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ANALYSIS OF THE ROLE OF OIL AND GAS COMPANIES IN IMPLEMENTING THE ACHIEVEMENTS OF SDGS 14 AND 17 THROUGH THE FISH CULTIVATION PROGRAM IN THE KEPULAUAN ANAMBAS DISTRICT

Imran Gunawan Tambunan[1*], Eleonora Sofilda[2]**

[1,2]*Universitas Trisakti*

[*] *imran122012016004@std.trisakti.ac.id* [**] *Eleonora@trisakti.ac.id*

ABSTRACT

Kepulauan Anambas District, with 98% of its territory consisting of waters, has promising fisheries potential, However, is inversely proportional to the performance achievement of the fisheries sector during the 2016-2020 period, which decreased. Nevertheless, overfishing continues to occur in Anambas waters. This study aims to analyze the role of oil and gas companies in efforts to develop aquaculture in Kepulauan Anambas District, the intended role focuses on how aquaculture practices are carried out, the involvement of fishing communities, also the benefits and challenges faced, this research method uses a mixed methods approach, by gathering information from relevant sources, both from the company side as program administrators, and fishermen groups as beneficiaries. The Information gathering was carried out qualitatively with in-depth interviews and quantitatively with questionnaires. The data was collected and analyzed by content analysis techniques and descriptive statistics related to the perceptions of fishermen groups towards sustainable fisheries by measuring using a Likert scale. The object of this research consists of entities of two oil and gas companies that have community development programs in the aquaculture sector, namely Medco E&P Natuna, Ltd and PT. Primer Oil BV-Harbour energy. The sample determined in this study consisted of 19 people divided into managers and company personnel in the CSR department, and cultivator community groups. The results of this study explain that through aquaculture, fishing companies make a positive contribution to the implementation of SDG number 14 concerning life below water, and number 17 concerning partnerships for the goals. Strategically, companies interpret these development goals by providing guidance in the form of investment, infrastructure, transfer of knowledge, technology, and management of aquaculture management which is carried out periodically, in particular, this research also identifies the forms of involvement of the two companies fostered groups, towards the achievements of the community development program, the results of this study also identified that only certain people have an interest in being involved Farther in management.

Keywords: SDGs 14 & 17, aquaculture, community empowerment, Kepulauan Anambas District, the role of oil and gas companies.

INTRODUCTION

Overall global fishery production reached 179 million tonnes in 2018, 96.4 million tonnes of which came from capture fisheries and another 82.1 million tonnes came from aquaculture. In this case, when compared to the average fishery production in the last three years there was at least a 5.4% increase in fishery production, which was due to an increase in capture fisheries of 3.2 million tons in 2018. The United Nations Food and Agriculture Agency (FAO), in 2019 released data, that Indonesia was ranked third as an aquaculture producer by producing 6 million tons out of a total of 75.4 million tons from the ten largest aquaculture-producing countries in the world, but when compared to China 48 .2 million tonnes (Martinet et al., 2016). Based on these data, with the large potential that is owned, aquaculture activities in Indonesia are still lacking in interest, with the potential that has not yet attracted the public or companies (Kurnia et al., 2020). According to data from the Central Bureau of Statistics, the number of

aquaculture companies in Indonesia has not increased significantly or decreased. In the 2019-2020 period, there was a total decrease in the number of aquaculture companies such as ponds, hatcheries, freshwater, and marine. In line with this fact, Kepulauan Anambas District which is in the north of Indonesian waters, with a water area reaching 98% makes Anambas an archipelago with quite promising fishery potential, both in terms of production and market for fishery commodities, with a total number of exports in 2020 reached 53.2 tonnes with a valuation of 3.8 billion rupiah or 1.5% of the national achievement (Dirjen Perikanan Budidaya KKP , 2020). However, the threat of overfishing practices also often occurs in the territorial waters of the Kepulauan Anambas District. This was stated by the Secretary of the All Indonesian Fishermen's Association branch of Anambas (Hakim et al., 2018) who said that in recent years there has been an increase in the population working as fishermen with a total of 4,744 people. In this case, the causative factor is the limited employment opportunities, and the sluggish aquaculture in Anambas, even though previously the Anambas coastal community had a tradition of cages for cultivation (Shafitri & Sujarwo, 2018).

The fishery potential of the Kepulauan Anambas District is inversely proportional to the achievements in the performance of fisheries affairs for the 2016-2020 period. According to RPJMD data, the amount of capture and aquaculture production is unstable and tends to decrease every year, while the available facilities or fleets tend to increase (Lestari et al., 2018). Few facts explain that the increasing number of fishermen is not directly proportional to the amount of production produced, so this raises the assumption that the number of fish in the waters of Anambas is decreasing.

