

Vocational Educations And Training (VET) Adoption At Science Techno Park (STP) In The Field Of Maritime To Promote Business Incubation And Community Empowerment In Indonesia

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Abstract – This research aims to adoption of VET in the Indonesian Science Techno Park (STP) to support business incubation and community empowerment in the maritime field. Research and development (R&D) was used in this study to improve STP exploration to more effective and efficient. This research approach uses SOAR analysis to determine STP's strategy to build its future through collaboration, understanding, and action. The approach involves the analysis of relevant documents, observations, and interviews. This research focuses on three important aspects of VET adaptation in the Science and Techno Park (STP) program, are the following: (1) education and training to produce competent personnel; (2) adaptation and transfer of technology to produce innovative products; and (3) becoming a business incubator to produce new entrepreneurs. The results show that STP has developed various VET programs adapted to the maritime sector. These programs have been successful in increasing the skills of the maritime community, helping the community build new business start-ups to increase skills in developing of various fish and seafood processing products, having quality products whose consistency is shown by the results of lab tests, and able to reach market areas with a wide range of marketing in this maritime field in indonesia.

Keywords – VET, Science techno park (STP), business incubation, community empowerment, maritime, Indonesia

I. INTRODUCTION

History states that the ancestor of the Indonesian nation was a sailor who prospered from the Sriwijaya kingdom to the Majapahit kingdom [1], [2]. Since ancient times, the strategic position of the “Nusantara” which is the origin of the Indonesian nation [2], [3] along with geographical factors and socio-economic conditions, has been considered to have a strategic position in the global environment [1], [4]. Specifically, it has played a significant role in influencing the stability of political, economic, and regional and international environmental security. At present, Indonesia, as a “Unitary State,” has a large territory with diverse regional topography, consists of land, vast seas, has around 17,000 islands, and has the second longest coastline in the world [5], [6]. Supported by geographical conditions and the vast potential of maritime resources, the marine sector has become a priority for the Indonesian government at this time, in the future and is sustainable (SDGs) within the framework of the world maritime axis [7].

The Indonesian Maritime Policy [8], which is outlined in Presidential Regulation Number 16 of 2017, was created by the government under the direction of President with the goal of making Indonesia a bigger, stronger, and richer maritime nation. This policy restoring Indonesia's marine nationhood, safeguarding maritime security and interests, expanding maritime capability, and achieving economic equality in Indonesia [8]. Development focused on the maritime sector is done to assist maritime development, where the maritime serves as the “main foundation” [9].

The government has also put blue economy policies in place to encourage the best and most sustainable exploitation and development of maritime resources because of the diversity of maritime species, ecosystems, energy sources, and mineral resources. According to statistics from the Indonesian Marine and Fishery Ministry [10], three prospective fisheries in Indonesia can be fully exploited.

Indonesia's fishery potential and production will be based on superior commodities in 2021 [10]. The data is presented in table 1 below:

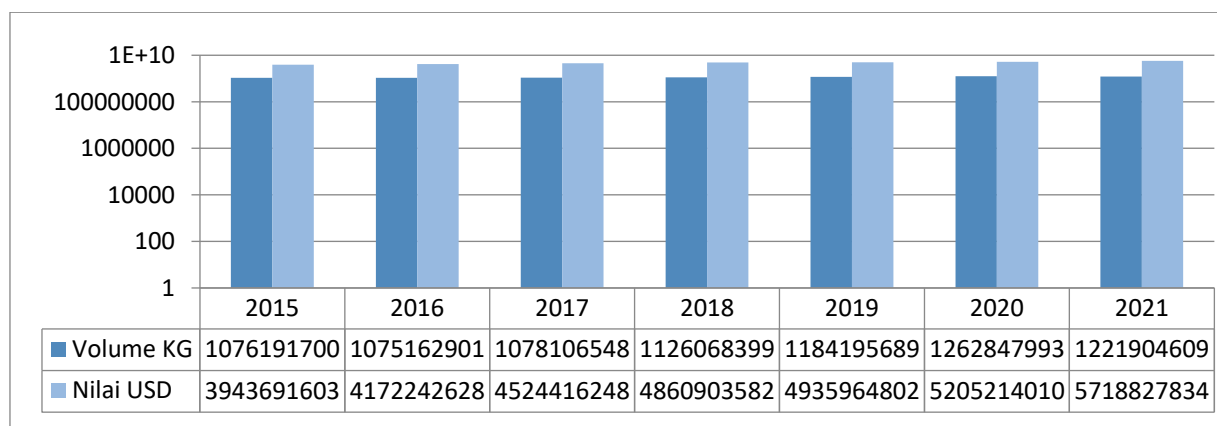
Table 1: Statistics on Indonesia's national fish consumption rate for 2015 – 2021.

