



The Role and Strategy of Extension in the Indonesian Marine and Fisheries Sector

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ABSTRACT

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Counseling as a two-way active process between the instructor and the extension worker aims to build a behavior change process. Extension officers disseminate information and provide information to the public. The process adopted adheres to the principles of being consistent and continuous, with maximum effort and thought, time-consuming and tiring, until in the end the beneficiaries of the counseling experience a change for the better. The purpose of this study is to analyze the role and strategy of extension in the marine and fisheries sector in Indonesia. Based on the studies conducted, extension officers in the marine and fisheries sector have a strategic role in determining the success of marine and fisheries development in the field. Outreach strategy for the marine and fisheries sector through structuring and increasing institutional capacity. Referring to the concept of role and strategy, future fisheries extension must involve sustainable, science-based approaches to increase fisheries production and maintain healthy marine ecosystems. Then, to maintain the sustainability of the fisheries sector, future fisheries extension must pay attention to sustainable, science-based aspects, and involve all relevant parties in decision-making and policy implementation, by prioritizing a holistic approach; government, society, and the private sector. This will help maintain the sustainability of the fisheries sector and healthy marine ecosystems for the future.

Introduction

Counseling is a process that is carried out actively and interacts between the extension worker and the person being exposed to it. It aims to build a behavior change process (Safrida *et al.*, 2015). Counseling does not stop at simple concepts, namely disseminating information and providing information to the public. This process is consistent and continuous, with maximum effort and thought, time-consuming and tiring, until in the end the beneficiaries of the counseling experience a change for the better (Al Asyari, 2018). On the one hand, counseling is often

associated with information or propaganda, whereas counseling is an effort to change the behavior of individuals, groups, or communities so that they know, want, and can solve the problems they face so they can live a better and dignified life. For counseling to take place properly, education and communication are needed to share information. This can be done by facilitators, either from a social system itself (internal agent of change) or from outside the social system, such as field extension workers or development workers from a non-governmental organization (NGO). Equating counseling with information may be influenced by the term *voorlichting* in Dutch. In this case, *voor* means front; and lighting means lamp or torch (Amanah, 2006).

Historically, during the Dutch colonial era, the extension that existed was agriculture, called *landbouw voorlichting*. In Germany extension is called *aufklärung* (enlightenment). In Austria *forderung* (rural guidance). In Spanish *capacitation* (the desire to improve skills or training), and in French *vulgarisation* (simplifying the message for the layman). The term university extension was first used in England in the 1840s. At that time William Sewell with other figures formed the Royal Commission on the University and Colleges of Oxford (1852) and proposed the dissemination of Information from the University to industrial workers (Suggestions for the Extension of the University).

Practically speaking, counseling was first carried out by James Stuart of Fellow of Trinity College, Cambridge in 1867-68. In this case, counseling is education for community development or Community Development. Counseling is constantly changing such as organizational changes, strategic planning, re-organization, and setting new priorities. In principle, counseling is a systematic process to help farmers, fishermen, cultivators, or communities to be able to solve their problems (self-help). Therefore, counseling prioritizes meeting the needs of its participants. Röling (*in Oakley, 1988*) reports the results of research at Wageningen University in Africa. He found that extension, to overcome poverty, must carry out five activities namely: procurement of inputs, technical services, education, organization, and awareness. In practice, the activities that were mostly carried out were the procurement of technical inputs and services, while the activities of education, organizational development, and community awareness were neglected.

From the 1960s to the 1980s extension services in Indonesia relied on the transfer of technology. The low mastery of agricultural technology is believed to be the cause of poor agricultural performance. To overcome this, advanced farmers and community leaders are used as a medium to diffuse innovation to farmers. This approach is irrelevant to the heterogeneous conditions of rural communities (Oakley, 1988).

Furthermore, [Rhodes \(1990\)](#) reveals that four eras display the relationship between research and extension, namely: production, economics, ecology, and institutional. Each era has certain characteristics. In the production era (1950-1975), the disciplines that stood out were breeding and genetics. At this time, farmers are considered recipients of technology. Then in the economic era (1975-1985), research on farming systems pioneered by economists, agronomists, and farmers is a source of information for technology design. Furthermore, in the ecological era (1985-1995), anthropology, agroecology, and geography played a real role. Farmers who contribute to the development of local knowledge are considered victims and causes of unsustainable development. Finally, in the institutional era (after 1995), those who played a very important role were management specialists, psychologists, organizational sociologists, experts in science, politics, fisheries experts, and counseling. At this time there was the development of various institutions. Farmers who contribute to the development of local knowledge are considered victims and causes of unsustainable development. Finally, in the institutional era (after 1995), those who played a very important role were management specialists, psychologists, organizational sociologists, experts in science, politics, fisheries experts, and counseling. At this time there was the development of various institutions. Farmers who contribute to the development of local knowledge are considered victims and causes of unsustainable development. Finally, in the institutional era (after 1995), those who played a very important role were management specialists, psychologists, organizational sociologists, experts in science, politics, fisheries experts, and counseling. At this time there was the development of various institutions.

