



## MULTISPECIES FISHERY ASSESSMENT REPORT

<b>Fishery Under Assessment</b>	Ba Ria / Vung Tau Mixed Trawl
<b>Date</b>	July 2021
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Application details and summary of the assessment outcome			
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<b>Assessor Name</b>	<b>Peer Reviewer</b>	<b>Assessment Days</b>	<b>Initial/Surveillance/Re-approval</b>
Vu Viet Ha TRAN Van Cuong MAI Cong Nhuan HOANG Minh Tung Sam PEACOCK NGUYEN Kim Thanh	Not applicable	30 days	Initial
<b>Assessment Period</b>	2018 – 2021		
Scope Details			
<b>Management Authority (Country/State)</b>		Ba Ria – Vung Tau Province	
<b>Main Species</b>		1. Bigeye scad – <i>Selar crumenophthalmus</i> 2. Greater lizardfish – <i>Saurida tumbil</i> 3. Blunt-nose lizardfish – <i>Trachinocephalus myops</i> 4. Yellowtail scad – <i>Atule mate</i> 5. Sulphur goatfish – <i>Upeneus sulphureus</i>	
<b>Fishery Location</b>		Southeast Area of Vietnam (the coastal waters, inshore waters under administration of Ba Ria - Vung Tau province) and waters from the inshore route to the outer boundary (offshore) of Vietnam's exclusive economic zone (EEZ) FAO fishing region 71	
<b>Gear Type(s)</b>		Otter trawl, Pair Trawl	

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## Assessment process

This assessment was conducted by a team of assessors with different expertises from RESEARCH INSTITUTE OF MARINE FISHERIES (with experts in Marine Fisheries Resources and conducted many relevant researches for Ministry of Agriculture and Rural Development of Vietnam), NHA TRANG UNIVERSITY (a Fishery Management lecturer and also the key coordinator of Vietnam Tuna FIP by Tuna Association of Vietnam), KIM DELTA T&C (with an expert in certification assessment reporting) and RS Standards (MarinTrust approved assessor).

The assessment process has involved different stakeholders, including People's Committee of Ba Ria - Vung Tau province, provincial Department of Agriculture and Rural Development, especially support from BRVT sub Department of Fisheries for dialogues with fishermen (vessel owners) and landing port authorities. The BRVT Fishmeal & Fish Oil Association has properly played their role of facilitator in engaging provincial authorities, fishmeal companies in BRVT, fishermen and feed companies.



*Dialogue: FIP's members and fishermen and Sub-DOF, 2016*



*Dialogue: FIP's members and fishermen and Sub-DOF, 2017*



*Dialogue: FIP's members and Sub-DOF, 2020*



*Training about Fisheries Law 2017 with landing port authorities*

*Figure 1: Assessment process has involved different stakeholders*

### Summary of Section 1 results

General Clause	Outcome (Pass/Gap)
M1 – Legislation, policy and plans	Gap
M2 – Institutions and stakeholder engagement	Gap
M3 – Monitoring, control and surveillance	Gap

### Summary of Section 2 fishery risk ratings

	Very Low (0-20)	Low (21-40)	Moderate (41-60)	High (61-80)	Very High (81-100)
Catch – Part A				68	
Catch – Part B					92
ETPs*					84
Habitats					84
Ecosystems					100

\*ETP = endangered, threatened and protected species

## Initial screening

	Pass /Fail
<p><b>1. Defined unit of application</b></p> <p>a. <u>An organisation within whose jurisdiction the fishery falls</u>: according to Vietnam Fisheries Law 2017, Chapter 8, article 102, the fishery covered by this Unit of Assessment (UoA) is under jurisdiction of People's Committee of Ba Ria - Vung Tau province.</p> <p>b.</p> <ul style="list-style-type: none"> <li>- <u>Information on catch composition – at a minimum</u>: the independent fisheries survey conducted by RIMF using the bottom trawl in August 2018 indicated 372 species belonging to 111 families whereas 21 species contributed from 1% to the total survey catch. The dominant species were Brushtooth lizardfish (14.6%), Blunt-nose lizardfish (5.3%) and Mitre squid (5.1%). Observed on boat fishing vessel of BRVT trawlers in 2015-2016 by RIMF identified 232 species in 70 families (Appendix 1), in which the dominant species of the otter trawl were Whiskered velvet (18.7%), Blunt-nose lizardfish (11.2%), Horn dragonet (7.1%); Loligo squids (6.5%); Brushtooth lizardfish (5.6%); Greater lizardfish (3.2%); Southern velvet shrimp (2.5%) and of the pair trawl were Bigeye scad (17.1%); Blunt-nose lizardfish (13.6%), Yellowtail scad (12.1%); Goldband fusilier (10.5%); Sulphur goatfish (9.1%); Moonfish (8.4%); and other goatfish (3.9%).</li> <li>- <u>An estimate of magnitude of the total catch</u>: 450,464 tons (by RIMF, year 2019-2020)</li> <li>- <u>A description of the species or groups of species regularly caught</u>: demersal resources, including Greater lizardfish (<i>Saurida tumbil</i>), Blunt-nose lizardfish (<i>Trachinocephalus myops</i>), Sulphur goatfish (<i>Upeneus sulphureus</i>), Bigeye scad (<i>Selar crumenophthalmus</i>) and Yellowtail scad (<i>Atule mate</i>)</li> </ul> <p>c. <u>An estimation of the scale of the fishery, geographical location, and number and size of vessels</u>: The Report No.167/BC-CCTS dated December 10, 2020 by The Provincial Department of Fisheries (Sub-DOF) of BRVT indicates that as of December 2020, the number of trawl fishing vessels operating in the province is 1538 unit, with maximum length above 15m. Geographical location is Southeast Area of Vietnam (the coastal waters, inshore waters under jurisdiction of Ba Ria - Vung Tau province) and waters from the inshore route to the outer boundary (offshore) of Vietnam's exclusive economic zone (EEZ) FAO fishing region 71.</p> <p>d. <u>Information on the gear type(s) used</u>: Otter trawl, Pair trawl</p>	PASS
<p><b>2. Organized framework for compliance and enforcement</b></p> <p>State administration of fisheries according to Article 101, Chapter 8 of the Fisheries Law 2017:</p>	PASS



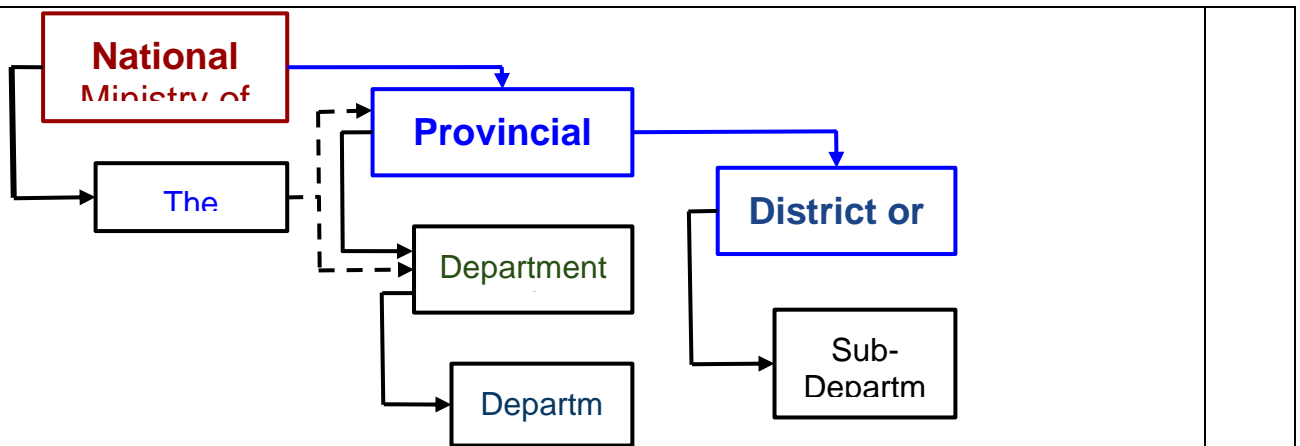


Illustration 1: State administration of fisheries

Fisheries management system according to Decree 15/2017/ND-CP dated February 17, 2017

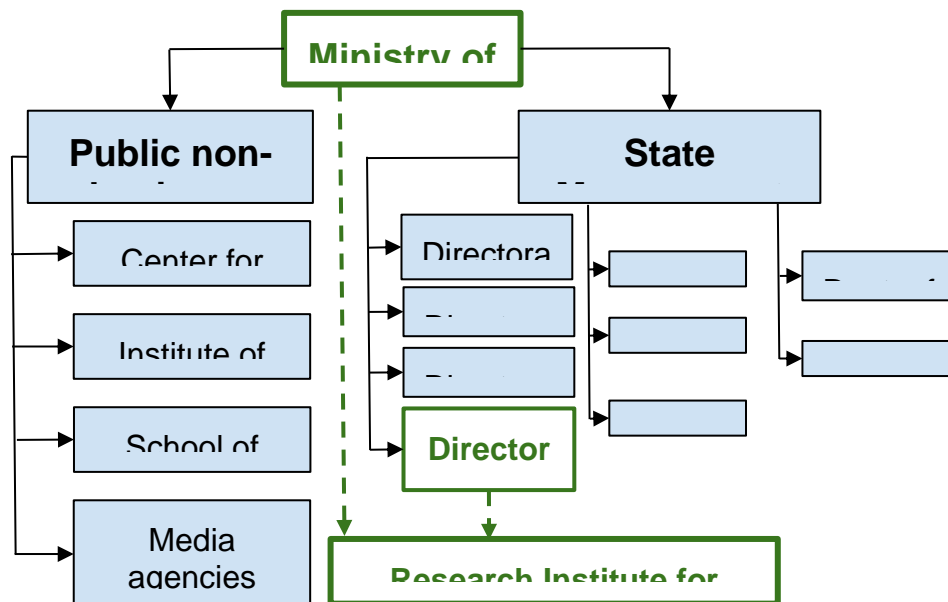


Illustration 2: Organisation structure of Vietnam Fisheries management system

### 3. No dynamiting, poisoning or other comparable destructive fishing

Article 7, Chapter 1 of the Fisheries Law 2017 about 'Prohibited actions in fishery activities' defines as following (only relevant requirements are listed):

- Destruction of aquatic resources, aquatic ecosystem, reproductive areas, areas where offspring live and residence of aquatic species.
- Obstruction of natural migration patterns of aquatic species.
- Encroachment of or damage to protected zones of aquatic resources and MPAs.
- Catching of aquatic products, aquaculture and construction and other activities that affect the living environment and aquatic resources in subdivisions under strict protection and subdivisions of ecological recovery of MPAs.
- Illegal operation of commercial fishing vessels and other watercraft in subdivisions under strict protection of MPAs except for force majeure.

PASS

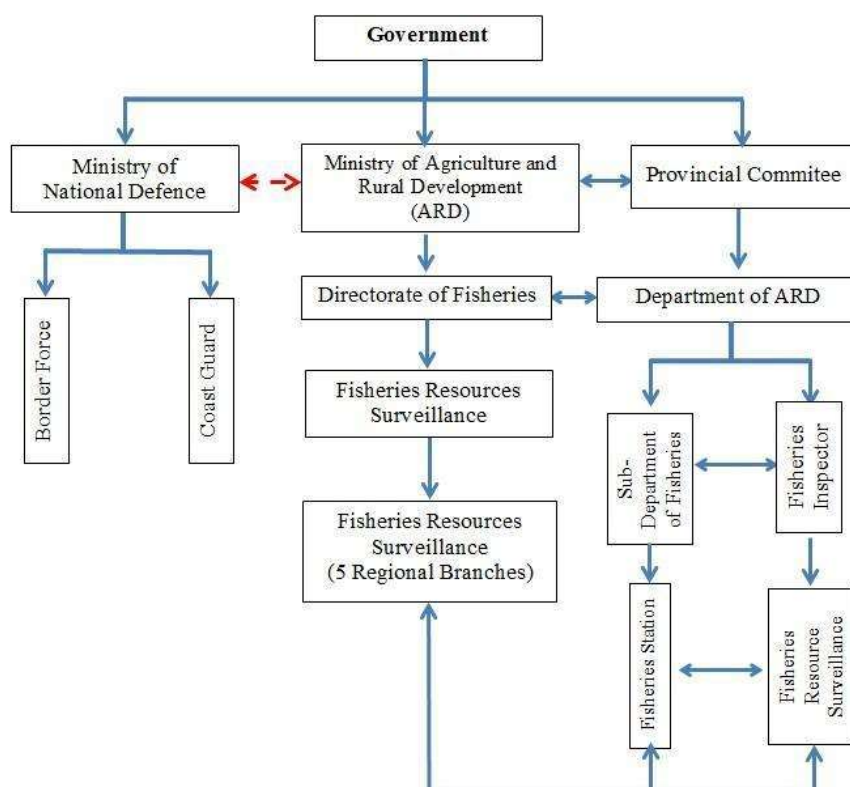


<ul style="list-style-type: none"> <li>- Use of banned substances or chemicals, toxins, explosives, electric impulses, electric currents, destructive methods, means and fishing tackle for exploiting aquatic resources.</li> <li>- Throwing the fishing tackle in natural waters, except for force majeure.</li> </ul>	
<p><b>4. Not directly target endangered, threatened or protected (ETP) species:</b></p> <p>Qualitative information is adequate to estimate the impact of the UoA on ETP species and to support measures to manage impacts trawl fisheries in BRVT on ETP species. A comprehensive assessment is not yet carried out.</p>	Fail
<p><b>5. ETP species not used in the manufacture of fish meal or fish oil:</b></p> <p>The list of ETP species observed by RIMF is not communicated with fishmeal producers in BRVT, and fishmeal producers have not developed a responsible sourcing of incoming raw fish policy yet.</p>	Fail
<p><b>6. Not carry out shark finning at sea (removal of fins and discarding of body):</b></p> <p>There is not any case of shark finning at sea conducted by Vietnamese fleet reported so far.</p>	PASS

## Characteristics of the fishery of Ba Ria – Vung Tau Trawl Fishery

### Fishery structure and management

The fisheries management in Vietnam is the responsibility of the Ministry of Agriculture and Rural Development (MARD). Under the MARD, the Directorate of Fisheries (DOF) is the central fisheries management organization (Declaration No.27/2017/QĐ-TTg) and Research Institute for Marine Fisheries (RIMF) is a research institution established in 1961, responsible for fisheries research, fish stock assessment and marine fisheries protection and conservation (Decision No.466/QĐ-BNN-TCCB) supporting the scientific information for fisheries management. Fisheries management structure in Vietnam is indicated in Figure 2.



*Illustration 3: Fisheries management structure in Vietnam.*

To minimise the impact of fishing activities on fisheries resources, habitat and ecosystem, Clause 1 Article 48 of the Law on Fisheries 2017 pointed out the “Zoning for fishing activities”. Decree 26/2019/ND-CP clarified that the Vietnam’s waters shall be divided into 3 fishing zones (Figure 2) as follows:

1. Coastal zone, which is delimited by the waterline along the coast and coastal route. Regarding an island, coast zone is the waters extending up to 06 nautical miles from the average line of tide in multiple years around the coast of the island;
2. Inshore zone, which is delimited by the coastal route and inshore route;
3. Offshore zone, which is delimited by the inshore route and outer boundary of the exclusive economic zone of Vietnam's waters.

The central government is responsible for fisheries management, fisheries resources survey and investigation in the whole EEZ of Vietnam whilst at the local level, the Provincial Department of Agriculture and Rural Development has been tasked with the fisheries management for the inshore and coastal zones.

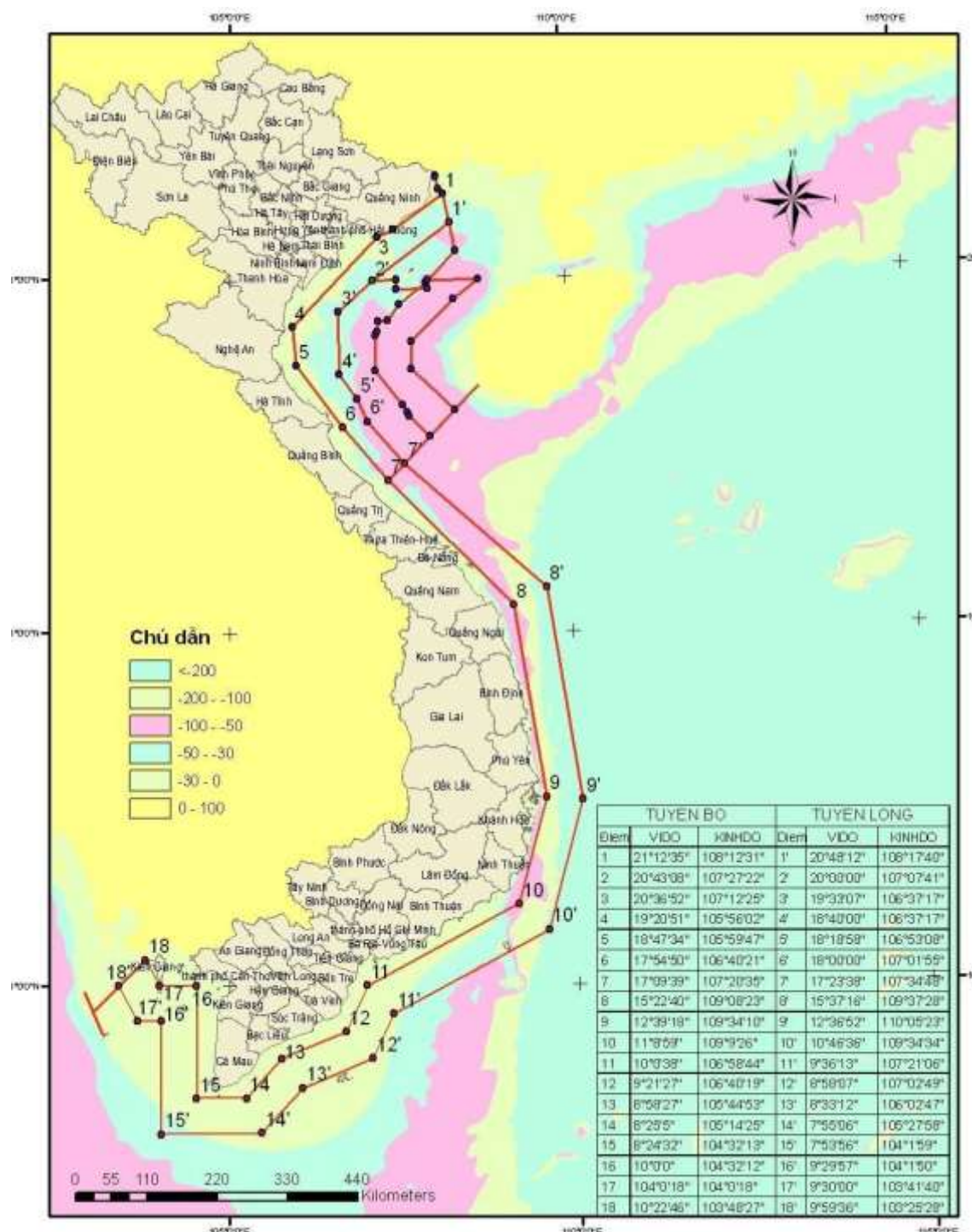


Figure 2: Zoning for fishing activities in Vietnam by Decree 26/2019/ND-CP

This application concerns the bottom trawl component of the Ba Ria-Vung Tau (BRVT) province fishery. Ba Ria-Vung Tau province is located in the Southeast (SE) region of Vietnam, and includes an area of



the mainland near Ho Chi Minh City but also the Con Dao islands some distance off Vietnam's south-eastern coast.



*Figure 3: Location of the Ba Ria-Vung Tau bottom trawl fishery off the coast of Vietnam in 2015 and 2016<sup>1</sup>.*

Fisheries in Vietnam in general and particularly in BRVT bears multi-species and multi-fishing gear characteristics. Trawl activity occurs in the SE region, primarily around the Con Dao islands and further offshore. Otter trawling occurs mainly at night, whereas pair trawling occurs at all times of day and night.

Official statistics indicated a total of 109,748 fishing vessels in Vietnam in 2017, of which BRVT province contributed 5.73% (6,284 fishing units) to the total number of fishing vessels in the country.

<sup>1</sup> Map provided by Dr Vu Viet Ha, January 2018

Trawlers are dominant in BRVT comprising 27-30 % in total number of fishing units (1,576 – 1,925 fishing boats) with total catch estimated at 260-450 thousand tons per year in the period 2015-2019. Overfishing is a challenge not only in the SE region where BRVT trawl fisheries occur but also in the whole EEZ of Vietnam. Presently, the main faced issues in trawl fisheries in general are:

- Fisheries resources in the coastal water have been overfished
- Conflicts among and within fisheries significantly increased
- Big trawlers fishing in coastal and inshore waters and catching more juvenile fish
- No selectivity, trawl fisheries catch species, no by-catch
- Insufficient information on catch composition, species composition and size of species caught
- Poor complement of fisheries management measures, no harvest strategy, no harvest control rules.

### Catch volume

The precise scale of the BRVT bottom trawl fishery is unclear, with one source reporting a total of 6,277 licenced fishing vessels using all gear types, catching a little under 300,000 tons in 2016<sup>2</sup>; while annual landings estimated from logbook data conducted by Research Institute for Marine Fisheries (RIMF) and Directorate of Fisheries (DOF) was about 340,000 tons in 2014-2015, dropped to 259,000 tons in 2016-2017 and increased to 450,000 tons in 2019-2020<sup>3</sup>.

One potential source of discrepancy is that a substantial proportion of landings are categorised as 'trash fish', a term which refers to catch which is of low economic value, frequently poor quality and often not identified to the species level. The 2014/15 data indicates around 80,000t of trash fish in the BRVT trawl fishery (approximately 24% of total landings)<sup>2</sup>. The General Statistics Office of Vietnam places the proportion of trash fish across the Southeast region at 39.2% in otter trawls and 51.5% in pair trawls; the same data show proportions of trash fish as high as 96% in Southwest regional otter trawls<sup>4</sup>.

### Catch composition

Information on the species caught by the BRVT trawl fishery is also varied. The degree of granularity varies from the highly specific (i.e. down to the species level) to almost non-existent (around 22% of landings in 2015 were categorised as 'other fish' and 6% 'selected fish'; when combined with the 'trash fish' category this leaves more than half the catch unidentified).

Overall, 109 species or groups of species are identified in the Research Institute for Marine Fisheries (RIMF) data<sup>2</sup>; some other sources indicate over 300<sup>5</sup>. However, due to the grouping of many species together, the actual number of species being landed is likely to be substantially greater than 300. One report indicates there may be as many as 2,080 fish species in Vietnamese waters<sup>6</sup>.

<sup>2</sup> DoF news report, "Ba Ria-Vung Tau towards sustainable capture fisheries":

<https://tongcucchuysan.gov.vn/en-us/vietnam-fisheries/doc-tin/007461/2017-04-10/ba-ria-vung-tau-towards-the-sustainable-capture-fisheries>

<sup>3</sup> RIMF data provided via email by Dr Vu Viet Ha, January 2018.

<sup>4</sup> GSOV landings statistics provided via email by Kim Thanh Nguyen, March 2018

<sup>5</sup> Catch composition data provided via email by Dr Vu Viet Ha, January 2018

<sup>6</sup> National Report on bycatch management and reduction of discards, RIMF. [http://www.rebyc-cti.org/downloads/doc\\_download/53-vietnam-national-report-on-bycatch-management-and-reduction-of-discard](http://www.rebyc-cti.org/downloads/doc_download/53-vietnam-national-report-on-bycatch-management-and-reduction-of-discard)

The independent fisheries survey conducted by RIMF using the bottom trawl in August 2018 indicated 372 species belonging to 111 families whereas 21 species contributed from 1% to the total survey catch and the dominant species were Brushtooth lizardfish (14.6%), Blunt-nose lizardfish (5.3%) and Mitre squid (5.1%). Observed on boat fishing vessels in 2015-2016 by RIMF identified 232 species in 70 families, in which the dominant species of the otter trawl were whiskered velvet (18.7%), blunt-nose lizardfish (11.2%), horn dragonet (7.1%); *Loligo* squids (6.5%); brushtooth lizardfish (5.6%); greater lizardfish (3.2%); southern velvet shrimp (2.5%) and of the pair trawl were bigeye scad (17.1%); blunt-nose lizardfish (13.6%), yellowtail scad (12.1%); goldband fusilier (10.5%); sulphur goatfish (9.1%); moonfish (8.4%); and other goatfish (3.9%). The substantial differences between the two data sources are indicative of the challenges associated with characterising the catch composition in the fishery, which not only changes based on season and location, but also from year to year and survey to survey. Additionally, even when sampled by experts many species can only be identified to genus or family level.

