

Performance Analysis of Certification Institutions of Marine and Fisheries Professions from 2019 to 2023

Imron Natsir ^{1*}, Eny Triastuti ²

^{1*} Department of Economic Shariah-Post Graduate, Universitas PTIQ, Jakarta, Indonesia

² Departement of Management, STIE Kalpataru Cibinong, Bogor, Indonesia

Email: imronnatsir@ptiq.ac.id ^{1*}, enytriastuti@yahoo.co.id ²

Article history:

Received August 11, 2024

Revised September 15, 2024

Accepted September 17, 2024

Abstract

This research aims to analyze the performance of the Professional Certification Institute (LSP KP) for Marine and Fisheries during the period of 2019-2023. The performance of the LSP KP is measured based on indicators such as the number of certifications issued, the pass rate of competency test participants, and the level of stakeholder satisfaction. Data was collected through surveys, interviews, and related document analysis. The analysis results indicate an improvement in performance regarding the number of certifications issued; however, there are still challenges in service quality and the efficiency of the certification processing time. This research also identifies the factors that influence the performance of LSP, such as the availability of resources, the competence of assessors, and regulatory policies. The main conclusion of this research is that although the performance of LSP KP has improved, further enhancements are needed to reach higher standards. Recommendations are made for strengthening the capacity of assessors, improving infrastructure, and refining operational procedures. The implications of these recommendations include an improvement in the quality of certification and industry trust in LSP KP, which can ultimately contribute to enhancing the competitiveness of the workforce in the maritime and fisheries sector.

Keywords:

Professional Certification Institution; Marine and Fisheries; LSP KP; Performance, Certification.

1. INTRODUCTION

The certification of professionals in the marine and fisheries sectors is crucial for ensuring the competence and quality of the workforce. Certification programs help standardize skill levels and ensure that workers meet specific industry requirements, which is essential for maintaining high standards of productivity, safety, and environmental sustainability. The process is increasingly recognized as a way to improve workforce capabilities, align with international best practices, and enhance the competitiveness of the fisheries industry on a global scale.

Recent data indicates a growing demand for certified professionals, driven by increased regulatory requirements and the global expansion of the fisheries industry. Many countries, including Indonesia, have introduced stricter regulations to ensure that fishery operations are sustainable and meet global environmental standards. Certification ensures that professionals are equipped with the necessary skills to comply with these regulations and to operate within the increasingly technical and specialized environments of modern marine and fisheries industries.

According to the Ministry of Marine Affairs and Fisheries, the number of certified workers in the sector grew by 15% between 2018 and 2022. This growth reflects the industry's ongoing need for highly skilled labor, particularly as the sector adopts more advanced technologies and management practices. Certification programs not only ensure that workers are competent in their roles but also help improve the overall quality and efficiency of marine and fisheries operations, contributing to long-term industry growth and sustainability.

The certification of professionals in the marine and fisheries sectors is essential for ensuring a competent and skilled workforce. Certification institutions face several challenges that hinder the effectiveness of their programs. One of the main issues is the variability in the certification process, where differences in procedures and criteria among various institutions create inconsistencies in outcomes. Another challenge is limited resources, which impact the ability of institutions to provide comprehensive training and assessments, especially in remote or underdeveloped areas. Additionally, there are inconsistencies in assessor competencies, where assessors may not be adequately trained or updated on the latest industry standards and technologies. A lack of transparency in certification outcomes further complicates the trust and credibility of the certification process. Certified professionals and employers often struggle to understand the exact qualifications or competencies achieved through the certification. Lastly, there is a pressing need to align certification standards with evolving industry demands, as the marine and fisheries sectors increasingly adopt advanced technologies and sustainability practices. This study aims to explore these challenges by analyzing the performance of Certification Institutions (LSP) in the marine and fisheries sectors between 2019 and 2023. The research focuses on identifying specific areas requiring improvement, including standardizing processes, enhancing assessor training, increasing transparency, and adapting to industry advancements.

