



Socialization of Ship Fire Prevention For Fishermen In East Sapa Village

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Abstract Shipping activities, especially for fishermen, have significant risks. In addition to the unexpected challenges of nature, one of the serious threats that is often overlooked is the risk of ship fires. Fires can occur due to a variety of factors, such as mechanical failures, fuel leaks, or other accidents. The purpose of this study is to find out the socialization of ship fire prevention for fishermen in East Sapa village. The research method used in the socialization of ship fire prevention is a qualitative method. This approach was chosen to deeply understand the knowledge, attitudes, and skills of fishermen related to fire prevention and safety at sea. The results of this study show that community service activities carried out by the North Sulawesi Shipping Polytechnic in collaboration with the East Sapa Village government have succeeded in achieving their goals in providing education and practical skills to the fishing community. The program, which combines interactive counseling and training, has successfully increased the fishermen's knowledge and awareness of various important aspects of their work, including boat maintenance, life safety at sea, and fire prevention.

1. INTRODUCTION

At sea, safety is a top priority for all boat users, especially fishermen who often operate in challenging and risky conditions. One of the biggest threats that can threaten safety at sea is ship fires. Fires can occur for a variety of reasons, including mechanical failures, fuel leaks, or other accidents, and can pose a serious risk to life and property.[D. Rianjuanda, M. A. Chaliluddin, R. Rinaldi, K. Melanie, and R. M. Aprilla,2019] In this context, socialization of ship fire prevention is very important. In East Sapa Village, which is one of the active fishing communities, knowledge and skills about fire prevention and the use of safety equipment must be given special attention. The implementation of proper preventive measures and an understanding of safety equipment such as personal buoys, Life Buoys, and Life Rafts can be very influential in protecting fishermen from potential hazards at sea.[D. Faturachman and S. Mustaf,2012]

Shipping activities, especially for fishermen, have significant risks. In addition to the unexpected challenges of nature, one of the serious threats that is often overlooked is the risk of ship fires. Fires can occur due to a variety of factors, such as mechanical failures, fuel leaks, or other accidents. If not addressed quickly and appropriately, fires on ships can be fatal, damage equipment, and threaten the lives of crew members. Therefore, fire prevention and knowledge of proper safety tools have become very important for all boat users. East Sapa

Village, as an active fishing community, is an area that needs special attention regarding this safety issue.[R. Amuthakkannan, K. Vijayalakshmi, S. Al Araimi, and M. Ali Saud Al Tobi,2023] The fishing community in this village often operates in open waters that have unpredictable conditions, and the lack of knowledge about fire prevention can increase the risk. Awareness of fire hazards and knowledge of how to deal with and prevent fires are key to improving their safety at sea. To answer this challenge, the North Sulawesi Shipping Polytechnic took the initiative to hold a socialization activity with the theme "Ship Fire Prevention for Fishermen in East Sapa Village".[R. Irvana, A. Fadillah, and S. Manullang,2020] This activity aims to provide in-depth education about fire prevention and the effective use of safety equipment. This socialization is expected to help the fishing community to better understand the potential fire hazards and the ways that can be taken to prevent and handle these emergency situations.[J. M. Lincoln and G. A. Conway,1999]

In this socialization, various aspects related to safety on ships were discussed in detail. Starting from understanding personal life jackets and life buoys, to the use of life rafts which are an important part of safety equipment at sea. These devices are designed to provide protection and assist fishermen in emergency situations. In addition, the socialization material also includes fire prevention measures which include an understanding of fire hazards on ships, the introduction of fire extinguishers, and effective ways to use these tools. Through this training, it is hoped that fishermen will not only gain theoretical knowledge but also practical skills that they can apply while at sea.[K. V. Størkersen and T. Thorvaldsen,2020]

The importance of this activity lies not only in increasing knowledge but also in the ability of fishermen to apply what they have learned in real situations. With a good understanding of fire prevention and the use of safety equipment, fishermen will be better prepared to face possible hazards that may arise during operation. This activity is also expected to strengthen awareness of the importance of safety at sea, not only among fishermen in East Sapa Village but also as an example for other fishing communities in the surrounding area. Thus, efforts to improve safety at sea can be expanded and strengthened. This article will review the importance of socialization of ship fire prevention in East Sapa Village and explain the various safety tools needed to reduce fire risk and improve safety at sea. By exploring more deeply about the use of safety equipment and the implementation of preventive procedures, it is hoped that fishermen can be better prepared to face emergency situations. Through a comprehensive and planned approach, this socialization activity aims to significantly improve safety, so that fishermen can carry out their activities more safely and effectively.[P. R. B. Galicia,2017]