## Data Collection

Fisheries managers in Vietnam were advised to apply the adaptive fisheries management approach<sup>7</sup>. Resource and ecosystem indicators are used to estimate the trends of fisheries resources, whilst fleet indicators are used to evaluate the fisheries activities. The comprehensive surveys for fisheries resources status supporting the fisheries management in Vietnam were carried out by RIMF since 2000 covering the EEZ of Vietnam, with support from DANIDA for a period from 2000-2005. After a gap from 2006 to 2010, the surveys have been reconducted since 2011 by the Decision No.47/2006/QĐ-TTg dated March 1<sup>st</sup> 2006 of Prime Minister on the approval of the Master Project on the basic survey and management of marine natural resources and environment toward 2010, vision 2020. The survey stations for the certain fisheries resources group are presented in Figure 1. Independent fisheries surveys in Vietnam indicated that the average biomass of fishes and invertebrates in EZZ of Vietnam was 5.07 million tons for a period 2000-2005<sup>8</sup> and 4.36 million tons during 2011-2015<sup>9</sup>. In the Southeast waters, the 5-year average biomass was quite stable and estimated at 1.08 and 1.12 million tons for periods 2000-2005 and 2011-2015, respectively. However, the quality of fisheries resources was changed with the increasing CPUE of the low value species and decreasing of the economically important species.

<sup>7</sup> <https://doi.org/10.1016/j.marpol.2006.05.013>

<sup>8</sup> Dao MS, Vu VH, Dang VT, Nguyen VN, Bach VH and Mai CN (2009). Marine fisheries resources in the sea of Vietnam in the period 2000-2005, page: 174-186. Proceeding of National Conference on Marine Biology and sustainable development. Science and Technology Publishing House

<sup>9</sup> Nguyen VN and Vu VH (2016). Trends of the Marine Fisheries Resources in the sea of Vietnam. Science and Technology Journal of Agriculture and Rural Development. Nov 2016, page: 26-37.



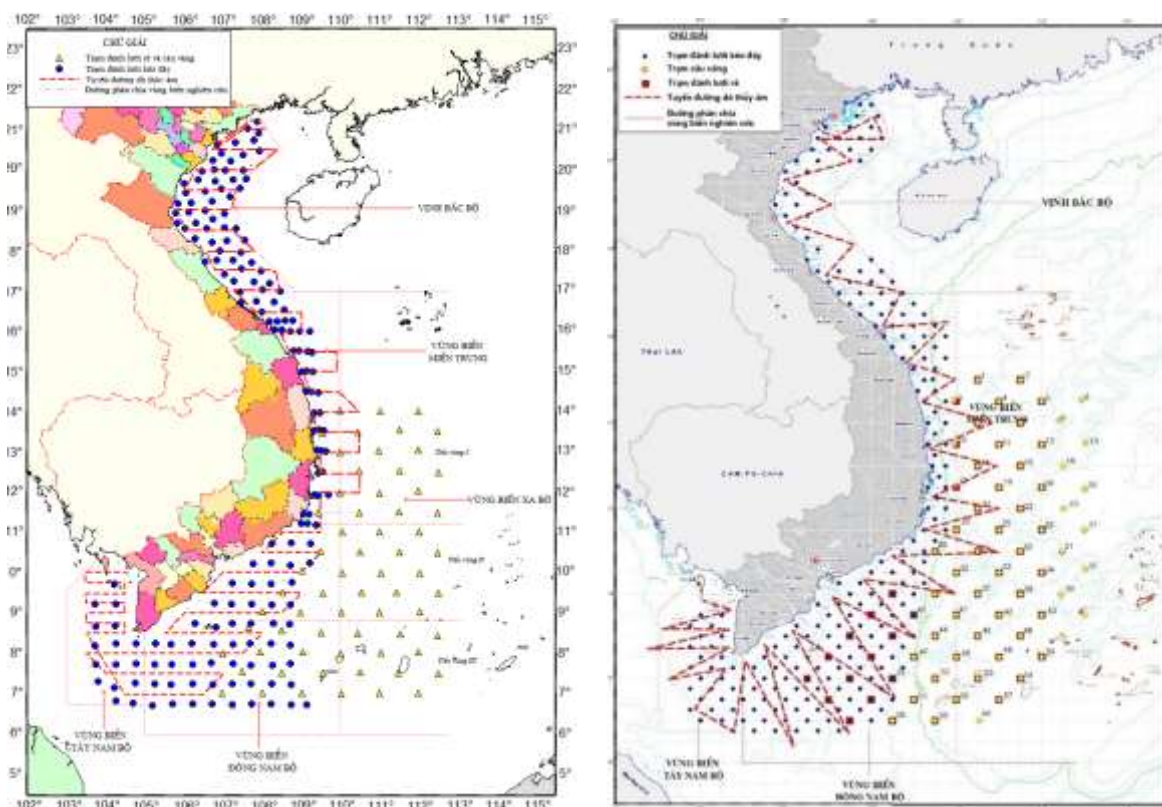


Figure 4: The maps show the fixed survey stations in the EEZ of Vietnam for the demersal fisheries resources (point), large pelagic fish resources (triangle and square dots) and the acoustics transect for small pelagic fish resources (dash line) in periods 2000-2005 (on the left) and 2011-2020 (on the right).

Commercial fisheries data were collected comprehensively in all 28 coastal provinces of Vietnam since 2014 under the cooperation between RIMF, DOF and Provincial Department of Fisheries. The trip-based logbook approach was applied to sample the catch and effort data as well as fishing grounds, catch composition, number of fishing days at sea. Overview of commercial fisheries data survey was discussed by Vu Viet Ha 2018<sup>10</sup>.

## Objectives for the fishery

General objectives for fisheries at national level focus on 4 issues:

1. Upgrading of fishery infrastructure investment: fisheries centers, fishing ports, fishery database and statistical system.
2. Programs for protection and development of aquatic resources: fisheries resources, habitats of aquatic species, aquatic resource databases, co-management of aquatic resources and funds for aquatic resource protection and development.
3. Program sustainable fishing development: restructure fishing vessels, compatibility of trades and stock of fishery resources and fishing grounds, safety for people and fishing vessels at sea, monitoring and surveillance systems for marine fishing activities.
4. Projects on improvement of fishery state management capacity: the system of fisheries surveillance.

<sup>10</sup> Vu VH (2018). Discussion on Marine Capture Fisheries Survey in Vietnam. Vietnam Journal of Marine Science and Technology, Vol 18, No 1: 52-59. DOI <https://doi.org/10.15625/1859-3097/18/1/8663>



At provincial level, People's Committee of Ba Ria - Vung Tau gives priority to:

1. Control exploitation of marine resources within the resilience of marine ecosystems by restructure fisheries: shifting coastal fishing to inshore and offshore fishing, focus on high economic value seafood, reducing the number of fishing vessels, especially trawl fishing vessels; information about aquatic resources in coastal and inshore areas in the province.
2. Upgrading fishing ports and logistics: information on catch composition, species composition and size of species caught; control rooms at landing ports for vessel tracking.
3. Completing the fishing vessel information system.
4. Developing co-management models of coastal fisheries.

It seems that BRVT wants to minimise trawl fishing activities within its jurisdiction, however, specific objectives for trawl fisheries are not set up yet.

### Current status of the fishery resources, ETPs, habitats and the ecosystem

Information about current status of the fishery resources, ETPs, habitats and the ecosystem is not available.

### Conclusion

From the assessment results, it can be said that the information needed to enable assessment of the sustainability and impact of trawling in BRVT province on the environment is incomplete. High priorities for the next phase of FIP Vung Tau are identified, including the multi-species stock assessment methodology, the stock assessment for other species of trawl fisheries in BRVT, fishery related data collection frameworks, assessments of ETP species and Vulnerable Marine Ecosystems. Outcomes of such works need to be communicated and discussed with authorities at provincial level so that recommendations can be incorporated in the provincial fishery management plan.

## Section 1 – Management/governance framework

*This section considers the legislation, policy and planning (M1); management frameworks (M2); and monitoring, control and surveillance mechanisms (M3) in place in the fishery. The Fishery Action Plan (FAP) should include improvements which work towards meeting all of the requirements in this section.*

### M1 Legislation, policy and plans

Legislation, policy and plans			
M1	M1.1	The fishery is covered by modern comprehensive legislation that includes primary legislation (law and acts) and subsidiary legislation (rules and regulations).	Pass
	M1.2	The legislation is based on relevant international law, instruments and standards.	Pass
	M1.3	The legislation and/or overarching policies outline the overall broad objectives for the fishery (ecological, social and economic).	Pass
	M1.4	The legislation legally empowers the responsible organisations to manage the fishery, including undertaking monitoring, control and surveillance and implementing management actions.	Pass
	M1.5	The policies and plans publicly commit the fisheries management organisations to sustainable development of the fishery (sustainability).	Pass
	M1.6	The legislation and national policies include arrangements for stakeholder engagement and consultation.	Pass
	M1.7	The fishery has an up-to-date fisheries management plan (or is linked to such a plan) that incorporates the main principles of the ecosystem approach to fisheries, covering the ecological, social and economic dimensions of sustainable development.	Gap
	M1.8	The fishery management plan specifies goals and operational objectives.	Gap
	M1.9	The fishery management plan outlines the roles and responsibilities of the different fishery management and partner organisations.000	Gap
<b>M1 outcome:</b>			<b>GAP</b>
<b>Evidence:</b>			
<p><b>M1.1:</b> <i>The fishery is covered by modern comprehensive legislation that includes primary legislation (law and acts) and subsidiary legislation (rules and regulations).</i></p> <p>The foundational fisheries legislation of Vietnam is the Fisheries Law No.18/2017/QH14 which effected on January 1st, 2019. The Vietnam Fisheries Laws have 9 Chapters. Below are chapters relevant to fishery management:</p> <ul style="list-style-type: none"> <li>- Chapter 1 about General provisions stipulates Ownership of aquatic resources, Principles of fishery activities, The State's policies related to fishery activities, Prohibited actions in fishery activities, International cooperation in fishery activities, Fishery national database and Co-management in aquatic resource protection.</li> <li>- Chapter 2 about Protection and development of aquatic resources. This chapter defines provisions on The master plan for protecting and exploiting aquatic resources, Investigation into and assessment of aquatic resources and living environment of aquatic species, Aquatic resource protection, Recreation of aquatic resources and recovery of living environment of aquatic species,</li> </ul>			

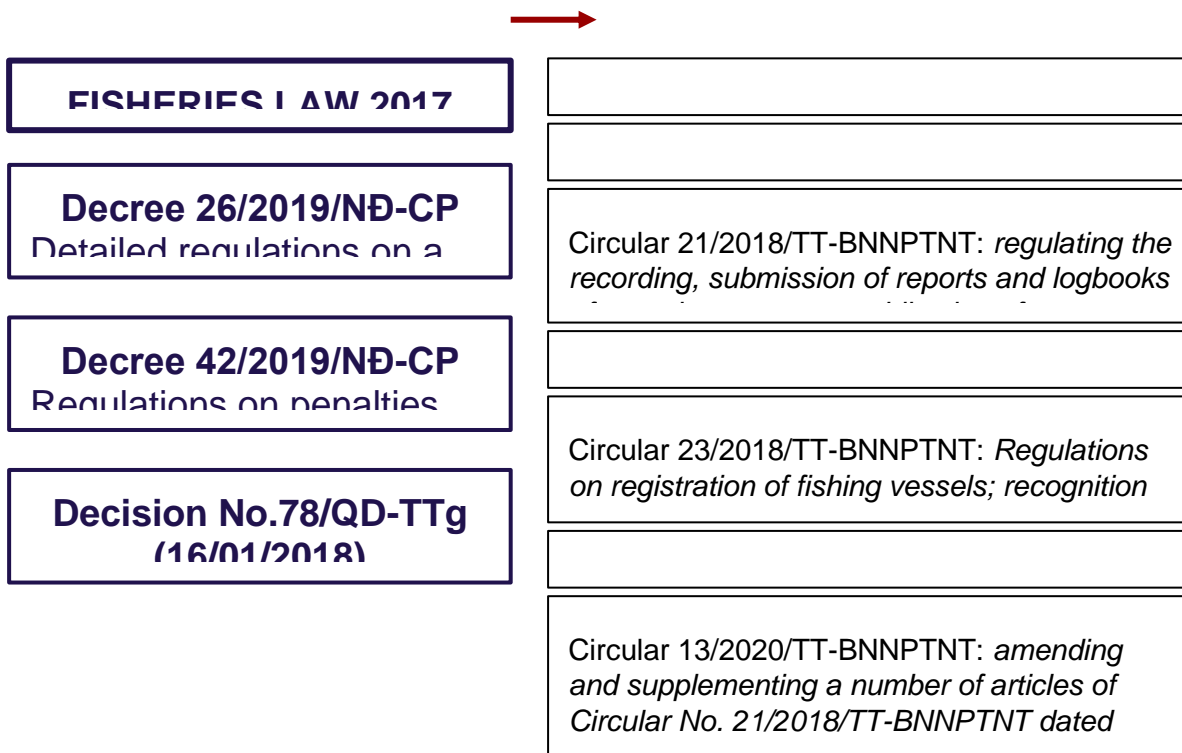
Marine Protected Areas (MPAs), Establishment of MPAs, Aquatic resource protected areas, Management of aquatic resources and aquatic ecosystem in reserve forests and protection forests, Management of aquatic resources in wetland reserves, Fund for protection and development of aquatic resources.

- Chapter 4 about Commercial fishing covers articles about Management of fishing areas, Quota on issuance of marine fishing licenses, Commercial fishing licenses inside and outside Vietnam's maritime boundary, Rights and responsibilities organizations and individuals engaged in fishing activities inside and outside Vietnam's maritime boundary, Illegal commercial fishing.
- Chapter 5 about Management of commercial fishing vessels, ships of fishery authorities and sheltering anchorages for commercial fishing vessels with one relevant article about commercial fishing vessels entering and leaving fishing ports.
- Chapter 6 is all about Fisheries resources surveillance
- Chapter 8 defines clauses related to State administration of fisheries.

In order to support the implementation of the Fishery Laws, Vietnam Government has released two (02) Decrees about regulations on penalties for administrative violations on fishery sectors under Decree 42/2019/ND-CP and regulations on detailed articles and executed measures Fishery Laws under Decree 26/2019/ND-CP. To some extent it can be said that the Law on Fisheries 2017 and its guiding documents have a lot of responsive updates and improvements as a part of the process to lift off the Yellow card issued by the European Commission for Vietnam's fisheries. A series of Circulars by MARD from the end of 2018 to 2020 for further guidance on the implementation of the Fisheries Law. Among these legislative documents are those dedicated to fisheries management, including:

- Circular 19/2018/TT-BNNPTNT: Guidelines on protect and develop aquatic resources;
- Circular 20/2018/TT-BNNPTNT: Regulations on attire, symbols, flag, traditional flag, figures, and colors;
- Circular 21/2018/TT-BNNPTNT: regulating the recording, submission of reports and logbooks of aquatic resources; publication of designated fishing ports confirming the origin of fisheries from exploitation; list of illegal fishing vessels; certification of raw materials, certification of exploited aquatic resources;
- Circular 22/2018/TT-BNNPTNT: Regulations on crew members of fishing vessels and fisheries official ships;
- Circular 23/2018/TT-BNNPTNT: Regulations on registration of fishing vessels; recognition of fishing vessel registration facility; guarantee the technical safety of fishing vehicles, fishing vehicles; registration of fishing vehicles, fishing office vehicles; removal of fishing vehicles and fishing vehicles;
- Circular 24/2018/TT-BNNPTNT: Regulations on updating, exploiting and managing the national database on fisheries;
- Circular 13/2020/TT-BNNPTNT: Amending and supplementing a number of articles of Circular No. 21/2018/TT-BNNPTNT dated November 15, 2018 providing for recording and submission of reports and diaries of fishing; announce the designated fishing port certifying the origin of fishery products from fishing; list of illegal fishing vessels; certification of raw materials, certification of the origin of caught fish;

On the other hand, Decision No.78/QĐ-TTg about the National Plan of Actions to combat IUU fishing (NPOA-IUU) was released by the government on Jan 16, 2018, focusing on IUU combating tasks on short-term (within 2018), mid-term (2019 – 2020) and long-term (2021 – 2025) as a result of consultations and participations from related ministries and agencies.



*Illustration 4: Fishery management legal framework of Vietnam*

In practice, marine capture fisheries management can be divided into two (02) issues: vessel management and fishing management.

- Vessel management covers all vessel related matters: registration, fishing license, vessel monitoring system, safety inspection and fishing logbook.
- Fishing management includes all management of fishing related activities: fishing areas, fishing quotas, operations and reporting at sea, catch verification, catch certification and export.

Legislation framework applied according to issues and its elements are visualised in the below diagram:

Fishing vessel management		Fishing management	
Registration	Circular 23/2018/TT-	Fishing areas	Fisheries Law 2017. Article 49
License & Fishing	Decree 26/2019/NĐ-CP	Operations and reporting	Circular 21/2018/TT-
Safety inspection	Circular 22/2018/TT-	Catch verification	Circular 21/2018/TT-
VMS	Decree 42/2019/ND-CP	Catch certification	Circular 21/2018/TT-
Logbooks	Circular 21/2018/TT-	Export	Circular 48/2013/TT-

*Illustration 5: Legislation framework applied according to issues and its elements*

**Vessel management:**

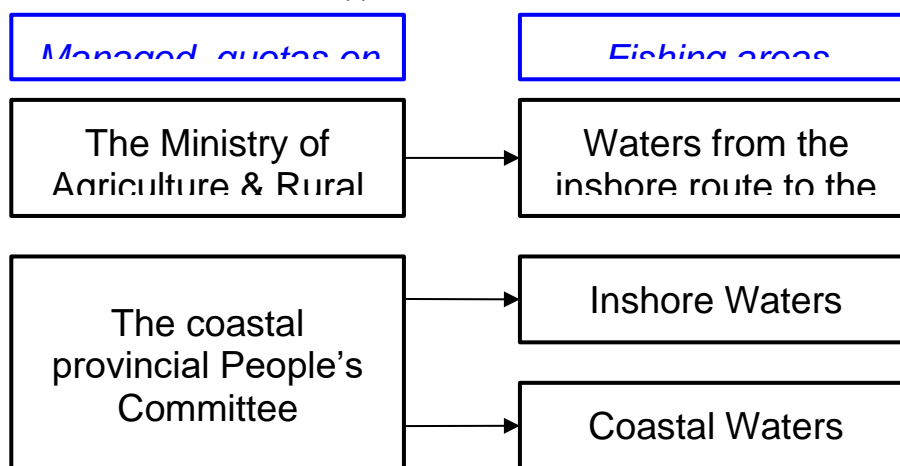
- Registration is applicable for all fishing vessels more than 6m length, under control of The Provincial Department of Fisheries (Sub-DOF).
- License is applicable for all fishing vessels more than 6m length, under control of Sub-DOF, data is uploaded to national fisheries databases, managed by VNFishbase.
- Safety inspection is applied for all new vessels after shipbuilding, carried out by Sub-DOF.
- VMS: Vessel Monitoring System is mandatory for all offshore fishing vessels as prescribed by Vietnam Government on Decree 26/2019/ND-CP. The vessel with the maximum length of at least 15 meters is required by law to equippe with the VMS devices. Also by this Decree, offshore vessels are required to report their locations for every 2 hours by its long-latitude coordinate locations and keep connections with authorities 24/24 hours.
- Logbook recording is daily mandatory for all vessels 12m length & above which will be submitted to fishing port authorities for every fishing trip by using a regulated template in Appendix of Circular 21/2018/TT-BNNPTNT. For small-scale fishing vessels from 6m to 12m length, logbooks are also mandatory but will be submitted weekly.

**Fishing management:**

- The Government prescribes fishing areas including the coastal waters, inshore waters and waters from the inshore route to the outer boundary (offshore) of Vietnam's exclusive economic zone (EEZ) and activities of commercial fishing vessels in the above mentioned areas. MARD shall manage the commercial fishing in the waters from the inshore route to the outer boundary of Vietnam's exclusive economic zone. The People's Committee of each province

manage the commercial fishing in coastal and inshore waters and domestic commercial fishing in the province.

- Bases for determining quota on issuance of marine fishing licenses are results of aquatic resources assessment; variable trend of aquatic resources; the maximum production of aquatic species allowed to be caught sustainably; structure of fishery vocations, aquatic species to be caught and fishing areas. MARD determines and assigns quotas on issuance of marine fishing licenses and production allowed to be caught of each species in the waters from the inshore route to the outer boundary of Vietnam's exclusive economic zone of provinces. The People's Committee of each province determines and assigns quotas on issuance of marine fishing licenses and the production allowed to be caught of each species in the coastal waters and inshore water under its management. The quota on issuance of marine fishing licenses shall be published and adjusted every 60 months. If there is any variation in aquatic resources, according to results of investigation into and assessment of aquatic resources in each subject, annual investigation into and assessment of commercial fisheries, MARD and People's Committees of provinces shall adjust the production allowed to be caught of each species. Vietnam is still on piloting for applied fisheries quotas management, and the pilot is only for tuna fisheries. Expansion for other fisheries will be applied in the future.



*Illustration 6: Applied fisheries quotas management*

- Fishing operations & reporting at sea are mandatory for all fishing vessels with 12m length & above & submit fishing logbooks to fishing port authorities within 24h after landing completed (Clause 1, Article 4, Circular 21/2018/TT-BNNPTNT).
- Catch verifications are carried out at landing by port authorities. The catch is checked by weight and species to provide the "Landing Declaration" and issue the Statement of Catch if required.
- Catch Certifications will be issued (if required) by Sub-DOF after checking and registration, licensing database and VMS system and confirming compliance.
- Exportations for seafood products to international markets, applied for seafood processors & exporters. All original above documents need to be submitted to the National Agro-Forestry-Fisheries Quality Assurance Department (NAFIQAD) to get the "Exportation Letter" before Custom Clearance procedure is taken place.

**M1.2:** *The legislation is based on relevant international law, instruments and standards.*

The Fisheries Law 2017 of Vietnam was approved in the context of Vietnam's drastic restructuring of the seafood industry towards sustainability and that Vietnam's seafood export is facing the EC's yellow card (issued on October 23, 2017 by EC). The Law, decrees and guiding circulars were developed with regards to recommendations of the European Commission, guidances of FAO and the Southeast Asia Regional about Conduct for Responsible Fisheries. The Fisheries Law 2017 was developed according to new approaches based on ecosystems, chain management and sustainable development, transforming from artisanal fisheries to modern and responsible fisheries.

The Fisheries Law 2017 focuses on 3 key issues:

- Firstly, the Law has created a legal framework to comprehensively regulate activities in the fisheries sector in order to shift from artisanal fisheries to modern, responsible and sustainable fisheries.
- Second, create a legal framework for Vietnam's fisheries to gradually meet international requirements, in line with international conventions that Vietnam has signed or acceded to.
- Third, create a legal framework to implement the socialization of some public services, decentralize to the maximum extent for localities to grant licenses and certifications in fisheries activities.

New contents of the Law include regulations on co-management in the protection of aquatic resources; planning on protection and exploitation of aquatic resources, periodically surveying and evaluating aquatic resources; regulations on licensing fishing according to quotas; managing fishing vessels, fishing ports and storm shelters for fishing vessels; fisheries database.