Featured Commodity	JTB_Ton	Potential_Ton	Utilization rate
Squid	22,758.00	32,511.00	0.70
Demersal Fish	115,000.00	230,000.00	1.20
Coral Fish	31,066.00	34,518.00	0.40
Large Pelagic Fish	37,548.00	75,095.00	1.40
Small Pelagic Fish	41,436.00	157,151.00	0.30
Crab	5435.00	10,870.00	1.50
Lobster	239.00	477.00	1.40
crab	2034.00	2906.00	0.80
Penaeid Shrimp	23,805.00	47,610.00	1.60

The export value of Indonesian fishery and marine products based on superior commodities in 2015 reached 1,076,191 metric tons worth US\$4.00 billion, then increased to 1,221.904 metric tons worth US\$5.71 billion in 2020 [10]. The data is presented in table 2 below:

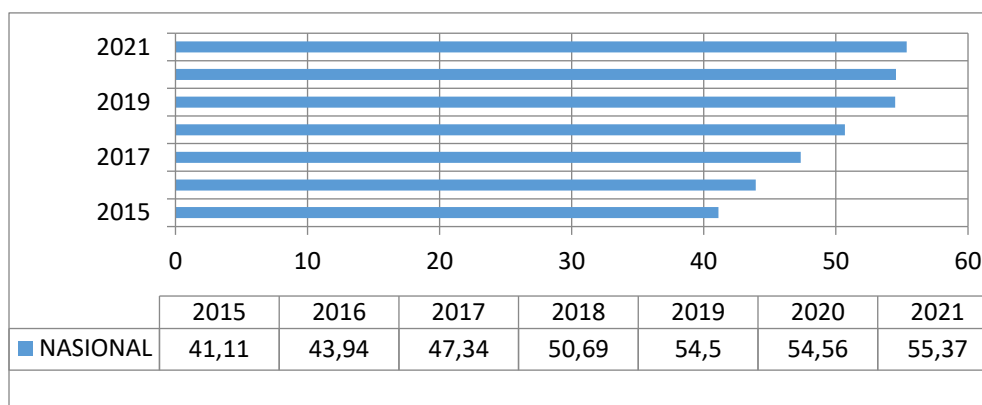
Table 2: Export value of Indonesian fishery and marine products by commodity

2015 – 2021. Source



Indonesia's national fish consumption rate (MMR) in the last seven years has continued to increase, namely from 41.11 kg per capita per year in 2015 to 55.37 kg per capita per year in 2021 [10]. The data is presented in table 3 below:

Table 3: Statistics on Indonesia's national fish consumption rate for 2015 – 2021.



Ideally, the enormous potential of Indonesia's marine resources should be able to prosper the lives of the Indonesian people, including fishermen and coastal residents who depend for their livelihoods on the wealth of marine resources. However, in reality, news is still heard that the lives of local and coastal fishermen are always poverty-stricken' in fact, fishermen's lives are often identified with poverty [11].

The government has carried out a series of policies set forth in a presidential regulation to overcome this problem. The principles of Indonesian marine policy (NAWACITA) based on the archipelagic perspective, sustainable development (SDGs), blue economy, integrated and transparent management, and increasing community participation based on equity and equality have all been implemented by the government to address this issue [7].

The government's commitment to developing human resources to explore maritime potential is manifested, among other ways, by increasing maritime education, research, and training institutions [1], [12], [13]. Since 2016, the government has constructed a Science and Techno Park (STP) in 24 locations, Asmara Oktaviyanti [14] across Indonesia with the help of the Coordinating Minister for Human Empowerment and Culture, the Minister of Research Technology and Higher Education, and the Ministry of Maritime Affairs and Fisheries (KKP) [15]. with a primary focus on STP initiatives in the areas of education, technology, development, and incubators for entrepreneurship and female empowerment, particularly the growth of maritime-based STPs.

To carry out this accelerated process, the government has introduced several models that can be carried out by focusing on optimizing technology, industry, land, and sea to increase the level of utilization of marine resources as a whole. In order to clearly formulate Indonesia's role, potential, and opportunities to become the World Maritime Fulcrum [13], differentiation and selection are needed by considering various factors related to maritime affairs and choosing which aspects must take priority and focus on sustainable development (SDGs) in Indonesia in the future.

