International Journal of Environment, Agriculture and Biotechnology
Vol-6, Issue-4; Jul-Aug, 2021

Journal Home Page Available: https://ijeab.com/
Journal DOI: 10.22161/ijeab

Article *Peer-Reviewed Journal*

Fisherman Competency Study on Fishing Business Units on Pole and Line Based on SKKNI and STCWF-1995 in Sikka Maumere Regency, East Nusa Tenggara

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Received: 11 Jun 2021; Received in revised form: 11 Jul 2021; Accepted: 18 Jul 2021; Available online: 28 Jul 2021

Abstract— *One of fishermen's problems is skills and knowledge. The skills and knowledge of fishermen are obtained from a learning process that is hereditary. Fisherman competency standards are important in order to improve work safety and fishing business. This study aims to evaluate the competence of pole and line fishermen based on SKKNI 2013-298 (competence units for operating huhate (pole and line)), SKKNI 2005-191 PRK.NP03002.01, and STCW-F 1995 Resolution 3 in Sikka Maumere Regency, East Nusa Tenggara and the suitability of fishermen's competency standards in SKNNI and STCW-F 1995. Fishermen's competency data were obtained through observation and in-depth interviews with selected respondent fishermen and then analyzed based on these two standards. National fishermen's competency standards are also evaluated for conformity to international standards. The amount of weighting is determined based on the level of importance of each of the existing performance criteria. The assessment criteria for competency elements use a score scale of 1-4. The total value of the weights is 10. The total value of x weights is 40, then multiplied by 100%. Obtaining the suitability value of each performance criterion can show the level of conformity of the fishermen's competence with competency standards. The results showed that (1) the competence of fishermen based on the 2005-191 SKKNI was not suitable (conformity value interval <50%), while based on the 2013-298 SKKNI it was quite appropriate (conformity value interval between 50-75%). (2) Fishermen are still not suitable (conformity value interval <50%) to the implementation of STCW-F 1995 resolution 3. (3) The basic competency units in SKKNI 2005-191 and SKKNI 2013-298 are divided into 7 competency units. Meanwhile, in STCW-F 1995 became an integral part of the competency unit as a basic level safety training for fishermen*.

Keywords— ***SKKNI 2005-191, SKKNI 2013-298, STCW-F 1995, pole and line.***

I. INTRODUCTION

The problem that is often faced by Indonesian fishermen is the lack of knowledge and skills. This can result in the inability of fishermen to access technology, information, and lack of mastery of safety and fishing competencies as well as the ability to handle fish catches. According to Lincoln et al., (2002), fishing vessel safety is an interaction of complex factors, namely human factors (master and crew), machines (ships and safety equipment) and environmental (weather and climate for fishery resource management). . Safety problems or accidents will arise if at least one element of the human factor, machines or environmental factor is not functioning properly. Risk control in the fishing process is carried out by selecting

competent crew members, making plans for fishing/shipping activities, designing safe work procedures, using appropriate equipment, using personal protective equipment and conditioning a healthy work environment, and always coordinating between crew members. . The management of fishermen's work safety needs to be done so that their implementation is synergistic. (Fis Purwangka, 2013).

Mazaheri et al., (2015) stated that many ship accidents occur due to errors by crew members in reading the situation in navigating, resulting in errors in decision making. Errors occur due to weak competence, so it is necessary to draft regulations governing the competence of ship crewing. Hamzens & Sumardjo (2007) stated that the quality of fisherman's human resources is low, characterized by low competencies such as low awareness of safety at sea, low ability to plan business, low ability to catch fish, and low ability to solve business problems. According to Retnowati (2014) stated that the root cause of problems related to fishermen's human resources is education. In addition, the problem of competence contained in the elements of skills and knowledge. These abilities and knowledge, they get from the learning process that is hereditary, so that these competencies can still be improved for the better. Therefore, fisherman competency standards are needed that can improve the safety and fishing effort of fishermen so that the quality and number of fishermen's catches increases.

Monintja (1968) said that in principle the pole and line fishing gear consists of three parts, namely: the rod (pole), line (line) and hook (hookless). Pole and line (huhate) is one type of fishing gear that can be classified as a fishing rod that is usually used in catching skipjack tuna. These tools are used individually, so that one of the factors that influence the success of fishing is the individual skill of the crew, and other factors, such as the availability of live bait and the density of skipjack tuna schools in fishing areas. The success of the operation of the pole and line ship, is very dependent on the condition of the stability of the ship because of the oceanic nature of the operation. Good cooperation by the crew is needed in order to successfully catch fish using pole and line (huhate) fishing gear. Research on the study of fishermen's competence on fishing business units on Pole and line based on SKKNI and STCWF-1995 is expected to provide data and information on fishermen's competence in pole and line fishing business units in the research area. Its utilization can provide material for consideration in determining policies in the field of capture fisheries, especially increasing the ability and skills of fishermen. Fishermen also get legal protection and increase the quality and quantity of their catch.