Previous research has explored various aspects of certification in the marine and fisheries sectors, focusing on the impact of certification on workforce quality and the operational challenges faced by certification bodies. Studies have shown that certification significantly enhances workforce competence, contributing to higher productivity, safety, and compliance with international standards in the fisheries industry (Jones & Williams, 2019). Certified professionals are better equipped to handle the increasing complexity of marine operations, including sustainable practices and advanced technological applications, thus enhancing the overall quality of the workforce (Smith & Johnson, 2020).

Several studies have also highlighted the difficulties certification bodies face in standardizing competencies across different regions and organizations. According to Taylor and Brown (2018), certification institutions often struggle with resource constraints, inconsistent assessor training, and misalignment with industry demands, all of which undermine the effectiveness of certification programs. These challenges are exacerbated in developing nations where resources for training and certification are often scarce, resulting in regional disparities in the quality of certified professionals (Anderson, 2017).

Despite these findings, few studies have systematically analyzed the performance of Certification Institutions (LSP) over an extended period, particularly in the context of evolving industry needs. Most research to date has focused on short-term outcomes or isolated challenges faced by certification bodies, without considering how these institutions adapt and evolve over time in response to technological and regulatory changes in the marine and fisheries sectors.

This study aims to fill this gap by providing a comprehensive analysis of LSP performance from 2019 to 2023, focusing on how well these institutions have adapted to the changing landscape of the industry. The research will highlight both the strengths and weaknesses of LSP operations, offering insights into areas that require improvement, such as transparency in certification outcomes, standardization of processes, and alignment with industry advancements. By addressing these issues, the study seeks to provide actionable recommendations that can guide future enhancements in certification practices.

This research employs a mixed-method approach, combining quantitative data analysis with qualitative insights from stakeholder interviews. By integrating these methods, the study offers a comprehensive and holistic view of the performance of the Lembaga Sertifikasi Profesi (LSP). The quantitative component allows for the measurement of key performance indicators (KPIs) and other relevant data points over time, providing an empirical foundation for understanding trends and patterns. Simultaneously, the qualitative interviews with stakeholders such as trainers, certified individuals, and organizational leaders provide contextual depth, uncovering perceptions, challenges, and potential areas for improvement that quantitative data alone might not reveal.

The innovation of this research lies in its focus on longitudinal data, meaning it tracks performance metrics over an extended period, allowing for the identification of long-term trends and changes. This approach enhances the study's ability to detect not only current strengths and weaknesses but also emerging issues that may affect future performance. Additionally, the research emphasizes actionable recommendations, designed to serve as a practical guide for certification institutions in terms of policy and operational improvements. These recommendations are not just based on the current state of affairs but are forward-looking, aiming to support continuous improvement and sustainability in the LSP's operations. By employing a mixed-method approach, the study ensures that both quantitative rigor and qualitative richness inform the analysis, resulting in a more nuanced and effective set of recommendations for enhancing the performance and impact of certification institutions.

2. RESEARCH METHOD

The research uses mixed methods combining qualitative and quantitative research. The mixed approach allows researchers to harness advantages of both types and provide a comprehensive understanding of performance of certification agencies in marine and fisheries sectors. Qualitative research digs into stakeholder insights and experiences about certification processes and outcomes. According to Creswell (2014), "qualitative research allows researchers to gain in-depth insights through rich and contextual data". This approach would involve in- depth interviews with key stakeholders in the Maritime and Fisheries sectors.

Tabel 1. The performance of the output Certificate LSP KP from 2019 to 2023

No	Profession	Total Certificate Output				
		2019	2020	2021	2022	2023
1	Fishery Capture	11.025	1.933	1.910	2.820	3.420
2	Fishing boat engines	4.720	328	883	1.023	450
3	Fishing Cultivation	28.225	1.932	1.459	3.419	960
4	Processing Fishing Products	37.420	1.079	1.487	4.808	1.510
5	Fishing Business Supervisory	1.635	83	976	371	1.287
6	Marine Expertise	1.525	75	176	836	243
Number		84.550	5.430	6.891	13.277	7.870
Total Number for 5 years		118.018 certificates				
Average yearly		23.604 certificates				