Table 1. Fisheries Performance Data for Kepulauan Anambas District for 2016-2020

No	Description	Year				
		2016	**2017**	**2018**	**2019**	**2020**
1	Number of fisheries production (capture and cultivation)	28.983	29.739	23.368	23.526	21.017
2	Number of capture fishing fleets	2.481	2.497	2.501	2.501	3.026

Source: Kepulauan Anambas District RPJMD 2020

So to answer this challenge aquaculture needs attention because of its considerable potential in Kepulauan Anambas District, so to ensure the sustainability of aquaculture it is necessary to involve the community to increase the management capacity of fishermen groups by the required competencies (Syahputra et al., 2019). Apart from that, the role of the company should also be considered for the development of aquaculture in Anambas, and one of those that has been running so far is the community empowerment program for grouper farming by two oil and gas companies, namely Primer Oil BV, and Medco E&P Natuna, Ltd. These two companies through the Community Empowerment Program for the pillars of economic empowerment, until now have taken a special role in the development of aquaculture, besides having economic goals, it also aims to improve safety and environmental aspects, as another consideration to achieve the goals of fisheries (Shafitri & Sujarwo, 2018). Sustainable. There is an opportunity that is a potential aspect in the development of aquaculture, it is necessary to take further action on this matter (FAO, 2022). However, with the object of aquaculture

research, along with supporting aspects related to the company's role in the context of aquaculture development, and implementation of the fostered fish cultivator groups, including the role and involvement of fisherman groups, it is hoped that this research can fill the gaps in previous studies.

METHOD

Research Design

The method used in this study uses a mixed methods approach, namely research with a mixed approach to aquaculture practices, in addition to measuring the perceptions of fishermen who are members of groups related to aquaculture indicators, and involving stakeholders in it, efforts are made in This research aims to find out the benefits and challenges from the fishing community as beneficiaries (Waruwu, 2023). Meanwhile, the data collection method in this study was carried out using in-depth interview techniques and structured questionnaires, where the results of qualitative data collection will be analyzed using content analysis techniques, namely research that seeks to discuss in-depth information from an object of research, while for the analysis of quantitative data obtained about fishermen's perceptions, it will be measured with a Likert scale with a descriptive statistical analysis approach, on the other hand, this research was carried out from February 2023 to April 2023.

Research Variable

The research variables used are 1). SDG's achievement is number 14 regarding life below water, and number 17 concerning partnerships to achieve goals 2) Characteristics & Practices of aquaculture, 3). The role of oil and gas companies in the Community Empowerment Program in the field of aquaculture 4). Involvement of fishermen groups in cultivation programs, and 5). Economic, social, and environmental benefits and challenges to aquaculture programs (Khotimah et al., 2022).

Sampling Method

The object of this study consists of entities of two oil and gas companies that have community development programs in the field of aquaculture, and also two groups of fishermen involved in efforts to develop aquaculture in Anambas District. The population determined in this study consists of two oil and gas companies operating in the Kepulauan Anambas District area which has specifically had a Community Development Program in the field of aquaculture for the past two years, namely Medco E&P Natuna, Ltd and PT. Primer Oil BV-Harbour Energy and the CSR or community investment department are the populations of this study because they are the people who instill these activities from planning to exit strategy (Ruggerio, 2021).

The selection of informants located in Anambas used a purposive sampling technique, where the selection of informants from the company's point of view was CSR managers because this research is related to the company's role in CSR programs related to aquaculture, as well as fishermen groups related to aquaculture development programs (Hidayat et al., 2021). This can be found in Table 2. Characteristics of resource persons, including the following:

Table 2. Characteristics of Respondents

No	Resource Person / Informant	Amount
1.	Oil and Gas Company Manager	2 persons
2.	Oil and Gas Company Employees	4 people
3.	Cultivator community groups	13 people
	Total	19 Orang

Source: Researcher

Data Analysis Method

The technique of analysis of research results, using content analysis techniques, is a technique of identifying the characteristics of research objects constructively to then conclude in a systematic, objective, and general manner, Objectives are intended according to measurable procedures, systematic means content, or categories are arranged consistently, general means results research must have a theoretical reference, the information obtained from the content analysis can be linked and have a theoretical relationship, another definition of content analysis that is often used is, content analysis is a qualitative research-oriented technique, standard measures are applied to certain units to determine character documents or compare them (Berelson, 1952; Kracauer, 1993). While the analysis used for the quantitative data obtained is a descriptive statistical approach, descriptive statistics are statistics that are used to analyze data by describing or illustrating the data collected without intending to make general conclusions or generalizations (Sugiyono, 2016). The descriptive approach was chosen because one of the objectives of this study was to describe the perceptions of the fishermen group beneficiaries of the program in particular towards the interpreted role of companies in grouper aquaculture development activities, and in general to describe perceptions regarding sustainable fishing practices, while the perception analysis technique used the Likert scale, by calculating the score obtained from 13 respondents who responded to a list of questions.