The Science and Techno Park (STP) program is expected to accelerate the development of the maritime economy [16] by conducting entrepreneurship education and training and creating business incubators for fishermen and coastal communities. Science and Techno Park (STP) was established by collaborating with universities, researchers, the government, and community involvement [17], [18] with the aim of conducting maritime-based education and training. The program is an initiative, and we hope to improve the economy of fishermen and coastal communities. One of the education and training methods used in the STP program is the adopting Vocational Education and Training (VET) [19], [20]. By emphasizing an innovative, creative, adaptive, and sustainable education and training curriculum [12], [21].

The reason underlying the adoption of VET in STP in the maritime field is that VET enthusiasts are currently increasing because the education and training model applied by VET can adapt to job market developments. [22], local wisdom [23] and being able to prioritize competency skills over theory [20], [22], [23]. Furthermore, Nurmallasari et al., [22] emphasized that VET is able to create skilled human resources (HR) and can encourage empowerment in coastal areas. VET prepares human resources, especially in fostering lifelong learning [21] and enhancing the soft entrepreneurial skills of fishermen and coastal communities by creating a competency-based training model that is able to compete in the workplace and be financially independent [23], [24].

Based on the principles and consequences of VET adopted in the education and training model at the Science and Techno Park (STP), the obstacles faced in implementing VET in this research are practical and short-term goals in addressing the needs of the world of work. In this research, the author will take pictures of one of the government's educational initiatives to prepare human resources (HR) to explore the marine potential and realize economic equality in Indonesia. To promote company incubation and community empowerment in the maritime sector, the author concentrates his research on three crucial components of VET adoption in the Science and Techno Park (STP) program. These three aspects include the following:

1. Organizing education and training to produce competent personnel;
2. Increase adaptation and transfer of technology to produce innovative products;
3. Become a media business incubator to produce new entrepreneurs.

II. LITERATURE REVIEW

2.1. Science Techno Park (STP)

The notion of a Science and Technology Park (STP) arose in the 1950s as a strategy to stimulate collaboration between academics and industry. Science Techno Park (STP) is an integrated area of science and technology that offers numerous chances to encourage innovation, research and technological development [25]. STP was initially focused on scientific and technology research and development, as well as supplying space for business, universities, research and education institutes [26] to develop new innovations. Over time, STP has developed to embrace a wide range of activities, from delivering incubation programs and entrepreneurship to giving educational opportunities and networking events. Today, STP is now increasingly regarded as a major engine behind economic development, innovation, and job creation.

Various countries build science and technology parks (STP) to boost innovation and the success of entrepreneurs. Examples of countries that have successfully developed STP include the United States [27] which, through government and industry collaboration in Silicon Valley, has succeeded in becoming a centre for technological innovation and has become an inspiration for many other countries. In South Korea and Singapore, the development of STP has helped to face Industry 4.0 (Asmara, Dini, et al., 2018). In Thailand, the Philippines, and Malaysia, STP development has also contributed to the success of start-ups in the scientific and technology fields [28], [29].

This success story is due to the fact that STP may be a vehicle for the technology community to innovate and flourish. STP helps generate economic growth, manage technological resources better, stimulate sustainable economic growth (SDGs), and boost the nation's competitiveness. STP also contributes to raising the understanding and utilization of technology for the benefit of society and the community. In general, STP can contribute to boosting national income, improving the management of technological resources, extending knowledge and technology to attain economic, social, and environmental balance, as well as promoting national competitiveness. STP can also assist in increasing the quality of education in the region by providing facilities to facilitate research and development and train students in technical and management skills.

2.2. VET, Adoption and Approach

Vocational education and training (VET) is a method that focuses on learning and mastering certain procedures and is based on scientific notions [20], [30]. The name VET corresponds to the basic rules defined by UNESCO-UNEVOC [21], [31], [32] is a based on cognitive theory, with three theoretical viewpoints underpinning the curriculum and teaching practices [33]. Caves et al., [34] confirmed that the VET program has educational and employment ties, which illustrates the extent to which the VET curriculum may offer students skills relevant to the job market. VET can also be applied in informal or non-formal training institutions as a lifelong education program to expedite sustainable development projects [21].

Vocational education and training (VET) is an important part of any country's education system [35] and its acceptability is critical for a successful education system. VET adoption is an important procedure for boosting the quality of a country's education. This method comprises developing and integrating VET within the national education system [36] Previous research conducted by Edeh et al., [37], [38] has shown that a country's VET can enhance vocational behavior and increase the adoption of new technologies.