Quantitative research is used to measure numerical data related to certification, participant satisfaction, and the impact of certification on the performance of individuals and organizations. Creswell (2014) stated that "quantitative research allows researchers to test hypotheses and produce findings that can be generalized through statistical analysis". The data collection techniques in this study are as follows:

- Interviews will be conducted with stakeholders in Maritime and Fisheries sector, including certification agencies, technical advisors, and companies. The objective is to gather insights on certification process and impact. According to Kvale (2007), deep interviews provide an opportunity for in-depth exploration of individual perspectives and social contexts that influence their understanding.
2. Survey of Certified Participants: The survey will collect data from certification participants about their experience, satisfaction, and impact on careers. According to Fowler (2014), "surveys are efficient for collecting data from large samples and enabling statistical analysis.
3. Certification Agency Document Analysis: Analysis against certification agency documents, including annual reports, guidelines, certification schemes, and evaluation reports, aims to understand organizational structure, competency certification systems, process, and results. Bowen (2009) states that document analysis is an important method in qualitative research to understand the context and content of written material. In addition, the Data Analysis Technique is conducted with descriptive analysis and comparative analysis of performance data of the LSP Maritime and Fisheries and Fishing from 2019 to 2023. Overview of certification, satisfaction of participants, and quality of LSP KP Competence Test.

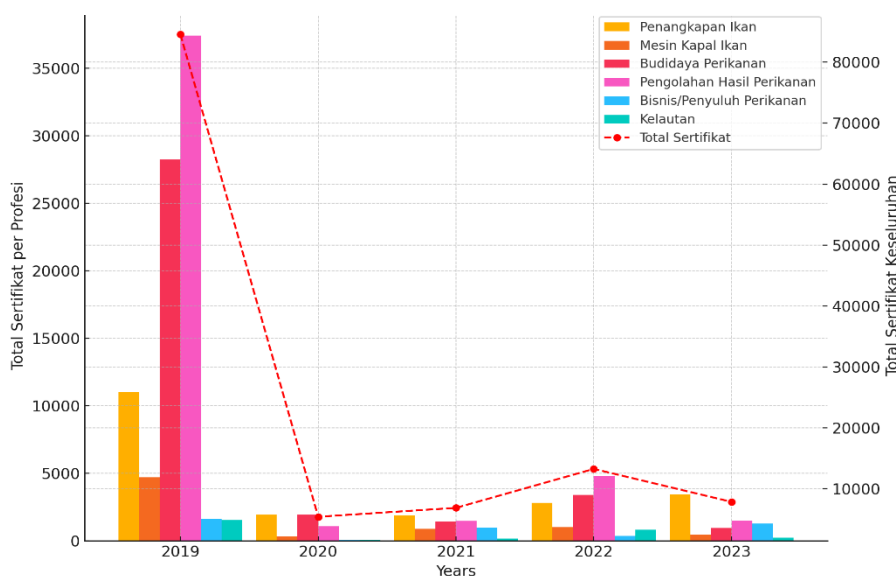


Figure 1. The Graph of Output Certificates of LSP KP from 2019 to 2023

3. RESULTS AND DISCUSSION

The Marine and Fisheries Profession Certification Institute (LSP KP) is important in ensuring the quality and safety standards of products/services. The performance of the certification agency focuses on increasing the confidence of the public and entrepreneurs in the competent certified human resources. In addition, the KP LSP plays a role in ensuring compliance with regulations and standards. During 2019-2023, certification process innovations were carried out by LSP KP. Specifically, digital technology is used to facilitate online certification submissions. This will speed up the process of certification and reduce errors in data management.

Thus, the certification agency plays an important role in the quality of products and services and ensuring compliance with applicable standards. Through efforts to improve their performance, certification agencies can make a positive contribution to the development of the marine, fishing and fisheries industries.