2. METHOD

The research method used in the socialization of ship fire prevention is a qualitative method. This approach was chosen to deeply understand the knowledge, attitudes, and skills of fishermen related to fire prevention and safety at sea. Through qualitative methods, researchers can explore participants' perceptions and experiences through interactive discussions, in-depth interviews, and direct observation during training. In the implementation of socialization, qualitative data was collected from the interaction between the instructor and the participants, direct feedback from the participants regarding the understanding and skills acquired, as well as the evaluation of the responses and changes in the participants' attitudes after the training. This method allows researchers to identify specific challenges faced by fishermen and tailor training materials to meet their needs more effectively. Research in ship fire prevention socialization activities for fishermen in East Sapa Village is carried out with a structured and systematic approach to ensure the effectiveness of material delivery and the application of appropriate practices. This activity began with the identification of potentials and problems faced by the fishing community, which was carried out through surveys and direct communication with the village government and fishing communities. Based on the results of the identification, socialization materials were designed that included theory and practice on ship fire prevention and the use of safety equipment.[Sugiyono,2018]

Counseling was carried out through presentations and interactive discussions involving competent lecturers from the North Sulawesi Shipping Polytechnic. The material covered various important topics such as safety at sea, the use of Light Fire Extinguishers (APAR), and the introduction of rescue equipment on board. In addition to theory, this activity also includes practical training conducted in the form of demonstrations and hands-on exercises, such as small-scale fire extinguishing practices. The socialization participants consisted of 66 fishermen from East Sapa Village, who were actively involved in training sessions to ensure the understanding and skills obtained. This method is expected to have a positive impact by increasing the knowledge and readiness of fishermen in dealing with emergency situations, as well as improving their work safety at sea. Evaluation of the results of the activity was carried out through feedback from participants and direct observation during the training to assess the effectiveness and suitability of the material provided. With this approach, it is hoped that it can provide better insights into how knowledge and skills about fire prevention are absorbed and applied by fishermen, as well as how such training can be optimized to improve safety at sea.

3. RESULTS AND DISCUSSION

Result

Community Service Activities by the North Sulawesi Shipping Polytechnic were successfully carried out on May 7, 2024 in the Hall of the Old Law Office of East Sapa Village. A total of 66 local fishermen participated in the event with enthusiasm. This activity includes several interactive counseling and training sessions. First, counseling on ship maintenance delivered by Jozua Ch. Huwae, ST., M.Si. The material includes routine maintenance of machinery and ship body parts, as well as basic tools that need to be carried when going to sea. This session caused active interaction between the presenter and the participants, showing high interest from fishermen. Second, counseling on life safety at sea was delivered by Azhar Ariansyah Ansar, S.S.T. Pel., M.Si. and Haryadi Wijaya, S.S.T.Pel. The material includes emergency evacuation and survival skills at sea, as well as explanations of the basic safety equipment that must be available on fishing boats. The fishermen were actively involved in the discussion session, showing increased awareness of the importance of safety at sea. Third, counseling on fire prevention was delivered by Dr. Capt. Arika Palapa, M.Si., M.Mar and Kriswanto, M.Pd. The material included an introduction to fire hazards on ships and settlements, as well as ways to deal with them. Demonstrations of the types of fire extinguishers (Light Fire Extinguishers) and light-scale fire extinguishing practices were also carried out. Participants were divided into two groups for fire extinguishing practice, guided by a team of instructors.[Sunardi, M. A.,2024]

Increased Knowledge and Awareness

After the implementation of socialization, there was a significant increase in the fishermen's knowledge about boat fire prevention. Prior to the training, most participants had limited knowledge of fire risk and safety equipment. However, after participating in the socialization, almost 90% of the participants showed a better understanding of the types of safety equipment, emergency procedures, and how to use these tools. This is shown by the results of questionnaires and interviews that show that participants now better understand the function of life jackets, life buoys, life rafts, and emergency evacuation procedures.[A. C. Chávez-mejía, R. Magaña-lópez, J. C. Durán-álvarez, and B. E. Jiménez-cisneros,1995]