RESULTS AND DISCUSSION

In general, fishing activities in Anambas have their characteristics, Anambas fishermen are at least divided into two groups, namely capture fishermen and cultivating fishermen. Furthermore, capture fishermen are further divided according to distance traveled; coastal fishing fishermen with a distance of less than 2 miles, and offshore fishing fishermen with a distance of more than 30 miles from the coastline, but each fisherman may enter into these two sub-categories depending on the season and capital capabilities. Fishing fishermen still use traditional methods, although still using traditional methods the number of fishermen catching pelagic fish or coastal capture fishermen is a greater number than offshore fishermen so this has the potential to disrupt the balance of the pelagic biota ecosystem, coupled with the lack of knowledge regarding the environment of aquatic ecosystems before socialization by the fisheries service, until now fishermen were still found using potash and poison bombs to make it easier to catch reef fish so this caused damage to pelagic marine biota, this was confirmed by actual conditions in the field where the condition of coral reefs not good with the characteristic turbidity (bleach).

Medco E&P Natuna. Ltd

The aquaculture development program implemented by Medco E&P Natuna, Ltd is a follow-up program that began in 2007, The program idea is a form of the company's concern and concern for fishermen's interest in catching and raising reef fish (grouper) which has been rife since the 1980s., mainly for the type of Napoleon fish, and types of sun grouper, tiger grouper, and others), the process of taking small seeds in nature which is often carried out by fishermen is the background for the importance of this program, in addition to the methods used by fishermen with poisoned pesticides, bombs, and Poisoning has become a habit that has raised fears of damage to the ecosystem, especially to the reef fish that the groupers feed on (Yunior & Kusrini, 2021). As previously explained this program focuses on grouper cultivating fishing communities, This activity generally includes grouper seed nursery activities with spawning techniques, nursery, fostering cultivation techniques, forming and developing institutions, and strengthening business networks, to achieve the success of this program community participation is prioritized with the relevant stakeholder engagement process(Politis & Grigoroudis, 2022). The cycles that have been achieved by this program are as follows:

1. The year 2007-2015 was a grouper cultivation program through the creation of floating net cages located in the village of Ladan, with the name of the Teladan fishermen group, an acronym for the villages of Tebang and Ladan.
2. In 2015-2016 the company focused its program on business development and independence of fishermen groups for floating net cage cultivation.
3. In 2017-2020 the focus is on assisting the process of accelerating the formation of a grouper seed center model at the Anambas Fish Seed Center.
4. The 2020-2021 program was temporarily suspended due to the Covid-19 pandemic.
5. In 2021-2022 the program is focused on developing and strengthening institutional management activities for the Anambas Fish Seed Center.

For now, the company is no longer assisting and/or collaborating with third parties as expert institutions in the field of fisheries, current institutional management has been fully entrusted to groups to carry out management independently.

1. Business Concept, this program aims to manage Aquaculture-based fisheries business units managed by a community of Fishermen's groups, prepare institutional and management of grouper aquaculture businesses, strengthen community cooperation support, and make Floating Net Cages (KJA) and Fish Seed Nets (BBI)) as a fishing community learning center, while the output of this program has at least four points, namely: (1). Development of good management and cooperation, (2). Have the capacity to produce/procure grouper seeds, (3). Realizing the object of Fisheries Tourism, (4). As well as aiming to have a positive impact on the social and economic area.
2. Group & Institutional Management, assistance, in this case, is focused on increasing group cooperation with activities including preparation of Standard Operating Procedures on broodstock maintenance, SOP for spawning, SOP for making natural green algae feed culture, SOP for making natural rotifer feed culture, SOP for grouper larvae maintenance, and SOP for grouper nursery, this SOP was subsequently prepared together in a participatory manner with the assistance of expert consultants with preparation standards referring to cultivation theory and cultivation experience with

adjustments to environmental conditions, including SOPs for accepting apprenticeships or research for local communities who wish to acquire knowledge related to fish farming grouper

3. Involvement of Stakeholders. In the context of the Community Development program (PPM), stakeholder involvement is the key to the success of the program. In the case of aquaculture development carried out by the two companies in this study, the role and involvement of stakeholders in the aquaculture development effort were also investigated.