3.1. Number of Certifications Issued During the Period of 2019 to 2023

The Certification Institute of Marine and Fisheries Professions (LSP KP) has issued a number of certifications to the labour force in this sector as shown in table 1. The number of certifications issued each year shows a very fluctuating trend of growth, reflecting the growth of interest and need for certification in the Maritime and Fishing and fisheries sectors. This indicates an increasing awareness among the labor force in the maritime and fishery sectors of the importance of having certification that can enhance their credibility and competence. For example, certification in sustainable fishing can help fishermen understand best practices in the sustainability of marine resources. Furthermore, the rise in the number of certifications being obtained annually also signifies a shift towards more environmentally conscious practices within the maritime and fishing industries. With concerns about overfishing and the depletion of marine resources becoming more prevalent, certifications in sustainable fishing play a crucial role in educating fishermen about the importance of preserving marine ecosystems for future generations. Moreover, the certification process itself has evolved to encompass not just technical skills but also aspects of environmental stewardship and social responsibility. By obtaining certifications in areas such as marine conservation and responsible fishing practices, individuals in the maritime and fishery sectors are not only enhancing their own skills but also contributing to the overall sustainability of the industry. In conclusion, the increasing trend in certification issuance shows a growing recognition within maritime and fishing sectors for continuous learning and improvement. Certification programs promote sustainable practices and environmental awareness, enhancing professional development and safeguarding marine resources.

3.2. Types of Certifications Available

The Institute for Certification of Marine and Fisheries Professions (LSP KP) is an agency that provides various types of certifications to meet the needs in the marine and fisheries and fishing sectors. The certification offered covers various aspects of work relevant to this industry. For example, certification for sustainable fish catch experts involving in-depth knowledge of environmentally friendly and sustainable fishing practices. In addition, there are also certifications for fish breeders who include knowledge of fish farming techniques that are efficient and have a minimal impact on the environment.

With a variety of certifications, Maritime and Fisheries and Fishing workers enhance skills to meet industry demands. This certification ensures that work practices are in line with international standards. It benefits not only individuals, but also industry by improving quality and professionalism.

A sustainable fishing expert is vital to preserving marine resources. Certifications in the maritime and fisheries and fishing sectors are essential for individual careers and industry sustainability. Available certifications include:

Table 2. Types of LSP Certificate in Maritime and Fisheries

Occupational Health and Safety (K3) Certification in the Maritime and Fisheries Sector	This certification ensures that the workforce understands and implements appropriate safety practices to reduce the risk of accidents and injuries in the workplace.
Certification of Navigation and Operation by the crew of fishing vessels	This certification covers the skills and knowledge needed to operate ships safely and efficiently, including navigation, fuel management, and fishing vessel management.
Fishing Plantation Certification and Seafood Processing	This certification focuses on fisheries and seafood cultivation skills and techniques to ensure safe and high-quality products.
Certification in Marine Resource Management	This certification covers knowledge and skills in managing marine resources sustainably, including fishing, marine ecosystems, and conservation.
Certificate of Marine Engineering	This certification covers a range of technical skills required for employment in marine engineering, such as maintenance and repair of ships, marine technology, and marine systems.

3.3. Participation of Professions in the Maritime and Fishing Sectors

The participation of professions in the Maritime and Fisheries sector in the LSP KP certification scheme shows a wide variety, covering the wide range of roles and jobs that exist in this industry. This can be seen from the wide variety of types of certifications offered, ranging from certifications for divers to certification for captains of ships. For example, a Marine and Fisheries biologist can take certification to become a Marine researcher accredited by the LSP KP. Furthermore, participation in a profession in the Marine and Fishing sector also covers various aspects such as marine resource management, ship safety, and environmental protection. A Marine and fisheries engineer, for example, can follow certification in environmentally friendly ship maintenance techniques. Thus, the LSP KP certification program provides an opportunity for professionals in the Maritime and Fisheries sector to enhance their skills in accordance with the ever-growing demands of the industry.