Change of Attitude and Application of Procedures

Observations during the training showed a positive change in participants' attitudes towards the importance of fire prevention. Prior to the training, most fishermen considered fire prevention to be a less important aspect. However, after the socialization, many participants showed a stronger commitment to the implementation of correct safety procedures, such as

regular inspections of safety equipment and emergency preparedness training.[J. M. Lincoln, D. S. Hudson, G. A. Conway, and W. Hole,2018]

Preparedness for Emergency Situations

Emergency simulation assessments conducted during the training showed that participants were now better prepared to deal with emergency situations. Most participants were able to identify and use safety equipment correctly, as well as follow the evacuation procedures that had been taught. This reflects an increase in practical skills and readiness to deal with emergency conditions at sea. The implementation of socialization on ship fire prevention in East Sapa Village showed satisfactory results in terms of increasing fishermen's knowledge and preparedness. Increased understanding of safety equipment such as life jackets, life buoys, and life rafts, as well as evacuation procedures, is essential to reduce fire risk and improve safety at sea. This is in line with the purpose of the socialization to provide clear and practical information on how to protect yourself and your ship from fire hazards. The results of this study also show that qualitative methods, through in-depth interviews and direct observation, are effective in evaluating changes in participants' knowledge and attitudes. This method allows researchers to deeply understand how participants receive and apply the information provided. The positive change in attitude shows that fishermen are now more aware of the importance of safety procedures and are ready to face emergency situations.[J.-W. CHO, S.-H. HAN, K.-S. KIM, and C.-H. LEE,2016]

However, there were some challenges encountered during the training, including initial resistance to change and the need for more specific training materials according to local conditions. Further adjustments and ongoing training sessions are required to ensure that the knowledge and skills gained remain relevant and applicable in real-world situations. Overall, this socialization has had a positive impact and is expected to be the first step in sustainable efforts to improve safety at sea. With a planned and participatory approach, fishermen in East Sapa Village are expected to carry out their activities more safely, and be better prepared to face the risk of fires and other emergency situations.[W.-S. Kim, Y.-B. Cho, S.-J. Kim, K.-J. Ryu, and Y.-W. Lee,2014]

This service activity is designed with interactive counseling and training methods that have proven effective in improving the knowledge and skills of fishermen in East Sapa Village. This activity succeeded in increasing fishermen's awareness and knowledge about boat maintenance, life safety at sea, and fire prevention. The material presented comprehensively and interactively helped participants understand concepts that were previously poorly understood. The enthusiasm and active participation of the participants in the discussion and

practice sessions showed the success of the interactive training method. The questions asked by the participants showed that they were beginning to realize the importance of the knowledge and skills provided. The sustainability of this program is important to continue to raise public awareness about ship maintenance, safety at sea, and fire prevention. This program can be a model for other community service activities, by involving more fishermen and coastal communities. Recommendations for improvement include continuing advanced training programs with more in-depth material and more frequent practices, as well as involving more relevant parties, such as local governments and maritime agencies, to support and expand the scope of activities.[C. Matheson, S. Morrison, E. Murphy, T. Lawrie, L. Ritchie, and C. Bond,2014]

This community service activity has succeeded in achieving its goal of providing education and skills to fishermen in East Sapa Village. The interactive counseling and training carried out had a positive impact on increasing fishermen's knowledge and awareness regarding boat maintenance, life safety at sea, and fire prevention. The material was delivered by Jozua Ch. Huwae, ST., M.Si, with the hope that fishermen are more concerned about boat maintenance, including routine maintenance of machinery and body parts of fishing boats to avoid work accidents that may occur in the middle of the sea.

The material was delivered by Azhar Ariansyah Ansar, S.S.T. Pel., M.Si. and Haryadi Wijaya, S.S.T.Pel, with the hope that fishermen are more concerned about life safety when working at sea, including evacuation in the worst conditions and the ability to survive at sea. The material on Fire Prevention was delivered by Dr. Capt. Arika Palapa, M.Si., M.Mar and Kriswanto, M.Pd., it is hoped that the socialization participants can recognize the dangers of fires that can occur on fishing boats and settlements, as well as how to deal with fires with the use of fire extinguishers and light-scale fire extinguishing practices. Furthermore, the session on life safety at sea was delivered by Azhar Ariansyah Ansar, S.S.T. Pel., M.Si. and Haryadi Wijaya, S.S.T.Pel. The session covers evacuation in emergency conditions and basic skills to survive in the event of an accident at sea. The participants received an explanation about various safety equipment such as life jackets and life rafts. The fishermen showed great interest in this material, many asked questions and shared personal experiences related to safety at sea. This shows an increase in awareness and understanding of the importance of safety preparations before going to sea.