Since the implementation of [Law Number 22 of 1999](#) concerning Regional Government and [Law Number 32 of 2004](#), extension institutions in Indonesia have changed very rapidly. The institutional structure of agricultural extension at the district level which was built for 30 years, namely the Agricultural Extension Information Center changed to the Agricultural Information Center, Regional Technical Implementation Unit, Extension Information Office, Sub-Office, or Section. Some have permanent status and some are unclear, some have even been disbanded. The problem currently faced by extension workers is the working mechanism and financing. Based on the problems faced, the Functional Technical Implementation Unit coordinates with KIPP's Agricultural Extension Officers (PPB), namely agriculture, plantations, livestock, and fisheries. Coordination by the UPTF is also carried out with other agencies or related agencies at the sub-district level and with the KTNA at the sub-district level. Specifically, regarding fisheries extension, its implementation is integrated with agricultural extension. When the Department of Fisheries and Maritime Affairs was formed in 1998, fisheries counseling in the

regions was managed by a work unit that had the duties and functions of fisheries extension at one of the related agencies that handle fisheries (Slamet, 2001 *in* Pregiwati, 2021).

Referring to some of the narrations above, a study was carried out regarding the role and strategy of extension in the marine and fisheries sector in Indonesia.

Literature Review

Fisheries extension is non-formal education aimed at fisheries communities to improve knowledge, skills, and attitudes in the marine and fisheries sector. Extension activities are expected to encourage the realization of fishery communities towards a more decent life, more profitable business, and more prosperous life. Some of the reasons that make fisheries extension very important, in the form of (a) statutory mandates; (b) biophysically, the nature, characteristics, and forms of fisheries and marine activities are very specific; and (c) the strategic role of fisheries extension in the development of independent and competitive fisheries communities (Razi, 2016).

Based on a study written by Putra (2023), the prospect of Indonesian fisheries extension in the future is very good and promising. Of course, this prospect is in line with the role and strategy of fisheries extension itself. Various government and private sector initiatives to increase production and efficiency through aquaculture require trained and experienced human resources. This creates an opportunity for fisheries extension workers to play an important role in improving production and industry efficiency. Not only in the field of aquaculture, but capture fisheries, fish processing, and others also require reliable human resources.

Fisheries extension workers can help fisheries business actors, both in the fields of capture, aquaculture, fish processing, etc. to understand the most effective technologies and methods in their respective fields and ensure that they have access to the necessary information and/or raw materials. They can also help ensure that the fisheries sector must be carried out sustainably and does not harm the environment. In addition, fisheries extension workers can also help expand markets and improve product distribution efficiency to help fisheries business actors earn better income.

Furthermore, Putra (2023) also elaborated that as a country that has great fisheries potential, Indonesia has a good opportunity to expand the fisheries industry. Therefore, the prospect of fisheries extension in the future is very good and promising for extension workers who want to help advance the Indonesian fisheries

industry. With many programs and initiatives focusing on improving fisheries production and efficiency, the prospect of fisheries extension in Indonesia will continue to increase and open up many opportunities for extension workers to play an important role in advancing the industry.

Research Methods

The methodology used in this research is a literature review or library research using academic sources (Jesson *et al.*, 2011). There are two approaches to the literature review, namely the traditional and systematic approaches. However, it should be understood that library research is not research that is only based on relevant literature books, but more than that literature studies place more emphasis on collecting data information originating from the internet network which aims to obtain research data such as through online journals, textbooks, online libraries. The steps that must be carried out in library research are identifying the problem to be studied, and looking for sources that can provide factual information, from journals that are relevant to the research, the latest reading books, or from the opinions of experts to be used as a summary statement.

Result and Discussion

The Role of Extension in the Indonesian Marine and Fisheries Sector

The role of counseling is not just to assist or provide information but can have an impact on the main actors and fisheries business actors so that with counseling, the fishing community can get the maximum benefit from their work related to the world of fisheries and counseling is very much needed in the development of the main actors or businesses. to be able to be independent (Choeronawati & Rochman, 2021). The role of Fisheries Extension is one of the extension institutions that have a strategic role in determining the success of fisheries development in the field (Maryam, 2018). Further, according to Jumain *et al.* (2018), the existence of independent and professional fisheries extension officers is urgently needed in building community potential in the field of fisheries. The role of competent fisheries extension officers is necessary for the development of the quality of the main actors and businesses.