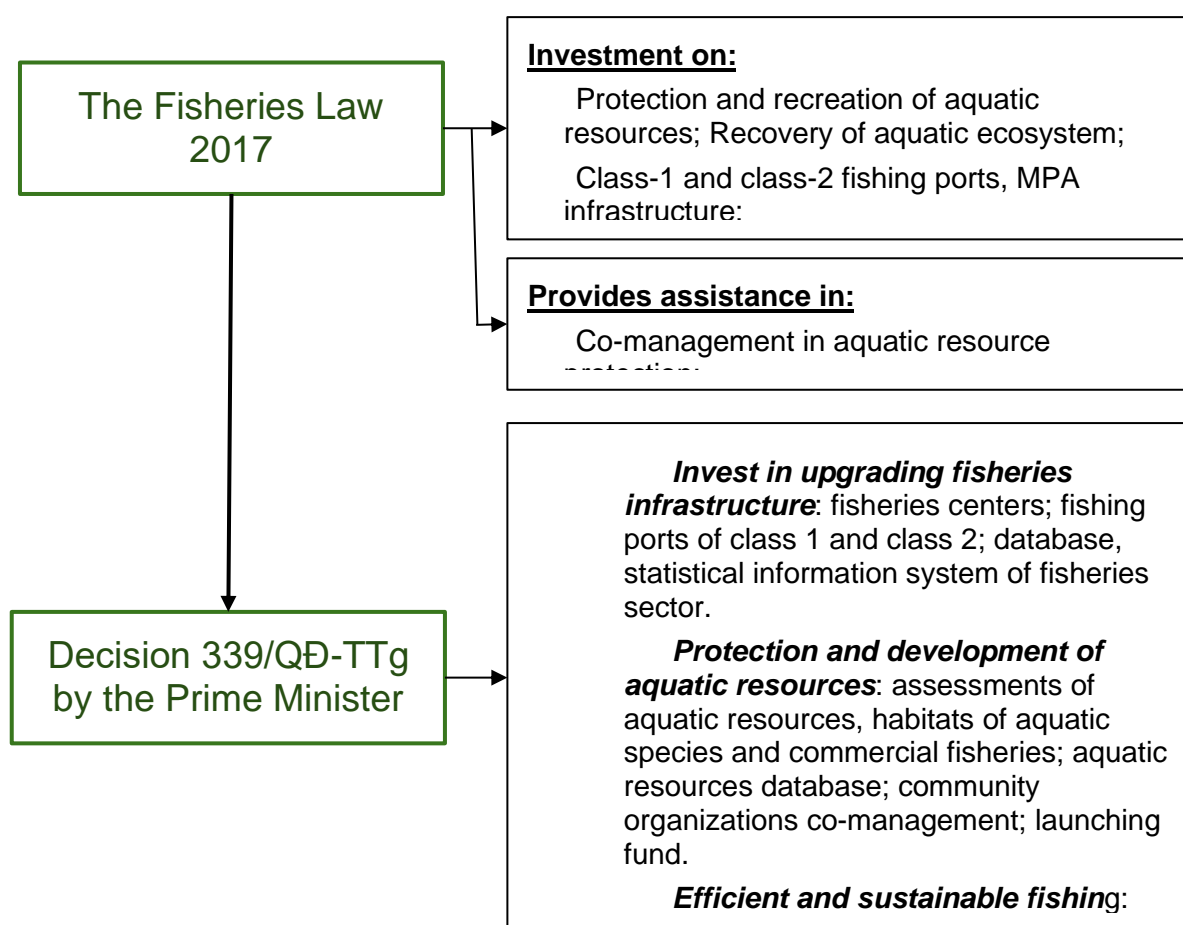
- Co-management in the protection of aquatic resources so that the State shares and assigns management rights to the community in the protection of aquatic resources, aiming to raise the sense of responsibility and strengthen the role of the community in the protection of aquatic resources.
- Planning on the protection and exploitation of aquatic resources, survey and assessment of aquatic resources, according to which MARD periodically investigates and evaluates aquatic resources and habitats of aquatic species every five years to effectively and sustainably protect and exploit aquatic resources.
- The law also provides for the establishment of funds for the protection and development of fishery resources, enabling contribution of resources from communities and interested parties.
- Regulations on quotas for fishing permits and allowable catches for a number of distant migratory fish species and grouping aquatic species. The results of investigation and assessment of aquatic resources are the basis for determining quotas for fishing licenses. Manage according to quotas to control fishing force, manage and develop fishing vessels in a sustainable way. This is a step towards compliance with international law on the protection and conservation of aquatic resources, showing a change in the approach to law-making based on the ecosystem.
- The fishing port management organization is responsible for certifying that the fishery originating from the catch is transported to the port, collecting the fishing logbooks, and the catch report from the captain or owner of the fishing vessel. Fishing vessels operating offshore must land at ports designated by MARD. MARD is responsible for publishing the list of fishing vessels violating IUU fishing regulations.



**M1.3: The legislation and/or overarching policies outline the overall broad objectives for the fishery (ecological, social and economic)**

**NATIONAL LEVEL**

In a systematic way, objectives are often established based on set policies. For Vietnam, the latest Fisheries Law was released by the end of 2017 with clear statements of the government about State policies on marine fisheries. Related implementation guidelines had been issued since then until 2019. More than a year later, in March 2021, the Prime Minister approved the Vietnam Fisheries Development Strategy to 2030, visions up to 2045 (Decision No.339/QĐ-TTg). Long term objectives of fisheries are set, in which 04 out of 11 national programs are related to marine fisheries. Below is the diagram to visualise The Fisheries policies and the fisheries long term objectives.



*Illustration 7: The Fisheries policies and the fisheries long term objectives.*

The Fisheries Law 2017, Article 6 about The State's policies related to fishery activities, the government places the protection and restoration of marine resources and marine ecosystems on top, aspects of good fisheries management that are of interest to the government include building class-1 and class-2 fishing ports, sheltering anchorages, necessary infrastructure of MPAs, a system for monitoring and supervising activities of commercial fishing vessels at sea and a system of information and national database on fishery activities. The State's assistance will be provided for co-management in aquatic resource protection, establishing large fishery centers, insurances for crew accidents and for hull and equipment of commercial fishing vessels.

These policies have been concretized in objectives in the Vietnam Fisheries Development Strategy to 2030, visions up to 2045, under different national programs and projects, in which 4 of them related to marine fisheries sector, include:

**1. Fishery infrastructure investment and upgradation project:**

- There will be 5 big fisheries centers all over the country: in Hai Phong, Da Nang, Khanh Hoa, Ba Ria - Vung Tau and Kien Giang;
- Fishing ports of class 1 and class 2 will be upgraded to standard;
- Fishery databases and statistical systems will be set up.

**2. National program for protection and development of aquatic resources:**

- There will be assessments about the overall fisheries resources and habitats of aquatic species throughout the country every 5 years and assessments of the commercial fishing industry every year;
- Aquatic resource databases will be set up;
- The rights to manage, protect and exploit aquatic resources will be assigned to community organizations.
- Aquatic resource protection and development foundation will be initiated.

**3. National program for effective and sustainable fishing development:**

- Marine fishing activities will be restructured in a way that fishing vessels (type and number) and trades are compatible with the stock of fishery resources and fishing grounds;
- Safety for people and fishing vessels at sea will be ensured;
- Monitoring and surveillance systems for marine fishing activities will be upgraded.

**4. Project on improvement of fishery state management capacity:**

- The system of fisheries surveillance organizations from the central to local levels will be improved in order to ensure consistency, efficiency and effectiveness.

**PROVINCIAL LEVEL**

The Committee of People of BR-VT issued the Decision 575/QĐ-UBND dated 10 March 2021 on Plan of Actions for Marine Economic Development Strategy to 2030 and visions 2045. In this document, long term objectives for the provincial fisheries were defined as following:

**1. Control exploitation of marine resources within the resilience of marine ecosystems (to 2045):**

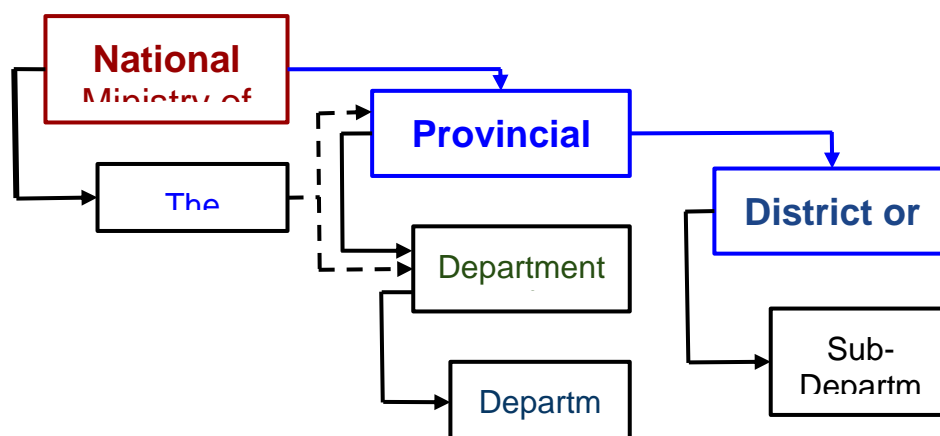
- Shifting coastal fishing to inshore and offshore fishing (by 2030). This objective is based on the fact that fisheries resources in the coastal water have been overfished. In order to realise this, BRVT People's Committee has planned to restructure fisheries, with focus on high economic value seafood such as shrimp, squid, tuna, mackerel. Accordingly, by 2025, the number of fishing vessels in the province will be reduced to 5000 units, of which 2880 fishing vessels will operate offshore (as of 2020, the total number of registered fishing vessels in the province is 5809, of which 2902 are operating in offshore areas). The Report No.167/BC-CCTS dated December 10, 2020 by Sub-DOF of BRVT indicates that as of December 2020, the number of trawl fishing

vessels operating in the province is 1538 units, down 61 units compared to December 2019 (1599 units). However, it is not clear how many trawl fishing vessels shall be reduced by 2025 and 2030. This issue will be reflected on the work plan for a more specific objective.

- Having sufficient information about aquatic resources in coastal and inshore areas in the province. As defined by Article 45 of the Fisheries Law 2017, it is the responsibility of the provincial People's Committee for licensing quotas for fishing in coastal and inshore areas. Mr Tòng Văn, the Director of Sub-DOF of BRVT informed that the sub-department has contracted RIMF for this the assessment of aquatic resources in coastal and inshore areas in BRVT.
2. **Upgrading fishing ports and logistics.** This objective is based on the fact that there is not sufficient information on catch composition, species composition and size of species caught; control rooms at landing ports for vessel tracking (via vessels monitoring system) is needed for better landing control. Successful realization of this objective will contribute to the national goals regarding establishing fisheries activities information and national fisheries database.
  3. **Invest in completing the fishing vessel information system.** This objective is set as one of actions to end IUU fishing and to lift the Yellow card by the EU (in the short term).
  4. **Developing co-management models of coastal fisheries.** This is set to aim that responsibility for aquatic resources management can be shared between the government and user groups (fishermen) to address the existing growing problems of fisheries overexploitation.

**M1.4:** *The legislation legally empowers the responsible organisations to manage the fishery, including undertaking monitoring, control and surveillance and implementing management actions.*

#### STATE ADMINISTRATION OF FISHERIES



*Illustration 8: State administration of fisheries*

#### **National level:**

Article 101, Chapter 8 of the Fisheries Law 2017 defines ‘the Ministry of Agriculture and Rural Development ([MARD](#)) shall work as a contact point to assist the Government in the state administration’. According to this article, MARD is responsible for:

- a. *State administration of fishery activities in the whole country; make and provide directions on implementing strategies, plans and schemes for fishery activities;*

- b. Promulgate or request competent authorities to promulgate and implement policies, legislative documents, standards, technical regulations and economic and technical norms in fishery fields;*
- c. Provide directions and instructions on and carry out environmental monitoring and warning, aquatic epidemic prevention and commercial fishing at sea; set up, manage and provide instructions on updating and accessing to the national fisheries database;*
- d. State administration of fisheries resources surveillance; provide consistent directions on fisheries resources surveillance;*
- e. Organize the issuance, reissuance, extension and revocation of licenses and certificates in fishery activities under its management; authorize or assign the administration in accordance with regulations of law;*
- f. Organize the investigation, scientific research and technological development, technology transfer; assess and analyze impacts of economic activities on fishery activities;*
- g. Provide instructions on and carry out state inspections of fishing ports; provide professional training in managing fishing ports in accordance with regulations of law and announce the list of appointed fishing ports having sufficient systems for certifying origins of caught aquatic species;*
- h. State administration applicable to marine protected areas and aquatic resources protected areas in the whole country;*
- i. State administration and provide professional training in fisheries; organize and provide instructions on statistics, information, propagation and popularization of knowledge and legal education in fisheries;*
- k. Specialized technical management in fishery activities;*
- l. Manage, provide directions on, formulate plans for and organize inspection, handling of complaints and denunciation, taking actions against violations of law of fisheries within its power; work as a contact point to join international cooperation in fisheries;*
- m. Take charge and cooperate with Ministries, ministerial agencies and People's Committees of provinces in developing software for managing the national fishery database;*

**Provincial level:**

According to Article 102, Chapter 8 of the Fisheries Law 2017, the People's Committee of provinces are responsible for:

- a. Promulgate or request competent authorities to promulgate documents provide guidelines for implementation of law on fisheries;*
- b. Provide directions on and organize management of fishery activities in the province; organize production and catching of aquatic species;*
- c. Organize the propagation, popularization of and education about laws and knowledge related to fisheries; set up fishery database in the province and update the national fishery database;*
- d. Organize the issuance, reissuance, extension and revocation of licenses and certificates in fishery activities under its management according to the assignment;*
- e. Provide directions on, formulate plans for and organize inspection, handling of complaints and denunciation, taking actions against violations of law on fisheries within its power;*

- f. Ensure allowances, funding and working conditions for the local fisheries resources surveillance force in accordance with regulations of law;
- g. Organize the management of fishing ports; inspect, control and comply with regulations of law on catching and protecting aquatic resources, food safety, environmental safety and fire safety at fishing ports; collect, consolidate and report statistics of aquatic products passing commercial fishing vessels in accordance with regulations and law;
- h. State administration applicable to marine protected areas and aquatic resources protected areas in the province.

**District and commune levels:**

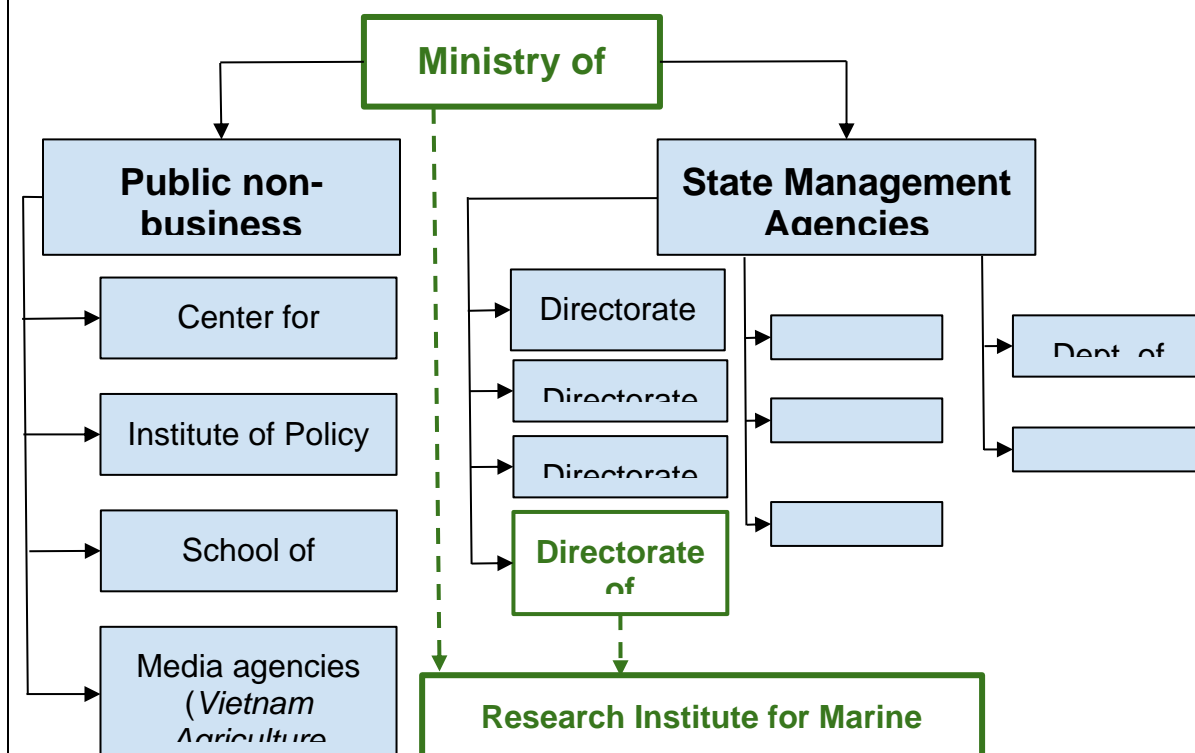
According to Article 102, Chapter 8 of the Fisheries Law 2017, People's committees of a district or a commune are more about implementation at district and lower levels. They are responsible for:

- a. Carry out activities and implement methods for managing fishery activities in the district or commune in accordance with regulations of law;
- b. Carry out tasks of state administration of fisheries according to assignment or authorization by the supervisory People's Committee;
- c. Propagandize, popularize and provide education about law on fisheries in the district or commune.

**B. FISHERIES MANAGEMENT SYSTEM**

**National level:**

**MARD:** As defined in the Fisheries Law 2017, MARD is the key ministry for State administration of fisheries. Organisation structure of MARD is given in the following chart:

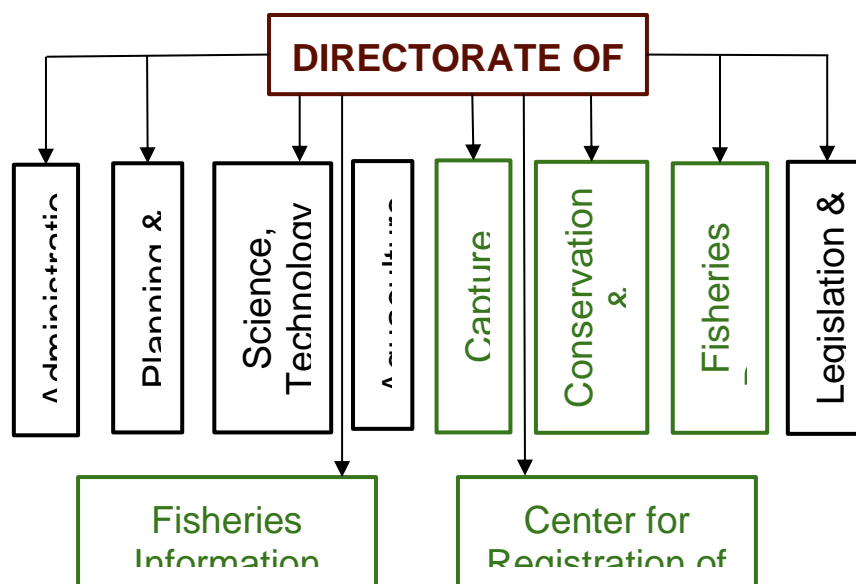


*Illustration 9: MARD is the key ministry for State administration of fisheries, and its organisation structure*

Sources: Decree 15/2017/ND-CP dated February 17, 2017

**Directorate of Fisheries (DOF)** is the MARD subordinate agency responsible for fisheries management as specified in Decision No.27/2017/QĐ-TTg on functions, tasks, powers and organizational structure of the Directorate of Fisheries under the Ministry of Agriculture and Rural Development, issued by the Prime Minister. Within DOF, departments of Fisheries, Conservation & Development of aquatic resources, Fisheries Inspection, Fisheries Information Center and Center for Registration of Fishing Vessels directly participate in fisheries management activities.

- The Department of Capture Fisheries performs the function of state management in the field of fishing, fishing vessels and logistics service facilities.
- The Department of Conservation & Development of aquatic resources performs the function of state management of protection, conservation, regeneration and development of aquatic resources.
- The Department of Fisheries Resources Surveillance performs the task of patrolling, inspecting, controlling, investigating, detecting, preventing and handling violations of the law and specialized inspection of fisheries in the waters of Vietnam.
- The Fisheries Information Center is a public non-business unit with the function of managing and operating the fishing vessel monitoring system and the national database on fisheries; information, statistics and application of information technology to serve the state management tasks of DOF and provide public services in accordance with the law.
- The Center for Registration of Fishing Vessels is a public non-business unit, having the function of carrying out the registration of fishing vessels to serve the state management tasks of DOF and provide public services in accordance with the law.



*Illustration 10: DOF is the MARD subordinate agency responsible for fisheries management, and its organisation structure*

**Research Institute for Marine Fisheries (RIMF)**: as defined by Decision No.466/QĐ-BNN-TCCB of MARD, RIMF is a public scientific and technological non-business unit directly under the Ministry of Agriculture and Rural Development. Functions of RIMF related to marine fisheries are performing scientific

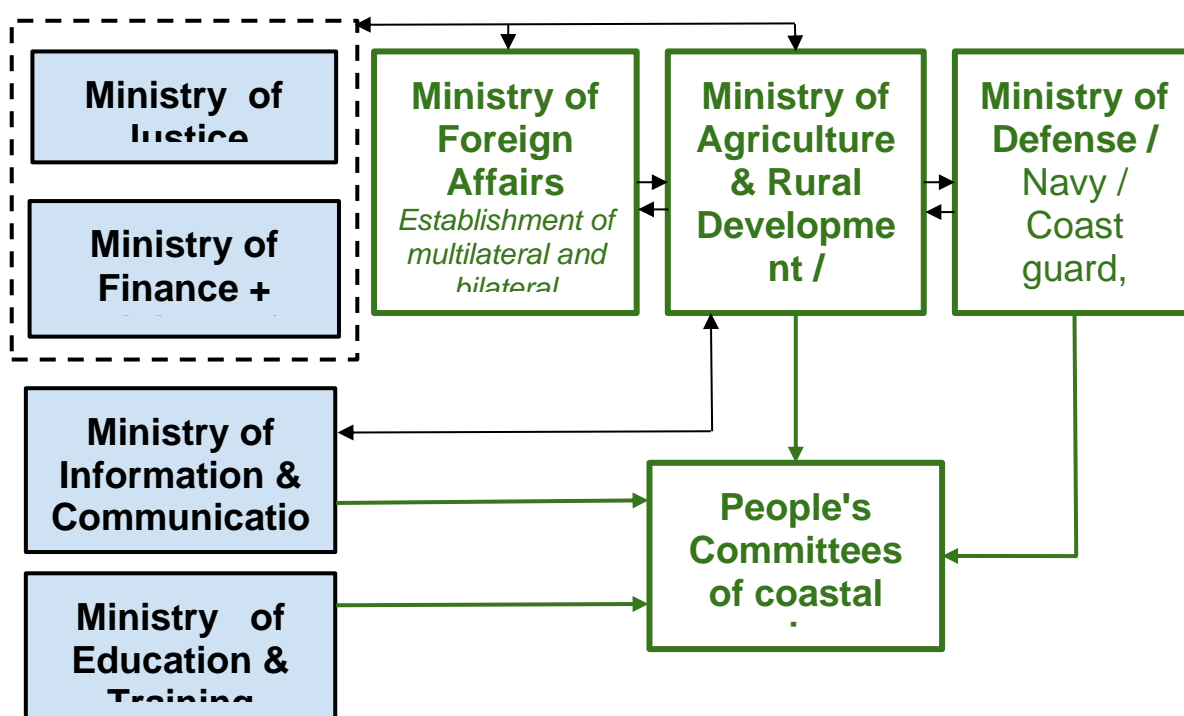


research, consulting and services on conservation and development of marine resources. Responsibilities of RIMF are:

- a. Developing and submitting to the Ministry:
  - Strategies, planning, long-term, five-year, annual plans, programs and projects on exploitation, conservation and development of marine resources;
  - National standards, national technical regulations, technical guidance in the field of fishing; conservation and development of marine resources.
- b. Conduct basic research about:
  - Marine resources, the principles of changes in marine resources and fisheries biology for forecasting fishing ground and fisheries management;
  - The relationship between the environment, marine resources and marine fisheries; measures to restore, regenerate and develop marine resources;
  - Socio-economic issues of fisheries; fisheries management model; model of organization of production and exploitation at sea; biodiversity and marine conservation.
  - Investigate and evaluate the biomass stock and sustainable exploitation of marine resources; ecosystems as a scientific basis for the rational use of marine biological resources.

#### **Fisheries management system**

Regarding law enforcement issues, especially illegal, unreported and unregulated (IUU) fishing, the Prime Minister of Vietnam promulgated Decision No.78/QĐ-TTg on January 16, 2018 about Approval of the national action plan to reduce and to end IUU fishing. According to the decision, MARD is responsible for the main coordination and collaborates with other ministries and their affiliates to execute the action plan. This action plan can be illustrated in the following diagram:





*Illustration 11: The national action plan to reduce and to end IUU fishing*

Tasks allocation was given in the Annex I of the Decision, summary as following:

- MARD is responsible for organizing and guiding the implementation of the plan; coordinating with concerned ministries, departments and provinces in monitoring, supervising and evaluating the results of the implementation of the Action Plan; and reporting to the Prime Minister.
- The Ministry of Defense is responsible for controlling fishing vessels leaving and docking at ports; preventing Vietnamese fishing vessels from violating foreign waters.
- The Ministry of Police is responsible for detecting, investigating and handling cases of organizations sending Vietnamese fishing vessels and fishermen abroad for illegal fishing.
- The Ministry of Foreign Affairs is responsible for supporting the establishment of multilateral and bilateral management mechanisms to handle incidents and situations at sea with international organizations and countries in the region.
- The Ministry of Information and Communications is responsible for propagating, disseminating and educating the law among the people about the provisions of law related to the issue of demarcation of the sea between Vietnam and neighboring countries, especially undefined sea areas and overlapping areas; information management, satellite data, radio frequency networks, satellites and information security.
- The Ministry of Justice is responsible for advising and proposing accession to international conventions on fisheries; development and appraisal of legal documents, mechanisms for IUU fishing management.
- The Ministry of Education and Training is responsible for implementing communication programs on preventing, reducing and eliminating IUU fishing at higher education institutions in coastal provinces and cities.
- The Ministry of Finance, the Ministry of Planning and Investment are responsible for balancing and arranging the annual budget for implementation.
- People's Committees of coastal provinces and cities shall coordinate in implementation.

