

# Implementation of Precautionary Principle on Bycatch Management in Indonesian Policy

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## Abstract

Food and Agriculture Organization estimates that around 7 million tons of bycatch discard by the sea. FAO Code of Conduct for Responsible Fisheries require to suppress the number of bycatch and environmental impact from their fishing methods. The precautionary principle proposed as guides in environmental decision making. This research aimed to analysed the precautionary principle to implement for fisheries especially for bycatch management. The research method used is normative juridical research, that is documenting the by catch impact and analyzed suitable with the existing regulations, combined with the legal event occurs and interview with the relevant officials to complete the existing document. The results showed that precautionary principle needed as one of procedures to prevention which should be done before the fishermen fishing. Precautionary principle with four element are taking preventive action in the face of uncertainty; shifting the burden of proof to the proponents of an activity; exploring a wide range of alternatives to possibly harmful actions; and increasing public participation in decision making. The procedure of precaution to keep the environment conserved and with efficient cost should be headed.

**Keywords:** Precautionary principle, bycatch, efficient cost, national policy..

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## 1. Introduction

Bycatch is the phenomenon of the capture of undesirable sea creatures by fishing gear. Fishermen generally spread long and very large nets in the sea to catch fish. The hope is that by spreading large, long nets, fish catches can increase so that income will increase. However, there is a huge effect that was apparently not realized by the fishermen. The effect is the capture of animals that are not the target of capture. Batches can be seals, sharks and seabirds. Usually the animals that are caught are endangered animals, such as sea turtles, dolphins, and even whales. Strategic approaches are needed for stakeholders in overcoming the bycatch problem.

According to the Food and Agriculture Organization of the United Nations (FAO) has recently estimated that nearly 7 million tonnes of fish bycatch is discarded globally by commercial fishermen every year [1]. Of course this is a very big threat to the balance of the marine environment. Strategic approaches are needed for stakeholders in overcoming the bycatch problem.

According to report of Minister of Marine Affairs and Fisheries [2] The study on the effectiveness of cantrang fishing gear has been conducted by research and the results of the study indicate that catches are not selective, the results of the catch are those that have not been caught in catch, and the results of bycatch can be over 50% more. This is the distribution of fishing vessels > 30 GT in Indonesian Fisheries Management Area