In developing nations, VET provides a comprehensive reference source for the newest literature on maximizing the implementation of curriculum development and instructional design methodologies [39] VET can help a country's development by providing young people with job-market-relevant skills based on non-academic technical education and practical, informal training that develops skills and knowledge [40], [41] empowering [20], [31], [42] and promoting economic growth [21].

Ariza-Montes & Muniz [43] suggested that a VET strategy combined with STP can be utilized to carry out entrepreneur incubation, encompassing pre-incubation, technical training, and business support activities. STP's collaboration with VET's educational models, such as entrepreneurship training and business incubators, can help achieve the goal of increased economic growth that can ensure prosperity for broad segments of society and contribute to higher life expectancy, reduced unemployment and poverty rates and other positive outcomes.

Finally, the acceptance of VET involves careful planning and implementation, and the method must ensure that the policy is widely received and embraced by all stakeholders. Legusov et al., [17] research has verified that VET is in great demand and has been utilized to impact educational thought, notably in the sphere of vocational-technical education and training in many developing nations.

2.3. Business Incubation and Community Empowerment

Business incubation and community empowerment are coaching and development activities to strengthen communities' innovative capacity and ability to manage their resources and economy [43], [44]. Furthermore, Eveleens & Rijnsoever [45] believe that business incubation and development is a key method for enhancing community welfare and empowering micro, small, and medium firms. Incubation can allow communities to gain skills, expand networks, and boost their capacity or ability to manage resources. In addition, incubation can also help enhance people's access to technology, money, and other services that can help expedite economic advancement [46]

Legusov et al., [17] stressed that the purpose of community empowerment is to include the community in overcoming the primary challenges to sustainable development, such as the high cost of education, low graduation rates, and the difficulty of acquiring a job. And the business incubation project can be used as a community empowerment tool to increase social capital and create a competent and empowered workforce [21]. The business incubation program at STP aims to expedite the successful development of entrepreneurship and technology [44]. The incubation program can also provide services such as training to strengthen and empower communities, company growth and innovation, and research in science and technology [47]. Incubation programs are also accessible to aid entrepreneurs who have company ideas and want to start up [48].

III. RESEARCH METHODS

In this research, the authors employed a research and development (R&D) research was used in this study to improve STP exploration to make it more effective and more efficient, and more efficient. [49]. The R&D research used in this study serves to find solutions to certain problems at STP. The main goal is that the process of vocational system adaptation and innovation can aid in the resolution of problems at STP. so that research results can be utilized for the benefit of others, either individually or in groups, as well as for industrial or political purposes and not for scientific insight alone. This research also can be used for the implementation of sustainable development goals (SDGs) [50].

3.1. Rationale

Acceleration of marine development is a necessity that must be pursued within the framework of realizing trained human resources and masters in the maritime industry. as well as mastery and utilization of marine science and technology, starting from secondary and tertiary education as well as providing maritime VET scholarships, which are realized by increasing research and development capacity [7] through business incubators and empowering coastal communities.

This researcher concentrates his research on three major components of VET adoption in the Science and Techno Park (STP) program, which are the following: (1) the provision of education and training to produce competent staff; (2) increasing adaption and transfer of technology to produce innovative products; and (3) becoming a business incubator to produce new entrepreneurs [15]. Based on data processed by researchers from the Science Techno Park Integrated Information System

(SPINS), managed by the Indonesian Research and Innovation Agency [51], ten STP points in the maritime sector have been established and developing in Indonesia since 2015 until now.



Figure 1: Map of the distribution STP in the Mortality sector in Indonesia.

3.2. Population Sample

The STP program is part of a research acceleration project that aims to strengthen public research institutions and create an innovation ecosystem that involves academics, researchers, start-ups, the government, and the community [18]. The Science and Technology Park is expected to play an important role in making Indonesia a highly competitive and innovative nation [27], [52]. In addition, the STP program is intended to support the industry and provide a positive socio-economic impact.

Currently, the development of STP in Indonesia has shown an increase. From research data, agency reports, and other sources [14], [51] the authors have processed the data, which is presented in table 4 below:

Table 4: Development of STP in the maritime sector in Indonesia.

