories.

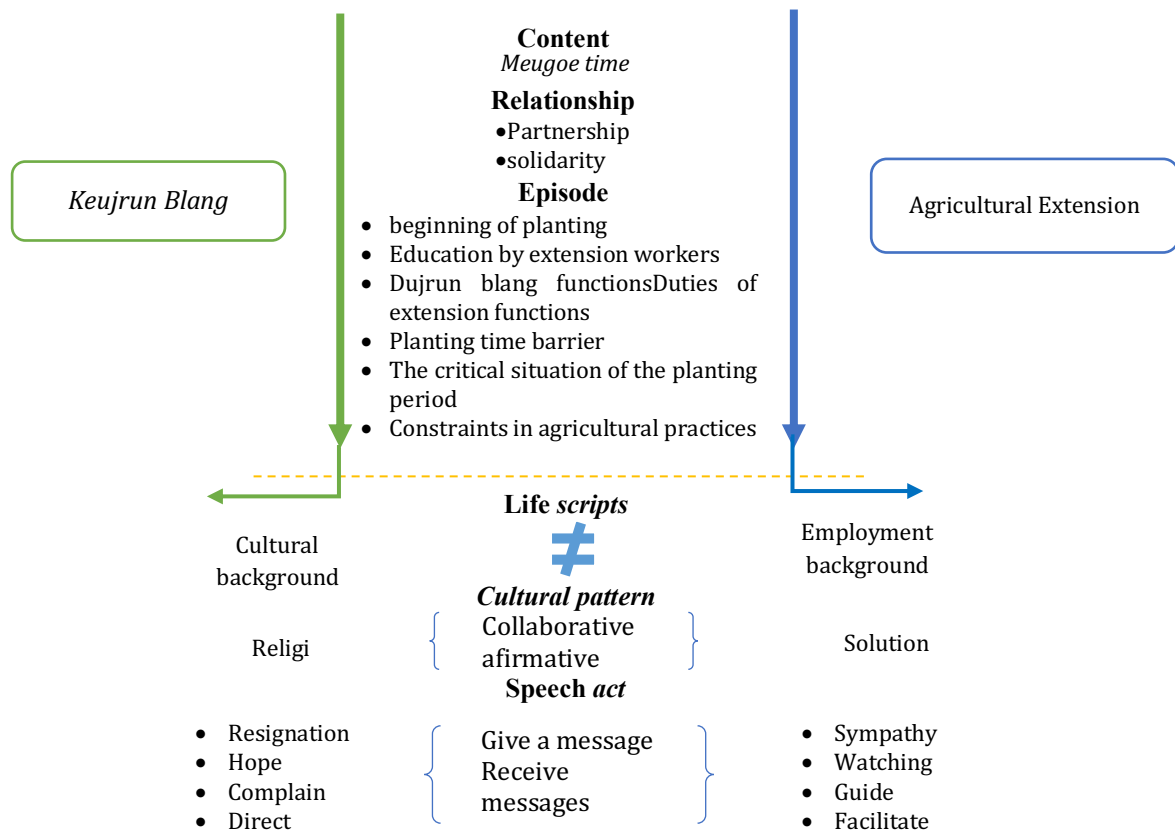


Figure 6. Coordination of the meaning of agricultural practices content level, meugoe activity categories

Dialogue that occurs between actors at the level of content, relationships, and episodes is not found to converge the meaning of agricultural practices. However, when the dialogue process occurs at the level of life scripts, cultural patterns, and speech acts, there are differences in the meaning of agricultural practices. This difference is related to the background of the extension worker's work and the cultural background of Keujrun Blang, where in this paddy field, the role of extension workers as facilitators provides ideas and ideas to overcome the problems at hand. Conversely, as a stakeholder of agricultural customs, *keujrun blang* is more directed to surrender when problems occur. This is because cultural patterns develop based on religious aspects.

This difference turns out to support the common meaning of sustainable agricultural practices. This statement is strengthened by validation where each actor carries out their obligations in accordance with their respective roles. The following diagram is a post-meugoe period that can emphasize that the divergence of meaning that occurs can support the similarity of meaning.