**Provincial level:**

Implementation at provincial level is under the responsibility of the provincial Committee of People. The Committee of People of Ba Ria - Vung Tau province released Decision No.1457/QĐ-UBND about guidelines for implementation of law on fisheries in BRVT (period 2019-2024). According to this decision, the fishery management system involved:

- Department of Agriculture & Rural Development and its affiliates - Department of Fisheries
- Vietnam Fisheries Surveillance, Squad 2
- Department of Internal Affairs
- Department of Foreign Affairs
- Department of Justice
- Department of Finance
- Naval Region 2 Command

- Coast Guard Region 3
- Provincial Border Guards
- Police
- BRVT Fishery Association
- Port authorities
- BRVT Radio & Television Station
- Organizations managing fishing ports in BRVT
- BRVT Newspaper

**M1.5:** *The policies and plans publicly commit the fisheries management organisations to sustainable development of the fishery (sustainability).*

Decision No.339/QĐ-TTg, dated on March 11, 2021, signed by the Prime Minister of Vietnam about 'Approving the strategy for development of Vietnam's fisheries by 2030 with vision towards 2045', Article 1:

Item 'I' about 'DEVELOPMENTAL VIEWPOINTS' states that:

1. *Building the fishery industry into the economy with the large scale and high commodity rate, the prestigious brand name, the in-depth participation in the global supply chain, and the **highly competitive and sustainable capability**. Ensuring the deep and wide **international integration**, and the **responsible development towards the circular economy**, improving productivity, quality, added value and efficiency.*
2. *Boosting the industrialization and modernization of the fishery industry so that it becomes a market-oriented, **environment-friendly** industry, **helps protect, revive and develop fishery resources, and conserve biodiversity**; helps adapt to climate change; helps ensure epidemic safety, biological safety and social security. Developing fisheries in collaboration with improving people's material and spiritual life, building new rural areas; combining the economic development with construction of a strong defense and security posture at sea, contributing to firmly defending the national sovereignty over the islands of our Fatherland.*

Item 'III' about 'DEVELOPMENTAL ORIENTATION' defines:

a) *Protection and development of fishery resources:*

- *Focusing on investigation and assessment of fishery resources and habitats of aquatic species and deep sea marine resources as a basis for protection, regeneration and sustainable exploitation of fishery resources;*
- *Completing the database system of fishery resources in the direction of digital transformation, and serving as a basis for forecasting fishing grounds and fishery resources;*
- *Establishing, expanding and improving the operational efficiency of marine protected areas. Paying attention to protecting breeding areas, immature fish farming areas and migration routes of aquatic species. Developing and conserving sea, ecotourism and new rural areas;*

- *Organizing the management and protection of concentrated fish farming areas, immature fish farming areas and migration routes of aquatic species;*
- *Keeping original varieties, conserving and efficiently exploiting genetic resources; conducting researches on breed reproduction, giving priority to the supplementary stocking of aquatic species of economic and scientific value; native aquatic species; endemic aquatic species into natural waters;*
- *Prioritizing research on planting and transplanting corals to ensure the restoration of coral reef ecosystems;*
- *Forming artificial habitats for endangered, precious and rare aquatic species;*
- *Protecting habitats of aquatic species, additionally reviving fishery resources in inland natural water bodies, reservoirs, lagoons in coastal areas and marine areas. Emphasizing and regularly performing activities of supplementary stocking, regeneration and development of fishery resources nationwide so that these activities involve various economic sectors;*
- *Strengthening the implementation of co-management in the protection of fishery resources, assigning management rights to community-based organizations over the protection of fishery resources in coastal areas and inland waters;*
- *Deploying Fishery Resources Protection and Development Foundation, mobilizing financial resources for the protection, regeneration and development of fishery resources.*

*b) Fishery production:*

- *Promoting the efficient and sustainable exploitation of marine products on the basis of gradually reducing fishing force to be suited for reserves of fishery resources;*
- *Reorganizing activities of fishing in open, inshore or inland waters in a reasonable manner, linking the livelihood development of fishermen with the development of aquaculture, ecotourism, and recreational fishing industries;*
- *Complying with responsible fisheries codes of conduct, combating illegal, uninformed and violating fishing activities;*
- *Building the logical structure of the fishery production industry, the full-time and part-time labor structure according to natural conditions, fishery resources, and socio-economic characteristics of each region. Allocating appropriate fishing quotas;*
- *Minimizing and striving to abort destructive fishing practices, converting activities extremely invading fishery resources or consuming a lot of fuel into the ones friendly to the environment and fishery resources;*
- *Modernizing fisheries management activities at sea to proactively alert and promptly respond to incidents, risks and natural disasters at sea. Ensuring safety for people and fishing vessels at sea, effectively participating in support for search and rescue activities, contributing to ensuring national defense and security, firmly maintaining independence and sovereignty over our Fatherland's islands.*

Article 2 of the Decision allocates tasks for implementation to relevant ministries and organisations as following:

- The Ministry of Agriculture and Rural Development (MARD) shall lead, and cooperate with ministries, sectoral administrations and local authorities in, implementing the Strategy;
- The Ministry of Planning and Investment, the Ministry of Finance and the State Bank of Vietnam shall, according to their assigned functions and tasks, complete investment, finance and credit policies;
- The Ministry of Science and Technology shall take charge of, and cooperate with the MARD in, planning and organizing a council to evaluate Vietnamese standards and regulations;
- The Ministry of Natural Resources and Environment shall take charge of, and cooperate with MARD in, guiding localities to formulate plans, allocate reserve land for fisheries, and shall take control of environmental pollution in the fisheries production industry;
- The Ministry of Labor, War Invalids and Social Affairs shall cooperate with MARD in developing and implementing vocational training for fishermen and fishermen communities that are subject to trade shifting requirements or need to switch to other more favorable production and business sectors;
- The Ministry of National Defense and the Ministry of Public Security shall cooperate with MARD and the People's Committees of coastal provinces and cities in combating illegal, unreported and uncontrolled fishing activities;
- People's Committees of provinces and centrally-affiliated cities shall lead the formulation and implementation of the Fisheries Development Strategy to suit local practical conditions;
- Fisheries industry associations and societies shall cooperate with MARD in propagating, educating and disseminating the provisions of domestic laws of Vietnam, international laws, Responsible Fisheries Code of Conduct to business communities and fishermen; participate in the formulation and assessment of strategic directions, solutions, mechanisms and policies for fisheries development.

**M1.6:** *The legislation and national policies include arrangements for stakeholder engagement and consultation.*

**National level:**

The system of legal documents of the State of Vietnam is defined in the Law on Promulgation of Legal Documents dated June 18, 2020 constitutes Law documents and Sub-law documents. Existing legal documents for the fisheries management system comprises one Law document (The Fisheries Law 2017) and several sub-law documents, including Decree of the Government; Decision of the Prime Minister, Circulars of Ministers and Heads of ministerial-level agencies and Legal documents of the People's Committee.

According to Law No.63/2020/QH14, promulgated on June 18, 2020 on 'Amendments and Supplements to some articles of the law issuing legal documents', Clause 3, Article 6 stipulates that 'In the process of elaborating legal documents, agencies, organizations and National Assembly deputies shall preside over the drafting and relevant agencies and organizations are responsible for creating favorable conditions for agencies, organizations and individuals contribute opinions on the proposal to develop legal documents, draft legal documents, for the Vietnam Fatherland Front to conduct social criticism on draft legal documents; organize the collection of opinions of subjects directly affected by legal documents'. Clause 4 of Article 6 also stipulates that 'Opinions on the proposal for formulation of legal documents,

draft legal documents and social criticisms on draft legal documents shall be studied, explained and taken into consideration during the editing of the draft document’.

Decree 34/2016/ND-CP dated May 14, 2016, Article 11 on the participation of organizations and individuals in the process of making a request for the formulation of a legal document stipulates that the requesting agency may mobilize the participation of research institutes, universities, associations, other related organizations, experts and scientists.

In addition, the Fisheries Law 2017, Article 103 defines that the Vietnamese Fatherland Front and its affiliated organizations, Socio-professional organizations and social organizations shall give opinions on promulgating regulations of law on fisheries.

Those regulations have been followed in the process of developing the Fisheries Law 2017 and related legal documents for implementation guidelines. Beside agencies and institutions under MARD, other stakeholders such as associations, private organisations have participated the process, among these can be mentioned following because of their significant influence on local communities and the industry:

- Centre for Marinelife Conservation and Community Development (MCD) is a leading Vietnamese NGO in the field of coastal and marine ecosystem conservation, striving for a coastal zone of Vietnam with healthy ecosystems and a good quality of life for coastal communities, especially the most vulnerable.
- Vietnam Fisheries Association (VINAFIS) and its affiliates represent for the legitimate interests of members and fishermen; promote dialogue and bring the voice of fishermen to policy makers, contribute to the adjustment and development of policies for sustainable development of fisheries.
- Vietnam Association of Seafood Exporters & Producers (VASEP) coordinates and links enterprises' operations; improves value, quality and competitive capacity of Vietnamese seafood; enhances the source of raw material for seafood export; represents and protects legal interests of members.
- Vietnam Tuna Association (VINATUNA) coordinates & links for all stakeholders in its tuna supply chains from fishing, landing, purchasing, transporting, processing, trading & exporting tuna products.

#### **International level:**

The Vietnamese government has made great efforts in removing the EU yellow card, in which cooperation with fisheries management organizations in the region is a top priority. The process of finalizing the Fisheries Law 2017 also consulted with the following organizations:

- International organisations that Vietnam is a member of can name Regional Fisheries Management Organizations (RFMOs), SouthEast Asia Fishery Development Center (SEAFDEC).
- Vietnam is cooperating with Western & Central Pacific Fishery Commission (WCPFC) under the Non-Member option.

**M1.7:** *The fishery has an up-to-date fisheries management plan (or is linked to such a plan) that incorporates the main principles of the ecosystem approach to fisheries, covering the ecological, social and economic dimensions of sustainable development.*

#### **National level:**

The fisheries management plan of Vietnam is covered by 'Programs and Projects prioritized for Implementation of the Strategy for Development of Vietnam's Fisheries by 2030 with vision towards 2045', promulgated as an annex to Decision No.339/QĐ-TTg, dated on March 11, 2021, signed by the Prime Minister of Vietnam about 'Approving the strategy for development of Vietnam's fisheries by 2030 with vision towards 2045' (hereby called 'master plan'). According to the master plan, there will be 7 projects for fisheries, including:

1. *Fishery infrastructure investment and upgradation project* so that the fishery infrastructure system becomes synchronous and fishery logistics services meet requirements of the supply chain of seafood products.
2. *National program for protection and development of aquatic resources* for conserving, protecting and restoring aquatic resources. According to this program, the government will allocate a budget for scientific research to enable effective management of fishing activities with regards to preserving the biodiversity of Vietnam's biological resources.
3. *National program for effective and sustainable fishing development* for effectively, sustainably and responsibly exploiting seafood in accordance with the permissible capacity of aquatic resources, types of occupations, fishing grounds, biodiversity, environment, and climate change (adaptive).
4. *Fishery human resource training and development project* to build up capacity of fishery human resources meeting the industry's requirements.
5. *Project on improvement of fishery state management capacity* to build up capacity of the fishery state management capacity to meet the industry's requirements.
6. *Project on development of co-management of aquatic resource protection* to develop the co-management in the aquatic resource protection at inshore waters and inland water bodies, together with developing eco-tourism for coastal communities.
7. *Fishery environmental protection project* for controlling and preventing pollution in fishery production activities to protect the environment and sustainably develop the fishery sector.

#### **Provincial level:**

The fishery management plan at provincial level is covered by the provincial 5 years-master plan, which details relevant projects or programs of the national master plan, promulgated by the provincial People's Committee.

On March 10, 2021, BRVT People's Committee issued Decision 575/QĐ/UBND about the Implementation of Action plan of Strategy for sustainable development of Vietnam's marine economy to 2030, vision to 2045. The province has set objectives for the fisheries in BRVT, as described in M1.3, including: Control exploitation of marine resources within the resilience of marine ecosystems, shifting coastal fishing to inshore and offshore fishing; Having sufficient information about aquatic resources in coastal and inshore areas; Upgrading fishing ports and logistics; Invest in completing the fishing vessel information system; Developing co-management models of coastal fisheries. The BRVT fisheries management plan can not be considered as completed, because of lack of specific activities and budget allocated for such activities. This is understandable, because the provincial master plan was only issued in March 2021, and it may take some time for DARD BRVT and Sub-DOF BRVT (as defined by organisational structure) to prepare and propose the implementation plan to BRVT People's Committee. Hence this clause is rated as 'gap'.



**M1.8: The fishery management plan specifies goals and operational objectives.**

As described in M1.3 and M1.7, although fisheries in BRVT have goals and objectives set till 2030, however they are not specific and measurable. Hence this clause is rated as 'gap'.

**M1.9: The fishery management plan outlines the roles and responsibilities of the different fishery management and partner organisations.**

Due to gaps of M1.7 and M1.8, this clause is rated as 'gap'.

**EVIDENCE:**

1. Fisheries legislation (primary and subsidiary):

Promulgated by the National Assembly:

- Chairwoman Of National Assembly. Law No.18/2017/QH14: [Law on Fisheries](#). 2019. [Government Portal of Socialist Republic of Vietnam](#). (M1.1; M1.2; M1.3; M1.4; M1.6)
- Chairwoman Of National Assembly. Law No.63/2020/QH14: [Amendments and Supplements to some articles of the law issuing legal documents](#). 2021. Government Portal of Socialist Republic of Vietnam. (M1.6)

Promulgated by the Government:

- Prime Minister. Decree 26/2019/ND-CP: [Guidelines for implementation of the law on fisheries](#). 2019. [Government Portal of Socialist Republic of Vietnam](#). (M1.1)
- Prime Minister. Decision No.78/QD-TTg: [the National Plan of Actions to combat IUU fishing \(NPOA-IUU\)](#). 2018. Government Portal of Socialist Republic of Vietnam. (M1.1; M1.4)
- Prime Minister. Decree 42/2019/ND-CP: [Guidelines for penalties for administrative violation against regulation on Fisheries](#). 2019. Government Portal of Socialist Republic of Vietnam. (M1.1)
- Prime Minister. Decree 15/2017/ND-CP: [Regulations on functions, tasks, powers and organizational structure of the Ministry of Agriculture and Rural Development](#). 2017. Government Portal of Socialist Republic of Vietnam. (M1.4)
- Prime Minister. Decision No.27/2017/QD-TTg: [Regulations on functions, tasks, powers and organizational structure of the Directorate of Fisheries under the Ministry of Agriculture and Rural Development](#). 2017. Government Portal of Socialist Republic of Vietnam. (M1.4)
- Prime Minister. Decree 34/2016/ND-CP: [Regulations on details of some of articles and measures to implement the Law on Promulgation of Legal Documents](#). 2017. Government Portal of Socialist Republic of Vietnam. (M1.6)

Promulgated by MARD:

- Deputy Minister of MARD. Circular 19/2018/TT-BNNPTNT: [Guidelines on protect and develop aquatic resources](#). 2018. Government Portal of Socialist Republic of Vietnam. (M1.1)

- Deputy Minister of MARD. Circular 20/2018/TT-BNNPTNT: [Regulations on attire, symbols, flag, traditional flag, figures, and colors](#). 2018. Government Portal of Socialist Republic of Vietnam. (M1.1)
  - Deputy Minister of MARD. Circular 21/2018/TT-BNNPTNT: [Regulating the recording, submission of reports and logbooks of aquatic resources; publication of designated fishing ports confirming the origin of fisheries from exploitation; list of illegal fishing vessels; certification of raw materials, certification of exploited aquatic resources](#). 2018. [Government Portal of Socialist Republic of Vietnam](#). (M1.1)
  - Deputy Minister of MARD. Circular 22/2018/TT-BNNPTNT: [Regulations on crew members of fishing vessels and fisheries official ships](#). 2018. Government Portal of Socialist Republic of Vietnam. (M1.1)
  - Deputy Minister of MARD. Circular 23/2018/TT-BNNPTNT: [Regulations on registration of fishing vessels; recognition of fishing vessel registration facility; guarantee the technical safety of fishing vehicles, fishing vehicles; registration of fishing vehicles, fishing office vehicles; removal of fishing vehicles and fishing vehicles](#). 2018. Government Portal of Socialist Republic of Vietnam. (M1.1)
  - Deputy Minister of MARD. Circular 24/2018/TT-BNNPTNT: [Regulations on updating, exploiting and managing the national database on fisheries](#). 2018. Government Portal of Socialist Republic of Vietnam. (M1.1)
  - Deputy Minister of MARD. Circular 13/2020/TT-BNNPTNT: [Amending and supplementing a number of articles of Circular No. 21/2018/TT-BNNPTNT dated November 15, 2018 providing for recording and submission of reports and diaries of fishing; announce the designated fishing port certifying the origin of fishery products from fishing; list of illegal fishing vessels; certification of raw materials, certification of the origin of caught fish](#). 2020. Government Portal of Socialist Republic of Vietnam. (M1.1)
  - Deputy Minister of MARD. Circular 48/2013/TT-BNNPTNT: [Regulations on inspection and certification of food safety for exported aquatic products](#). 2013. Government Portal of Socialist Republic of Vietnam. (M1.1)
  - Minister of MARD. Decision No.466/QĐ-BNN-TCCB: [Regulations on the functions, tasks, powers and organizational structure of Research Institute for Marine Fisheries](#). 2015. RIMF website. (M1.4)
2. National planning documents (e.g. 5-year plans): Prime Minister. [Decision No. 339/QĐ-TTg: Approving the strategy for development of Vietnam's fisheries by 2030 with vision towards 2045](#). 2021. Government Portal of Socialist Republic of Vietnam. (M1.3; M1.5; M1.7)
  3. National fishery policy documents: Chairwoman Of National Assembly. Law No.18/2017/QH14: [Law on Fisheries](#). 2019. [Government Portal of Socialist Republic of Vietnam](#). (M1.1; M1.2; M1.3; M1.4; M1.6)
  4. Fishery management plans:
    - National level: Prime Minister. [Decision No.339/QĐ-TTg: Approving the strategy for development of Vietnam's fisheries by 2030 with vision towards 2045](#). 2021. Government Portal of Socialist Republic of Vietnam. (M1.3; M1.5; M1.7)

- Provincial level: Vice Chairman of the People's Committee of BRVT. [Decision No.575/QĐ/UBND: Plan of Actions for Marine Economic Development Strategy to 2030 and visions 2045](#). 2021. Government Office (Ba Ria - Vung Tau province). (M1.3; M1.7)
5. Provincial documents:
- The Director of Sub-DOF of BRVT. Report No.167/BC-CCTS: [Summarize the implementation of tasks in 2020 and the direction and tasks planned for 2021 of the The Provincial Department of Fisheries](#). 2020. Sub-DOF of BRVT. (M1.3)
  - Vice Chairman of the People's Committee of BRVT. [Decision No.1457/QĐ-UBND: Guidelines for implementation of law on fisheries in Ba Ria - Vung Tau province \(period 2019-2024\)](#). 2019. Ba Ria - Vung Tau People's Committee. (M1.4)

## M2 Institutions and stakeholders engagement

M2 Institutions and stakeholder's engagement			
M2.1	The organisation identified in the initial screening has an effective management framework in place.	Pass	
M2.2	The management decision-making is based on the best scientific evidence available.	Pass	
M2.3	There is an organisation charged with the identification, management and conservation of ETPs with jurisdiction over the fishery.	Pass	
M2.4	There is an organisation responsible for the conservation and protection of fishery habitats.	Pass	
M2.5	The fishery has some form of governance arrangement in place that can be used to coordinate management between the government organisation and key stakeholders of the fishery.	Gap	
M2.6	There is a consultation process through which fishery stakeholders are engaged in all aspects of planning and decision-making.	Pass	
M2.7	The decision-making process is transparent, with processes and results publicly available.	Pass	
<b>M2 outcome:</b>			<b>Gap</b>
<b>Evidence:</b>			
<p><b>M2.1:</b> <i>The organisation identified in the initial screening has an effective management framework in place.</i></p> <p>As described in M1.4:</p> <ul style="list-style-type: none"> <li>- The <u>policy and planning</u> are under the responsibility of MARD and DOF.</li> <li>- <u>Data collection and analyses</u> are assigned to <a href="#">Research Institute of Marine Fisheries</a></li> <li>- <u>Registration and licensing of vessels/gears</u> are tasks of the Center for Registration of Fishing Vessels, a public non-business unit under DOF. This center has the function of carrying out the registration of fishing vessels to serve the state management tasks of DOF and provide public services in accordance with the law.</li> <li>- <u>Decision-making (both long-term policy and day-to-day)</u> are mainly carried out by DOF, coastal provincial People's Committee, DARD and Sub-DOF.</li> <li>- <u>Monitoring, control and surveillance (MCS)</u> are taken care of by the Fisheries Information Center, a public non-business unit under DOF. The center has the function of managing and operating the fishing vessel monitoring system and the national database on fisheries.</li> <li>- <u>Administration and training</u>: item 'i' of Article 101, Chapter 8 of the Fisheries Law 2017 about role of MARD defines that MARD shall be in charge of state administration and provide professional training in fisheries; organize and provide instructions on statistics, information, propagation and popularization of knowledge and legal education in fisheries.</li> </ul> <p>The fact that the yellow EU card has not yet been lifted is the key concern about effectiveness of the management framework. The last report of EU inspection Delegates in November 2019 said that Vietnam had made a lot of progress compared to the first inspection (May 2018) and was on the right track regarding to the Fisheries Law and its guiding documents; significant improvement in monitoring, controlling and surveilling fishing vessels (MCS) compared with the previous inspection; efforts to deploy the installation of fishing vessel monitoring equipment (VMS); marking of fishing</p>			

vessels to control fishing vessels at sea, efforts to manage fishing capacity through freezing of offshore and assign quota of offshore fishing licenses to 28 coastal provinces.

However, the report also said that the progress of installing vessel monitoring devices was slow; fishing vessel surveillance and the use of a fishing vessel monitoring system were not comprehensive and contained many technical errors; inconsistent among localities regarding administrative sanctions, especially vessels violating foreign waters.

The EC also recommended Vietnam to continue implementing in the coming time with legal framework and law enforcement; monitoring, control and supervision of fishing ships; traceability and certification of fishing from the catch.

**M2.2: The management decision-making is based on the best scientific evidence available.**

As described in M1.4, Research Institute for Marine Fisheries (RIMF) is the public scientific and technological non-business unit directly under MARD. Functions of RIMF related to marine fisheries are performing scientific research, consulting and services on conservation and development of marine resources. One of RIMF main duty is to conduct basic research about:

- Marine resources, the principles of changes in marine resources and fisheries biology for forecasting fishing ground and fisheries management;
- The relationship between the environment, marine resources and marine fisheries; measures to restore, regenerate and develop marine resources;
- Socio-economic issues of fisheries; fisheries management model; model of organization of production and exploitation at sea; biodiversity and marine conservation.
- Investigate and evaluate the biomass stock and sustainable exploitation of marine resources; ecosystems as a scientific basis for the rational use of marine biological resources.

RIMF has close relations with fishers/fishing communities because of their regular sampling at sea and also interviews that serve their scientific research.

**M2.3: There is an organisation charged with the identification, management and conservation of ETPs with jurisdiction over the fishery;**

**AND**

**M2.4: There is an organisation responsible for the conservation and protection of fishery habitats.**

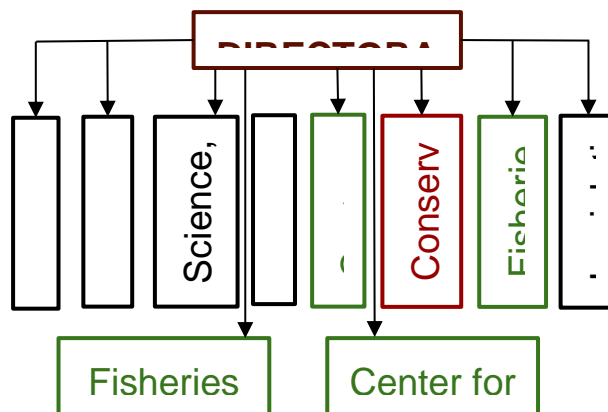


Illustration 12: DOF is an organisation responsible for the conservation and protection of fishery habitats

The Department of Conservation and Development of Aquatic Resources (DCDAR) performs the function of state management of protection, conservation, regeneration and development of aquatic resources, in which including functions of identifying, managing and conserving ETPs, protecting habitats where the spawning and nursery grounds of the living marine resources. The Department of Conservation and Development of Aquatic Resources shall review and report to DOF the list of ETP species, species at risk at yearly basis.

The department collaborates with scientific institutions for surveys on marine fisheries resources. Outcomes of these surveys are:

- Sensitive areas such as spawning grounds, nursery grounds are identified.
- Time restriction applied for fishing areas or creation of fisheries refugia.

**M2.5: *The fishery has some form of governance arrangements in place that can be used to coordinate management between the government organisation and key stakeholders.***

The Fisheries Law 2017 defines there are 2 kinds of activities that have governance arrangements involving relevant stakeholders: co-management in aquatic resource protection and inspection of commercial fishing vessels.