II. RESEARCH AND METHODS

Data retrieval is done by purposive sampling method (a sampling technique of data sources with certain considerations, namely the data source knows best about what is expected, making it easier for researchers to explore the object or situation being studied (Sugiono, 2010). Data collection is done by: (1) Observation, namely the object of observation that is studied are aspects related to the suitability of fishermen's competence regarding pole and line fishing operations and work safety problems on board with existing standard rules.(2) Interviews, namely direct interaction and communication and observing performances. the work of pole and line fishermen selected to obtain information (3) Literature study, namely studying the rules of national and international competency standards that support research so that it is hoped that with a strong legal basis a good understanding will be obtained.

Data retrieval using a questionnaire containing the units and elements of competence that exist in SKKNI 2005-191 PRK.NP03002.01, SKKNI 2013-298 (competence units for operation of huhate (pole and line)), and STCW-F 1995 Resolution 3. Observations of fishermen's actions during fishing operations using the pole and line are scored on a scale of 1-4. The scoring score is shown in Table 1.

Table 1. Assessment criteria

Score	Assessment criteria	Description
4	Very suitable	Fishermen explain sequentially and in great detail
3	Appropriate	Fishermen explain sequentially and in detail
2	quite appropriate	Fishermen explain sequentially and in less detail
1	Not suitable	Fisherman explains not sequentially

Performance Criteria :

If 4: 85 up to 100%

3: 75 to < 85 %

2: 50 to < 75 %

1: < 50%

The number of competency elements in SKKNI 2005-191 PRK.NP03002.01 is 5 (five), namely: (1) Organizing and implementing regulations on occupational safety and health practices for crew members. (2) Implement FAO/ILO/IMO provisions on fishing vessel crews. (3) Use

and maintain work safety equipment. (4) Precautions for entering enclosed spaces. (5) Take action to prevent accidents on board. The competency units based on the 2013-298 SKKNI are (1) Planning fishing operations. (2) Preparing ship's seaworthiness. (3) Preparing the seaworthiness of fishing operations. (4) Carry out the task of guarding the sea. (5) Assembling huhate. (6) Catching fish in the sea using huhate (pole and line). (7) Perform maintenance on fishing gear made from ropes and fishing rods on land. (8) Perform maintenance on fishing gear made from ropes and fishing rods on the ship. (9) Repairing fishing gear made from ropes and fishing rods. (10) Handling tuna fish on board. The elements of competence that exist in STCW-F 1995 Resolution 3 are as follows: (1) Knowledge and techniques of self-rescue. (2) Fire prevention and suppression. (3) Emergency procedures. (4) The basics of first aid (first aid in an accident). (5) Prevention of pollution of the marine environment. (6) Prevention of ship accidents.

Data analysis used: (1) Content Analysis Method; The analysis used is the content analysis method where descriptive data is often only analyzed according to its content. Therefore, this kind of analysis is also called content analysis (Suryabrata 1983). Charles (2001) means that the content analysis method is carried out by observing the content of the main articles of the policy, in this case the competence of pole and line fishermen. The procedure taken begins with identifying and taking inventory of existing fishermen's competency standards on national and international standards. (2) HTA (Hierarchical Task Analysis); work/activity is broken down into several levels of activity/job. It is also very useful in seeing the activities/workers in interacting with work equipment and aspects of the work environment. Activities/jobs are divided into several levels of activity/work based on the goals to be achieved (Lyons et al., 2004). The approach taken in qualifying with time. The identified activities are overall activities, both from the stages of the preparation, catching, and handling of the catch. Work intensity is researched through quantitative studies using large-scale survey instruments and has been understood as a series of measurements of pace of work and the need to meet strict time targets (Hamilton, 2007). (3) Scoring System Method; according to Wardhani (2005) as a measurement result in the form of numbers (quantitative), the scoring system, which is also known as a scale score, requires a comparison norm so that it can be interpreted qualitatively. Basically, the interpretation of the scale score is always normative, meaning that the meaning of the score is referred to the relative position of the score in a group that has been limited in advance. The scoring method is used to represent the level of proximity, the relationship between the performance of fishermen in the operation of pole and line fishing with national and international standards. The assessment criteria for competency elements use a score scale of 1-4. The total value of the weights is 10. The total value of x weights is 40, then multiplied by 100%. Obtaining the suitability value of each performance criterion can show the level of conformity of the fishermen's competence with competency standards. The assessment of the suitability of competency standards using intervals is shown in Table 2.

Table 2. Conformity Assessment

Value of Conformity	Assessment Criteria Conformity	Assessment Interval
4	Very suitable	85 ≥ 100%
3	Appropriate	75 < 85 %
2	quite appropriate	50 ≤ 75%
1	Not suitable	< 50 %

III. RESULT AND DISCUSSION

Data collection was carried out on 8 (eight) pole and line vessels from 75 vessels or 10% of the number of existing vessels. This number can represent fishing activities carried out because almost all pole and line fishermen operating in florest waters are located in Water Management Areas (WPP-RI) 573, 713, and 714 in the waters of East Nusa Tenggara Province. Fishermen started to participate in fishing operations on pole and line vessels, acting as chefs and preparing live bait in fishing operations. The fishermen, on average, graduated from elementary school or even dropped out of school since elementary school. It was at this young age that they began to learn directly in fishing operations. Beginning as cooks and preparing live bait that will be used by the boys in fishing operations, they then learn directly as anglers, engine guards, helmsmen, compradors, to become ship captains. Pole and line ship data can be seen in Table 3.