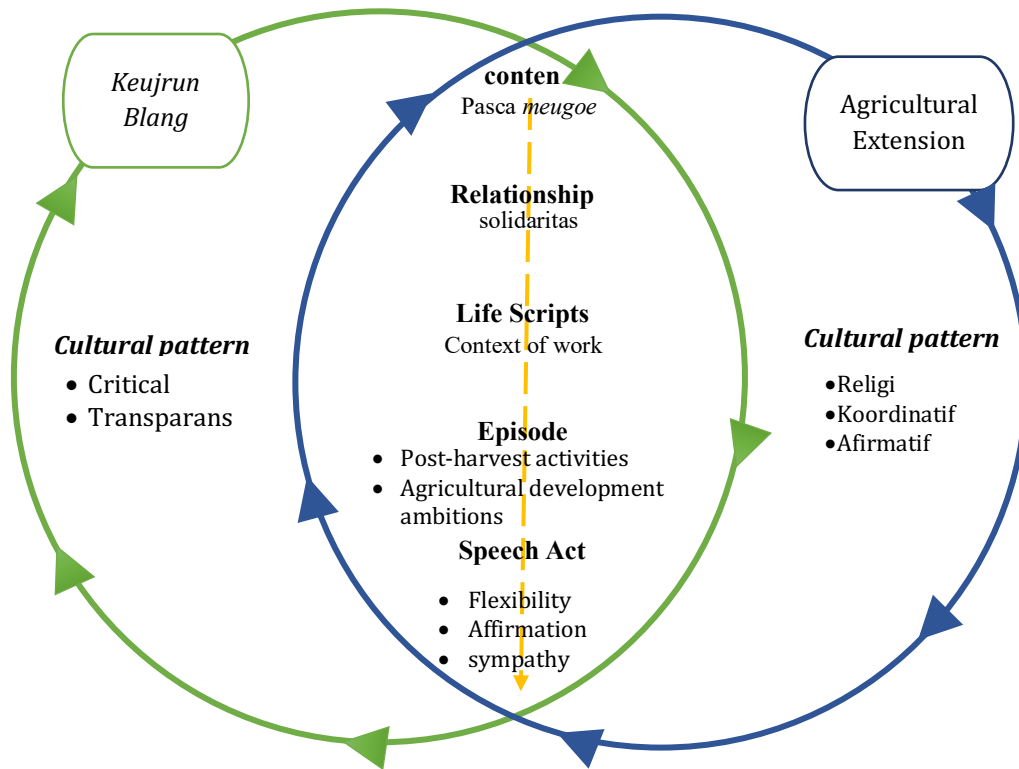


Figure 7. Coordination of the meaning of content-level agricultural practices, post-meugoe categories

The process of coordinating meaning in the post-meugoe period also occurs cyclically, but there is a divergence of meaning at the level of cultural patterns. Cultural patterns between the two actors reflect their roles and functions. The role of *keujrun blang* is to support all farmers' agricultural practice activities based on cultural (religious) customs, while the role of extension workers is to support all agricultural practice activities based on the vision and mission of national development, which critically and transparently nurtures farmers. This divergence of meaning at the level of cultural patterns validates the similarity of meaning between the two actors.

The similarity in the meaning of the agricultural practices in question is to realize sustainable agricultural practices with the role of each chord. The similarity of meaning obtained cannot be separated from the coordination of meaning through levels in the hierarchy of meaning. The divergence of meaning at a certain level of the hierarchy of meaning does not cause the communication process to be hampered but still supports each other between levels. This is in line with the idea of Pearce and Cronen (1980), who state that the hierarchy of meaning is a model rather than a definite sorting system because people have different interpretations of meaning at different levels.

CONCLUSION

Based on the results and discussions that have been submitted, it can be concluded that the similarity of meaning related to agricultural practices by *keujrun blang* and extension workers cannot be separated from the coordination of meaning through levels in the hierarchy of meaning. Although there is a divergence of meaning at certain levels of the hierarchy, this does not hinder the communication process, but rather supports each other between levels. This study reveals a conclusive purpose: first, the role of *keujruen blang* in agricultural practices is to maintain customs in rice field activities. Second, the role of extension workers in agricultural practices is to focus on organic farming. Third, coordinating the meaning of agricultural practices between *keujruen blang* and extension workers with CMM theory shows the same meaning, namely realizing sustainable agriculture through the role of each actor. Thus, the role of *keujruen blang* in realizing sustainable agriculture is to maintain customs in rice field activities, while extension workers focus on organic farming.

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