PT. Premier Oil BV-Harbour Energy

In contrast to Medco E&P Natuna, Ltd, Primer Oil BV Company started the journey of grouper cultivation development activities in 2010 with almost the same approach, namely creating a business incubation model for fisherman groups in the field of aquaculture, locus areas of community development activities by PT. Primer Oil BV is in the village of Pistil. So since 2010, a Nelayan Maju Bersama group was formed, consisting of 50 fisherman members in the village of Putik Ruslan.

1. Business Concept, The cultivation concept applied by Primer Oil in its cultivation development activities consists of seeding through an initial stimulus in the form of assistance in procuring seeds as initial capital for fishermen in doing business, in contrast to Medco, Primer Oil BV implements a revolving capital system for fishermen where assistance a total of 3,000 tails managed by working groups, from 50 members formed 5 working groups with each member consisting of only 10 people. Unlike other companies, Primer Oil BV implements a cycle starting from seeding, growing, harvesting, selling, and rolling activities.
2. Group & Institutional Management, The group management applied to this assistance is the management of a joint business group, even so, the group is provided as a forum for fishermen to be administratively registered in the group.
3. Community Involvement, This activity is in the form of increasing the role of fishermen's groups in aquaculture activities, Although efforts are made to collaborate, basically fishermen have a natural tendency to work individually, even fishermen themselves have a habit of never going to sea with no more than 2 people, thing this then also happens to aquaculture fishermen, for this reason, giving an active role to the group also feels difficult, the Nelayan Maju Bersama Joint Business Group with the Putik village is used to managing grouper cultivation independently until one cycle is completed, the group members will return the capital obtained to the other group members who are entitled to obtain revolving capital from this activity based on the results of deliberations and the results of a joint agreement.

SDG's Implementation and Linkages

This study also aims to identify the role of companies in implementing the goals of sustainable development according to the parameters and indicators in the SDGs, in the implemented aquaculture program, the SDG's achievements obtained include SDG's number 14 concerning life below water aimed at marine ecosystems, concerning meta This program indicator has succeeded in achieving the target of 14.2. regarding management and sustainably

protecting of marine and coastal ecosystems to avoid negative environmental impacts to create healthy and productive seas, it is hoped that aquaculture activities will be able to meet indicator 14.2.1. (a) Regarding the proportion of national Exclusive Economic Zones managed using the ecosystem-based approach, this activity is also able to fulfill indicator 14.2.1.(b) regarding the management of 11 fisheries management areas (WPP) in a sustainable manner (Kartikasari et al., 2020). Furthermore, grouper aquaculture activities are also able to encourage the achievement of targets in SDGS number 14, namely indicator 14.4. on ending overfishing, illegal fishing, and destructive fishing practices, implementing science-based management, for proper restoration of fish stocks in a short time. In addition, this activity is also expected to be able to meet target number 14.7. regarding increasing economic benefits for developing countries, and small islands from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture, and tourism, so that indicators that can be fulfilled are indicator 14.7.1 concerning sustainable fisheries as a percentage of GDP in developing countries and small island areas.

Fishery Culture Practice

The fishery activities in Anambas which have been running so far have fulfilled good cultivation practices, however, at the beginning of the activity there were still many cultivator fishermen who took seeds from nature which had implications for the scarcity of certain fish species such as Napoleon/ketipas, this deficiency was due to the lack of information about good cultivation practices, coupled with the limited knowledge of fishermen causing this to go on for quite a long time, the presence of community development programs by the two companies for cultivators has had the impact of increasing knowledge in terms of the importance of maintaining fishery sustainability, in addition to helping the economy of fishing communities significantly.

The Role of Oil and Gas Companies in Aquaculture

The companies both Medco E&P Natuna Ltd and Primer Oil BV-Harbour Energy have taken strategic steps to develop this fishery potential, the initial steps taken were to carry out a comprehensive study and develop good planning after which the two companies each formed an incubator for aquaculture groups. with a different locus Medco E&P Natuna, Ltd and Tebang village, which then switched to Candi village, and Primer Oil BV- Harbor Energy with Putik village, In the course of the program the two companies had experienced dynamics both in terms of business development and group involvement, several efforts carried out by the two companies have little difference, while these efforts include:

1. Capital investment, The two companies provide capital stimulant assistance in the form of grouper seeds, infrastructure in the form of floating net cages, and other supporting equipment to each of the target groups with the amount reported elsewhere in this paper.
2. Sustainable aquaculture practices, while the two companies provide various aquaculture management training to increase the capacity of fishermen in the two assisted groups, in the form of training in the form of spawning training, fish rearing, seed procurement, nursery, grouper aquaculture business management.