Overall, the participation of professions in the Maritime and Fisheries sector in the LSP KP certification scheme program reflects the workers' commitment to improving the standards of professionalism and quality of service in the industry. With standardized and widely recognized certification, professionals in the Marine and Fishery sector can demonstrate their competence to clients and other stakeholders. The KP LSP certification scheme program not only provides individual benefits, but also contributes to the advancement of the Marine and Fisheries industry as a whole. Certification is essential to enhancing the competence of the workforce in the marine, fisheries, and fishing industries. Here are some of the categories of professions participating in the certification program:

Table 3. Categories of professions of extraction and fishing

Professional Group	Description
Seafarers and Ship Operators	One of the largest groups to follow certification programs, mainly in navigation and ship operation as well as occupational safety.
Technician and Marine and Fisheries Engineer	Individuals who work in the maintenance, repair, and installation of marine and fishing equipment as well as development of maritime and fisheries technology.
Fisheries Managers and Supervisors	Responsible for fishing operations and processing of seafood, many of whom are certified in marine resource management and marine products processing.
Researchers and Conservatives	Professionals working in the field of marine research and marine resource conservation, engaged in certification programmes to deepen their knowledge and skills.
Seafood Processing Industry Workers	It is important for workers involved in the processing and production of seafood to ensure they have the necessary competence to produce high quality and safe products.

3.4. Annual Performance Analysis of LSP Maritime and Fisheries

The graph above visualizes the output of LSP KP certificates from 2019 to 2023. In the bar chart, each color represents a specific profession, while the dashed red line indicates the total number of certificates issued each year.

2019: The highest number of certificates, particularly for the professions of Fish Processing and Aquaculture. The highest number of certificates, especially for the professions of Fish Processing and Aquaculture, indicates a strong interest and participation in this field. The processing of fishery products involves various processes such as preservation, processing, and presentation of fishery products. For example, a certificate in fish preservation techniques using drying or salting methods. In addition, certification in fish processing into processed products such as nuggets or fish balls is also very important.

Meanwhile, the field of Aquaculture is also receiving significant attention. Certificates in freshwater fish farming, such as catfish or tilapia, add value for fish farmers. For example, a certificate in ornamental fish maintenance requires specialized knowledge about the fish's living environment. With the highest certification in this profession, fishery entrepreneurs can improve the quality of their products and services.

Thus, the increase in the number of certificates in Fishery Product Processing and Fish Farming reflects a positive development in the fisheries sector. This also indicates an awareness of the importance of education and training in improving the quality of human resources in the fisheries sector. I hope that with the existence of this highest certification, the Indonesian fishing industry will advance and develop rapidly.

2020-2021: There was a significant decline across all professions, primarily due to the impact of the COVID-19 pandemic, which restricted training and certification. This decline can be seen across various sectors, such as the tourism industry, which has experienced a drastic decrease in the number of tourists due to travel restrictions. Many tourism workers have lost their jobs or experienced salary cuts due to declining demand.

In addition, the education sector has also been affected, with teachers and students having to switch to remote learning that requires technological skills that may not be possessed by all parties involved. This results in unequal access to education for students from different economic backgrounds.

In the healthcare sector, medical personnel and nurses are facing immense pressure due to the surge in COVID-19 cases. They work in very harsh conditions and high-risk environments without adequate protection guarantees. The impact is not only on their physical state but also mentally and emotionally.

This condition highlights the need for adaptation and innovation across various professions to tackle the challenges faced. Online training and the development of new skills have become essential to remain relevant and competitive in the rapidly changing job market. All parties must work together to ensure the sustainability of the profession and the well-being of society in the future.

2022: A recovery began to take place, evident from the increase in the issuance of certificates across almost all professions. A recovery began to take place, evident from the increase in the issuance of certificates across almost all professions. The recovery currently taking place is good news for various economic sectors. For example, the education sector has seen an increase in the issuance of certificates for teachers and educators. This indicates an improvement in quality within the education system that can have a positive impact on future generations.

In addition, the healthcare sector is also experiencing the effects of this recovery. The issuance of certificates for medical personnel and nurses has seen a significant increase. With the presence of more qualified medical personnel, it is hoped that healthcare services can become better and more accessible to the wider community.