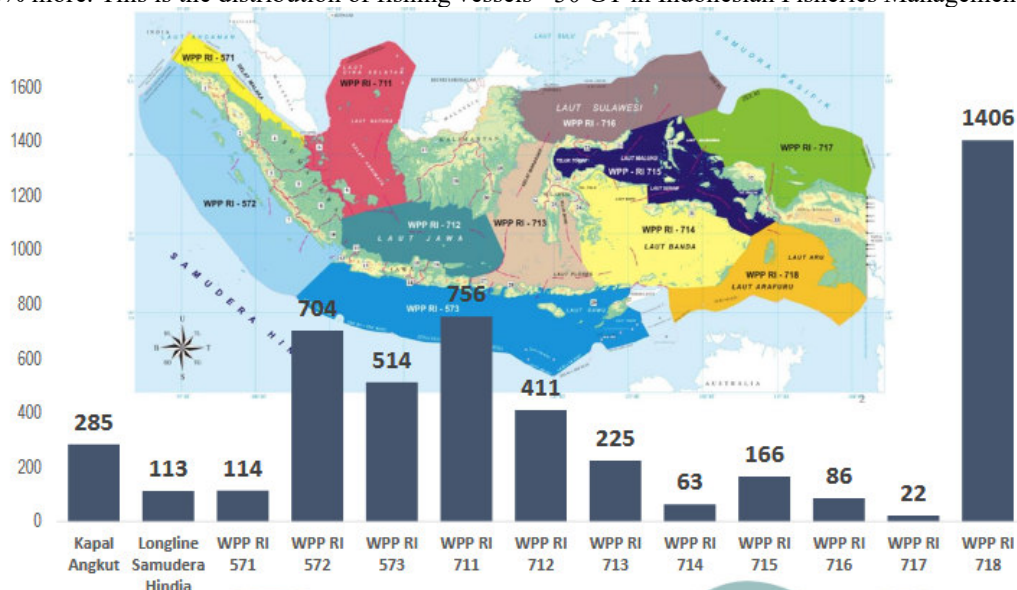


Figure 1. Fisheries Management Area

Data from World Wildlife [3] bycatch also every year, 7,700 sea turtles in Indonesian waters are accidentally killed because they are caught in trawl. In order to cope with the high levels of marine life captured or killed by bycatch, the Government needs to issue more specific regulations regarding bycatch. To minimize bycatch, the Government has indeed limited the types of fishing gear that can be used by fishermen. In addition, there is also the Minister of Marine Affairs and Fisheries Regulation No. PER.12 / MEN / 2012 concerning Capture Fisheries in the High Seas. This Regulation is regulate bycatch results that are ecologically related to tuna fisheries, including sharks, seabirds, sea turtles, marine mammals including whales, and monkey sharks, including reporting. However, there is no clear mechanism for monitoring the results of arrest and bycatch reporting. The Regulation Ministry also has not yet set operational standards for Fishermen if there are protected marine animals caught as a bycatch. Besides improving bycatch regulations, it is also necessary to improve regulations related to the determination of species protection status It is said to be limited, because the protection given to monkey sharks is not in the form of establishing protection status, but the obligation to release a monkey shark caught as a bycatch in a state of life, as stipulated in Ministerial Regulation KP No. 12/2012. Whereas for cowboy sharks and hammerhead sharks, the form of protection is only in the form of a ban on shark export from the territory of the Republic of Indonesia abroad, but there is no arrest prohibition, and the prohibition of shark expenditure abroad has ended on 31 December 2018.

## 2. Method

The research method used is normative juridical research, that is documenting the by catch impact and analyzed suitable with the existing regulations, combined with the legal event occurs and interview with the relevant officials to complete the existing document. From prelementary researchs, that are several results to reduce bycatch, example using artificial bait circle and enlarging the size of the fishing line. The research question is why Indonesia needed a National Bycatch Policy? A National Bycatch Policy is needed because bycatch is an environmental, social, educational, engineering and economic issue and needs to be addressed strategically and in a focused, coordinated manner. It is also important that stakeholders have a common understanding and agreement on the need for action. By achieving a common understanding, support for addressing bycatch at the level of the individual fishery can follow. Stakeholders will have a role in ensuring that action taken to reduce bycatch will have achievable objectives, and can be implemented in reasonable time frames. The Policy recognises that there will be different ways of addressing the bycatch issue for different fishing activities. In some fisheries, fishery-specific bycatch action plans will be developed. In others, different mechanisms may be used e.g. by incorporating specific measures into management plans. Actions will be prepared in consultation with stakeholders. The Policy provides a framework for the development of such actions.

## 3. Result and Discussion

### The Concept of the Precautionary Principle

One of the primary foundations of the precautionary principle and globally accepted definition from Principle 11 World Charter for Nature 1982, [4] stated "*Activities which might have an impact on nature shall be controlled and the best available technologies that minimize significant risk to nature or other adverse effects shall be used; in particular: (a) Activities which are likely to cause irreversible damage to nature shall be avoided; (b) Activities which are likely to poses a significant risk to nature shall be preceded by an exhaustive examination; their proponents shall demonstrate that expected benefits outweigh potential damage to nature, and where potential adverse effects are not fully understood, the activities should not proceed; (c) Activities which may disturb nature shall be preceded by assessment of their consequences, and environmental impact studies of development projects shall be conducted sufficiently in advance, and if they are to be undertaken, such activities shall be planned and carried out so as to minimize potential adverse effects; (d) Agriculture, grazing, forestry and fisheries practices shall be adapted to the natural characteristics and constraints of given areas; (e) Areas degraded by human activities shall be rehabilitated for purposes in accord with their natural potential and compatible with the well-being of affected populations.*"

Underlying concept of general framework of the precautionary principle as reflected in principle 15 of the Rio Declaration of 1992, which provides that: "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation". (Phillip Sands, 2003:268) Central to principle 15 is the element of anticipation, reflecting a requirement that effective environmental measures need to be based upon actions which take a long-term approach and which might anticipate changes on the basis of scientific knowledge. If we looks of the main objective of the precautionary principle is to prevent the resources degradation in protect environment resources, as well as to recuperate the impoverished resources, so that they could be available for use by both present generations and future ones. Nevertheless, we have to apply the precautionary principle not only to the resource itself, but we also have to take into consideration the legal consequences of the measures to

be applied, since a modern fisheries management and conservation are based on the idea that any national action plan must take into implementation in national levels.

The Precautionary principle on bycatch management may combine a variety approach as follows : Adopting the sustainable development principle, adopting the principle of precautionary management, using the best scientific evidence available, agreeing on acceptable levels of impacts, improving management response time, and strengthening monitoring, control and surveillance. Governments must implement Surveillance and controlling activity, intended to ensure standard implementation of input and output control in order to manage fishing activity. They have a duty to evaluate fishing vessels and fishing gears (detail design, fishing vessel suitability, fishing gears suitability, fishing vessels registration, crew of fishing vessel, monitoring and calculate fishing vessel productivity, evaluate fishing port development (redesign fishing port development, fishing port development requirement, fishing port operational standard, controlling fishing port development)

Learned from Australia policy [5], bycatch species are further defined as: general bycatch species that are never retained for sale and not protected (i.e. species of fish, including most sharks and invertebrates as defined in the Fisheries Management Act 1991. Fisheries Management Authority (AFMA) protected species which include Protected species (listed threatened species i.e. vulnerable, endangered or critically endangered), conservation dependent species, cetaceans, listed migratory species and other listed marine species.