Table 3. Data of pole and line ships

Name of Vessel	GT Vessel	LOA (m)	Number of Fishermen	Educational Level Starting from elementary school
KMN. Citra	27	20.72	17	17
KMN. Jabal Sur	30	20.10	16	16
KMN. Indah Baitullah 03	30	23.00	20	20
KMN. Kembali Baitullah	26	22.65	22	22
KMN. Khanza	30	22.09	15	15
KMN. Surya Mas	30	18.35	18	18
KMN. Tujuan Baitullah	30	19.11	17	17
KMN. Darussalam	29	20.15	18	18

Fishermen Competency Suitability Based on SKKNI 2005-191 PRK.NP03.002.01

The suitability value of the competence of pole and line fishermen based on SKKNI 2005-191 PRK.NP03002.01 is presented in Figure 1.

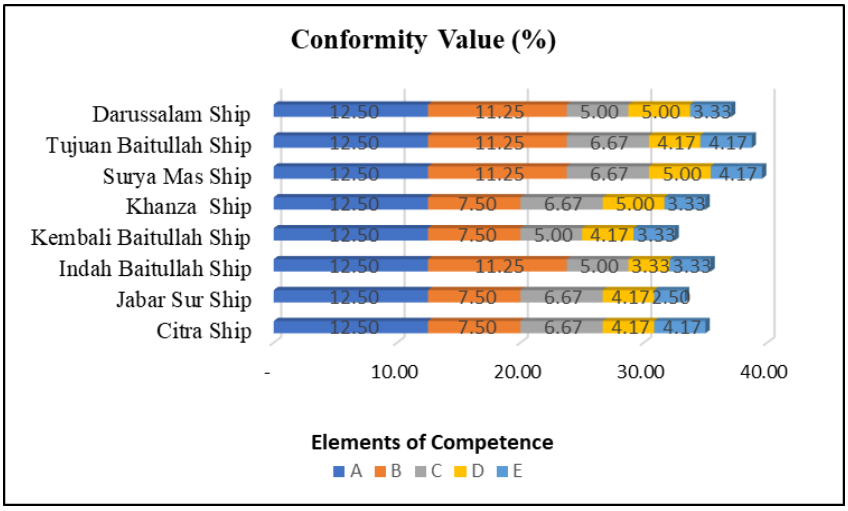

Fig 1. The value of the suitability of the competence of pole and line fishermen with SKKNI 2005-191 PRK.NP03002.01

Description of Competency Elements:

A. Organizing and implementing regulations on occupational safety and health practices for crew members.

B. Apply FAO/ILO/IMO provisions on fishing vessel crews.

C. Use and maintain work safety equipment.

D. Precautions for entering enclosed spaces.

E. Take precautions to prevent accidents on board

In Figure 5, it can be seen that pole and line fishermen are still not suitable (conformity value interval < 50 %) to the implementation of SKKNI 2005-191 PRK.NP03.002.01 concerning Implementing Occupational Safety and Health on Ships. This is because fishermen's knowledge of the importance of occupational safety and health on ships has not been understood.

Learning about work safety is done by going to sea often and obtained from information from generation to generation. It is evident from the number of crew members who have participated and passed the BST (basic safety training) training. The average crew who have followed and passed the BST are only 2 people, namely the captain/captain and the engineer. The other crew members didn't even know about BST.

The first element of competence in the 2005-191 SKKNI is Organizing and implementing regulations on occupational safety and health practices for crew members. The fishermen explained about the use of gloves to avoid injuries to the hands while working on the boat. The action to save the crew is to use life jackets and jump into the sea in the event of a fire. In an effort to maintain health and safety on board, fishermen explained the efforts made to eat on time and get enough sleep. In the second element of competence related to safety measures on fishing vessels

and technical steps for safe fishing operations according to FAO/ILO/IMO provisions concerning fishing vessel crews, fishermen do not yet know the importance of wearing safety clothing on board. The only work safety clothing known to fishermen is gloves, and even then they are used only one-sidedly and are often not used. The process of filling ice blocks and the fishing process can be seen in Figure 2a and Figure 2b.

In the third competency element, namely using and maintaining work safety equipment, from the observations of the fishermen, none of the fishermen used wear packs, work shoes, work helmets, gloves, and protective masks. Only one person uses gloves when fishing and puts ice into the hold, and even then only one side.

