



**STRATEGIES FOR TRAWL FISHERIES  
BYCATCH MANAGEMENT  
(REBYC-II CTI; GCP /RAS/269/GFF)**

**REPORT ON  
MANAGEMENT NEEDS EVALUATION FOR TRAWL  
FISHERIES AT NATIONAL AND LOCAL LEVELS**

Hà Nội, 2013

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## 1. Introduction

The Coral Triangle region of Southeast Asia is one of the world's most biologically diverse, economically productive and potentially vulnerable marine zones. As a result of increasing populations and exploitation pressures, growing threats from pollution and major ecosystem change are a particular concern in the region. Also – as more widely in the global context – the non-targeted capture of fish and non-fish species, commonly called as bycatch and discards, is an increasing concern. Bycatch includes fish, turtles, corals and other seabed fauna and flora. This part of the catch tends to be poorly monitored and not managed but could have an important impact on fishery resources, habitats and ecosystems. In some fisheries and regions, there is an increasing trend towards retention of the bycatch consisting of juveniles and small-sized fish for use as food for human consumption or for utilization as aquafeed. This is therefore a complex issue, requiring resource and biodiversity aspects to be tackled alongside human needs and involving a mix of policy, technical and community support measures. The project “Strategies for trawl fisheries bycatch management” (REBYC-II CTI) was conceived based on the successes of the 2002-2008 FAO/UNEP/GEF global project “Reduction of Environmental Impact from Tropical Shrimp Trawling through the Introduction of Bycatch Reduction Technologies and Change of Management”. The REBYC-II CTI project intends to focus on multispecies bottom trawling, where bycatch issues are amongst the most serious, with potentially significant effects on ecosystems and livelihoods. The Project aims to address these challenges by promoting sustainable fishing practices and improved trawl management. The REBYC-II CTI project was developed under the leadership of FAO (project implementing agency) in close collaboration with its partners: Southeast Asian Fisheries Development Center (SEAFDEC) and the governments of the participating countries Indonesia, Papua New Guinea, Philippines, Thailand and Viet Nam.

Currently, even the total catch is not clearly known for the trawl fisheries in Vietnam in general and if the total catches is known but only with uncertainty and there is no bycatch information in term of volume and species composition. There is an almost total lack of any operational-level data on the catches and bycatch for all regions, such that trends in catch rate are unable to be monitored. Although national legal framework has been established to implement a logbook program requiring cooperation of fishing communities, implementation is very weak due to lack of compliance and enforcement. The difficulty of the catch monitoring task is exacerbated by the complex multi-gear nature of the trawl fishery.

Vietnam's existing laws, policies, and institutional arrangements for trawl fisheries management and bycatch issues may not be sufficient to meet international/regional requirements such as those of the Code of Conduct for Responsible Fisheries (CCRF). To enhance Vietnam's capacity, its legal arrangements need to be reviewed for possible reform, if necessary, in order to comply with international and regional requirements, especially those approved by FAO on trawl fisheries management and bycatch reduction. Policy and institutional reform may also be necessary in Vietnam to enable its fisheries management administrations to be strengthened, recognition of national responsibility towards international and regional requirements in relation to bycatch issues improved and stakeholders' participation in trawl fisheries management activities enhanced.

To evaluate the management needs in trawl fisheries and the strategies for their management, a desk study was performed to gather trawl information at national level (central fisheries management authorities). In addition, two field trips were also carried out to collect information from various actors including local level such as fisheries administration, related agencies, fishing communities. The first field trip was conducted from 8-11 April 2013 (Annex 3) and second one of from 25-28 December 2013 (Annex 4, 5 and 6) at Kien Giang province. This report is to provide summaries on findings on data collection from the desk study and outcomes of the field trip to evaluate trawl fisheries management needs at national and local level and suggest suitable reforms on trawl fisheries management.