Based on Law Number 16 of 2006 regarding the extension system for agriculture, fisheries, and forestry the function of the extension system is contained in Article 4, has 7 main functions and duties of the Fisheries Extension Officer as follows: 1. Facilitating the learning process of the main actors and business actors; 2. Seeking

easy access for key actors and business actors to sources of information, technology, and other resources so that they can develop their businesses; 3. Improving the leadership, managerial, and entrepreneurial skills of the main actors and business actors; 4. Helping key players and business actors in developing their organizations into highly competitive, productive economic organizations implementing good, and sustainable business governance; 5. Help analyze and solve problems and respond to opportunities and challenges faced by key players and business actors in managing the business; 6. Developing the awareness of the main actors and business actors regarding the preservation of environmental functions; and 7. Institutionalizing the cultural values of advanced and modern fisheries development for the main actors in a sustainable manner.

The Strategy of Extension in the Indonesian Marine and Fisheries Sector

Yusuf (2021) in theory, he writes that to realize measurable and targeted coaching and mentoring of key actors/business actors, a concept of the Marine and Fisheries Sector Extension Strategy is needed that is relevant to current conditions intending to provide certainty of direction for the implementation of the productive, participatory, broad-minded extension. Furthermore, realizing advanced and modern Fisheries Extension in a sustainable development system. Lastly, empower key actors and business actors in capacity building by creating a conducive business climate.

The extension strategy for the marine and fisheries sector can be through structuring and increasing institutional capacity, increasing the quantity and competency of manpower, strengthening and structuring the fisheries extension implementation system, increasing the capacity and institutions of the main players and business actors, increasing the support of facilities, infrastructure, and financing, increasing coaching and supervision, as well as prioritizing the principle of partnership. This strategy for managing and increasing the institutional capacity of Fisheries Extension includes: forming extension institutions in 34 provinces to facilitate coordination, and supervision, and shorten the span of control; increasing synergy between government extension institutions and agencies in charge of marine and fisheries affairs; as well as the growth and institutional development of the main actors/fishery business actors;

Furthermore, increasing the quantity and competency of fisheries extension personnel includes increasing coordination between extension officers. Strengthening and structuring the program implementation system includes program preparation, selection of appropriate methods, and arrangement of fisheries extension materials based on needs, as well as developing cooperation in the implementation of

extension across sub-sectors. Increasing the capacity and institutions of key actors and business actors (institutional growth and development; dissemination of economic institutions, giving awards to groups of key actors and economic institutions of outstanding business actors; growing and developing community capacity to become self-help extension agents and encouraging private sector motivation to take an active role in organizing Fisheries Extension through the creation of a conducive business climate).

Follow-up strategy related to increasing support for facilities, infrastructure, and financing, which includes developing facilities and infrastructure to increase the productivity of effective and efficient implementation and support efforts to increase community self-reliance; provision of facilities based on the characteristics of the extension work area; fulfillment of infrastructure needs in stages; and fulfillment of adequate operational financing. Increasing the guidance and supervision of the implementation of fisheries extension includes sustainable and comprehensive development of Fisheries Extension; fulfillment of continuous Fisheries Extension supervision; and periodic performance evaluation of Fisheries Extension.

The last part, prioritizing the principle of partnership in the institutional development of Fisheries Extension, Main Actors, and Business Actors includes building networks between fishery extension officers and groups, combined groups, and associations of Main Actors and Business Actors; growing and developing the capacity of the Main Actors and Business Actors groups through comparative studies and apprenticeships; and increasing the independence of the Main Actors and Business Actors groups in accessing marine and fisheries business capital; development of meeting forums for group products and developed locally, regionally, nationally and internationally; as well as the development of marine and fishery futures market forms, to determine and ensure prices.

The current marine and fisheries program has succeeded in changing the face of the marine and fisheries sector in Indonesia. In addition to changes in the fields of physical infrastructure, technology, and fisheries productivity, Indonesian fishery business actors have also changed more markedly (Leilani *et al.*, 2020). Taking into account the conditions and changes in marine and fisheries development as well as the existing challenges, it is necessary to prepare an effective development communication strategy in supporting the marine and fisheries development program (Leilani *et al.*, 2020). According to Mulyana (2012), strategy is essentially planning and management to achieve certain goals. Baran and Davis (2010) state that a communication strategy is generally formulated by taking into account three

things, namely the target audience or receiver, the message to be conveyed, and the channel used to achieve that goal.