Fig 2. (a) The process of filling ice blocks; (b) Fishing process

Maintenance of work safety equipment is not carried out because all ships do not provide complete safety equipment. The precautionary measure to enter a closed room in the fourth element of competence has never been carried out by fishermen. Respiratory protection equipment, protective equipment to help victims, protective equipment to extinguish small fires are not provided on board. Elements of competence take action to prevent accidents on board, fishermen do good ship movement, but understanding of ship motion during an emergency has never been trained. One of According to AP2HI (2015), safety on ships needs to be considered and known by pole and line and handline fishermen. Accidents can occur on ships both during shipping, when making arrests and when loading and unloading is done at the port. Accidents can occur due to lack of knowledge, training and lack of awareness. Lack of awareness such as not using safety equipment on board, even though using safety equipment on ships can reduce the risk of accidents on board. Lack of knowledge and inappropriate attitudes about hygiene and sanitation at sea causes many fishermen to have work accidents (Ratri and Paskarini, 2014).

Fishermen Competency Suitability Based on SKKNI 2013-298 concerning Huhate Operation (pole and line)

In the 2013-298 SKKNI, there are 10 competency units in it related to the competence of pole and line fishermen. The 10 competency units have different boundaries and goals in each type of competency. The explanation regarding the 10 competency units that must be mastered by fishermen can be seen in Table 4.

Table 4. Competency units in SKKNI 2013-298 regarding Huhate Operation (pole and line)

	Competency Unit Code	Competency Description
1	A.031110.001.001	Planning fishing operations
2	A.031110.002.001	Preparing the ship's seaworthiness
3	A.031110.003.001	Preparing the seaworthiness of fishing operations
4	A.031110.004.001	Carry out marine guard duties
5	A.031110.009.001	Assembling huhate (pole and line)
6	A.031110.014.001	Doing fishing in the sea using huhate (pole and line)
7	A.031110.017.001	Perform maintenance on fishing gear made from ropes and fishing rods on land

8	A.031110.018.001	Perform maintenance on fishing gear made from ropes and fishing rods on the ship
9	A.031110.019.001	Repairing fishing gear made from ropes and fishing rods
10	A.031110.020.001	Handling tuna on board

Pole and line fishermen are quite appropriate (interval of suitability value between 50 to < 75 %) to the implementation of SKKNI 2013-298 regarding fishermen's competence in terms of fishing using pole and line in the sea which must be owned and controlled. The actions of fishermen have been sequential in terms of operating the catch using pole and line fishing gear, but the fishermen do not use safety equipment on the boat. The suitability value of the competence of pole and line fishermen based on the 2013-298 SKKNI is shown in Figure 3.

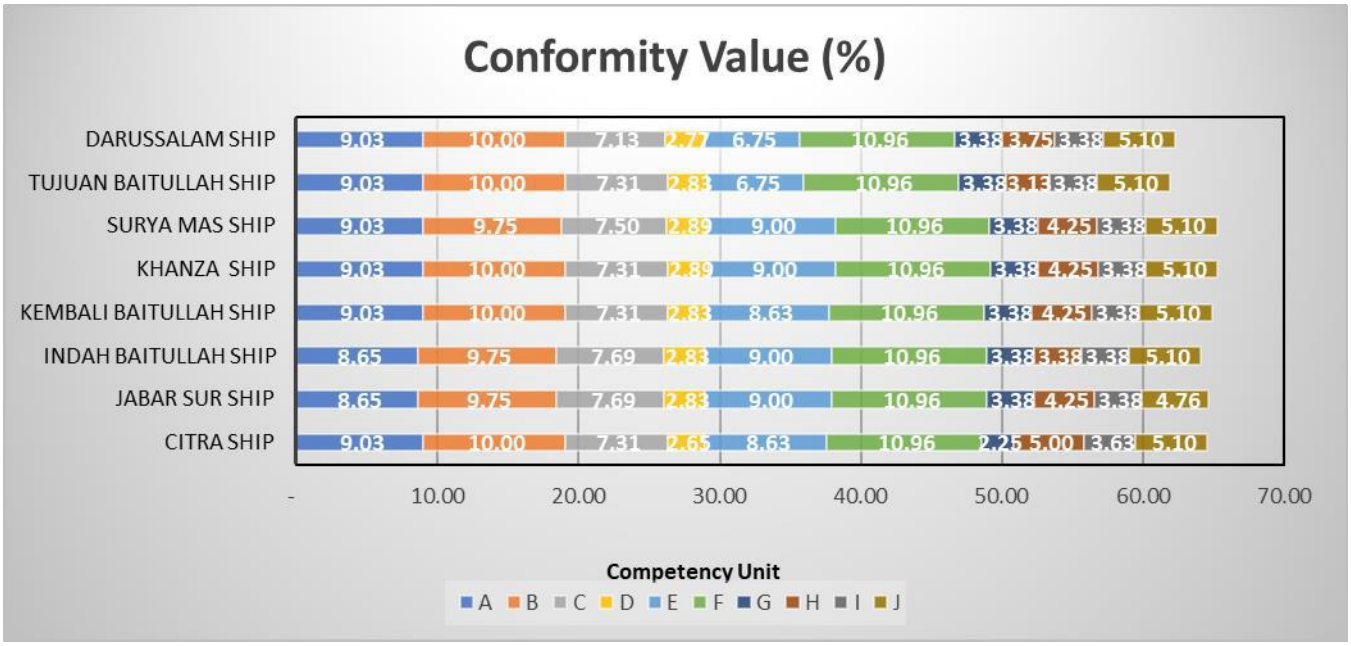

Fig 3. The suitability value of pole and line fishermen's competencies based on the 2013-298 SKKNI concerning fishermen's competencies in terms of catching fish using pole and line in the sea