**Co-management in aquatic resource protection:**

In Chapter 1, it is said that the State provides assistance and encourages domestic and foreign individuals and organizations to invest in co-management<sup>11</sup> in aquatic resource protection. Article 10 of this chapter lays out requirements regarding community<sup>12</sup> co-management, whereby:

1. *A community will be recognized and assigned to management in aquatic resource protection if it satisfies the following conditions:*
  - a) *its members are households and individuals living and benefiting from aquatic resources in this area;*
  - b) *It has submitted application for co-management in protection of aquatic resource protection in a certain geographical area which has not been managed by other organizations or individuals;*
  - c) *It has its own plans for protecting and extracting aquatic resources and operating regulations*
2. *Power to recognize and assign management to communities shall be specified as follows:*
  - a) *The People's Committee of each province has power to recognize and assign management in aquatic resource protection in areas located in at least 2 districts;*
  - b) *The People's Committee of each district has power to recognize and assign management in aquatic resource protection in areas under its management;*
  - c) *Recognition and assignment of management in aquatic resource protection in areas located in at least 2 provinces or central-affiliated cities shall be negotiated by People's Committees of these provinces or cities.*

<sup>11</sup> The term "co-management" in this context means a management method in which the State shares its power and responsibilities with communities in protection of aquatic resources.

<sup>12</sup> 'Community' means an organization established by voluntary members who manage and share their benefits and protect aquatic resources in a certain area. This organization may be a legal entity or not and shall be recognized and assigned to engage in co-management by a competent authority.



3. *Contents of a decision on recognizing and assigning management to communities includes:*
  - a) *Name of the community and its representative;*
  - b) *Scope of assigned management;*
  - c) *Location and boundary of the assigned geographical area;*
  - d) *Plans for protecting and extracting aquatic resources and operating regulations of the community.*
4. *Regulatory authorities have the following rights and responsibilities:*
  - a) *Make decisions on recognizing and assigning management in aquatic resource protection;*
  - b) *Provide assistance for communities involved in co-management;*
  - c) *Inspect and supervise activities of communities;*
  - d) *Amend and revoke decisions on recognizing and assigning management in aquatic resource protection;*
  - e) *Exercise rights and carry out responsibilities prescribed by law.*
5. *A community is entitled to:*
  - a) *Organize and manage aquaculture, protection and extraction of aquatic resources, tourism in combination with fishery activities in areas under its management;*
  - b) *Patrol and inspect aquaculture, catching, protection and development of aquatic resources in areas under its management; request competent authorities to take actions against violations;*
  - c) *Prevent violations committed in areas under its management in accordance with regulations of law and its operating regulations;*
  - d) *Be consulted about projects and activities directly related to ecosystem or aquatic resources in the areas under its management;*
  - e) *Preferential and supporting policies in accordance with regulations of law;*
  - f) *Establish a community fund.*
6. *A community shall:*
  - a) *Comply with contents specified in the decision on recognizing and assigning management prescribed in Clause 3 of this Article;*
  - b) *Comply with regulations of law on fishery activities and follow inspections carried out by the competent authority in accordance with regulations of law;*
  - c) *Cooperate with competent authority in patrolling, inspecting, investigating, preventing and taking actions against violations committed in the area under its management;*
  - d) *Submit reports on its operation to the competent authority in accordance with regulations of law.*
7. *A decision on recognizing and assigning management in aquatic resource protection will be revoked if:*
  - a) *Its contents are erased or changed;*

- b) *The community is dissolved according to its operating regulations or regulations of law;*
  - c) *The community fails to implement the plan for protecting and extracting aquatic resources or comply with its operating regulations;*
  - d) *The decision is revoked for national defense and security or public purposes according to a decision issued by the competent authority;*
  - e) *There are other violations in which the decision shall be revoked.*
8. *A decision on recognizing and assigning management will be adjusted if there are changes in its contents.*
9. *The authority recognizing and assigning management has power to revoke and adjust the decision's contents.*
10. *The Government shall provide detailed guidelines for this Article.*

However, the implementation of fisheries co-management in Vietnam is not really effective.

Firstly, after 20 years of piloting fishery co-management methods, the development of a legal framework is considered incomplete.

Secondly, the funding for the programs is mainly from external support, not from the fishing grounds that the fishing community operates. So, when the project ends and the outside support is gone, everything will be back to the way it was.

Thirdly, the awareness and capacity of fishermen as well as officials of authorities (from central to local level) on fishery co-management is still limited, not having enough qualified personnel to do the job.

Source: [Vietnam Seafood magazine](#)

One [report of a co-management pilot in Ben Tre](#), by IUCN.

### **Fishing vessel inspection**

Chapter 5, article 68 to 70 define requirements for fishing vessel inspecting organizations:

#### **Article 68. Conditions for inspecting organizations**

1. *Organizations and individuals will be issued with the certificates of eligibility for inspecting commercial fishing vessels if:*
  - a) *They are established in accordance with regulations of law.*
  - b) *Facilities meet the requirements;*
  - c) *Inspectors meet the requirements;*
  - d) *There is a suitable quality management system.*
2. *The Government shall provide detailed guidelines for this Article.*

#### **Article 69. Issuance, reissuance and revocation of certificates of eligibility for inspecting commercial fishing vessels**

1. *The Ministry of Agriculture and Rural Development has power to issue, reissue and revoke certificates of eligibility for inspecting commercial fishing vessels and inspect the maintenance of eligibility every 24 months.*

2. *The certificate of eligibility for inspecting commercial fishing vessels will be reissued if:*
  - a) *It is lost or damaged; or*
  - b) *The holder's information specified in the certificate is changed.*
3. *The certificate of eligibility for inspecting commercial fishing vessels will be revoked if:*
  - a) *Its contents are erased or changed;*
  - b) *The inspecting organization or individual fails to inspect commercial fishing vessels in accordance with regulations of law;*
  - c) *The organization or individual fails to satisfy the conditions prescribed in Clause 1 Article 68 of this Law;*
  - d) *There are other violations in which the certificate shall be revoked.*
4. *The Minister of Agriculture and Rural Development shall promulgate national technical regulations on classification and construction of commercial fishing vessels; procedures for recognizing the eligibility for inspecting commercial fishing vessels; prescribe standards of competence and provision of professional training for inspectors; issue and revoke cards or seals of inspectors.*

**Article 70. Rights and responsibilities of inspecting organizations and inspectors**

1. *An inspecting organization has the following rights and responsibilities:*
  - a) *It is entitled to inspect commercial fishing vessels in accordance with regulations of law;*
  - b) *It is entitled to request shipowners, shipbuilders or modifying facilities of commercial fishing vessels to provide documents on technical designs and facilitate the supervision, technical inspection by inspectors and ensure the safety of inspectors during their performance of tasks;*
  - c) *It is entitled to receive inspection fees in accordance with regulations of law;*
  - d) *It shall exercise technical supervision of commercial fishing vessels in accordance with regulations of law;*
  - e) *The head of the inspecting organization shall take legal responsibility for inspection results and issue certificates of technical safety;*
  - f) *It shall comply with instructions and be subject to inspections in accordance with regulations of law;*
  - g) *It shall submit regular or ad hoc reports on inspecting commercial fishing vessels according to instructions given by the Ministry of Agriculture and Rural Development.*
2. *An inspector has the following rights and responsibilities:*
  - a) *He/she is entitled to sign and use special seals or prints when making documents on registration of commercial fishing vessels and equipment thereon in accordance with regulations of law;*
  - b) *He/she may refuse to carry out technical inspection if the conditions for inspection prescribed by law have not been satisfied.*

- c) *He/she may reserve opinions other than decisions of the heads of inspecting organizations related to conclusions of assessment of technical status of commercial fishing vessels and equipment installed thereon;*
- d) *He/she shall inspect commercial fishing vessels in accordance with national technical regulations on classification and construction of ships*
- e) *He/she shall take responsibility for results of technical safety inspection and classification of commercial fishing vessels.*

There is no implementation report available.

In both 2 above activities, there are not any committees in place to facilitate coordination across stakeholders and jurisdictions. This indicator is rated as 'gap'.

**M2.6: *There is a consultation process through which fishery stakeholders are engaged in decision-making.***

- a. The consultation with stakeholders is mandatory as defined by law (please refer to M1.6 for details), and covered by the management system. Below are examples with consultation activities in the fisheries sector. The mechanism to engage stakeholders is that MARD/DOF/DARD collaborate with the private sector (NGOs, industry associations) to carry out such workshops or seminars.
- b. Examples of consultation processes in fisheries sector:
  - [Consultation Conference on Fisheries Law](#) (amended) on 18/9/2017 in Quang Ninh province.
  - [VASEP - 20 years of doing a good job as a "bridge"](#) by Vietnam Association of Seafood Exporters and Producers (18/06/2018). 'As an industry association working with a professional spirit, with many ideas, VASEP has made many proposals, recommendations, and consultations for state management agencies, especially the Ministry of Agriculture and Rural Development in the planning process, developing policies to promote production and export of the fisheries sector in particular...'
  - [Series of events to consult and comment on the draft Fisheries Law 2017](#) in two days (May 23-24, 2018) by the Directorate of Fisheries, Center for Marine Conservation and Community Development (MCD), UNDP/GEF SGP program and Binh Dinh Department of Agriculture and Rural Development. Content of consultation: guidance on co-management in the protection of aquatic resources, regulations on the Fund for the protection and development of aquatic resources and draft guidelines for management of aquatic resource protection zones; experience in empowering the community to manage, protect, exploit and develop the marine area with coral reefs.
  - [Fisheries, sustainable livelihoods and community development](#): Guidelines for Regulatory Implementation and Consultation Action Plan Implementation of Co-management in Fisheries Resources Protection to reduce Illegal Fishing, by Directorate of Fisheries and Center for Marine Conservation and Community Development (MCD, 31/5/2019).
  - [Seminar Consultation](#) report, review, analysis of fishing vessel tracking data and technology solutions for piloting fishing log and electronic traceability in Vietnam (14/01/2020), by Fisheries Information Center, Directorate of Fisheries and Center for Marine Conservation and Community Development (MCD).

- [Kick-off meeting "CSR Advisory Group"](#) to promote CSR implementation in seafood supply chain in Vietnam (20/2/2020), by ILO Vietnam.
- Fisheries Association: [Public consultation workshop](#) on the plan to protect and exploit aquatic resources in Hon Nhan sea area (22/7/2020) by Binh Dinh Fisheries Association has cooperated with Fisheries Sub-Department, People's Committee of Ghenh Rang Ward and Quy Nhon Port Border Guard Station.
- Invitation to attend [the consultation workshop](#) on the Project on Development of the Seafood Processing Industry, the Project on Sustainable Aquaculture Development in the Mekong Delta and develop an action plan to implement the EVFTA Agreement (02/12/2020).

This indicator is rated as 'pass'.

#### **M2.7: The decision-making process is transparent, with processes and results publicly available**

From all examples given in M2.6, it can be concluded that formal communication with fishery stakeholders for explanation of any decision that affects them has been done in a transparent way. Processes and results can be accessed via websites of [MARD](#), [DOF](#), [local NGOs](#), [international NGOs](#) and [industry associations](#). Hence this indicator is rated as 'pass'.

#### **EVIDENCE:**

Fisheries primary legislation:

Promulgated by the National Assembly:

- Chairwoman Of National Assembly. Law No.18/2017/QH14: [Law on Fisheries](#). 2017. [Government Portal of Socialist Republic of Vietnam](#). (M2.1; M2.5)

### **M3 Monitoring, control and surveillance**

<b>M3 Monitoring, control and surveillance</b>			
<b>M3</b>	M3.1	The MCS organisation identified in the initial screening provides effective compliance and enforcement mechanisms that ensure management measures are complied with.	Pass
	M3.2	There are adequate sanctions for illegal activities that can be applied when rules and regulations are broken.	Pass
	M3.3	There is no substantial evidence of widespread non-compliance in the fishery, and no substantial evidence of illegal, unreported and regulated (IUU) fishing.	Gap
	M3.4	Surveillance is conducted through a regime that includes a range of activities, for example, at-sea and portside inspections, observer programmes and VMS, as appropriate.	Gap
	M3.5	Stakeholders in the fishery are aware of, and understand, the laws and regulations.	Pass
<b>M3 outcome:</b>			<b>Gap</b>
<b>Evidence:</b>			
<b>M3.1: The MCS organisation identified in the initial screening provides effective compliance and enforcement mechanisms that ensure management measures are complied with.</b>			

### **National level**

Annually, MARD organizes meetings to review management tasks in the year and plan tasks for the following year. In this Meeting, DOF reports to MARD all aspects of fisheries management for a whole year-round in national wise scope.

Every six-month period, DOF also organizes North-East Monsoon & South West Monsoon fishing season meetings to review the status of national fisheries in the last fishing season and plan for the following fishing season.

### **At provincial level**

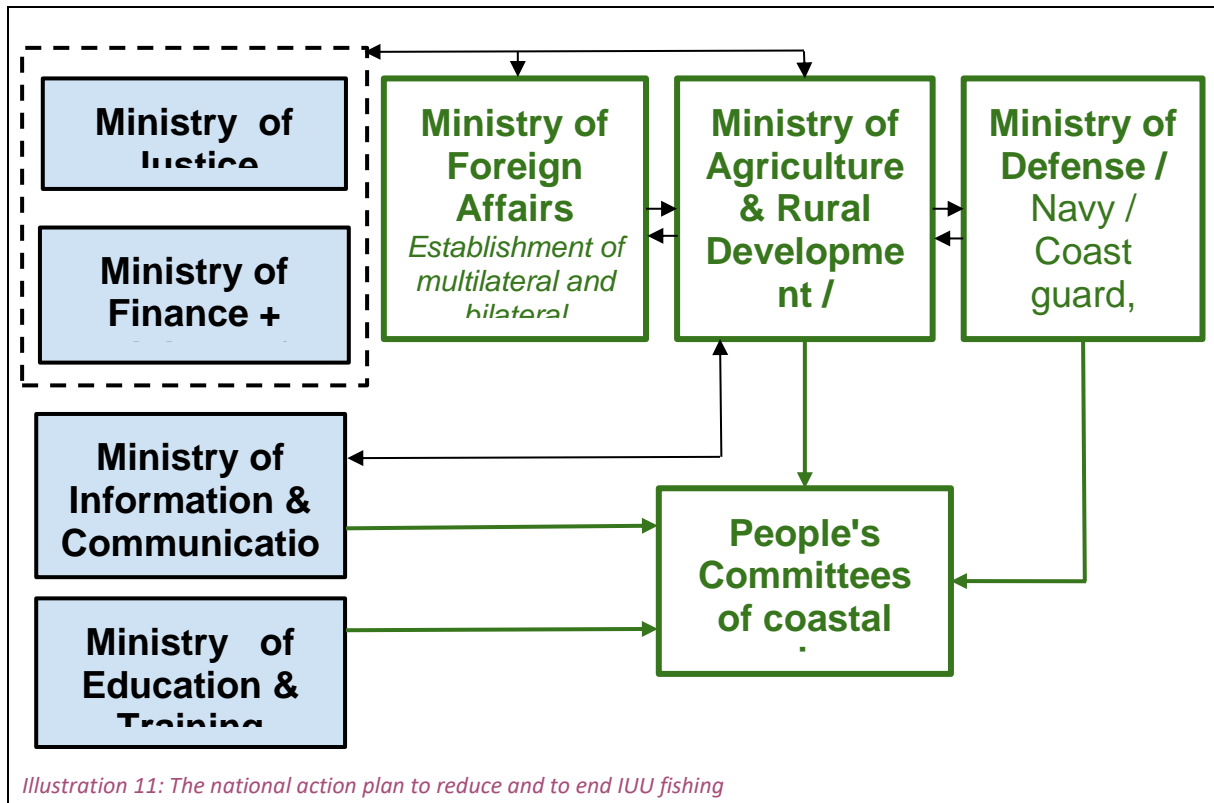
Every six-month period, BRVT Sub-DOF organizes meetings to review the management performance for the first half of the fiscal year and make a plan of actions for the last half. On this meeting, BRVT Sub-DOF reviews all aspects of management mechanism such as management activities, administrations, capture fisheries management, marine resources protections, fishing vessels & fisheries service management, aquaculture management and other activities (Report No.90/BC-CCTS on Status of Vung Tau Fisheries management at first six-month of 2020 and action plans for last six-month year-end of 2020).

Similarly, BRVT Sub-DOF also has annual meetings to review monitoring and management results at the year-end for one-year management performance and plan for the next six-month period in the following year. Similar to the six-month Meeting, BRVT Sub-DOF also reviews all aspects of fisheries management in Vung Tau province (Report No.167/BC-CCTS on Status of Vung Tau Fisheries management in 2020 and action plans for 2021).

### **Implementation of relevant strategies to minimise the risk of IUU:**

Regarding strategies to minimise the risk of illegal, unreported and unregulated (IUU) fishing, the Prime Minister of Vietnam promulgated Decision No.78/QĐ-TTg on January 16, 2018 about Approval of the national action plan to reduce and to end IUU fishing. According to the decision, MARD is responsible for the main coordination and collaborates with other ministries and their affiliates to execute the action plan. This action plan can be illustrated in the following diagram:





The implementation at provincial level is under the responsibility of the provincial Committee of People. A monitoring, control and surveillance (MCS) system has been implemented by Vung Tau DARD under Decree 26/2019/ND-CP and detailed by Plan No.21/KH-UBND date 20 Feb, 2020 of BRVT People's Committee on implement urgent tasks to adapt with "Yellow Card" situation which mostly focus & strengthen on MCS activities, which involve following departments:

- Department of Agriculture & Rural Development and its affiliates - Department of Fisheries
- Vietnam Fisheries Surveillance, Squad 2
- Department of Internal Affairs
- Department of Foreign Affairs
- Department of Justice
- Department of Finance
- Naval Region 2 Command
- Coast Guard Region 3
- Provincial Border Guards
- Police
- BRVT Fishery Association
- Port authorities
- BRVT Radio & Television Station
- Organizations managing fishing ports in BRVT
- BRVT Newspaper

**M3.2:** *There are adequate sanctions for illegal activities that can be applied when rules and regulations are broken.*

Decree 42/2019/ND-CP laid out Guidelines for penalties for administrative violation against regulation on Fisheries:

#### **Forms of penalties**

The main form of punishment is money, depending on the severity and nature of the violation, the following penalties may be added (Clause 2, Article 4):

- Deprivation of the right to use licenses or practice certificates for a definite time, suspension of operations for a definite time;
- Confiscation of material evidence and means used to commit administrative violations, including: fishing vessels, fishing gear, electric stimulation tools, banned substances, chemicals, banned chemicals, poisons, caught products.

The remedial measures for violations specified in Article 3 of this Decree are as follows:

- Forced release live fish back into their habitat;
- Forced transfer of aquatic products on the list of endangered precious and rare aquatic species that have died to competent agencies for handling;
- Forced release of endangered and rare aquatic products according to regulations
- Forced restoration of the original status of functional zones in marine protected areas, habitats of aquatic creatures;
- Forcing fishing vessel owners to pay expenses for returning Vietnamese citizens detained by foreign competent authorities to return country home;
- Forced dismantling of fishing vessels banned from development or newly built or converted fishing vessels without written approval of competent authorities;
- Forcibly flying the national flag of the Socialist Republic of Vietnam or the national flag;
- Forced re-export of fishing vessels.

#### **Fines**

Related articles include:

- Article 6 Violation of regulations on protection of habitats of aquatic species: fine from 5 million to 200 million dong along with additional penalties for acts of illegally obstructing the natural migration of aquatic species; destroying aquatic resources or aquatic breeding areas or living areas of young aquatic; destroy the habitat of aquatic species on the ETP list; encroaching upon or harming aquatic resource protection areas; and one of the acts of exploration, exploitation of natural resources, construction or demolition of underwater works that degrade or lose aquatic resources or cause damage to habitats, aquatic breeding areas or living areas of young aquatic.
- Article 7 on violations of regulations on prohibited fishing areas, applicable to violations that are not serious enough for criminal prosecution: fine from 10 million to 50 million dong along with additional penalties. Penalties are doubled for trawling, fishing and fishing gear combined with light (except for squid fishing).
- Article 8 relating to violations of the management of aquatic species, including illegal fishing of ETP species: fine from 3 million to 100 million dong along with additional penalties.

- Article 9 deals with violations of regulations on management of marine protected areas, including illegal floating buoys, conducting scientific research without approval by competent authorities, and illegal fishing: fine from 50 million to 200 million dong along with additional penalties.
- Article 20 deals with serious violations in fishing, including vessels without a regulated fishing license or an expired fishing license, transshipment from unlicensed fishing vessels or vessels involve IUU fishing, not equipped with regulated VMS equipment, deliberately failing to operate or disable VMS, failing to keep catch and purchase logs in accordance with regulations, IUU fishing, overfishing: fine from 300 million to 1 billion dong along with additional penalties.
- Article 21 deals with violations of regulations on fishing areas, including illegal fishing in the coastal waters of other provinces; wrong size of fishing vessels operate in coastal areas, inland waters and the high seas; trawling, fishing and fishing gear combined with light (except for squid fishing) in coastal areas: fine from 5 million to 40 million dong along with additional penalties.
- Article 22 related to violations of regulations on quotas for fishing catches: fine from 20 million to 50 million dong along with additional penalties.
- Article 23 related to violations of regulations on fishing licenses: fine from 20 million to 70 million dong along with additional penalties.
- Article 24 regarding violations of regulations on transshipment of fishery products or support for IUU fishing vessels: fine from 100 million to 300 million dong along with additional penalties.
- Article 25 related to violations of regulations on recording on fishery logbook, fishing reports, fishing logs and transshipment: fine from 5 million to 50 million dong along with additional penalties.
- Article 27 deals with violations of regulations on fishing gear, including illegal disposal of fishing gear into natural waters, failure to mark fishing gear or improperly marking fishing gear, possession of prohibited tools: fine from 2 million to 30 million dong along with additional penalties.
- Article 28 related to violations of regulations on using electricity for fishing: fine from 3 million to 50 million dong along with additional penalties.
- Article 29 related to violations of regulations on storage and use of chemicals, banned chemicals and toxic substances for fishing: fine from 10 million to 70 million dong along with additional penalties.
- Article 30 regarding violations of regulations on flying national flags: fine from 2 million to 10 million dong along with remedial measures.

**M3.3:** *There is no substantial evidence of widespread non-compliance in the fishery, and no substantial evidence of illegal, unreported and regulated (IUU) fishing.*

#### **Vietnam IUU context**

On 23 October 2017, the European Commission warned Vietnam over insufficient action to fight illegal fishing with a "yellow card" about the risk of it being identified as a non-cooperating country. Content of the 'yellow card', as described on the official website of the EU, is that '*Vietnam is not doing enough to fight illegal fishing. It identifies shortcomings, such as the lack of an effective sanctioning system to deter IUU fishing activities and a lack of action to address illegal fishing*

*activities conducted by Vietnamese vessels in waters of neighbouring countries, including Pacific Small Island Developing States. Furthermore, Vietnam has a poor system to control landings of fish that are processed locally before being exported to international markets, including the EU' (source: [European Commission website](#)).*

The EC recommended that Vietnam should implement within the timeframe of 6 months (from October 23, 2017 to April 23, 2018) before the inspection of EC scheduled in May 2018, including:

- Ensure effective implementation and enforcement of revised national laws;
- Enhancing the effective implementation of international rules and regulatory measures through a well-enforced and monitored sanctions regime;
- Address identified gaps in monitoring, control and surveillance (MCS) related to the requirements laid down in international and regional regulations and within the framework of the catch certification system;
- Strengthening management and improving the system of registration and licensing;
- Balance fishing capacity and fleet policy;
- Enhance the traceability of fishery products and take all necessary steps, in accordance with international law, to prevent illegal fishing products from being traded and imported into the territory;
- Strengthen and promote cooperation with other countries (especially coastal countries in waters where ships flying the Vietnamese flag can operate) in accordance with international obligations;
- Ensure compliance with reporting and retention obligations in RFMOs (regional fisheries management organizations)

#### **Progress of lifting the yellow card**

From May 16 - 24, 2018, the inspection team of the General Department of Marine and Fishery Affairs of the European Commission (EC Inspection Delegation) worked in Vietnam to check the actual implementation. At the end of the business trip, the European Commission sent a letter dated June 25, 2018 (Ares (2018) 3356871) to the Ministry of Agriculture and Rural Development announcing the European Commission's opinion on the contents of the inspection. The delegation acknowledged the active participation of central agencies in combating IUU fishing and completed the legal framework by issuing the 2017 Fisheries Law. However, with the field inspection findings, the EC Inspectorate believed that the situation of Vietnam's implementation against IUU fishing in practice in localities had not been significantly improved: the certification and certification of caught aquatic products were flawed; the fishing vessel surveillance system had not met the requirements; the fishing vessel violation in foreign waters was still complicated and the administrative sanction level for IUU fishing violations was low and not aligned with regional and international practices.

November 5-14, 2019, the inspection team of the General Department of Marine and Fishery Affairs of the European Commission worked with Vietnam to follow up the implementation of previous EC recommendations on IUU. On December 19, 2019, the EC issued an official letter MARE B4 / SPM Ares (2019) announcing its opinion on the checked contents in Vietnam and the decision of not yet withdrawing the yellow card for Vietnamese seafood imported into the EU market. However, the EC Delegates confirmed that Vietnam had made a lot of progress compared to the first inspection (May 2018) and was on the right track:

- The Fisheries Law had been implemented and its guiding documents were in practice.