Effendy (2013) states that the communication strategy is a combination of communication planning and management to achieve goals. Communication itself is the process of delivering messages by the communicator to the communicant or recipient. If analyzed, the communication message consists of two aspects, namely the content of the message and the symbol. Concretely the contents of the message are thoughts or feelings, symbols are language. In addition, according to McQuail and Windahl (2015) elements of communication that always exist and process in every communication context, whether it is a linear (one-way) or circular (two-way) communication model consisting of the communicator (source), message (message), media (channel), communicant (receiver), and effects (effect) can guide on matters that need to be emphasized to design a communication strategy to obtain effective and maximum communication.

Visionary Mission of Indonesian Fisheries Extension in the Future

Future fisheries extension must involve sustainable, science-based approaches to increase fisheries production and maintain healthy marine ecosystems. Based on a study conducted by Putra (2023), the 15 best ideas can be the basis for fisheries extension in the future:

1. Sustainable fisheries technology development: Future fisheries extension should include the introduction of new and innovative technologies that can increase fisheries productivity and minimize negative impacts on the environment. Examples of such technologies are more selective fishing methods, the use of integrated aquaculture systems, water quality management, and monitoring and monitoring systems for aquatic conditions.
2. Education and training: Future fisheries extension should promote education and training to communities and fishers on sustainable and science-based fisheries practices. This will help increase awareness and understanding of the importance of maintaining the balance of marine ecosystems and the need to keep fisheries production sustainable.
3. Science-based fisheries management policies: Future fisheries extension should emphasize the importance of science-based fisheries management policies, which can help promote sustainable fisheries management and maintain the sustainability of fisheries resources. This policy should be based on scientific research and accurate monitoring of fisheries conditions and the marine environment.

4. Public-private partnerships: Future fisheries extension should promote partnerships between the public and private sectors to encourage the development of sustainable and innovative fisheries practices. This will help increase investment in the fisheries sector and accelerate the development of sustainable fisheries technologies and practices.
5. Increased added value of fishery products: Future fisheries extension should prioritize efforts to increase the added value of fishery products, which can help increase income and reduce pressure on sustainable fishery resources. This can be achieved through market development and promotion of high-quality fishery products, as well as the development of sustainable and environmentally friendly fisheries processing industries.
6. Promotion of diversification of fishery products: Future fisheries extension should prioritize efforts to promote diversification of fishery products produced, so as not to focus only on certain types of fish. This diversification will help reduce pressure on certain fish resources and create new opportunities for fishermen.
7. Increased local community involvement: Future fisheries extension should involve local communities in decision-making and policy implementation related to the fisheries sector. This will help increase public awareness and understanding of the importance of maintaining the sustainability of fishery resources and the need for sustainable fisheries practices.
8. Increased oversight and enforcement: Future fisheries extension should include increased monitoring and law enforcement of illegal fisheries practices, which can damage marine ecosystems and threaten the sustainability of fisheries resources. This should be done by strengthening cooperation between relevant parties and improving the effectiveness of supervision and law enforcement.
9. Increased access to technology and resources: Future fisheries extension should help improve fishermen and fishery's access to the technology and resources needed to implement sustainable fisheries practices. This can be done through training programs and technical assistance to increase the capacity of fishermen and fishery business actors.
10. International collaboration: Future fisheries extension should promote international collaboration in the development of sustainable fisheries practices and safeguard the sustainability of fisheries resources. This can be done through the exchange of knowledge and experience between countries and by strengthening international cooperation in fisheries management.
11. Women empowerment in the fisheries sector: Future fisheries extension should include empowering women in the fisheries sector. This can be done by

increasing women's access to training, funding, and technology, as well as strengthening their participation in decision-making and economic empowerment.

12. Sustainable market development and marketing: Future fisheries extension should promote sustainable market development and marketing, which supports sustainable fisheries practices and strengthens the added value of fishery products produced by fishers and fisheries.
13. Waste and pollution management: Future fisheries extension should include education on handling marine waste and pollution, which can help protect marine ecosystems and fishery resources from the negative impacts of waste and pollution.
14. Increased digital literacy: Future fisheries extension should include increasing digital literacy for fishers and fisheries businesses, to strengthen their access to information on the latest developments in the fisheries sector and the latest technologies.
15. Increased cooperation between sectors: Future fisheries extension should promote increased cooperation between sectors, which can help improve the effectiveness of fisheries resource management and maintain the sustainability of marine ecosystems as a whole.

Broadly speaking, to maintain the sustainability of the fisheries sector, future fisheries extension must pay attention to sustainable, science-based aspects, and involve all relevant parties in decision-making and policy implementation, by prioritizing a holistic approach; government, society, and the private sector. This will help maintain the sustainability of the fisheries sector and healthy marine ecosystems for the future.

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