Not only the education and health sectors, but the business and technology sectors are also experiencing positive effects from the increase in certificate issuance. For example, in the business world, more entrepreneurs are obtaining certification in management or marketing. This can enhance the company's competitiveness and create new job opportunities for the workforce.

With the increase in the issuance of certificates in almost all professions, it can be concluded that the economic recovery is underway. This indicates an increase in competence and quality across various sectors, which will ultimately have a positive impact on overall economic growth. All parties are expected to take advantage of this momentum to continuously improve themselves and contribute to the advancement of the nation and the country.

2023: Although there has been an increase in some professions such as Fishing Capture and Fish Business/Extension, other professions like Fish Farming and Fishing Vessel Machinery continue to experience a decline.

This indicates a change in dynamics within the fisheries sector. For example, in the profession of Fishing, there is an increase due to the discovery of new technology that makes it easier for fishermen to catch fish efficiently. On the other hand, the profession of Aquaculture may experience a decline due to unfavorable weather conditions that do not support optimal fish growth. Additionally, in the profession of Fishery Business/Extension, there may be an increase due to the growing awareness in society about the importance of maintaining the sustainability of fish resources. However, the profession of *Fishing Vessel Engineer* may experience a decline due to the lack of demand for new fishing boats caused by unstable market conditions.

Thus, changes in the profession in the fisheries sector are influenced not only by internal factors such as technology and public awareness, but also by external factors such as global market conditions. It is important for business actors in the fisheries sector to continuously adapt to these changes in order to remain competitive and sustainable in the future.

In conclusion, the fluctuating trends in certificate issuance highlight the dynamic nature of the job market and the importance of staying adaptable to changing demands. By understanding these shifts and investing in relevant skills and certifications, individuals can position themselves for success in an ever-evolving workforce.

3.5. Some of the Major Factors Affecting the Performance of the Marine and Fisheries LSP in Issuing Certifications Include

3.5.1. Government Policies and Regulations

Implementation and changes to policies and regulations relating to professional certification have a major impact on the performance of KP LSPs. For example, policies that support the improvement of the labor force competence through certification can increase the number of participants attending certification programmes. Government support through competition testing, assessment and subsidy programmes also contributed positively to the increase in the number of certifications issued (Ministry of Employment of the Republic of Indonesia, 2003).

3.5.2. Industry Needs

The needs of the marine and fishing industries for skilled and certified workforce are on the rise, especially in the face of global competition and international standard demands. Industries in need of improved workforce quality often encourage their employees to obtain relevant certification. According to Putri and Santoso (2019), Industry demand for high certified workforce contributes significantly to an increase in the number of certifications issued by the LSP.

3.5.3. Individual Awareness and Motivation

The awareness of and motivation of individuals to improve skills and competence through certification is also an important factor. The workforce that is aware of the importance of certification for career development and performance improvement tends to be more likely to follow certification programs. Setyan (2020) noted that individual awareness of the benefits of certification increases participation in certification scheme.

3.5.4. Availability and Quality of the Competence Certification Scheme

The availability of relevant and high-quality competence test and assessment schemes provided by the KP LSP also affects the performance in issuing certifications. Effective and industry-sensitive competence certification schemes attract more participants. The LSP KP who are able to provide good competency certification facilities, the competent Marine and Fisheries Technical Competence Advisor, and the up-to-date Certification Scheme tend to have better performance in issuance of certifications (Rahman, 2018).

3.5.5. The COVID-19

Pandemic that began at the end of 2019 and has a significant impact in 2020 to 2021 also affects the performance of KP LSPs. This adaptation, although challenging, has opened opportunities to reach more participants that were previously difficult to reach. This adaptation, although challenging, has opened opportunities to reach more participants that were previously difficult to reach. (Jones, 2020).