- Significant improvement in monitoring, controlling and surveilling fishing vessels (MCS) compared with the previous inspection.
- Efforts to deploy the installation of fishing vessel monitoring equipment (VMS); regulating and implementing the EC's recommended marking of fishing vessels to control fishing vessels at sea, and efforts to manage fishing capacity through freezing of offshore fishing fleets and ministry The Agriculture and Rural Development issued the Decision to assign quota of offshore fishing licenses to 28 coastal provinces.

However, according to the letter:

- The progress of installing vessel monitoring devices on fishing ships was still slow; fishing vessel surveillance and the use of a fishing vessel monitoring system were not comprehensive and contained many technical errors;
- Administrative sanctions were very limited and inconsistent among localities, especially vessels violating foreign waters;
- There was no evidence to prove that the competent authorities guarantee a complete and accurate traceability mechanism in the processing plant.

The EC also made recommendations for Vietnam to continue implementing in the coming time with legal framework and law enforcement; monitoring, control and supervision of fishing ships; traceability and certification of fishing from the catch.

On June 24, 2021, the website of [the Government Electronic Newspaper](#) of the Socialist Republic of Vietnam reported that The Deputy Prime Minister issued Directive 17/CT-TTg on inter-sectoral coordination mechanism between departments, ministries, branches and People's Committees of 28 coastal provinces and cities in exchanging and processing information in order to prevent , towards ending the situation of Vietnamese fishing vessels violating regulations on combating illegal, unreported and unregulated (IUU) fishing in foreign waters. According to the news, the EC assessed that some work was still slow, there was no clear change, especially the situation of Vietnamese fishing vessels violating seafood exploitation in foreign waters has decreased, but not stable and complicated. One of the important reasons is that the coordination between the departments, ministries, branches and People's Committees of 28 coastal provinces and cities is not tight enough in exchanging information, detecting, preventing, investigating and promptly handling violations.

In 2020, the province BRVT organized 12 patrols and control at sea with 554 fishing vessels, detected 102 violating fishing vessels, issued a decision to sanction with a total amount of VND 3,709,200,000, in which there are 28 cases of illegal fishing (fishing without a license, fishing in the wrong area, not equipped with tracking devices, not recording, not reporting), 03 cases have been transferred to the Provincial People's Committee to issue a sanctioning decision with a total amount of 2,441,200,000 VND, 69 cases have been fined with the amount of 553,200,000 VND.

With all above facts, the team of assessors conclude that IUU fishing in Vietnam and BRVT is not effectively tackled, this indicator is rated as 'gap'.

**M3.4:** *Compliance with laws and regulations is actively monitored, through a regime which may include at-sea and portside inspections, observer programmes and VMS.*

A monitoring, control and surveillance (MCS) system has been implemented by Vung Tau DARD under Decree 26/2019/ND-CP and detailed by Plan No.21/KH-UBND date 20 Feb, 2020 of BRVT

People's Committee on implement urgent tasks to adapt with "Yellow Card" situation which mostly focus & strengthen on MCS activities.

Based on Fisheries Laws 2017 and by-law documents, especially Decree 26/2019/ND-CP, all trawl fisheries activity at sea is monitored by the VMS system under Vung Tau fisheries management system. By December, 2020, in BRVT province, 97.8% of vessels above 24m and 83.8% of vessels 15-24m have been equipped with VMS (Vung Tau Sub-DOF Report 2020).

Most trawl fleets in Vung Tau are over 12m length which fishing logbook is mandatory to record daily and submit to fishing port authorities within 24h after landings are completed (Clause 1, Article 4, Circular 21/2018/TT-BNNPTNT).

With availability of human and capacity resources so far, BRVT prioritises verification at fishing ports and landing sites. In 2020, the province BRVT organized 12 patrols and control at sea with 554 fishing vessels, detected 102 violating fishing vessels, issued a decision to sanction with a total amount of VND 3,709,200,000. in which there are 28 cases of illegal fishing (fishing without a license, fishing in the wrong area, not equipped with tracking devices, not recording, not submitting updates. sign for fishing according to regulations), 03 cases have been transferred to the Provincial People's Committee to issue a sanctioning decision with a total amount of 2,441,200,000 VND, 69 cases have been fined with the amount of 553,200,000 VND.

Number of fishing logbooks obtained from the beginning of 2021 to June 2021 is 2139 out of 3388 vessels, accounting for 63.13%, in which trawl fishing vessels is 598 out of 1476 vessels, accounting for 40.51%.

This indicator is rated as 'gap' because of the lack of resources of Sub-DOF to fully control the fisheries and effectively enforce applicable law and regulations.

### **M3.5: Stakeholders in the fishery are aware of, and understand, the laws and regulations.**

After the Fisheries Law in 2017 came into force on Jan 1<sup>st</sup> 2019, a number of training for implementing the law on fisheries has been conducted by Sub-DOF for the provincial organizations tasked with fisheries management. In BRVT, DARD has approved the Law on [Fisheries training plan for 2021](#) with a total of 15 training classes. Participants include fishermen, fishing port representatives, middle men and stakeholders in related fisheries with the expectation that all stakeholders are aware of and understand the laws and regulations.

#### **EVIDENCE:**

1. Fisheries legislation (primary and subsidiary):

#### Promulgated by the National Assembly:

- Chairwoman Of National Assembly. Law No.18/2017/QH14: [Law on Fisheries](#). 2019. [Government Portal of Socialist Republic of Vietnam](#). (M3.4; M3.5)

#### Promulgated by the Government:

- Prime Minister. Decision No.78/QD-TTg: [the National Plan of Actions to combat IUU fishing \(NPOA-IUU\)](#). 2018. [Government Portal of Socialist Republic of Vietnam](#). (M3.1)
- Prime Minister. Decree 26/2019/ND-CP: [Guidelines for implementation of the law on fisheries](#). 2019. [Government Portal of Socialist Republic of Vietnam](#). (M3.1; M3.4)



- Prime Minister. Decree 42/2019/ND-CP: [Guidelines for penalties for administrative violation against regulation on Fisheries](#). 2019. Government Portal of Socialist Republic of Vietnam. (M3.2)
- Deputy Prime Minister. Directive 17/CT-TTg: [Inter-sectoral coordination mechanism between departments, ministries, branches and People's Committees of 28 coastal provinces and cities in exchanging and processing information in order to prevent, towards ending the situation of Vietnamese fishing vessels violating regulations on combating illegal, unreported and unregulated \(IUU\) fishing in foreign waters](#). 2021. Government Portal of Socialist Republic of Vietnam. (M3.3)

**Promulgated by MARD:**

- Deputy Minister of MARD. Circular 21/2018/TT-BNNPTNT: [Regulating the recording, submission of reports and logbooks of aquatic resources; publication of designated fishing ports confirming the origin of fisheries from exploitation; list of illegal fishing vessels; certification of raw materials, certification of exploited aquatic resources](#). 2018. [Government Portal of Socialist Republic of Vietnam](#). (M3.4)
2. Provincial documents:
- The Director of Sub-DOF of BRVT. Report No.90/BC-CCTS: [Status of Vung Tau Fisheries management at first six-month of 2020 and action plans for last six-month year-end of 2020 of the The Provincial Department of Fisheries](#). 2020. Sub-DOF of BRVT. (M3.1)
  - The Director of Sub-DOF of BRVT. Report No.167/BC-CCTS: [Summarize the implementation of tasks in 2020 and the direction and tasks planned for 2021 of the The Provincial Department of Fisheries](#). 2020. Sub-DOF of BRVT. (M3.1; M3.4)
  - Vice Chairman of the People's Committee of BRVT. Plan No.21/KH-UBND: [Implement urgent tasks to adapt to the "Yellow Card" situation issued by the European Union in Ba Ria Vung Tau province](#). 2020. Government Office (Ba Ria - Vung Tau province). (M3.1; M3.4)

## Section 2 – Fishery risk ratings: Catch, ETPs, habitats and ecosystem

### Section 2a: Catch

The first of the four Fishery Risk Ratings relates to the species caught in the fishery, and is named 'Catch'. This represents the risk posed by the fishery to the populations of the stocks it exploits, including discards, and particularly the risk of overfishing. Mitigation measures involve understanding the effects of the fishery on the fished species, determining appropriate levels of catch, restricting the total fishing effort, and others. The most effective way to reduce the risk posed by the fishery is to reduce total effort and/or fishing mortality, and this is reflected in the potential mitigation scores.

The catch of the multi-species fishery is divided into two parts:

**Part A: Total aggregate catch** (based on a target reference point = multi-species maximum sustainable yield [MMSY])

**Part B: High-risk species/species groups** (based on a limit reference point = PRI). Note: These species or groups of species do not include ETPs that are assessed separately below.

#### Part A: Total aggregate catch

<b>Part A: Total Mitigation Value</b>	32
<b>Part A: Catch Risk Value (100 minus mitigation value)</b>	68
<b>Part A: Catch Risk Rating</b>	High

A1: Management objectives and references points	
	Mitigation Score
The fishery has not developed any objectives or target reference points to ensure that the total multi-species assemblage is maintained or restored to levels capable of producing the multi-species maximum sustainable yield (MMSY) as qualified by relevant environmental and economic factors.	0
The fishery has informally adopted objectives and target reference points to ensure that the total multi-species assemblage is maintained or restored to levels capable of producing the MMSY.	10
The fishery has formally adopted objectives and target reference points to ensure that the total multi-species assemblage multi-species assemblage is maintained or restored to levels capable of producing the MMSY.	20
Evidence	
Information on catch composition – at a minimum: the independent fisheries survey conducted by Research Institute of Marine Fisheries (RIMF) using the bottom trawl in August 2018 indicated 372 species belonging to 111 families whereas 21 species contributed from 1% to the total survey catch. The dominant species were Brushtooth lizardfish (14.6%), Blunt-nose lizardfish (5.3%) and Mitre squid (5.1%). Observed on boat fishing vessel of BRVT trawlers in 2015-2016 by RIMF identified 232 species in 70 families (Appendix 1), in which the dominant species of the otter trawl were Whiskered velvet (18.7%), Blunt-nose lizardfish (11.2%), Horn dragonet (7.1%); Loligo squids (6.5%); Brushtooth lizardfish (5.6%); Greater lizardfish (3.2%); Southern velvet shrimp (2.5%) and of the pair trawl were Bigeye scad (17.1%);	

Blunt-nose lizardfish (13.6%), Yellowtail scad (12.1%); Goldband fusilier (10.5%); Sulphur goatfish (9.1%); Moonfish (8.4%); and other goatfish (3.9%).

Technical assessors from RIMF decided that Greater lizardfish (*Saurida tumbil*), Blunt-nose lizardfish (*Trachinocephalus myops*), Sulphur goatfish (*Upeneus sulphureus*), Bigeye scad (*Selar crumenophthalmus*) and Yellowtail scad (*Atule mate*) are species covered by this Improver Program (IP).

Although several trawl surveys and stock assessments have been carried out by the RIMF, data at species level for groups of species within the scope of this IP are not sufficient. Results of such surveys and assessment imply that the fisheries are over exploited, despite the fact there are no reference points have been set up yet. The stocks shall be assessed to enable setting up target reference points prior to any stock rebuilding strategy, harvest strategy and harvest rules are suggested.

A2. Data and information	
	Mitigation score
The fishery does not monitor any indicators relating to total catch nor collect sufficient data and information to assess the current status of the resources.	0
The fishery monitors indicators relating to total catch with a low degree of certainty and frequency and collects some information that could be used to estimate the status of the fishery resources through proxies.	8
The fishery monitors indicators relating to total catch with a high degree of certainty and frequency and also collects sufficient data and information to formally assess the current status of the fishery resources.	17
Evidence	
Report on CPUE, biomass, species composition and catch composition of the overall demersal fisheries resources or of the species level based on the trawl surveys has been available since 2000. CPUE of the BRVT trawl fisheries (otter trawl, pair trawl) from logbook are available from 2015, but data are not recorded at species level.	
Number of fishing logbooks obtained from the beginning of 2021 to June 2021 is 2139 out of 3388 vessels, accounting for 63.13%, in which trawl fishing vessels is 598 out of 1476 vessels, accounting for 40.51%.	

A3. Fishery resource assessment	
	Mitigation Score
There is no recent or reliable assessment of the status of the fishery resource.	0
The status of the fishery resource is based indirect evidence from indicators or proxies of stock status.	8
The fishery resource status has been recently assessed using a scientifically defensible methodology.	17
Evidence	
Based on the trawl survey data in 2018 and observed data onboard fishing vessels in 2015-2016 conducted by RIMF, 5 most dominant species were pointed out as 'other' species, given in the following table.	
<p><b>Table 1: Species classification</b></p>	

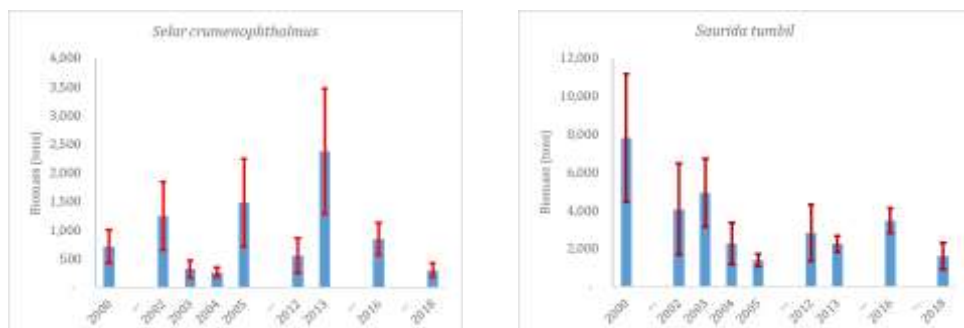
Species common and scientific names	Approximate proportion of catch (%)	Classification	
Bigeye scad - <i>Selar crumenophthalmus</i>	17.1	Main	
Greater lizardfish - <i>Saurida tumbil</i>	13.8	Main	
Blunt-nose lizardfish - <i>Trachinocephalus myops</i>	13.5	Main	
Yellowtail scad - <i>Atule mate</i>	12.1	Main	
Sulphur goatfish - <i>Upeneus sulphureus</i>	9.1	Main	

The bottom trawl with “swept-area” method ([Sparre and Venema, 1995](#)) was used to estimate the biomass and abundance of demersal resources distributed near the seabed in Vietnam. The Southeastern region is a part of Vietnam EEZ. This region is flat and shallow, therefore, the trawlable catch is mixed with the small pelagic fish and the demersal fish as well as the crustacean and cephalopod (Vu et al., 2013). Thus, the bottom trawl survey becomes important since it provides either data for the demersal resources or pelagic fish.

Since 2000, the trawl surveys with systematic fixed sampling stations have been used to estimate the standing stock biomass. The biomass of the most dominant species based on survey in 2018 listed in above table are:

- Bigeye scad: biomass was estimated at 302±125 tons and the long-term average biomass was 905±309 tons.
- Greater lizardfish: biomass was estimated at 1,601±696 tons and the long-term average biomass was 3,855±1,627 tons.
- Blunt-nose lizardfish: biomass was estimated at 9,352±1,782 tons and the long-term average biomass was 16,231±3,256 tons.
- Yellowtail scad: biomass was estimated at 2,757 tons and the long-term average biomass was 2,229 tons.
- Sulphur goatfish: average biomass for a period 2000-2018 was estimated at 2,229 tons and biomass in 2018 was 2,757 tons.

Trends of stock biomass of these species are shown in Figure 5 below.



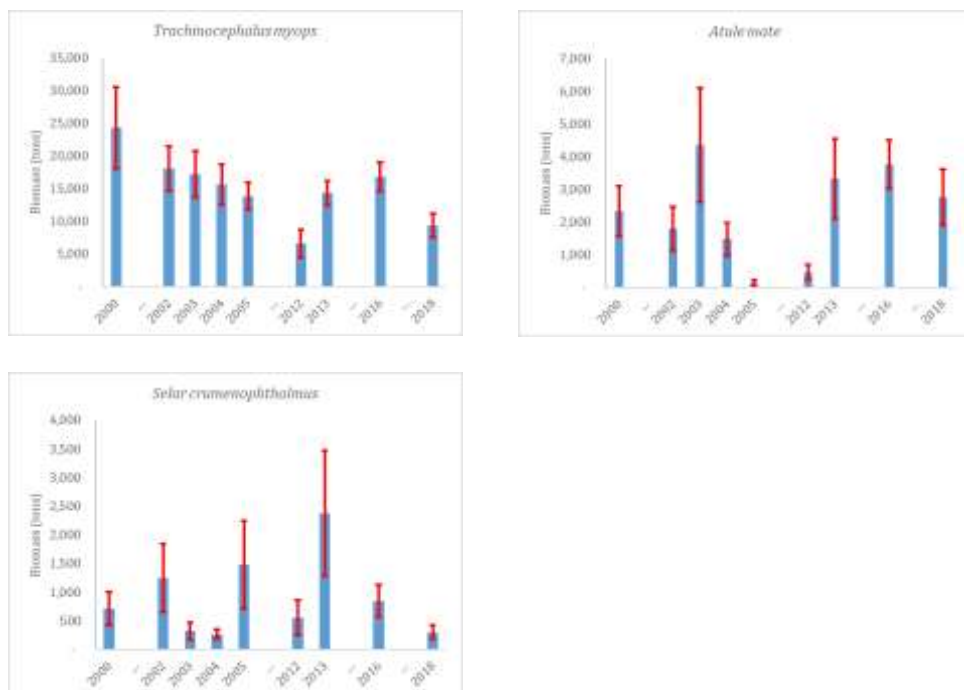


Figure 5: Trends of standing biomass of the five dominant species of the trawl fishery in the southeastern of Vietnam

The above figure illustrates that the biomass of these species highly fluctuated over time and there were 4 species heavily exploited (biomass in 2018 lower than long-term average biomass). The stock status reference points are not available, neither strategies at the national or provincial level of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.

#### A4. Status of fishery resource

	Mitigation Score
The status of the fishery resource with respect to the TRP is unknown.	0
The status of the fishery resource with respect to the TRP is known with a low level of certainty, and is based on proxies.	8
The fishery status with respect to the TRP is known with a high level of certainty.	17

#### Evidence

Although an appropriate multi-species stock assessment model applicable for trawl fisheries in BRVT is not developed yet and existing stock assessment only covers biomass estimation and fisheries description, the biomass estimation in 2018 indicated the stock of 4/5 species is below the long-term average biomass. This illustrates that the stocks are over exploited. Time series indicators are available since the bottom trawl survey has been conducted regularly. However, the CPUE and total landings from fisheries are not recorded.

#### A5. Management measures and their compliance

	Mitigation Score
There are no management measures in place to control total catch.	0

There are management measures in place to control total catch, but they are complied with effectively.	8
There are management measures in place to control total catch, which are complied with to a high level.	17
<b>Evidence</b>	
Management measures are in place including seasonal closing regions, periodic fishing restrictions, but there is no evidence about effectiveness of these measures. Harvest strategies linked to Maximum Sustainable Yield (MSY) are not developed yet.	

<b>A6. Management performance</b>	
	<b>Mitigation Score</b>
The fishery has failed to achieve the objectives it has set in relation to the aggregate catch OR there are no such objectives.	0
The fishery is making progress to meeting the objectives it has set in relation to the aggregate catch.	8
The fishery has achieved the objectives it has set in relation to the aggregate catch.	17
<b>Evidence</b>	
BRVT is aiming to minimise coastal trawl fishing in upcoming years, however, specific management objectives for trawl fisheries in BRVT are not included yet in the provincial plan.	



## Part B: High-risk species/species groups

Click on the spreadsheet icon below and save a copy on your computer with your file name. Fill in the data and scores for the species/species groups of interest. The spreadsheet will automatically calculate the PSA score based on the productivity/susceptibility scores.



<b>Part B Total Mitigation Value</b>	8
<b>Part B: Catch Risk Value (100 minus mitigation value)</b>	92
<b>Part B: Catch Risk Rating</b>	Very High

<b>B1: Management objectives and references points</b>	
	<b>Mitigation Score</b>
The fishery has not identified high-risk species/species groups and has not developed any objectives or limit reference points to ensure that these species or groups of species are not being pushed past their PRI.	0
The fishery has identified high-risk species/species groups with a low degree of certainty and the fishery has informally adopted objectives and limit reference points for only some species or groups of species.	8
The fishery has identified high-risk species/species groups with a high degree of certainty and the fishery has formally adopted objectives and limit reference points for all of these species or groups of species.	17
<b>Evidence</b>	
In 2015-16, the Research Institute for Marine Fisheries has conducted surveys to define species caught in BRVT trawl fisheries and categorize as Least Concern (LC), Vulnerable (VU), Near Threatened (NT) by IUCN Red list, Decision <a href="#">No.82/2008/QĐ-BNN</a> and Cites list. The full list is given in Appendix 2. There is no evidence of a thorough and comprehensive study; qualitative information to conduct a Productivity Susceptibility Analysis (PSA) is not sufficient.	

<b>B2. Data and information</b>	
	<b>Mitigation Score</b>
Monitoring does not include indicators that can be used for evaluating management performance or conducting stock assessments for high-risk species/species groups.	0
Monitoring includes some indicators that can be used for evaluating management performance or stock assessments for some high-risk species/species groups.	8
Monitoring includes indicators that can be used for evaluating management performance and conducting stock assessments for all high-risk species/species groups.	17
<b>Evidence</b>	
Where species-level catch information exists, it appears to define species groups according to convenience. There is a lack of information on individual species.	

B3. Assessment of high-risk species/species groups	
	Mitigation Score
There is no or unreliable assessment of the status of high-risk species/species groups.	0
The status of the high-risk species/species group has been recently assessed based on indirect evidence from indicators or proxies of stock status.	8
The status of high-risk species has been recently assessed using a scientifically defensible methodology.	17
Evidence	
A thorough and comprehensive study about high-risk species groups has not been conducted, nor the assessment.	

B4. Status of high-risk species/species groups.	
	Mitigation Score
The status of high-risk species/species groups with respect to the LRP is unknown.	0
The status of the high-risk species/species groups with respect to the LRP is known with a low level of certainty.	8
The fishery status with high-risk species/species groups with respect to the LRP is known with a high level of certainty.	17
Evidence	
There do not appear to be any established LRPs, nor is the status of any high-risk species known.	

B5. Management measures, and their compliance	
	Mitigation Score
There are no management measures in place aimed at preventing high-risk species/species groups falling below the PRI.	0
There are some management measures in place aimed at preventing specific species or groups of species, falling below the PRI.	8
There are management measures in place which could reasonably be believed to be capable of achieving the objectives relating to high-risk species/species groups.	17
Evidence	
The status of high-risk groups is unknown, hence no management measures have been developed.	

B6. Management performance	
	Mitigation Score
The fishery has failed to achieve the objectives it has set in relation to high-risk species/species groups OR there are no such objectives.	0
The fishery is making progress to meeting the objectives it has set in relation to high-risk species/species groups.	8

The fishery has achieved all of the objectives it has set in relation to high-risk species/species groups.	17
<b>Evidence</b>	
No management measures have been developed, hence management performance is not evaluated.	

## Section 2b: Endangered, threatened and protected species groups

The second of the four Fishery Risk Ratings relates to the impacts of the fishery on ETP species. Mitigation measures include monitoring and understanding the effects of the fishery on ETP species, minimising interactions, and mitigating other potential impacts.

<b>Total ETP Mitigation Value</b>	16
<b>ETP Risk Value (100 minus mitigation value)</b>	84
<b>ETP Risk Rating</b>	Very High

### Initial screening for ETPs

1. There is no list of ETP species for the fishery and no awareness of ETPs.
2. There is a list of ETP species but no awareness of this list by fishers: <a href="#">this is the answer</a> . The list is given in Appendix 2 of this document - ' <a href="#">List of species caught in BRVT trawl fisheries based observer data conducted by the Research Institute for Marine Fisheries in 2015-16, categorized as Least Concern (LC), Vulnerable (VU), Near Threatened (NT) by IUCN Red list, Decision No.82/2008/QĐ-BNN and Cites list</a> '
3. There is a list of ETP species that is well-known and appreciated by fishers.

T1. Interactions with ETPs are known	
	Mitigation Score
There are no observations or records pertaining to ETPs' interaction with the fishery.	0
There are ad hoc observations or records of interactions with ETPs.	16
There are reliable and regular records of ETP interactions.	33
<b>Evidence</b>	
Evidence from the observer onboard fishing vessel data in 2015-16 in the south-eastern waters of Vietnam, includes BRVT, conducted by RIMF indicated several Near Threatened and Vulnerable species occurring in the samples such as red stingray ( <i>Dasyatis akajei</i> , categorised by the IUCN as Near Threatened); pale-edged stingray ( <i>Dasyatis zugei</i> , Near Threatened); Malabar grouper ( <i>Epinephelus malabaricus</i> , Near Threatened); sharpnose stingray ( <i>Himantura gerrardi</i> , Vulnerable); and Spanish mackerel ( <i>Scomberomorus commerson</i> , Near Threatened). Additionally, seahorse ( <i>Hippocampus spp.</i> ) and flathead lobster ( <i>Thenus orientalis</i> ) have been categorised as vulnerable by Vietnam's Announcement of the List of Species at Risk in Vietnam ( <a href="#">Decision No.82/2008/QĐ-BNN</a> ). However, a comprehensive study about the interaction/effects of the trawl fishery with/on ETP in BRVT waters is not conducted yet.	