The material on fire prevention was delivered by Dr. Capt. Arika Palapa, M.Si., M.Mar and Kriswanto, M.Pd. The fishermen were taught how to recognize potential fire hazards on boats and settlements, as well as effective countermeasures. In addition to theory,

demonstrations of the use of Light Fire Extinguishers (APAR) and light scale fire extinguishing practices were also carried out. Participants were divided into two groups to take part in firefighting practices, guided by a team of experienced instructors. Participants looked very enthusiastic and active in practice, which showed a good understanding of the material presented. In addition, this activity also provides an opportunity for participants to discuss directly with the instructors. The fishermen can ask about the real situation they are facing and get practical solutions. This interaction helps to clarify the concepts being taught and ensures that participants truly understand the material being presented. Feedback from participants showed that they felt more prepared and confident in facing various situations at sea after participating in this training.

This service activity also involves the East Sapa Village government as a form of good collaboration between educational institutions and the local government. The support from the village government is very helpful in mobilizing participants and providing the necessary facilities during the event. This collaboration is a good example for other community service activities in the future, where synergy between various parties can provide greater benefits for the community. Overall, this community service activity not only succeeded in improving the knowledge and skills of fishermen in East Sapa Village, but also built collective awareness of the importance of boat maintenance, safety at sea, and fire prevention. The success of this activity opens up opportunities for more in-depth and sustainable further training, so that the benefits obtained by the fishing community can continue to be improved.

Discussion

This community service activity has succeeded in achieving its main goal, which is to improve the knowledge and skills of fishermen in East Sapa Village in the maritime sector, especially related to ship maintenance, life safety at sea, and fire prevention. Each training and extension session is designed in an interactive manner, involving presentations, discussions, and hands-on practice that makes it easier for fishermen to understand the material presented. Ship Maintenance: The material presented by Jozua Ch. Huwae, ST., M.Si. emphasized the importance of regular maintenance of machinery and hull parts. Through an explanation of the basic tools that must be brought when going to sea, the fishermen are invited to be more concerned about the condition of their boats. The interactive discussion that took place showed that the participants began to realize how important it is to carry out periodic maintenance to prevent damage that can result in work accidents at sea.[R. Indrayani, A. I. Syamila, R. I. Hartanti, and A. D. P. Sujoso,2023]

Saving Lives at Sea: Azhar Ariansyah Ansar, S.S.T. Pel., M.Si. and Haryadi Wijaya, S.S.T.Pel. conveying material on life safety at sea which is very relevant to the work of fishermen. Knowledge of evacuation in emergency situations, the use of safety equipment such as life jackets, and basic survival skills are important provisions for fishermen. The enthusiastic response from the participants showed that this material successfully increased their awareness of the importance of personal safety when working at sea. **Fire Prevention:** The material on fire prevention delivered by Dr. Capt. Arika Palapa, M.Si., M.Mar and Kriswanto, M.Pd. emphasized the identification of fire hazards and effective countermeasures. Demonstrations of the use of Light Fire Extinguishers (APAR) and fire extinguishing practices provide participants with hands-on experience, which is essential for building practical skills. This practice not only helps participants understand the theory presented, but also increases their confidence in dealing with fire situations. [M. S. I. Saadon et al,2013]

Collaboration with the Village Government: The collaboration between the North Sulawesi Shipping Polytechnic and the East Sapa Village government shows an effective partnership model in the implementation of community service activities. Support from the village government simplifies the process of mobilizing participants and providing the necessary facilities during the event. This synergy is an important factor in the success of activities, and can be a model for future community service programs. **Enthusiasm and Active Participation:** The high level of participation and enthusiasm of participants during the activity indicates the success of the interactive counseling and training methods used. Active discussions and questions and answers between speakers and participants reflected the interest and curiosity of fishermen in the material presented. This shows that the interactive approach is very effective in conveying information and building a deeper understanding. [M. Jezewska, M. Grubman-Nowak, I. Leszczyńska, and B. Jaremin,2012]

Recommendations for Advanced Activities: Based on the results and positive responses from participants, these service activities open up opportunities for more in-depth advanced training. Continuous counseling on ship maintenance, life safety at sea, and fire prevention needs to be carried out regularly to continue to increase the knowledge and awareness of the fishing community. In addition, advanced training with a focus on hands-on practice will be very beneficial to strengthen the practical skills that have been acquired.