Name	Expertise Sector
Marine Science Techno Park Diponegoro University (UNDIP), Jepara, Central Java	The focus of activities is the marine biological research, shrimp pond cultivation, seaweed cultivation and processing, mangrove cultivation and recovery, coastal tourism management, business incubation and community empowerment, ship technology and sea transportation.
Science Techno Park Institute of Technology Sepuluh November (ITS), Surabaya, East Java	Activities should center on ship design for transportation and fishing. Marine transportation management, fishing technology, sustainable development for islands in Indonesia, the impact of climate change in the maritime sector, and the Coral Triangle formation initiative
Parangtritis Geomaritime Science Park, Yogyakarta	The focus of activities is the utilization of geospatial information for maritime and coastal resource management. as a center for developing geospatial information and technology applications, collaborative research, and a sand dunes museum as a learning tool.
Science Techno Park Fishery Tegal, Central Java	The focus of activities is competency certification, the development of salt, rice shrimp, machinery, shrimp farming, and seaweed cultivation.
Science Techno Park Fishery City of Pekalongan, Central Java	The focus of activities is on superior tilapia cultivation (saline tilapia), multi-tropical cultivation (IMTA), the fishery product processing industry, R&D and innovation for new fisheries-based MKM, and tourism areas.
Science Techno Park Banyuwangi, East Java	The focus of activities is competency certification, eel farming, salt production, shrimp farming, and product processing.
Science Techno Park Aertembaga, Bitung City, North Sulawesi	The focus of activities is on competency certification, shipping, and product processing.
Science Techno Park	The focus of activities is competency certification, marine fish farming,

Ambon, Maluku	product processing, fishery machinery, and training tours.
Science Techno Park Penajam Paser Utara	The focus of activities is on the implementation of marine and maritime R&D, time-series observations of the ocean-atmosphere, and a marine data center that manages a complete ocean database.
National Science and Technology Park (BPPT), Serpong	The focus of activities is the growth of technology-based startup companies (PPBT) and/or an increase in the innovative capacity of technology-based existing companies in the maritime sector.

3.3. Data Collection

This research data were acquired through literature reviews from previous research reviews, scientific papers, books, government policies, and reports produced by local and international institutions such as the Asian Development Bank, the World Bank, and the International Fishery Center.

The next activity was to consult with specialists to analyze and approach VET and STP stakeholders. Also, where data is collected, relationships with community groups are established. This activity is useful for knowing the level to which business incubation and community empowerment at STP Marine are in demand and particularly useful for the community.

The next action is to synthesize and evaluate data relevant to the R&D of VET adoption in STP, with a major focus on the role of the VET research centre in STP. Then, needs are analyzed based on previous literature sources. Organizational contextual analysis for the R&D sector was carried out through SOAR analysis in cooperation with departmental officials from maritime VET and STP.

3.4. SOAR Analysis Approach

The approach employed in this study is a conceptual analysis using SOAR analysis (Strengths, Opportunities, Aspirations, Results) [53]. SOAR analysis was chosen because it focuses on organizational strengths and opportunities to develop viable aspirations and measurable results [54]. SOAR analysis is a strategic approach in which STP constructs its future through cooperation, insight, and action. This technique consists of four connected pieces. Gradually implement them by following these steps:

1. **Strengths**, by examining the current scenario at STP and how VET adoption may boost business incubation and community empowerment.
2. **Opportunity** by identifying STP's existing problems and how VET adaptation might help solve them.
3. **Aspiration**, by analyzing the available solutions to improve company incubation and community empowerment through VET adaptation at STP.
4. **Results** by selecting the most suited solution for the research purpose of VET adoption in STP and its implementation.

IV. RESULTS AND DISCUSSION

4.1. Exploring STP Potential in the SOAR Analysis

In 2017, the Indonesian government approved Presidential Regulation No. 106 to establish the STP program [7], [55]. Furthermore, in 2018, the Asian Development Bank (ADB) approved a project to encourage research and innovation through modern and efficient STPs in Indonesia [29]. As part of its national priority program, Indonesia is preparing three new science and technology parks this year. The STP program offers modern facilities and an integrated information structure to encourage technology research and development, industry commercialization, and community empowerment in the form of a business incubator to produce new entrepreneurs [56].

Science Techno Park (STP) is an area in Indonesia that is professionally managed to create and support innovation, research, and development [29], [55]. The Indonesian government has committed to building STP across the country [51] and has

produced basic policy recommendations and a plan for its development according to STP criteria [26]. STP is one of the key priorities of the Indonesian government to support industrial development through integrated innovation policies [14], [51].