T2: Interaction effects	
	Mitigation Score
It is unknown whether the fishery has a significant negative effect on ETPs.	0

There is some evidence to show that the fishery has no negative effect on ETPs	16
There is substantial evidence to show that fishery has no negative effect on ETPs.	33
<b>Evidence</b>	
A comprehensive study about the interaction/effects of the trawl fishery with/on ETP in BRVT waters is not conducted yet.	

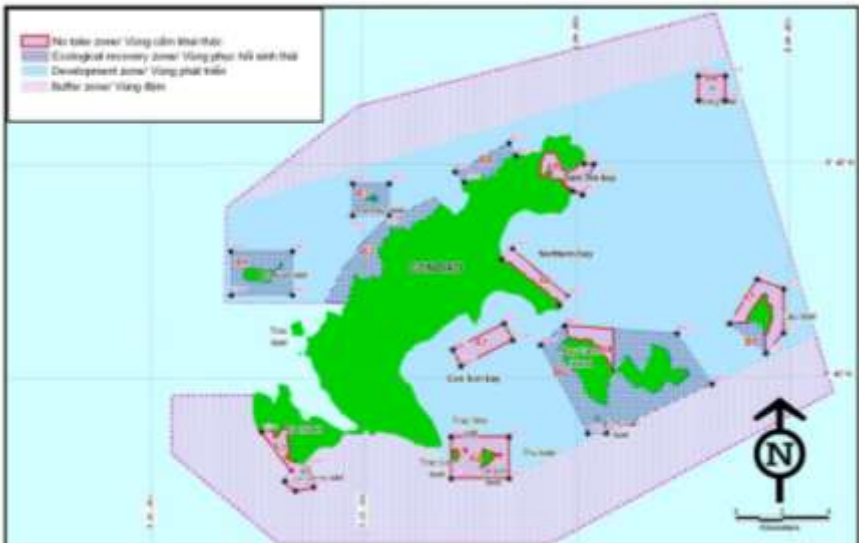
<b>T3. Management measures and their compliance</b>	
	<b>Mitigation Score</b>
If the fishery is known to interact with ETP species and:	
There are no strategies or measures in place to minimise mortality of ETPs.	0
There are some strategies and measures in place to protect ETP species, and to mitigate the impacts of the fishery on ETP species, but they are not being complied with effectively.	16
There are comprehensive strategies and measures in place, which are being complied with, to protect ETPs, and mitigate the impacts of the fishery on ETPs.	33
<b>Evidence</b>	
<p>As of 2016, Vietnam established 9 Marine Protected Areas (MPAs), in which 4 out of the 9 MPAs have implemented a management plan. Con Dao island MPA, under the administrative management of BRVT province, is one of 4 MPAs that have implemented a management and has an area of about 230km<sup>2</sup>. The island is an important breeding location for sea turtles and designed for protecting vulnerable species, coral reefs, and includes no take zones and ecological recovery zones. In general, fisheries in Vietnam are known to interact with turtles, including the IUCN Endangered green turtle and IUCN Critically Endangered hawksbill turtle. Advice from scientists for escapement of sea turtles by using the Turtle Excluder Device (TED) is given with training and communicating campaigns. However, the use of TED in trawl fisheries in practice is not clear. Fishermen are well aware that they are requested to release turtles captured in trawls nets.</p> 	

Figure 6: Con Dao island MPA under the administrative management of BRVT province

[A 2015 study of MPA management effectiveness in Vietnam](#) found considerable variation between areas, in terms of management authority, staff capacity and facilities. MPA managers in Vietnam are not empowered to enforce laws, and so there are inevitably delays in enforcement as other agencies must

be contacted when transgressions are detected. The Mangroves for the Future report concluded that none of the MPAs examined had adequate funding, all lack staff with backgrounds in marine biology, and only 4 of the 9 MPAs have implemented any sort of management plan. The Mangroves for the Future assessment of the Con Dao MPA concluded that there is a management plan and a development plan in place for 2009-2020, and that there are also efforts to measure the effectiveness of the management plans via monitoring of coral coverage, number of violations of regulations, and the reach of communication efforts.

In 2018, MARD issued [the Circular 19/2018/TT-BNN](#) with 32 seasonal closing regions along the coast of Vietnam, 8 sites in the SE waters and the coastal zone of Ba Ria – Vung Tau is restricted for fishing in a period from Nov 1st – Nov. 30th annually.

## Section 2c: Habitats

The third of the four Fishery Risk Ratings relates to the impacts of the fishery on benthic habitats. Mitigation measures include monitoring and understanding the effects of the fishery on habitats, protecting critical habitats, and mitigating other potential impacts.

<b>Total Habitats Mitigation Value</b>	16
<b>Habitats Risk Value (100 minus mitigation value)</b>	84
<b>Habitats Risk Rating</b>	Very High

### Initial screening for habitats

1. Critical habitats that the fishery normally encounters have not been identified.
2. Critical habitats have been identified in a general sense, but not specifically for that fishery: <a href="#">this is the answer. Critical habitats identified includes coral reefs, seagrass and spawning and nursery grounds of fish and invertebrates in coastal zones</a>
3. Critical habitats have been defined for the UoA.
4. The fishery does not interact with critical habitats.

H1. Habitat consideration	
	Mitigation Score
There is no consideration of potential habitat interactions in the management of the fishery.	0
There is some consideration of potential habitat interactions in the management of the fishery.	16
There is full consideration of potential habitat interactions in the management of the fishery.	33
Evidence	
Con Dao island MPA, under the administrative management of BRVT province is an important breeding location for sea turtles and designed for protecting vulnerable species, coral reefs, and includes no take zones and ecological recovery zones. There are studies on sensitive habitats in BRVT, conducted by RIMF, mainly focusing on spawning and nursery grounds of fish and invertebrates. However, a comprehensive study about the nature, distribution and vulnerability of the commonly encountered habitats in BRVT waters is not conducted yet.	

H2. Impacts of the fishery on critical habitats	
	Mitigation Score
There is no information on the impacts of the fishery on the critical habitats it encounters.	0
There is limited information collected on the impacts of the fishery on the main critical habitats.	10
There is comprehensive information collected on the impacts of the fishery on main and critical habitats.	20
Evidence	
It is believed that the trawl activities have risks on habitats since the trawl net equipped with heavy chains in footrope swept on the seafloor, however, there is no scientific studies to evaluate interaction.	

H3. Management measures	
	Mitigation Score
If the fishery is known to interact with physical habitats AND:	
There are no measures in place to minimise and mitigate negative impacts.	0
There are some measures in place to minimise and mitigate negative impacts, but they are not complied with.	16
There are comprehensive measures in place to minimise and mitigate negative impacts that are fully complied with.	33
Evidence	
Several attempts have been made, for example <a href="#">the Circular 19/2018/TT-BNN</a> dated November 15, 2018 stipulates that the trawl fisheries are not permitted to fish in the coastal and inshore zones, as efforts to minimize the impact of trawl fishing to the sensitive areas such as spawning and nursery grounds of fish and invertebrate. The creation of MPAs and Fisheries refugia also reflected that the potential habitat interactions are considered in the management decision-making process. However, there is a lack of information about Vulnerable Marine Ecosystems (VMEs) within the waters under the administrative management of BRVT and there is no convincing evidence to prove that a habitat management system exists.	



## Section 2d: Ecosystems

The last of the four Fishery Risk Ratings relates to the impacts of the fishery on ecosystems. Mitigation measures include monitoring and understanding the effects of the fishery on ecosystems, protecting ecologically important species, and mitigating other potential impacts.

E1. Ecosystem consideration	
	Mitigation Score
The impact of the fishery on the broader ecosystem within which the fishery occurs is not considered in management.	0
The impact of the fishery on the broader ecosystem within which the fishery occurs is considered in a superficial way in management.	12
The impact of the fishery on the broader ecosystem within which the fishery occurs is considered fully in management.	25
Evidence	
There is no information to identify the key ecosystem elements in BRVT waters, hence main impacts of the trawl fishery on these key ecosystem elements cannot be inferred.	

E2. Impacts on the ecosystem	
	Mitigation Score
There is no or inadequate information on the impacts of the fishery on the ecosystem.	0
There is limited information on the impact on the ecosystem, especially with respect to key ecological species.	12
The impact on the ecosystem is well known, especially with respect to key ecological species.	25
Evidence	
There is no information to identify the key ecosystem elements in BRVT waters, hence main impacts of the trawl fishery on these key ecosystem elements cannot be inferred.	

E3. Management measures and strategies	
	Mitigation Score
There are no measures in place for the management and conservation of ecosystem structure and function.	0
There are some plans/strategies and measures in place for the management and conservation of ecosystem structure and function.	12
There is a comprehensive set of plans/strategies and measures in place for the management and conservation of ecosystem structure and function.	25
Evidence	
There is no evidence of species-specific management measures in place.	

E4. Impacts on key ecological elements	
	Mitigation Score
If the impact on any key ecological species is unacceptable AND:	

No additional precaution is included in recommendations relating to the total permissible fishery removals and no target management measures are in place.	0
Some additional precaution is included in recommendations relating to the total permissible fishery removals and some target management measures are in place.	12
Comprehensive additional precaution is included in recommendations relating to the total permissible fishery removals and target management measures are in place.	25
<b>Evidence</b>	
There is no information to identify the key ecosystem elements in BRVT waters, hence main impacts of the trawl fishery on these key ecosystem elements cannot be inferred.	

## Socio-economic Criteria

In addition to the areas examined above, applicants to full MarinTrust RS approval must commit to ensuring that vessels operating in the fishery adhere to internationally recognised guidance on human rights. They must also commit to ensuring there is no use of enforced or unpaid labour in the fleet(s) operating upon the resource.

### Improver Programme Notes

In the current version of the MarinTrust RS fishery assessment, the social component is limited to a commitment from applicants. The extent to which this commitment is 'tested' is limited. However, applicants to the Improver Programme should be aware that this section will be under continuing development over the coming year(s), and additional social requirements are likely to be added before the end of any FIP process.

Because the overall goal of fisheries management is to maximise socio-economic benefits while minimising impacts on the fishery resources and the ecosystem integrity, structure and functioning, a set of economic criteria is also being considered so the costs (impacts on the fishery resources and the ecosystem) can be balanced with socio-economic benefits.

## APPENDIX

Appendix 1. Catch composition of the trawl fisheries based on the observer on boat fishing vessels in 2015-16 by Research Institute for Marine Fisheries in Ba Ria Vung Tau province

Family/Species Name	Otter trawl				Pair trawl		
	6/2015	9/2015	10/2015	Average	5/2016	6/2016	Average
<b>Alpheidae</b>	<b>0.01</b>	<b>0.02</b>	<b>0.05</b>	<b>0.03</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Alpheus sp.</i>	0.01	0.02	0.05	0.03	0.00	0.00	0.00
<b>Ammodytidae</b>	<b>0.06</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Bleekeria mitsukurii</i>	0.06	0.00	0.00	0.02	0.00	0.00	0.00
<b>Apistidae</b>	<b>0.00</b>	<b>0.00</b>	<b>0.13</b>	<b>0.05</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Apistus alatus</i>	0.00	0.00	0.13	0.05	0.00	0.00	0.00
<b>Apogonidae</b>	<b>0.71</b>	<b>0.95</b>	<b>1.87</b>	<b>1.20</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Apogon ellioti</i>	0.06	0.17	0.46	0.24	0.00	0.00	0.00
<i>Apogon kiensis</i>	0.26	0.18	0.05	0.16	0.00	0.00	0.00
<i>Apogon lineatus</i>	0.14	0.19	1.22	0.53	0.00	0.00	0.00
<i>Apogon poecilopterus</i>	0.06	0.35	0.00	0.15	0.00	0.00	0.00
<i>Apogon quadrfasciatus</i>	0.01	0.00	0.01	0.01	0.00	0.00	0.00
<i>Apogon semilineatus</i>	0.00	0.00	0.06	0.02	0.00	0.00	0.00
<i>Apogon sp.</i>	0.18	0.04	0.00	0.07	0.00	0.00	0.00
<i>Apogon trimaculatus</i>	0.00	0.00	0.05	0.02	0.00	0.00	0.00
<i>Apogonichthys sp.</i>	0.00	0.00	0.02	0.01	0.00	0.00	0.00
<b>Ariommatidae</b>	<b>0.17</b>	<b>0.00</b>	<b>0.01</b>	<b>0.05</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Ariomma bondi</i>	0.00	0.00	0.01	0.00	0.00	0.00	0.00
<i>Ariomma indica</i>	0.17	0.00	0.00	0.05	0.00	0.00	0.00
<b>Blenniidae</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Xiphasia setifer</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00

<b>Bothidae</b>	<b>3.86</b>	<b>1.53</b>	<b>0.37</b>	<b>1.79</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Crossorhombus azureus</i>	0.00	0.49	0.00	0.18	0.00	0.00	0.00
<i>Crossorhombus sp.</i>	0.75	0.01	0.17	0.27	0.00	0.00	0.00
<i>Engyprosopon grandisquama</i>	0.67	0.48	0.13	0.41	0.00	0.00	0.00
<i>Engyprosopon sp.</i>	2.45	0.56	0.00	0.90	0.00	0.00	0.00
<i>Grammatobothus polyophthalmus</i>	0.00	0.00	0.08	0.03	0.00	0.00	0.00
<b>Bregmacerotidae</b>	<b>0.00</b>	<b>0.08</b>	<b>0.01</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Bregmaceros japonicus</i>	0.00	0.00	0.01	0.00	0.00	0.00	0.00
<i>Bregmaceros maclellandii</i>	0.00	0.08	0.00	0.03	0.00	0.00	0.00
<b>Caesionidae</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>13.35</b>	<b>7.36</b>	<b>10.50</b>
<i>Pterocaesio chrysozona</i>	0.00	0.00	0.00	0.00	13.35	7.36	10.50
<b>Calappidae</b>	<b>0.48</b>	<b>0.88</b>	<b>0.00</b>	<b>0.46</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Calappa lophos</i>	0.48	0.88	0.00	0.46	0.00	0.00	0.00
<b>Callionymidae</b>	<b>12.91</b>	<b>12.91</b>	<b>0.51</b>	<b>8.61</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Bathycallionymus kaianus</i>	0.17	0.00	0.00	0.05	0.00	0.00	0.00
<i>Bathycallionymus sp.</i>	0.00	0.12	0.00	0.04	0.00	0.00	0.00
<i>Callionymus japonicus</i>	0.55	3.20	0.00	1.34	0.00	0.00	0.00
<i>Callionymus richardsoni</i>	12.07	9.59	0.51	7.14	0.00	0.00	0.00
<i>Callionymus sp.</i>	0.12	0.00	0.00	0.03	0.00	0.00	0.00
<b>Carangidae</b>	<b>0.18</b>	<b>0.68</b>	<b>0.15</b>	<b>0.35</b>	<b>38.18</b>	<b>19.93</b>	<b>29.49</b>
<i>Atule mate</i>	0.07	0.27	0.00	0.12	15.83	7.96	12.08
<i>Carangoides malabaricus</i>	0.00	0.01	0.00	0.00	0.00	0.00	0.00
<i>Carangoides sp.</i>	0.00	0.00	0.01	0.00	0.00	0.00	0.00
<i>Decapterus maruadsi</i>	0.00	0.11	0.02	0.05	0.00	0.00	0.00
<i>Megalaspis cordyla</i>	0.03	0.00	0.01	0.01	0.00	0.00	0.00

<i>Parastromateus niger</i>	0.04	0.14	0.00	0.06	0.09	0.00	0.05
<i>Scomberoides commersonianus</i>	0.00	0.00	0.00	0.00	0.13	0.00	0.07
<i>Selar crumenophthalmus</i>	0.04	0.16	0.00	0.07	22.13	11.55	17.09
<i>Selaroides leptolepis</i>	0.00	0.00	0.11	0.04	0.00	0.42	0.20
<i>Seriola sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Seriolina nigrofasciata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Cepolidae</b>	<b>0.07</b>	<b>0.03</b>	<b>0.00</b>	<b>0.03</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Acanthocephala krusensternii</i>	0.07	0.03	0.00	0.03	0.00	0.00	0.00
<b>Chirocentridae</b>	<b>0.03</b>	<b>0.04</b>	<b>0.00</b>	<b>0.02</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Chirocentrus dorab</i>	0.03	0.04	0.00	0.02	0.00	0.00	0.00
<b>Congridae</b>	<b>2.92</b>	<b>1.54</b>	<b>0.01</b>	<b>1.40</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Ariosoma anago</i>	0.37	1.23	0.01	0.56	0.00	0.00	0.00
<i>Ariosoma sp.</i>	2.55	0.31	0.00	0.84	0.00	0.00	0.00
<b>Cynoglossidae</b>	<b>3.06</b>	<b>3.22</b>	<b>0.83</b>	<b>2.35</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Cynoglossus arel</i>	0.01	0.32	0.10	0.16	0.00	0.00	0.00
<i>Cynoglossus bilineatus</i>	0.00	0.00	0.08	0.03	0.00	0.00	0.00
<i>Cynoglossus interruptus</i>	0.00	0.00	0.62	0.22	0.00	0.00	0.00
<i>Cynoglossus melampetalus</i>	0.00	0.00	0.02	0.01	0.00	0.00	0.00
<i>Cynoglossus puncticeps</i>	1.03	1.85	0.00	0.98	0.00	0.00	0.00
<i>Cynoglossus robustus</i>	0.04	0.19	0.00	0.08	0.00	0.00	0.00
<i>Cynoglossus sp.</i>	1.98	0.85	0.00	0.88	0.00	0.00	0.00
<b>Dasyatidae</b>	<b>0.73</b>	<b>0.24</b>	<b>0.13</b>	<b>0.34</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Dasyatis akajei</i>	0.58	0.03	0.00	0.18	0.00	0.00	0.00
<i>Dasyatis kuhlii</i>	0.00	0.01	0.04	0.02	0.00	0.00	0.00
<i>Dasyatis zugei</i>	0.06	0.13	0.09	0.10	0.00	0.00	0.00
<i>Himantura gerrardi</i>	0.06	0.07	0.00	0.04	0.00	0.00	0.00

<i>Himantura imbricata</i>	0.03	0.00	0.00	0.01	0.00	0.00	0.00
<b>Drepaneidae</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Drepane punctata</i>	0.01	0.01	0.00	0.01	0.00	0.00	0.00
<b>Engraulidae</b>	<b>0.24</b>	<b>0.19</b>	<b>0.00</b>	<b>0.14</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Encrasicholina punctifer</i>	0.24	0.19	0.00	0.14	0.00	0.00	0.00
<b>Fistulariidae</b>	<b>0.00</b>	<b>0.02</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Fistularia petimba</i>	0.00	0.02	0.00	0.01	0.00	0.00	0.00
<b>Gerreidae</b>	<b>0.04</b>	<b>0.02</b>	<b>0.02</b>	<b>0.03</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Gerres erythrourus</i>	0.01	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gerres filamentosus</i>	0.03	0.02	0.00	0.02	0.00	0.00	0.00
<i>Gerres sp.</i>	0.00	0.00	0.02	0.01	0.00	0.00	0.00
<b>Gobiidae</b>	<b>0.39</b>	<b>0.31</b>	<b>0.03</b>	<b>0.24</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Acentrogobius caninus</i>	0.00	0.04	0.00	0.02	0.00	0.00	0.00
<i>Cryptocentrus albidorsus</i>	0.08	0.00	0.00	0.02	0.00	0.00	0.00
<i>Cryptocentrus filifer</i>	0.10	0.09	0.00	0.06	0.00	0.00	0.00
<i>Cryptocentrus pavoninoides</i>	0.13	0.00	0.00	0.04	0.00	0.00	0.00
<i>Cryptocentrus russus</i>	0.00	0.08	0.00	0.03	0.00	0.00	0.00
<i>Cryptocentrus sp.</i>	0.05	0.09	0.01	0.05	0.00	0.00	0.00
<i>Gobiidae</i>	0.01	0.00	0.00	0.00	0.00	0.00	0.00
<i>Oxyurichthys sp.</i>	0.00	0.00	0.02	0.01	0.00	0.00	0.00
<i>Valenciennea wardii</i>	0.01	0.00	0.00	0.00	0.00	0.00	0.00
<b>Haemulidae</b>	<b>0.59</b>	<b>0.82</b>	<b>0.08</b>	<b>0.50</b>	<b>0.68</b>	<b>1.15</b>	<b>0.90</b>
<i>Plectorhinchus pictus</i>	0.33	0.55	0.05	0.32	0.00	0.00	0.00
<i>Plectorhinchus sp.</i>	0.00	0.00	0.03	0.01	0.68	1.15	0.90
<i>Pomadasys maculatus</i>	0.25	0.27	0.00	0.17	0.00	0.00	0.00
<b>Harpiosquillidae</b>	<b>0.12</b>	<b>0.27</b>	<b>0.00</b>	<b>0.14</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>



<i>Harpiosquilla annandalei</i>	0.04	0.15	0.00	0.07	0.00	0.00	0.00
<i>Harpiosquilla sp.</i>	0.08	0.13	0.00	0.07	0.00	0.00	0.00
<b>Labridae</b>	<b>0.02</b>	<b>0.01</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Xyrichtys dea</i>	0.01	0.01	0.00	0.01	0.00	0.00	0.00
<i>Xyrichtys evides</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Xyrichtys sp.</i>	0.01	0.00	0.00	0.00	0.00	0.00	0.00
<b>Leiognathidae</b>	<b>0.71</b>	<b>1.88</b>	<b>0.18</b>	<b>0.96</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Gazza minuta</i>	0.00	0.02	0.00	0.01	0.00	0.00	0.00
<i>Leiognathus berbis</i>	0.00	0.02	0.01	0.01	0.00	0.00	0.00
<i>Leiognathus bindus</i>	0.00	0.19	0.00	0.07	0.00	0.00	0.00
<i>Leiognathus elongatus</i>	0.23	1.27	0.02	0.54	0.00	0.00	0.00
<i>Leiognathus leuciscus</i>	0.00	0.01	0.00	0.00	0.00	0.00	0.00
<i>Leiognathus lineolatus</i>	0.00	0.00	0.03	0.01	0.00	0.00	0.00
<i>Leiognathus parviceps</i>	0.00	0.00	0.02	0.01	0.00	0.00	0.00
<i>Leiognathus sp</i>	0.31	0.01	0.00	0.09	0.00	0.00	0.00
<i>Leiognathus splendens</i>	0.07	0.31	0.00	0.13	0.00	0.00	0.00
<i>Leiognathus stercorarius</i>	0.03	0.02	0.10	0.05	0.00	0.00	0.00
<i>Secutor insidiator</i>	0.07	0.03	0.00	0.03	0.00	0.00	0.00
<b>Loliginidae</b>	<b>10.52</b>	<b>10.32</b>	<b>0.47</b>	<b>6.96</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Loligo beka</i>	0.07	0.31	0.02	0.14	0.00	0.00	0.00
<i>Loligo chinensis</i>	3.19	2.52	0.38	1.97	0.00	0.00	0.00
<i>Loligo duvauceli</i>	0.28	0.60	0.01	0.31	0.00	0.00	0.00
<i>Loligo edulis</i>	0.07	0.00	0.00	0.02	0.00	0.00	0.00
<i>Loligo sp.</i>	6.91	6.90	0.05	4.52	0.00	0.00	0.00
<i>Sepioteuthis lessoniana</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Lutjanidae</b>	<b>0.04</b>	<b>0.22</b>	<b>0.00</b>	<b>0.09</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