Description of Competency Unit:

A. Planning a fishing operation plan
B. Preparing the ship's seaworthiness
C. Preparing the feasibility of fishing operations
D. Carry out marine guard service
E. Assemble Huhate
F. Catching fish in the sea using huhate (pole and line)
G. Perform maintenance on fishing gear made from ropes and fishing rods on land
H. Carry out maintenance on fishing gear made from ropes and fishing rods on the ship
I. Repairing fishing gear made from ropes and fishing rods
J. Handling tuna on board

The performance of fishermen's actions in the fishing operation plan is on average the same from 8 vessels. The target fish to be caught are skipjack tuna, fishing gear using pole and line (huhate) fishing gear and fishing grounds. Fishermen predict the weather based on natural conditions. Among them count the dark moon. The terms used by fishermen are dark and light moon nights. The calculation of the time, distance, and route of the capture operation was carried out using an application on a cellphone, namely an offline maps application without using a marine map. Estimated operating time is only done by experience. Fishing is done before sunrise until around noon. 10.00 am and evening before sunset. If the catch is deemed insufficient, it will be carried out the next day, depending on the availability of live bait. Estimated ship logistics and ship crew, prepared for 3 days at sea. The activities of fishermen when going to FADs and looking for schools of fish for fishing can be seen in Figures 4 a and b.

Fig 4. (a) Fishermen's activities when going to FADs for fishing; (b) Looking for schools of fish for fishing

According to Rahmat & Yahya (2015), if the fishing area is carried out outside FADs, there are several clues to find schools of skipjack tuna, for example, it is seen that there are birds swooping down to the sea surface, fish jumping on the surface of the water, fish coming along. roaming with drifting logs or following dolphins or whales and so on.

The average performance of the fishermen's actions in preparing the ship's seaworthiness was fulfilled by 8 of these vessels. The documents required to obtain a sailing approval letter from the harbormaster are always met. Fulfillment of the crew is also fulfilled in accordance with the duties and functions of each crew member. Meanwhile, fishermen tend to pay less attention to the fulfillment of human and ship safety equipment.

In article 5 paragraph 2 Government Regulation no. 51 of 2002 Fulfillment of every ship's seaworthiness requirements is evidenced by a ship's certificate and/or ship's certificate. Shipworthiness requirements include ship building and engine condition in good condition. The captain and fisherman have certificates and experience at sea. Equipment and safety equipment on board are adequate and meet the requirements. Ships must also not pollute the environment while operating at sea.

Documents for fishing vessels consist of: (1) Letter of measurement/gross deed; (2) Nationality certificate (small/big pass); (3) Shipworthiness certificate and fishing vessel manning certificate; (4) Radio communication license (SIKRI) for ships > 35 GT; (5) List of crew members; (6) Sanitation exemption; (7) Fishery business license (SIUP) (photocopy); (8) Original fishing permit (SIPI) or fish transport ship permit (SIKPI); (9) Operation worthiness letter (SLO); (10) sailing approval letter (SPB); (11) Barcode tickets for ships over 30 GT; (12) Re-registration/sign of payment of the original fishery levy; (12) SIPI (photocopy).

The ship before sailing must obtain a sailing approval letter issued by the harbormaster. It is stated in article 219 paragraph 1 of Law Number 17 of 2008. The sailing approval letter is proof that (1) the ship has been inspected. (2) the ship has met the requirements of seaworthiness. (3) has fulfilled other obligations in the shipping sector.

The performance of fishermen's actions in the competency unit in preparing the feasibility of fishing operations is to complete licensing documents related to fishing businesses and prepare fishing gear and equipment. The administrative feasibility document (original SIPI and original fishery levy settlement sign, and barcode) is fulfilled by fishermen. Meanwhile, the completeness of the ship's and crew's needs for supplies tends not to be counted. Like the remaining fuel, lubricants, hydraulic oil, and fresh water during shipping and fishing operations, foodstuffs and medicines are not counted.

The performance of fishermen's actions in the competency unit carrying out the marine guard service is almost all not carried out by fishermen. Fishermen make improvements to the position, bow, speed of the ship. Running manual steering following the cruise track is also controlled. Actions based on important messages from previous marine watch officers or the captain's orders are carried out. The deck diary is not filled in. The handover of the replacement of the guard service at each round of the marine guard service is not carried out.