3. Assistance, Apart from investing in capital and cultivating practices to ensure the sustainability of the program, the two companies routinely provide access to assistance from experts who have expertise in aquaculture and aquaculture management.

Community Engagement Process

The community involvement process applied to the two aquaculture development programs is different, Medco E&P Natuna Ltd is involved to the level of providing full management to the Group after previously going through quite a long process, while from the Fishermen's "Nelayan Maju Bersama" with PT. Primer Oil BV- Harbor Energy is involved in the form of providing seeds and mentoring but management is left to each fisherman and tends to be carried out individually.

Fishermen's Perception of Cultivation

Aquaculture practices and the potential of Aquatic Resources in Anambas, are represented by two supporting questions, namely regarding the positive statement that Anambas has sustainable aquatic resources, from the results of the responses obtained and the results of the Likert scale calculation analysis, which shows that 96.92% stated that they strongly agreed with this statement (ABARES, 2021). Meanwhile, the activities of fishermen who still use traditional fishing equipment are considered to be local wisdom that needs to be maintained, as much as 86.15% of respondents strongly agree that fishermen still use traditional fishing equipment. The potential for aquaculture was recognized as beneficial by 95.38% of respondents from this study, and 90.76% were in the category of strongly agreeing with the Fisheries Program by the two oil and gas companies, on the other hand, 89.23% were in the category of strongly agreeing with the role of oil and gas companies in efforts to develop aquaculture in their environment. Furthermore, the seed aspect is also of particular concern in this study, as many as 92.31% of respondents in the category strongly agree with the statement that cultivation is a supporting factor for fishermen in having easy access to good and quality seeds. In addition, the dissemination of appropriate technology sought by the company was appreciated by 89.23% in the category Strongly agree with this statement, that so far the assistance provided by the company includes aspects of knowledge transfer and the introduction of modern aquaculture technology, then as output, 90.77% of respondents in the category strongly agrees and acknowledges that aquaculture activities can increase food security for the community ("The State of World Fisheries and Aquaculture 2022," 2022).

Of the benefits and challenges of aquaculture activities that have been running so far, as many as 93.85% are in the category of strongly agreeing with the statement that aquaculture has an economic impact on society, as well as the environment as much as 90.77% of respondents are in the category of strongly agreeing that aquaculture provides benefits for the environment, then regarding the challenges faced, including climate change being the most significant challenge which was recognized by 87.69% of respondents in the category of strongly agreeing with this statement, on the other hand, government policies mainly in aquaculture and capture fisheries are considered to be a challenge by 67.69% of respondents, matters This certainly requires further study so that there is good alignment between policies and the potential for commodities owned by each region. regarding sustainable development achievements based on fishermen's perceptions, as many as 84.62% of respondents in the

category strongly agree that aquaculture is part of an effort to protect the aquatic environment, with the support of an attitude statement explaining that aquaculture is felt to be able to increase the capacity of fishermen, this is recognized by 89.23% of respondents in category strongly agree with the statement (Stafford, 2019). Apart from that, another important factor is the indicator that aquaculture is a supporting factor for the achievement of partnerships to achieve goals, this statement was recognized by 87.69% of respondents in the strongly agree category.

CONCLUSION

The conclusion was obtained from the company's role in the achievement of aquaculture-based community development programs, namely assistance in aspects of aquaculture implementation, basically What The two companies had the same goal, namely to make Palmatak Candi Village and Putik Village a grouper hatchery center due to sufficient market potential. where demand comes from import markets such as Hong Kong, Taiwan, Singapore, and other countries, all of them always expect to get quality and superior live grouper, it's just that the mentoring pattern applied between the two companies is indeed different, Medco E&P Natuna, Ltd carries out this activity with two the main focus, namely hatchery with spawning techniques and also a nursery. While the Maju Bersama Fishermen group assisted by Primer Oil-Harbour Energi has a focused approach to the nursery, the consideration is that fishermen are considered capable of carrying out their activities independently, in addition to providing adequate infrastructure such as Floating Net Cages provided by the Company, for group coaching in addition to seed capital given as a stimulant, provision of knowledge in terms of nurseries, institutional management is also given to groups but until now the results obtained are not optimal in terms of measuring and involving the group as a whole.

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