The Strategy aims to achieve more consistency, transparency and practicality to bycatch management and improved monitoring and reporting of bycatch interactions in Commonwealth fisheries. This strategy an operational document and has been developed to provide accountability to the fishing industry and the broader public on the role of AFMA in the mitigation of bycatch in Commonwealth fisheries. This strategy will be reviewed every five years or as required due to critical changes in legislation, fishery triggers or other emerging bycatch issues. The review process will include consultation with fisheries managers, industry, fishery and protected species advisory groups, and will be published on the AFMA website. Implementation of Precautionary Principle on Bycatch management in Australia.

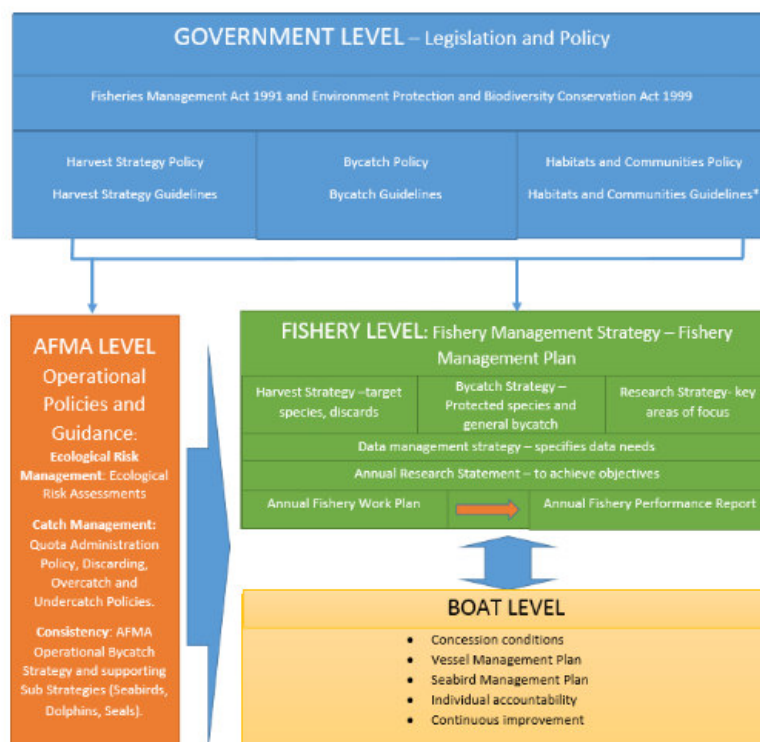


Figure 2. AFMA strategy and policy

This Strategy establishes guiding principles that AFMA will use in identifying bycatch issues in order to minimise and avoid bycatch of protected and general species. These principles have been developed to provide a consistent approach to management decisions while remaining flexible enough to tailor these decisions and responses for different gear types, spatial and temporal variations and degree of risk identified in the ecological risk assessment for the fishery. The five guiding principles are: Principle 1. Management responses are proportionate to the conservation status of bycatch species and Ecological Risk Assessment results; Principle 2. Consistency with Government Policy and legislative objectives (including to avoid and minimise) and existing national protected species management strategies such as the threat abatement plan and national plans of action; Principle 3. Incentives should encourage industry-led solutions to minimise bycatch of protected species utilising

an individual accountability approach; Principle 4. Accounting for cumulative impact of Commonwealth Fisheries on protected species when making management decisions on mitigation; Principle 5. Appropriate and consistent monitoring and reporting arrangements across fisheries. AFMA Management will ensure that any management response or mitigation measure to bycatch interactions will be consistent with these principles. In line with sustainability objectives AFMA will minimise and reduce bycatch as identified through AFMA's Ecological Risk Assessment process. In addition AFMA will pursue a reduction in bycatch where it is cost effective to do so. In these instances a reduction in bycatch may improve crew safety and or increase product quality. In addition to ensuring compliance of bycatch management measures and responses with the above principles, the following describe actions AFMA will take to reduce bycatch. These actions will guide the development of annual deliverables which will be identified in the bycatch section of each fishery's individual Fishery Management Strategy (FMS). This will provide a structured approach for identifying cross fishery and fishery specific projects. The FMS will also incorporate performance measures for assessment purposes and to demonstrate performance against the principles of this bycatch strategy

### Indonesian Policy to Reduction Bycatch

The reason for a National Bycatch Policy is to ensure that direct and indirect impacts on aquatic systems are taken into account in the development and implementation of fisheries management regimes. Implementation of the precautionary principle [6] the fishing sector became established as a reaction in general situation of world fish stocks to guarantee the sustainability of the exploitations. This paper tries to stress the implementation of the precautionary principle to application in Indonesia's legal framework of fisheries with compatibility before implementation in national level. In Indonesia formally found adoption of the precautionary principle to the legal framework of national fisheries policy especially bycatch management.