According to Ramadhan (2021), the implementation of the guard service carried out by the guard on the ship when the ship is sailing or docking has been regulated by the company and the ship in their duties and responsibilities. The guard service is carried out to achieve a safe and controlled situation while the ship is sailing. The purposes and objectives of the implementation of the watch service are: (a) Maintaining the security, safety, orderliness of the ship, cargo, passengers, and the environment. (b) Implement/comply with applicable regulations and provisions (national/international). (c) Carry out orders/instructions from the company or the captain (written orally) of Standing Orders/Bridge Orders.

Almost all of the performance of fishermen's actions in assembling the pole and line is done. Fisherman lays out

the huhate design. The number, type and size of work equipment and material requirements are not prepared. The series of huhate components is always carried out when going to do fishing activities. The activity of assembling pole and line fishing gear is shown in Figure 5.

Fig 5. Activities for assembling pole and line fishing gear

The performance of the actions of fishermen in the competency unit in catching fish at sea using pole and line, which is fulfilled is preparing live bait fish in the hold and fishing. The position of the presence of fish is determined by the location of FADs because fishing is always carried out around FADs and observing schools of fish by looking at signs in the sea. The caught fish are not collected, left to die. Newly caught fish are collected after the fishing process is complete.

Mallawa & Sudirman (2004), the presence of skipjack tuna is marked by the presence of foam or splashes of water, skipping skipjack tuna or flocks of birds flying swooping to the sea surface where schools of fish are located. According to Naamin (2000), the operation of the huhate depends on the availability of bait fish, about 20-40% of the total sea days cannot be carried out because there is no bait, especially in the skipjack season. Artificial bait for huhate is designed with attention to shape and color in order to attract the attention of the target fish. Matching and brighter color settings and fish-like shapes will stimulate fish to grab the hook.

In addition to live bait, artificial bait attached to the fishing line. Almost all of the pole and line fishermen in Sikka district use chicken feathers to disguise their hooks, not using artificial bait. According to Rahmat & Yahya, (2015), this artificial bait is made to cover the fishing line so that it can trick the target fish. The most widely used artificial bait material is lint cloth, but some are made of chicken feathers, neat rope, fish gill petals or shells/mussels which are shiny in color. The activity of assembling chicken feathers on the hook can be seen in Figure 6.

Fig 6. The activity of assembling chicken feathers on the hook

The operation of the huhate depends on the availability of bait fish. The fishing area using huhate is in the waters around FADs or in waters outside FADs. The principle of fishing with the huhate technique is to collect target fish in the fishing area by spreading live bait fish and if the school of fish is already in the fishing area, then fishing/fishing begins. The caught fish lying on the ship's deck are then put into the fish hatch and given bulk ice to maintain the quality of the fish. All types of fish are mixed in their storage in the hold (Rahmat & Yahya, 2015). Good cooperation by the crew is needed in order to successfully catch fish using pole and line (huhate) fishing gear.

The performance of fishermen's actions in the competency unit in carrying out maintenance on fishing equipment made from ropes and fishing rods on land has never been carried out. Fishermen do not prepare for the type of maintenance and prevention of damage to fishing gear, prepare the place, type, material and amount of equipment for maintenance and prevention of damage to fishing gear made from ropes and fishing rods, and carry out maintenance and prevention of damage to fishing gear on land. The fishing gear was left in the open at the bow of the boat, exposed to the sun and rain.

The performance of fishermen's actions in the competency unit in carrying out maintenance of fishing equipment made from ropes and fishing rods on the ship is to provide spare fishing line, spare rod, and chicken feathers for fishing line. While the fishing line maintenance is the responsibility of each angler because each angler brings his own fishing line. The placement and arrangement of fishing gear is not stored in the warehouse but is stored in the open at the bow of the ship. The actions of fishermen in the maintenance of fishing gear on boats are shown in Figure 7.

Fig 7. Actions of fishermen in the maintenance of fishing gear on the boat

The performance of fishermen's actions in the competency unit in repairing fishing gear made from ropes and fishing rods is repairing damaged rigging and replacing other damaged equipment components. The provision of preservatives and dyes on the rigging is not carried out. Likewise, avoiding damage caused by the direct influence of the sun, oil, harmful chemicals and rodents is not done. Fishing gear made from rope is stored in the open at the bow of the boat and fishing gear made from fishing rods is stored by each angler.

The performance of fishermen's actions in the competency unit in handling tuna on ships is to prepare equipment and places for handling tuna caught on board and prepare a storage system. The equipment provided on each ship is a hammer for crushing ice. Equipment for handling tuna is not prepared, the fish caught are left alone until fishing is complete. Fish die by themselves because the handling is waiting for fishing to finish. The storage system uses a stereoform box and some are stored in the hold. The large number of catches affects the storage area. If a lot is stored in the hold, if a little is stored in a steroform box. Fishermen handle fish by spraying seawater and then placing them in a styroform box or hold. The caught fish are arranged in a storage area. The caught fish are not cleaned of spoilage sources.