<i>Lutjanus malabaricus</i>	0.04	0.21	0.00	0.09	0.00	0.00	0.00
<i>Lutjanus sebae</i>	0.00	0.01	0.00	0.00	0.00	0.00	0.00
<b>Menidae</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>13.34</b>	<b>2.90</b>	<b>8.36</b>
<i>Mene maculata</i>	0.00	0.00	0.00	0.00	13.34	2.90	8.36
<b>Monacanthidae</b>	<b>0.50</b>	<b>0.27</b>	<b>0.06</b>	<b>0.26</b>	<b>1.60</b>	<b>0.00</b>	<b>0.84</b>
<i>Aluterus monoceros</i>	0.00	0.00	0.00	0.00	1.60	0.00	0.84
<i>Paramonacanthus japonicus</i>	0.43	0.14	0.06	0.19	0.00	0.00	0.00
<i>Thamnaconus modestoides</i>	0.01	0.00	0.00	0.00	0.00	0.00	0.00
<i>Thamnaconus modestus</i>	0.06	0.13	0.00	0.06	0.00	0.00	0.00
<b>Mullidae</b>	<b>0.08</b>	<b>0.29</b>	<b>0.20</b>	<b>0.20</b>	<b>6.85</b>	<b>19.78</b>	<b>13.01</b>
<i>Upeneus japonicus</i>	0.04	0.17	0.14	0.12	0.00	0.00	0.00
<i>Upeneus moluccensis</i>	0.04	0.12	0.01	0.06	0.00	0.00	0.00
<i>Upeneus sp.</i>	0.00	0.00	0.00	0.00	1.30	6.71	3.87
<i>Upeneus sulphureus</i>	0.00	0.00	0.04	0.02	5.55	13.07	9.13
<b>Muraenesocidae</b>	<b>0.44</b>	<b>0.20</b>	<b>0.49</b>	<b>0.37</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Muraenesox cinereus</i>	0.44	0.20	0.45	0.36	0.00	0.00	0.00
<i>Muraenesox sp.</i>	0.00	0.00	0.04	0.01	0.00	0.00	0.00
<b>Muraenidae</b>	<b>0.23</b>	<b>0.39</b>	<b>0.01</b>	<b>0.22</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Gymnothorax fimbriatus</i>	0.20	0.24	0.00	0.14	0.00	0.00	0.00
<i>Gymnothorax neglectus</i>	0.00	0.00	0.01	0.00	0.00	0.00	0.00
<i>Gymnothorax sp.</i>	0.04	0.16	0.00	0.07	0.00	0.00	0.00
<b>Nemipteridae</b>	<b>2.43</b>	<b>2.24</b>	<b>0.14</b>	<b>1.57</b>	<b>1.17</b>	<b>0.59</b>	<b>0.90</b>
<i>Nemipteridae</i>	0.00	0.00	0.00	0.00	0.05	0.00	0.03
<i>Nemipterus furcosus</i>	0.51	1.00	0.02	0.52	0.00	0.00	0.00
<i>Nemipterus hexodon</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nemipterus japonicus</i>	0.00	0.13	0.01	0.05	0.00	0.00	0.00

<i>Nemipterus mesoprion</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nemipterus nemurus</i>	0.00	0.00	0.02	0.01	0.00	0.00	0.00
<i>Nemipterus peronii</i>	0.00	0.25	0.00	0.09	0.00	0.00	0.00
<i>Nemipterus sp.</i>	1.30	0.08	0.00	0.40	1.12	0.59	0.87
<i>Pentapodus setosus</i>	0.53	0.74	0.00	0.42	0.00	0.00	0.00
<i>Scolopsis affinis</i>	0.09	0.04	0.00	0.04	0.00	0.00	0.00
<i>Scolopsis taeniatus</i>	0.00	0.00	0.01	0.00	0.00	0.00	0.00
<i>Scolopsis taeniopterus</i>	0.01	0.00	0.07	0.03	0.00	0.00	0.00
<i>Scolopsis vosmeri</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Octopodidae</b>	<b>2.00</b>	<b>1.83</b>	<b>0.32</b>	<b>1.36</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Octopus sp.</i>	2.00	1.83	0.32	1.36	0.00	0.00	0.00
<b>Odontodactylidae</b>	<b>0.02</b>	<b>0.12</b>	<b>0.00</b>	<b>0.05</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Odontodactylus scyllarus</i>	0.02	0.12	0.00	0.05	0.00	0.00	0.00
<b>Ophichthidae</b>	<b>0.12</b>	<b>0.19</b>	<b>0.09</b>	<b>0.14</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Ophichthus altipennis</i>	0.04	0.00	0.00	0.01	0.00	0.00	0.00
<i>Ophichthus sp.</i>	0.00	0.16	0.00	0.06	0.00	0.00	0.00
<i>Ophichthys sp.</i>	0.03	0.00	0.00	0.01	0.00	0.00	0.00
<i>Pisodonophis boro</i>	0.01	0.03	0.09	0.04	0.00	0.00	0.00
<i>Pisodonophis sp.</i>	0.05	0.00	0.00	0.01	0.00	0.00	0.00
<b>Ophidiidae</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Sirembo imberbis</i>	0.00	0.00	0.02	0.01	0.00	0.00	0.00
<b>Paralichthyidae</b>	<b>1.09</b>	<b>1.22</b>	<b>0.23</b>	<b>0.84</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Pseudorhombus duplici-cellatus</i>	0.00	0.00	0.01	0.00	0.00	0.00	0.00
<i>Pseudorhombus oligodon</i>	0.18	0.64	0.22	0.36	0.00	0.00	0.00
<i>Pseudorhombus sp.</i>	0.91	0.58	0.00	0.47	0.00	0.00	0.00
<b>Pectinidae</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

<i>Amusium sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Penaeidae</b>	<b>4.28</b>	<b>0.68</b>	<b>67.80</b>	<b>24.99</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Metapenaeopsis barbata</i>	2.02	0.43	51.79	18.70	0.00	0.00	0.00
<i>Metapenaeopsis lamelata</i>	0.00	0.00	0.01	0.00	0.00	0.00	0.00
<i>Metapenaeopsis palmensis</i>	0.00	0.00	7.05	2.45	0.00	0.00	0.00
<i>Metapenaeopsis sp.</i>	0.29	0.00	1.80	0.70	0.00	0.00	0.00
<i>Metapenaeus affinis</i>	0.00	0.00	0.24	0.08	0.00	0.00	0.00
<i>Metapenaeus sp.</i>	0.05	0.00	0.41	0.16	0.00	0.00	0.00
<i>Parapenaeopsis barbata</i>	0.07	0.00	0.61	0.23	0.00	0.00	0.00
<i>Parapenaeopsis hardwickii</i>	0.00	0.00	0.05	0.02	0.00	0.00	0.00
<i>Parapenaeopsis hungerfordi</i>	0.56	0.00	0.02	0.17	0.00	0.00	0.00
<i>Parapenaeopsis sp.</i>	0.03	0.00	0.17	0.07	0.00	0.00	0.00
<i>Penaeus monodon</i>	0.01	0.00	0.00	0.00	0.00	0.00	0.00
<i>Trachypenaeus curvirostris</i>	1.04	0.25	3.11	1.47	0.00	0.00	0.00
<i>Trachypenaeus malaiana</i>	0.00	0.00	2.05	0.71	0.00	0.00	0.00
<i>Trachypenaeus sp.</i>	0.21	0.00	0.48	0.23	0.00	0.00	0.00
<b>Pinguipedidae</b>	<b>1.10</b>	<b>2.85</b>	<b>1.66</b>	<b>1.94</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Parapercis ommatura</i>	1.10	2.80	1.66	1.92	0.00	0.00	0.00
<i>Parapercis sexfasciata</i>	0.00	0.05	0.00	0.02	0.00	0.00	0.00
<b>Platycephalidae</b>	<b>0.29</b>	<b>0.32</b>	<b>0.44</b>	<b>0.35</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Cociella crocodila</i>	0.00	0.00	0.27	0.09	0.00	0.00	0.00
<i>Platycephalus indicus</i>	0.00	0.00	0.01	0.00	0.00	0.00	0.00
<i>Rogadius asper</i>	0.17	0.32	0.17	0.22	0.00	0.00	0.00
<i>Rogadius sp.</i>	0.12	0.00	0.00	0.03	0.00	0.00	0.00
<b>Plotosidae</b>	<b>1.78</b>	<b>1.16</b>	<b>0.05</b>	<b>0.95</b>	<b>0.09</b>	<b>0.00</b>	<b>0.05</b>
<i>Plotosus limbatus</i>	0.00	0.00	0.00	0.00	0.09	0.00	0.05

<i>Plotosus lineatus</i>	1.78	1.16	0.05	0.95	0.00	0.00	0.00
<b>Pomacentridae</b>	<b>0.12</b>	<b>0.17</b>	<b>0.04</b>	<b>0.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>Abudefduf sparoides</i>	0.00	0.00	0.03	0.01	0.00	0.00	0.00
<i>Chromis notata</i>	0.12	0.17	0.01	0.10	0.00	0.00%	0.00%
<b>Portunidae</b>	<b>18.14</b>	<b>18.71</b>	<b>1.88</b>	<b>12.71</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Charybdis feriatus</i>	0.23	0.23	0.01	0.15	0.00	0.00%	0.00%
<i>Charybdis natator</i>	0.42	0.72	0.02	0.39	0.00	0.00%	0.00%
<i>Charybdis sp.</i>	1.94	1.02	0.15	0.98	0.00	0.00%	0.00%
<i>Podophthalmus vigil</i>	0.00	0.02	0.00	0.01	0.00	0.00%	0.00%
<i>Portunidae</i>	0.02	0.00	1.29	0.45	0.00	0.00%	0.00%
<i>Portunus gracilimanus</i>	0.00	14.35	0.00	5.31	0.00	0.00%	0.00%
<i>Portunus pelagicus</i>	0.33	0.37	0.21	0.30	0.00	0.00%	0.00%
<i>Portunus sanguinolentus</i>	0.51	0.43	0.00	0.30	0.00	0.00%	0.00%
<i>Portunus sp.</i>	14.67	1.56	0.18	4.80	0.00	0.00%	0.00%
<i>Portunus tricuberculatus</i>	0.02	0.01	0.02	0.02	0.00	0.00%	0.00%
<b>Priacanthidae</b>	<b>0.23</b>	<b>0.58</b>	<b>0.04</b>	<b>0.29</b>	<b>0.01</b>	<b>0.43%</b>	<b>0.21%</b>
<i>Heteropriacanthus cruentatus</i>	0.05	0.07	0.00	0.04	0.00	0.00%	0.00%
<i>Priacanthus hamrur</i>	0.00	0.05	0.00	0.02	0.00	0.00%	0.00%
<i>Priacanthus macracanthus</i>	0.17	0.46	0.04	0.23	0.00	0.00%	0.00%
<i>Priacanthus sp.</i>	0.01	0.00	0.00	0.00	0.01	0.43%	0.21%
<b>Rachycentridae</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Rachycentron canadum</i>	0.00	0.00	0.02	0.01	0.00	0.00%	0.00%
<b>Samaridae</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Samaris cristatus</i>	0.00	0.00	0.01	0.00	0.00	0.00%	0.00%
<b>Scaridae</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.12</b>	<b>0.00%</b>	<b>0.06%</b>
<i>Scarus ghobban</i>	0.00	0.00	0.00	0.00	0.12	0.00%	0.06%

<b>Sciaenidae</b>	<b>0.00</b>	<b>0.23</b>	<b>0.00</b>	<b>0.09</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Nibea soldado</i>	0.00	0.15	0.00	0.05	0.00	0.00%	0.00%
<i>Pennahia anea</i>	0.00	0.02	0.00	0.01	0.00	0.00%	0.00%
<i>Pennahia argentata</i>	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
<i>Pennahia pawak</i>	0.00	0.06	0.00	0.02	0.00	0.00%	0.00%
<b>Scombridae</b>	<b>0.05</b>	<b>0.06</b>	<b>0.04</b>	<b>0.05</b>	<b>2.16</b>	<b>14.97%</b>	<b>8.27%</b>
<i>Acanthocybium solandri</i>	0.00	0.00	0.01	0.00	0.00	0.00%	0.00%
<i>Rastrelliger kanagurta</i>	0.05	0.06	0.02	0.04	2.16	6.53%	4.24%
<i>Scomberomorus commerson</i>	0.00	0.00	0.00	0.00	0.00	8.44%	4.02%
<b>Scyllaridae</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Thenus orientalis</i>	0.00	0.00	0.01	0.00	0.00	0.00%	0.00%
<b>Sepiidae</b>	<b>2.66</b>	<b>1.99</b>	<b>0.16</b>	<b>1.54</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Sepia aculeata</i>	0.05	0.09	0.07	0.07	0.00	0.00%	0.00%
<i>Sepia esculenta</i>	0.70	0.71	0.07	0.49	0.00	0.00%	0.00%
<i>Sepia latimanus</i>	0.00	0.01	0.00	0.00	0.00	0.00%	0.00%
<i>Sepia sp.</i>	1.78	0.81	0.01	0.81	0.00	0.00%	0.00%
<i>Sepiella inermis</i>	0.12	0.37	0.00	0.17	0.00	0.00%	0.00%
<b>Sepiolidae</b>	<b>0.02</b>	<b>0.01</b>	<b>0.15</b>	<b>0.06</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Euprymna morsei</i>	0.00	0.00	0.15	0.05	0.00	0.00%	0.00%
<i>Sepiola sp.</i>	0.01	0.00	0.00	0.00	0.00	0.00%	0.00%
Sepiolidae	0.01	0.01	0.00	0.01	0.00	0.00%	0.00%
<b>Serranidae</b>	<b>0.05</b>	<b>0.28</b>	<b>0.00</b>	<b>0.12</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Epinephelus malabaricus</i>	0.00	0.01	0.00	0.00	0.00	0.00%	0.00%
<i>Epinephelus sexfasciatus</i>	0.05	0.27	0.00	0.12	0.00	0.00%	0.00%
<b>Siganidae</b>	<b>0.92</b>	<b>1.66</b>	<b>0.00</b>	<b>0.87</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Siganus canaliculatus</i>	0.92	1.11	0.00	0.67	0.00	0.00%	0.00%



<i>Siganus sp.</i>	0.00	0.55	0.00	0.20	0.00	0.00%	0.00%
<b>Sillaginidae</b>	<b>1.57</b>	<b>1.54</b>	<b>0.04</b>	<b>1.03</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Sillago robusta</i>	0.08	0.00	0.00	0.02	0.00	0.00%	0.00%
<i>Sillago sihama</i>	1.30	1.30	0.04	0.86	0.00	0.00%	0.00%
<i>Sillago sp.</i>	0.19	0.24	0.01	0.14	0.00	0.00%	0.00%
<b>Soleidae</b>	<b>0.94</b>	<b>0.55</b>	<b>0.14</b>	<b>0.52</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Brachirus orientalis</i>	0.16	0.07	0.00	0.07	0.00	0.00%	0.00%
<i>Heteromycteris japonicus</i>	0.10	0.00	0.00	0.03	0.00	0.00%	0.00%
<i>Pardachirus pavoninus</i>	0.04	0.00	0.00	0.01	0.00	0.00%	0.00%
<i>Pseudaesopia japonica</i>	0.01	0.11	0.00	0.04	0.00	0.00%	0.00%
<i>Synaptura commersonnii</i>	0.15	0.10	0.00	0.08	0.00	0.00%	0.00%
<i>Zebrias zebra</i>	0.00	0.12	0.14	0.09	0.00	0.00%	0.00%
<i>Zebrias zebrinus</i>	0.48	0.15	0.00	0.19	0.00	0.00%	0.00%
<b>Solenoceridae</b>	<b>0.00</b>	<b>0.00</b>	<b>0.15</b>	<b>0.05</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Solenocera crassicornis</i>	0.00	0.00	0.15	0.05	0.00	0.00%	0.00%
<b>Sphyraenidae</b>	<b>0.02</b>	<b>0.04</b>	<b>0.00</b>	<b>0.02</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Sphyraena jello</i>	0.02	0.04	0.00	0.02	0.00	0.00%	0.00%
<i>Sphyraena obtusata</i>	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
<b>Squillidae</b>	<b>0.21</b>	<b>0.01</b>	<b>0.20</b>	<b>0.13</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Oratosquilla gravieri</i>	0.13	0.00	0.00	0.04	0.00	0.00%	0.00%
<i>Oratosquilla oratoria</i>	0.02	0.00	0.04	0.02	0.00	0.00%	0.00%
<i>Oratosquilla sp.</i>	0.00	0.00	0.16	0.05	0.00	0.00%	0.00%
<i>Squilla sp.</i>	0.03	0.01	0.00	0.01	0.00	0.00%	0.00%
<i>Squillidae</i>	0.03	0.00	0.00	0.01	0.00	0.00%	0.00%
<b>Synanceiidae</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Minous monodactylus</i>	0.00	0.00	0.02	0.01	0.00	0.00%	0.00%

<b>Syngnathidae</b>	<b>0.02</b>	<b>0.01</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Hippocampus sp.</i>	0.02	0.01	0.00	0.01	0.00	0.00%	0.00%
<b>Synodontidae</b>	<b>21.83</b>	<b>25.20</b>	<b>20.51</b>	<b>22.62</b>	<b>22.44</b>	<b>32.89%</b>	<b>27.42%</b>
<i>Saurida elongata</i>	1.46	1.54	0.45	1.14	0.00	0.00%	0.00%
<i>Saurida sp.</i>	2.23	2.28	0.02	1.48	0.00	0.00%	0.00%
<i>Saurida tumbil</i>	1.07	2.96	5.10	3.17	11.46	16.43%	13.83%
<i>Saurida undosquamis</i>	5.39	5.34	6.15	5.63	0.00	0.00%	0.00%
<i>Synodus variegatus</i>	0.00	0.10	0.00	0.04	0.00	0.00%	0.00%
<i>Trachinocephalus myops</i>	11.68	12.98	8.79	11.16	10.98	16.46%	13.59%
<b>Terapontidae</b>	<b>0.00</b>	<b>0.33</b>	<b>0.01</b>	<b>0.13</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Terapon jarbua</i>	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
<i>Terapon theraps</i>	0.00	0.33	0.01	0.13	0.00	0.00%	0.00%
<b>Tetraodontidae</b>	<b>0.92</b>	<b>0.60</b>	<b>0.08</b>	<b>0.51</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Lagocephalus gloveri</i>	0.03	0.00	0.00	0.01	0.00	0.00%	0.00%
<i>Lagocephalus spadiceus</i>	0.00	0.00	0.06	0.02	0.00	0.00%	0.00%
<i>Lagocephalus wheeleri</i>	0.89	0.60	0.02	0.48	0.00	0.00%	0.00%
<b>Triakidae</b>	<b>0.00</b>	<b>0.00</b>	<b>0.03</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Mustelus sp.</i>	0.00	0.00	0.03	0.01	0.00	0.00%	0.00%
<b>Trichiuridae</b>	<b>0.00</b>	<b>0.03</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Trichiurus lepturus</i>	0.00	0.03	0.00	0.01	0.00	0.00%	0.00%
<b>Volutidae</b>	<b>0.00</b>	<b>0.00</b>	<b>0.10</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Melo melo</i>	0.00	0.00	0.10	0.04	0.00	0.00%	0.00%
<b>Tổng</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00 %</b>	<b>100.00%</b>

Appendix 2. List of species caught in BRVT trawl fisheries based observer data conducted by the Research Institute for Marine Fisheries in 2015-16, categorized as Least Concern (LC), Vulnerable (VU), Near Threatened (NT) by IUCN Red list, Decision No 82/2008/QĐ-BNN and Cites list

No	Species Name	Eng Name	VN Name	Cites	IUCN Red List	Decision 82/2008/QĐ-BNN
1	<i>Abudefduf sparoides</i>	False-eye sergeant			LC	
2	<i>Acanthocybium solandri</i>	Wahoo	Cá Thu ngành		LC	
3	<i>Acentrogobius caninus</i>	Tropical sand goby	Cá Bống tro		LC	
4	<i>Aluterus monoceros</i>	Unicorn leatherjacket	Cá Bò 1 gai		LC	
5	<i>Ariomma bondi</i>	Silver-rag driftfish			LC	
6	<i>Atule mate</i>	Yellowtail scad	Cá Tráo		LC	
7	<i>Carangoides malabaricus</i>	Malabar trevally	Cá Khế lưỡi đen		LC	
8	<i>Chirocentrus dorab</i>	Dorab wolf-herring	Cá Lanh		LC	
9	<i>Cociella crocodila</i>	Crocodile flathead	Cá Chai		LC	
10	<i>Dasyatis akajei</i>	Red stingray			NT	
11	<i>Dasyatis zugei</i>	Pale-edged stingray	Cá Đuối		NT	
12	<i>Encrasicholina punctifer</i>	Buccaneer anchovy			LC	
13	<i>Engyprosopon grandisquama</i>	Largescale flounder			LC	
14	<i>Epinephelus malabaricus</i>	Malabar grouper	Cá Mú điểm đại		NT	
15	<i>Fistularia petimba</i>	Red cornetfish	Cá Lao (mồm ống)		LC	
16	<i>Gazza minuta</i>	Toothpony	Cá Ngàng		LC	
17	<i>Gerres erythrourus</i>	Deep-bodied mojarra	Cá Móm mình ngắn		LC	
18	<i>Gerres filamentosus</i>	Whipfin silverbiddy	Cá Móm dài vây lưng		LC	
19	<i>Grammatobothus polyophthalmus</i>	Threespot flounder	Cá Bơn		LC	
20	<i>Heteropriacanthus cruentatus</i>	Glasseye			LC	

21	<i>Himantura gerrardi</i>	Sharpnose stingray			VU	
22	<i>Hippocampus sp.</i>	Seahorse	Cá Ngựa	X		VU
23	<i>Lagocephalus spadiceus</i>	Half-smooth golden pufferfish	Cá Nóc		LC	
24	<i>Leiognathus leuciscus</i>	Whipfin ponyfish			LC	
25	<i>Leiognathus splendens</i>	Splendid ponyfish	Cá Liệt		LC	
26	<i>Lutjanus sebae</i>	Emperor red snapper	Cá Hồng lang		LC	
27	<i>Megalaspis cordyla</i>	Torpedo scad	Cá Sòng gió		LC	
28	<i>Nemipterus furcosus</i>	Fork-tailed threadfin bream	Cá Lượng		LC	
29	<i>Nemipterus hexodon</i>	Ornate threadfin bream	Cá Lượng 6 răng		LC	
30	<i>Nemipterus nemurus</i>	Redspine threadfin bream	Cá Lượng vây đỏ		LC	
31	<i>Nemipterus peronii</i>	Notchedfin threadfin bream	Cá lượng tolu		LC	
32	<i>Ophichthus altipennis</i>	Highfin snake eel			LC	
33	<i>Paramonacanthus japonicus</i>	Hairfinned leatherjacket	Cá Bò giấy		LC	
34	<i>Pardachirus pavoninus</i>	Peacock sole	Cá Bơn hoa		LC	
35	<i>Pisodonophis boro</i>	Rice-paddy eel			LC	
36	<i>Platycephalus indicus</i>	Bartail flathead	Cá Chai ấn độ			
37	<i>Pomadasys maculatus</i>	Saddle grunt			LC	
38	<i>Priacanthus hamrur</i>	Moontail bullseye	Cá Trác		LC	
39	<i>Priacanthus macracanthus</i>	Red bigeye	Cá Trác đuôi ngắn		LC	
40	<i>Pseudaesopia japonica</i>	Wavyband sole			LC	
41	<i>Pterocaesio chrysozona</i>	Goldband fusilier	Cá Miền		LC	
42	<i>Rachycentron canadum</i>	Cobia	Cá Bớp		LC	
43	<i>Rogadius asper</i>	Olive-tailed flathead			LC	
44	<i>Saurida tumbil</i>	Greater lizardfish	Cá Mối thường		LC	

45	<i>Saurida undosquamis</i>	Brushtooth lizardfish	Cá Mối vạch		LC	
46	<i>Scarus ghobban</i>	Blue-barred parrotfish	Cá Mỏ vệt		LC	
47	<i>Scolopsis affinis</i>	Peters' monocle bream			LC	
48	<i>Scolopsis taeniopterus</i>	Lattice monocle bream	Cá Dơi sọc nâu (cá Bạch điều)		LC	
49	<i>Scomberoides commersonianus</i>	Talang queenfish			LC	
50	<i>Scomberomorus commerson</i>	Narrow-barred Spanish mackerel	Cá Thu vạch		NT	
51	<i>Selar crumenophthalmus</i>	Bigeye scad	Cá Tráo mắt to		LC	
52	<i>Selaroides leptolepis</i>	Yellowstripe scad	Cá Chỉ vàng		LC	
53	<i>Seriolina nigrofasciata</i>	Blackbanded trevally	Cá Cu (cam)		LC	
54	<i>Siganus canaliculatus</i>	White-spotted spinefoot	Cá Dìa		LC	
55	<i>Sillago sihama</i>	Silver sillago	Cá Đục		LC	
56	<i>Synodus variegatus</i>	Variegated lizardfish	Cá Mối vện		LC	
57	<i>Terapon jarbua</i>	Jarbua terapon	Cá Căng		LC	
58	<i>Terapon theraps</i>	Largescaled terapon	Cá Căng		LC	
59	<i>Thamnaconus modestoides</i>	Modest filefish	Cá Bò		LC	
60	<i>Thenus orientalis</i>	Flathead lobster	Mũ ni (bề bề)		LC	VU
61	<i>Trachinocephalus myops</i>	Snakefish	Cá Mối hoa		LC	
62	<i>Trichiurus lepturus</i>	Largehead hairtail	Cá Hổ		LC	
63	<i>Upeneus moluccensis</i>	Goldband goatfish	Cá phèn 1 sọc		LC	
64	<i>Upeneus sulphureus</i>	Sulphur goatfish	Cá phèn 2 sọc		LC	
65	<i>Valenciennesa wardii</i>	Ward's sleeper			LC	
66	<i>Xiphasia setifer</i>	Hairtail blenny	Cá Đai		LC	
67	<i>Xyrichtys dea</i>		Cá Bàng chài		LC	
68	<i>Xyrichtys evides</i>		Cá Bàng chài		LC	