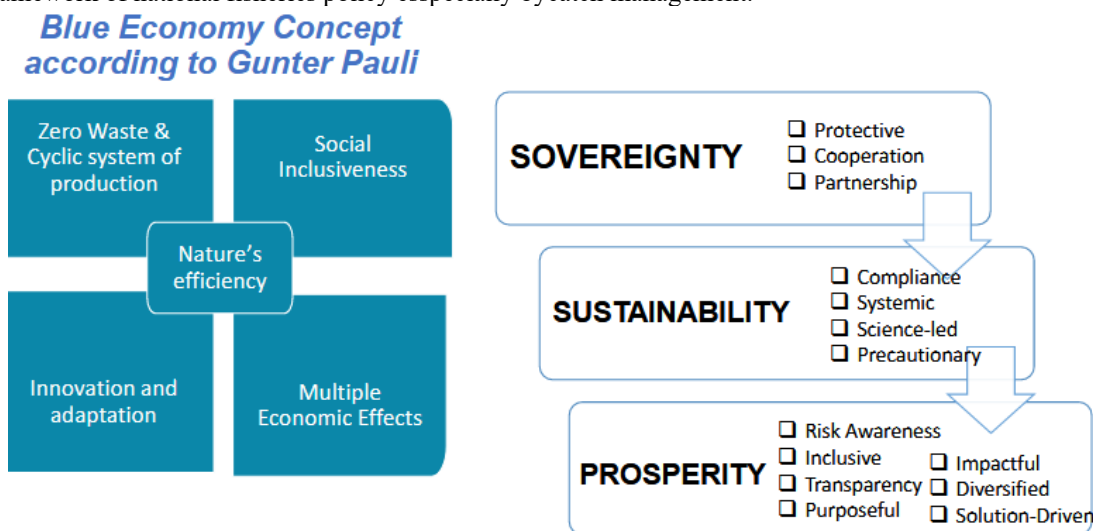


Figure 3. Blue Economy Concept harmonizing with precautionary principle

Blue Economy concept by Gunter Pauli [7] is harmonizing with precautionary principle to reduce bycatch. Bycatch management taking some mitigate any excessive catches that are over the capacity and making sure that the level of catches will not be more than the sustainable exploitation of fish resources. This is reflected in several regulations as follow.

- a. Act No 31 year 2004 as amended by Act No. 45 year 2009 Regarding Fishery
- b. Marine and Fishery Ministerial Regulation No. PER. 10/MEN/2013 Regarding Vessels Monitoring System.
- c. Marine and Fishery Ministerial Regulation No. 48/PERMEN-KP/2014 on log book. Log book application systems was developed since 2012;
- d. Marine and Fishery Ministerial Regulation No 2/PERMEN-KP/2015 Regarding the Prohibition of Using Trawls and Seine Nets in the Fisheries Management Area of the Republic of Indonesia[8]
- e. Circular of the Director General of Capture Fisheries. Minister of Marine Affairs and Fisheries Number B.743 / DJPT / PI.220 / VII / 2017 concerning the Assistance of Transfers of Trawler and Trawler Fishing Equipment in the Fisheries Management Area of the Republic of Indonesia; [9]
- f. Currently, E-monitoring through log book is being developed for vessels above 30 GT and will be trialed in September 2018 for vessel operated in Bitung, Indonesia.

The Precautionary Principle should be analyzed with compatibility rule before implementation in national level. Government might publish a gradually the information related to the steps of the reduce bycatch of fish

resources with precautionary principle.

#### 4. Conclusion

The precautionary principle proposed as guides in environmental decision making. This research aimed to analysed the precautionary principle to implement for fisheries especially for bycatch management. The precautionary principle needed as one of procedures to prevention which should be done before the fishermen fishing. Precautionary principle with four element are taking preventive action in the face of uncertainty; shifting the burden of proof to the proponents of an activity; exploring a wide range of alternatives to possibly harmful actions; and increasing public participation in decision making. The procedure of precaution to keep the environment conserved and with efficient cost should be headed. The Precautionary Principle should be analyzed with compatibility rule before implementation in national level. Government might publish a gradually the information related to the steps of the reduce bycatch of fish resources. There should be more research on precautionary principle especially on its complexity of legal instrument in fisheries management and conservation. Currently, the application of precautionary principle must be implement in national action plan as state obligation.

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