Fishermen Competency Suitability Based on STCW-F 1995

The knowledge and understanding of fishermen about personal safety equipment when working on ships is still very minimal so that its application is still difficult for fishermen to apply. Fishermen assume that the use of safety clothing can hinder the activities to be carried out. The self-defense technique known to fishermen is using a life jacket and plunging into the sea.

The suitability value of the competence of pole and line fishermen based on the 1995 STCW-F is presented in Figure 8.

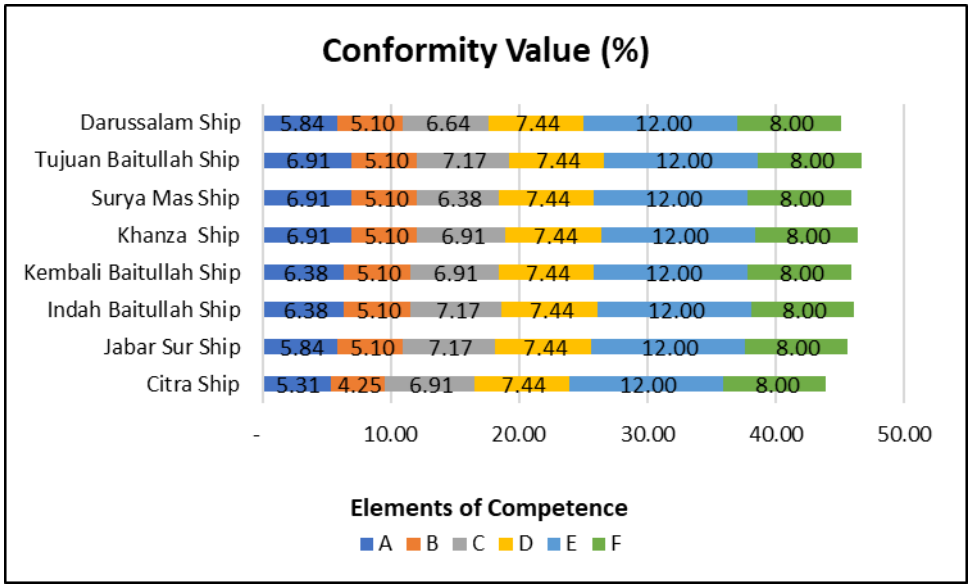

Fig 8. Compatibility of pole and line fishermen with STCW-F 1995

Description of Competency Elements:

A. Knowledge and techniques of self-rescue

B. Fire prevention and suppression

C. Emergency procedures

D. Basics of first aid (first aid in accidents)

E. Marine environment pollution prevention

F. Ship accident prevention

Figure 7 shows that pole and line fishermen are still not suitable (conformity value interval < 50%) to the application of STCW-F 1995 regarding basic level safety competencies for all fishing vessel crews. This is because

fishermen's knowledge of the importance of occupational safety and health on ships has not been understood and applied. Learning about work safety is carried out only with a lot of intensity at sea and information obtained from generation to generation.

The knowledge and understanding of fishermen about personal safety equipment when working on ships is still very minimal so that its application is still difficult for fishermen to apply. Fishermen assume that the use of safety clothing can hinder the activities to be carried out. The self-defense technique known to fishermen is using a life jacket and plunging into the sea.

According to Handayani (2014), human error is the main cause of accidents at sea that lead to death. As many as 80% of marine accidents are caused by human error and other causes are neglect by sea transportation operators and related agencies, as well as inadequate marine transportation safety equipment. Ramli (2010) states that Occupational Health and Safety (K3) is a science and application to prevent work accidents and occupational diseases.

Fishermen's knowledge regarding fire prevention and suppression is still minimal. Fishermen know how to extinguish fires using only water. Exercise The emergency organization of firefighting, chemicals and fire classes, fire extinguishing systems and fire fighting equipment is still unknown to fishermen.

Fire is a disaster caused by a fire. Where the fire disaster certainly causes losses. Fire is a rapid chemical reaction (oxidation) formed from 3 (three) elements, namely: heat, air and fuel that generates or produces heat and light. The fire triangle is the elements that support the occurrence of fire where the elements are heat, fuel and oxygen. However, with these three elements, fires have not occurred and only produce flares (ILO, 2018). APAR is a tube that functions to prevent or help extinguish fires and is also a portable device capable of removing water, foam, gas, or other materials capable of extinguishing fires.

Fishermen's knowledge of emergency procedures is limited to the use of life jackets and large buoys on board. Fishermen's learning relies on information passed down from generation to generation and the intensity of going to sea as experience so that there are no emergency conditions or work accidents on board and ship accidents. Based on the contents of Government Regulation number 5 of 1996 concerning Procedures for Facing Emergency and Disasters, it is stated that every company must have procedures for dealing with emergencies or disasters, which are tested periodically to determine reliability at the time of actual occurrence. Periodic testing of the procedure is carried out by personnel who have work competence, and for installations that have major hazards, they must be coordinated with the relevant authorities. Delivery of the basics of first aid (first aid in accidents) by fishermen, namely the use of minor wound medicine and the use of bandages.