Direct Influence on Fishermen's Daily Life: This service activity not only provides theory, but also practical skills that can be directly applied in the daily lives of fishermen. Knowledge of boat maintenance and fire prevention, for example, allows fishermen to keep their boats safe and seaworthy. By doing so, fishermen can avoid potential accidents that could

endanger their lives and livelihoods. In addition, the ability to handle emergency situations effectively will increase a sense of security when working at sea. Development of Continuous Training Modules: One of the important outcomes of this activity is the development of training modules that can be used for continuous counseling. The module covers ship maintenance, life safety at sea and fire prevention materials, and is equipped with practical guides and illustrations that make it easy to understand. With this module, similar training can be carried out independently by the village government or other institutions, so that the knowledge provided can continue to be disseminated and updated as needed.[A. S. Hidayat, L. A. Sofia, and E. Agusliani,2018]

Increased Ecological Awareness: In addition to focusing on boat safety and maintenance, this activity also indirectly increases the ecological awareness of fishermen. The explanation of good boat maintenance includes the use of environmentally friendly materials and methods. This is important to maintain the preservation of the marine ecosystem which is the source of livelihood for fishermen. By understanding the impact of their actions on the environment, fishermen can contribute to efforts to conserve marine natural resources. The Role of Technology in Maritime Safety: The discussion on safety tools and ship maintenance equipment also opened up fishermen's insights into the importance of technology in supporting maritime safety. Tools such as modern life jackets, fire extinguishers, and advanced navigation equipment can improve work efficiency and safety at sea. Awareness of this technology encourages fishermen to be more open to innovation and technological improvement in their fishing activities.

Evaluation and Feedback: After counseling and training activities, an evaluation is conducted to measure the extent to which the participant's knowledge and skills have improved. The feedback from participants was very positive, indicating that the material presented was relevant and easy to understand. This evaluation is also the basis for the improvement and development of training programs in the future, so that it can be more in accordance with the needs and conditions of the fishing community. Further Cooperation Development: The success of this activity opens up opportunities for the development of further cooperation between the North Sulawesi Shipping Polytechnic and the village government and other related institutions. A more comprehensive and integrated service program can be designed, covering various aspects of fishermen's life and work, such as fish resource management, local economic development, and capacity building of fishermen's organizations. This sustainable cooperation will have a more significant long-term impact on the welfare of the fishing community.[H. Setiawan, Sukirno, and V. D. Hemeto,2023]

The discussion of community service activities in East Sapa Village became more complete and comprehensive. Every aspect of this activity is discussed in detail, showing how the counseling and training carried out brings real benefits to the fishermen and opens up opportunities for further development. Overall, this activity shows that with the right approach and strong collaboration, community service programs can have a significant impact in improving community welfare and safety. This success provides a solid foundation for the development of more comprehensive service programs in the future.

4. CONCLUSION

Community service activities carried out by the North Sulawesi Shipping Polytechnic in collaboration with the East Sapa Village government have succeeded in achieving their goals in providing education and practical skills to the fishing community. The program, which combines interactive counseling and training, has successfully increased the fishermen's knowledge and awareness of various important aspects of their work, including boat maintenance, life safety at sea, and fire prevention.

5. SUGGESTION

It is recommended that counseling and training programs be carried out on an ongoing basis to ensure that knowledge and skills remain relevant. Expanding cooperation with other maritime institutions can improve the quality of materials and training. Upgrading training facilities with modern equipment and in accordance with international maritime safety standards is also important. The development of specific training modules in accordance with the needs of East Sapa Village fishermen as well as increased socialization efforts through local and social media will help reach more participants. Periodic monitoring and evaluation are necessary for the effectiveness of the program, while the integration of environmental awareness materials will ensure sustainable fishing practices. Government support in the form of policies and funding is also urgently needed to strengthen the results of this training program. By following these suggestions, it is hoped that community service activities can have a greater and sustainable impact on fishermen in East Sapa Village, as well as improve their safety and welfare in carrying out their profession.

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