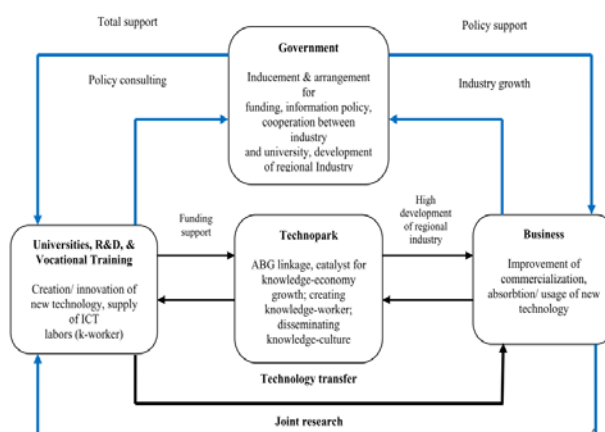


Figure 2: Government support for the development of STP in the field of Death in Indonesia.

In addition to the existing STPs, other provinces and cities are in the process of establishing STPs. Even though the existing STP had not yet been completed, an innovative system had begun to be created. This has proved that the creation of STP has a favorable impact on business induction and the empowerment of local communities. The following is the SOAR analysis carried out on STP in the maritime sector, which is displayed in Table 5 below:

Table 5: SOAR analysis in STP maritime sector of Indonesia.

Strength	Opportunity
Improvement of maritime competence. STP provides facilities to assist maritime stakeholders through quality training and certification activities.	Expanded market access. STP offers cooperation with maritime stakeholders from various countries to improve market access.
Technology upgrade. STP offers the latest technology and innovation in promoting technological development in the maritime field.	Product and service development. STP has several programs to develop competitive, high-quality products and services.
Infrastructure development. STP has facilities and services that enable maritime businesses to develop their infrastructure.	Improved maritime connections. STP offers a broad network of maritime connections, including communications, navigation, and information services.
Increased cost effectiveness. STP offers cost-efficient solutions to increase productivity and operational efficiency in the maritime sector.	Improved collaboration. STP offers a platform to facilitate cooperation between maritime stakeholders to increase productivity and efficiency.
HR capability development. STP provides training and certification programs to improve the competency of business actors in the maritime sector.	Capacity building. STP provides various services to increase maritime sector business actors' capacity and performance.
Improved safety and security. STP provides technology and services to ensure the safety and security of all maritime activities.	Resource upgrade. STP has various useful resources to support Indonesia's maritime development.
Increased environmental awareness. STP provides programs that promote environmental awareness and conduct research and development to prevent marine pollution and damage.	Improved quality of life. STP provides various services to promote the welfare and quality of life of business actors in the maritime sector.

Aspirations	Results
<p>Increased engagement of maritime stakeholders. STP seeks to increase the involvement of maritime stakeholders in developing the maritime industry.</p> <p>Improved access to ships and other tools. STP facilitates the procurement of ships and other equipment to increase the productivity and efficiency of operations in the maritime sector.</p> <p>Increasing cooperation between countries. STP is a liaison between countries to facilitate cooperation in the maritime field.</p> <p>Enhancement of maritime communication and information. STP facilitates maritime communication and information to improve performance and service.</p> <p>Service quality improvement. STP strives to improve the quality of service to maritime stakeholders.</p> <p>Enhancement of maritime technology capability. STP provides programs to promote innovative and efficient maritime technologies.</p> <p>Increased awareness of the maritime environment. STP seeks to raise awareness of the maritime environment by providing various programs that promote the reduction of marine pollution.</p>	<p>Improved operating efficiency and productivity</p> <p>STP has helped business actors in the maritime sector increase operational efficiency and productivity.</p> <p>Increasing the competence and quality of human resources</p> <p>STP has facilitated training and certification that helps maritime sector business actors improve their human resources' competence and quality.</p> <p>Increased market access and maritime connections</p> <p>STP has helped business actors in the maritime sector improve market access and maritime connections.</p> <p>Increased collaboration between countries</p> <p>STP has facilitated cooperation between countries, which helps business actors in the maritime field increase productivity and efficiency.</p> <p>Improved safety and security</p> <p>STP has facilitated technology and services to enhance the safety and security of all maritime activities.</p> <p>Increased awareness of the maritime environment</p> <p>STP has facilitated research and programs to raise awareness of the maritime environment.</p> <p>Increasing the quality of maritime life.</p> <p>STP has facilitated various services.</p>

4.2. Adoption of VET Program at STP to Produce Competent Personnel

In the context of VET Adoption to produce competent personnel in the maritime field, this can be done through various competency-based training programs. The training program can be in the form of maritime training programs, technical training, management training and maritime technology training. One of the main objectives is to increase the competence of the community related to the use of the latest technology and modern management concepts in the maritime field. this also includes marine product management, marine product marketing, logistics management and industry certification. Especially in the maritime business incubation program, it is necessary to add relevant knowledge, such as information technology, graphic design, and multimedia production. This program can be designed and organized in different ways, such as opening online classes, conducting seminars and webinars, workshops, and field experiences. This program can also be held through collaboration between educational institutions and industry. In this way, educational institutions can ensure that graduates are able to meet the current needs of the job market.