Based on the Law of the Republic of Indonesia Number 1 Year 1970 article 3 paragraph (1), one of the requirements for work safety is to provide first aid for work accidents (P3K). The first aid given must be appropriate and fast because if the treatment given is wrong or inappropriate and fast, the victim's condition will get worse. There are three basic principles that must be carried out by first aid workers. First, action guidelines related to the environmental situation and the patient's condition. Both disorders are common in patients who must be helped. The third is readiness for help in the form of helpers, facilities, and equipment needed (Amarudin et al., 2016).

To prevent pollution of the marine environment, the fishermen explained that they do not throw garbage, oil spills and excess catch into the sea, but instead bury them on land. They realize and understand that if the sea is dirty and polluted, it will result in reduced catches. Income will decrease and affect welfare because their livelihood is obtained from fishing. Fishermen's understanding of the use of small models for the demonstration of signs or lighting, or navigational lighting simulators is also still limited to the use of spotlights or flashlights.

Article 261-265 of the Law of the Republic of Indonesia concerning Shipping explains that the implementation and development of human resources in the shipping sector aims to provide professional, competent, disciplined and responsible human resources and meet national and international standards. Including the management of education/training of human resources in the field of shipping safety and security. The education/training in question can be taken through formal or informal channels. The local government plays a role in providing services and facilities as well as ensuring the implementation of quality education and training in the field of shipping for every citizen without discrimination.

The suitability of the existing fishermen's competency standards in SKNNI (national standards) with international standards (STCW-F 1995)

Basic training and certification in SKKNI 2005-191 and SKKNI 2013-298 regarding the knowledge and competencies that fishermen must have in fishing activities at sea are divided into several competency units, while in STCW-F 1995 the basic competencies that fishermen must have are made into one chapter, namely Chapter III Basic

Safety Training for All Crews of Fishing Vessels. The units and elements of competence in SKKNI 2005-191, SKKNI 2013-298 and STCW-F 1995 are shown in Table 5.

Table 5. Units and elements of competency standards for basic level fishing vessel crew training based on SKKNI 2005-191, SKKNI 2013-298 and STCW-F 1995

Competency Unit	SKKNI 2005-191	Competency Unit	*STCW-F 1995*
1	Application of Rescue Engineering Procedures Self at Sea (PTK.NP02.003.01)	**Resolution 3**	1 Personal survival techniques, including donning of lifejackets and, as appropriate, immersion suits
2	Doing Prevention and Extinguishing Fire (PTK.NP01.008.01)		2 Fire prevention and fire fighting
3	Emergency procedures (PTK.NP01.009.01)		3 Emergency procedures
4	Application of Onboard Medical Services (PRK.NP01.010.01)		4 Elementary first aid
5	Preventing Marine Environmental Pollution (PRK.NP02.013.01)		5 Prevention of marine pollution
6	Manipulating and Controlling the Ship Fisheries (PRK.NP02.007.01)		6 Prevention of shipboard accidents
7	Implementing Occupational Health and Safety onboard (PRK.NP03.002.01)		
	SKKNI 2013-298		
8	Carry out marine guard duties (A.031110.04.01)		

In Table 5, the basic competency units in the 2005-191 SKKNI are divided into 8 competency units. Meanwhile, in 1995 STCW-F became an integral part of the competency unit as a basic level safety training for fishermen. Fishermen in SKKNI must attend 8 trainings to obtain basic level safety knowledge and certificates. Whereas in STCW-F 1995, fishermen only attended 1 training to obtain basic level safety knowledge and certificates.

IV. CONCLUSION

1. Competence of pole and line fishermen based on SKKNI 2005-191 PRK.NP03002.01 concerning Implementing Occupational Safety and Health on Boats in Sikka Regency is not appropriate (conformity value interval < 50 %). This is due to the fact that fishermen's knowledge of the importance of work safety on ships has not been understood. The competence of pole and line fishermen based on the 2013-298 SKKNI concerning the competence of fishermen in terms of catching fish using pole and line in the sea is quite appropriate (interval of suitability value between 50 to < 75 %). The actions of fishermen have been sequential in terms of operating catching using pole and line fishing gear, only fishermen do not use work safety equipment when working on boats.
2. Pole and line fishermen are still not suitable (conformity value interval < 50 %) to the implementation of STCW-F 1995 regarding basic level safety competence for all fishing vessel crews. This is because fishermen's knowledge of the importance of work safety on ships has not been understood and applied.
3. The basic competency units in SKKNI 2005-191 and SKKNI 2013-298 are divided into 8 competency units. Meanwhile, in 1995 STCW-F became an integral part of the competency unit as a basic level safety training.

ACKNOWLEDGEMENTS

1. The need for BST training and training in the operation of pole and line fishing gear according to competency standards in Sikka Regency.
2. The need for further research on the curriculum and work programs of the local government of Sikka Regency and East Nusa Tenggara Province.

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