3.6. Impact of the KP LSP Certification Institution on the Maritime and Fisheries Sector

3.6.1. Increased Labour Competence

The Marine and Fisheries Profession Certification Institute (LSP KP) has a significant impact on the improvement of the competence of the labour force in the marine and fisheries sectors. A comprehensive certification program provides relevant and in-depth competence certification, enabling the labour force to work more efficiently and effectively in complex work environments. Research by the Scientist (2020) shows that "professional certification improves technical skills and labour competence, which in turn improves productivity and safety at work". The LSP Maritime and Fisheries aligns its certification, enabling the labour force to work more efficiently and certification standards with industry developments.

3.6.2. Certification Relevance to Industry Needs

The relevance of certification to industry needs is a key factor in the effectiveness of the certification program. Certifications designed to take into account the needs of the industry provide greater benefits to the workforce and the company, ensuring that the skills acquired are relevant to the challenges faced in the field. According to Putri and Santoso (2019), "certifications designed to take into account the needs of the industry provide greater benefits to the workforce and the company, ensuring that the skills acquired are relevant to the challenges faced in the field." By making sure that the certification reflects the skills required by the industry, LSP KP helps maintain the competitiveness of the labour force in the global market.

The industry's response to certification agencies reflects the acceptance and recognition of certification in the marine and fisheries sectors. The industry generally gives a positive response to the certification because of its contribution to improving the quality and safety of work. Rahman (2018) noted that the industry often recognizes certification as an essential standard to ensure that the workforce has the appropriate skills and meets operational expectations.

4. CONCLUSION

Based on the performance analysis of the Marine and Fisheries Profession Certification Institution (LSP KP) from 2019 to 2023, it can be concluded that: There is a trend of fluctuating increase in the number of certifications issued each year, showing a consistent growth in the demand for certifications in the marine and fisheries and fishing sectors. The certification ensures the quality of competent SDM and working standards.

The implications of these findings for policy and practice are that Governments and associated agencies should support certification policies to ensure competence standards in line with industry and latest technology needs. The industry needs to strengthen cooperation with the KP LSP to ensure that the development of certification schemes in line with the competence certification program reflects the demands in the field. The industry's recognition of KP certification can strengthen the value of the certification in the labour market.

To improve the performance of the Marine and Fisheries certification Institute, the LSP KP must update the certification scheme in line with technological, industrial and regulatory developments. The integration of digital technology and innovative competence testing methods need to be done. Expand access to certification schemes through collaboration with industry for competence tests in remote areas, especially

outermost islands. Implement systematic evaluation to assess certification schemes. Enhance cooperation with international certification agencies to establish global standards. By following these recommendations, LSP KP can improve performance and contribute to the development of competent workforce.

ACKNOWLEDGEMENT

We extend our deepest appreciation to all those who have played an important role in ensuring the success of this event. The support and dedication they showed had a significant impact. Without their valuable contributions, the event would not have achieved the same level of success. Specifically, we would like to extend our sincere appreciation to the Director of the LSP KP, Mr. Herry Maryuto, M.MA, Certification Manager Dr. Ir. Anthon A. Djari, MS, Chairman of the Certification Scheme Committee, Dr. EndangSuhaedy, Chauffeur of the Non-Privacy Committee Dr. Mulyoto, MM, and all the fellow Managers of the Marine and Fisheries LSP. We would also like to express our thanks to the Chairman of the Board of Directors of LSP KP, Mr. Dr. Andin H. Taryoto, Chairperson of the Assessment Center Forum of LSP KP and Master Assessor of BNSP, Utami Widiasih, M. Si, for their valuable expertise and commitment in giving directions and enthusiasm to better with the principle of Improvement Quality to ensure that LSP KP is more advanced in the future. In addition, we would also like to express our appreciation to the Director of LPK PUMI for his contributions and dedication as the meeting place. The collaboration and joint efforts shown reflect the spirit of teamwork and the partnership that are essential to achieving success in any effort of the LSP KP. It is thanks to the cooperation of all the parties involved, that this activity succeeded beyond expectations and has a long-term impact on all the LSP KP. We are very grateful for the extraordinary contribution that has been made and look forward to continuing to cooperate in the future.

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