Providing education and training to develop a competent workforce involves a teaching and learning process to improve knowledge, experience, skills and behavior. The competence of VET program graduates must be clear, precise, and measurable. This stage is the stage that will determine the work competencies that will be trained to research partners with the required work competency standards.

This competence is important because it provides benchmarks that can be used to evaluate the effectiveness of the learning process. Therefore, in the early stages of curriculum development, these competencies must be clearly defined in relation to the potential marine resources that have been identified previously. At this stage, various stakeholders such as local government, local

industry, skills certification providers, and vocational training providers should be involved to enhance the professional and vocational competence of training providers.

To determine the VET curriculum at STP in the maritime field, there are several steps and processes that need to be followed. First, you must determine the main goals and objectives of the curriculum to be created. After that, determine the competencies to be taught, as well as the types and forms of learning to be used. Next, determine the structure of the curriculum, including the assessment and evaluation system. After that, prepare teaching materials and learning materials that will be taught. Finally, prepare and evaluate the learning process that has been carried out. The VET program is implemented by working groups consisting of subject matter experts, professional/school teachers, and sector/labor market experts. Each job provides skills not only for the workplace and job description, but also for the job the employer expects. The following is the adoption of VET at STP to produce competent personnel, which is presented in table 6 below:

Table 6: Adoption of VET at STP to produce competent workforce

VET type	Curriculum Offered
Maritime VET	<ol style="list-style-type: none"> 1. Basic fisheries and marine 2. Aquaculture and marine 3. Capture fisheries cultivation 4. Conservation and aquatic biology 5. Social and economics of fisheries and marine affairs 6. Contemporary fisheries and marine 7. Fisheries and marine policies and laws
Technical VET	<ol style="list-style-type: none"> 1. Processing of fishery and marine products 2. Technical processing of canned fish and other aquatic biota. 3. Processing techniques for salting and drying fish and marine biota 4. Technical processing of smoking fish and marine biota 5. Technical processing of freezing fish and marine biota 6. Fish processing techniques 7. Other preservation processing techniques for fish and other biota: fish meal, shrimp meal, seaweed, shrimp paste, petis and the like
VET Management	<ol style="list-style-type: none"> 1. Management of fisheries and marine resources. 2. Integrated health management system and quality management of fishery and marine products 3. Communication and fisheries and marine business 4. Marketing of fishery and marine products 5. Fishery and marine investment management 6. Management of marine and coastal resources 7. Fishery and marine risk management
VET Technology	<ol style="list-style-type: none"> 1. Water resources management technology 2. Fishing technology 3. Fishery and marine product processing technology 4. Innovative and applied technology in fisheries and marine affairs 5. Innovative product technologies that can drive business incubators

4.3. Improving Technology Adaptation to Produce Innovative Products

To increase adaptation and transfer of technology in the maritime field to produce innovative products, various initiatives can be taken. One of the initiatives that can be carried out is through increasing technological skills in the maritime sector. This skill improvement can be done by creating training programs that can be used to improve the competence of workers in this sector. Another initiative that can be taken is through increasing inter-industry collaboration.

This can be done by increasing inter-industry networks related to the maritime sector, such as the logistics industry, the transportation industry, the processing industry, the information industry, and other industries. Thus, innovation can be achieved more quickly by sharing information and technology between industries. Apart from that, to produce innovative products in the maritime field, another initiative that can be taken is through increased investment in technology. This can be done by increasing investment in the sector to build technology infrastructure and finance research and technology projects that will help in producing innovative products.

Fisheries Business Incubation in Indonesia has adopted technology to produce innovative products. One example of this business incubation is the "Smart Fish Farming" project initiated by the Ministry of Maritime Affairs and Fisheries under the Fisheries Business Incubation Center program. This project uses Internet of Things (IoT) and Artificial Intelligence (AI) technology to increase the productivity and efficiency of aquaculture businesses. The IoT technology used in this project allows farmers to monitor water conditions and fish conditions in real time. AI technology is used to analyze data, identify problems, and provide recommendations to farmers to increase the productivity and efficiency of aquaculture businesses. In addition, this project also includes the development of a partnership network between farmers and buyers. This network allows farmers to access retail markets and increase their income by selling their products directly to consumers. The Fisheries Business Incubation Project in Indonesia has been successful in producing innovative products to help farmers increase their productivity and income. This has increased farmers' access to technology and a wider market. This has also brought benefits to local communities, consumers, and the fishing industry in Indonesia.

4.4. Become a Media Business Incubator to Produce New Entrepreneurs.

To become a business incubator media to produce new entrepreneurs in the maritime field, STP can make various efforts. One effort that can be done is through the Business Incubator program. This program can produce new maritime-based entrepreneurs by implementing the right business incubator strategies and practices. This program can also help new entrepreneurs create business plans and entrepreneurship training, develop entrepreneurship through partnerships, collaboration, mentoring, strengthening business incubator institutions at both the national and regional levels, as well as financing for new entrepreneurs. In addition, KP can also offer marketing programs and international cooperation for new entrepreneurs so that they can develop into strong and/or export-based entrepreneurs.

During the incubation period, incubation participants will be evaluated to determine graduation. Graduation is assessed based on the criteria and indicators of tenant success in the incubation program. The following are the criteria and indicators for the success of Tenant Inbis Invapro-KP which can be categorized as independent entrepreneurs who are innovative and competitive. The criteria and indicators of tenant success during the period of participating in the STP Business Incubation activities are presented in table 7 as follows.

Table 7: Criteria and indicators for the success of a business incubator for community empowerment.

Criteria	success indicator
Entrepreneur which is Innovative	<ol style="list-style-type: none"> 1. Implement marine and fisheries product diversification. 2. Has a multitude of product versions 3. Having a quality product requires quality consistency, which is verified by lab test results. 4. Have packaging in compliance with the Indonesian National Standard (SNI)
Entrepreneur the Independent	<ol style="list-style-type: none"> 1. Increased optimization of manufacturing capacity 2. Increase in turnover at the end of the year 3. HR enhancement in company management and number of staff
Entrepreneur competitive	<ol style="list-style-type: none"> 1. Implementing a quality assurance system and food safety, as shown by the following certificates: P-IRT, Halal, SKP, HACCP, MD, Patents, Brands, and SPPT SNI; 2. Have business licenses such as NIB, SIUMK, and SIUP. 3. Has a vast market region and marketing reach 4. Actively participate in the growth of the fishing business.

V. CONCLUSION

Indonesia's marine potential is immense. This potential may be channelled to improve the local marine economy by undertaking entrepreneurship education and training for coastal communities through company incubation at the Science Techno Park (STP) incubation at the Science Techno Park (STP). The process of speeding up marine development is a requirement that must be followed within the framework of developing competent human resources and masters in the maritime industry, as well as knowledge and usage of marine science and technology through improving research and development capacity through business incubators and empowering coastal communities.

One of the community empowerment education and training approaches utilized is the vocational education and training (VET) paradigm. VET enthusiasts are now expanding because they are suited to market trends and local wisdom and can prioritize competence over theory. Adopting VET at the Marine Science Techno Park (MSTP) will assist in boosting business incubation and community empowerment by creating a supportive environment for entrepreneurs. STP can foster new business growth and provide jobs for communities. Additionally, STPs can offer support services, such as coaching and networking, to help entrepreneurs improve their company ideas and abilities. In addition, STP may give training, workshops, and seminars to help entrepreneurs understand and implement business strategies.

This research can assist in promoting neighbourhood economic empowerment, providing jobs and increasing access to resources. STP may also boost the capacity of local industries and enterprises by giving them access to the latest technology and information. This research may assist them in developing new goods and services and boost their competitiveness in the worldwide market. This research was undertaken to help marine and sea development become Indonesia's future development direction (SDGs).

The results of this research can be used for infrastructure development. STP provides facilities and services that help marine firms build their infrastructure. Improvement of marine expertise, by way of STP offering facilities to support marine stakeholders through quality training and certification operations. STP provides the latest technology and innovation in encouraging technological progress in the marine area through technological advancement. Product and service development, using which STP has numerous projects to generate competitive and high-quality goods and services. Increasing market access through STP provides cooperation with marine stakeholders from many nations to gain market access.

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