## **2. Management needs at national level**

### ***2.1. Overview of trawl fishery of Vietnam***

#### ***2.1.1. General introduction***

Trawl fisheries are one of the very important gears in marine capture fisheries of Vietnam. The trawl fisheries can be operated in many areas of Vietnam with diversity species compositions. In the past, the trawl fisheries contributed an important role in national economic development and in total catch of marine capture fisheries. However, at the moment, the contribution of the trawl fisheries has been no longer as a leading fishery in the capture fisheries of Vietnam due to its unsustainability and impacts to marine ecosystem environment. These are due to lack of effective and efficient fisheries management system on the trawl fisheries. In addition, recognition and knowledge of fishing communities of the trawl fisheries is not sufficient on fisheries resource conservation. Lack of enforcement ability due to limited human and financial resources is also one of the main causes for unsustainable development of the trawl fisheries. Finally, application of selective and environmental friendly gears is not considering

appropriately in the trawl fisheries. Therefore, trawl fisheries management is challenging and there is a need to implement suitable solutions.

### 2.1.2. Trawl fisheries fleet structures of Vietnam

In 2012, there are total 21.539 units using trawling gears in Vietnam accounting for 16.8% in total vessel numbers. Of those, the total number of vessel with capacity less than 20HP accounted for about 10% in total trawling vessels, 48% accounted for the vessels from 20-150HP and the rest (42%) belong to the vessel higher than 150HP. In general, there was a recent large change on the fishing fleet structure over some years. The total trawl vessel with high capacity is increased over the past few years.

Some provinces where the trawl fisheries developed are Quang Ninh, Thanh Hoa, Nghe An, Khanh Hoa, Binh Thuan, Ba Ria Vung Tau, Ben Tre and Kiên Giang.

Table 1. Total trawl fisheries vessel by provinces and capacities (including otter and pair trawl and shrimp trawl) of Vietnam up to 5/2013 (*Noted: data of Hai Phong and Quang Ngai was in 2011*).

Ord	Province	Capacity ranges (HP)						Total	
		< 20	20-50	51-90	91-150	151-250	251-400		>400
1	Quang Ninh	0	1080	138	31	0	0	8	<b>1257</b>
2	Hai Phong	338	303	0	0	2	0	0	<b>643</b>
3	Thai Binh	0	145	51	54	54	24	19	<b>347</b>
4	Nam Định								<b>432</b>
5	Ninh Binh								<b>26</b>
6	Thanh Hoa	864	224	135	20	21	24	8	<b>1296</b>
7	Nghe An								<b>889</b>
8	Ha Tinh	17	147	6	8	0	20	4	<b>202</b>
9	Quang Binh								<b>77</b>
10	Quang Tri								<b>0</b>
11	TT Hue								<b>229</b>
12	Đà Nang	0	175	19	6	2	4	4	<b>210</b>
13	Quang Nam	<b>131</b>	205	31	0	0	0	0	<b>367</b>
14	Quang Ngai	120	566	309	102	56	297	110	<b>1560</b>
15	Binh Dinh	<b>27</b>	219	238	62		91	0	<b>637</b>
16	Phu Yen		249	165	128	55	21		<b>618</b>
17	Khanh Hoa	0	453	166	178		123	41	<b>961</b>
18	Ninh Thuan								<b>130</b>
19	Binh Thuan	1	133	220	154		458	205	<b>1171</b>
20	Ba Ria - Vung Tau	<b>1</b>	100	110	200	<b>754</b>		859	<b>2024</b>

21	TP Ho Chi Minh	44	199	25					268
22	Tien Giang	8	38	32	62	0	358	47	545
23	Ben Tre	32	944	217	126	159	640	568	2686
24	Tra Vinh	13	259	144	36		65	14	531
25	Bac Lieu								414
26	Soc Trang								502
27	Ca Mau	10	25	26	7	56	168	54	346
28	Kien Giang	4	132	132	73	307	657	1866	3171
	<b>Total</b>	<b>1,610</b>	<b>5,596</b>	<b>2,164</b>	<b>1,247</b>	<b>1,466</b>	<b>2,950</b>	<b>3,807</b>	<b>21,539</b>

### *2.1.3. Overview of types of trawl fisheries in Vietnam*

#### *Otter trawl*

Before the otter trawl vessels were not using other gear types on board as other multi-gear fisheries. However, recently the otter trawl vessels can also be integrated with pair trawl vessels to shift the other fisheries such as squid handline, gillnet, fish longline, etc...

Normally, the otter trawl vessels of Vietnam are operating with small groups from 2-7 vessels each group. The otter trawls in the group usually communicate each other to exchange information on fishing grounds, market price and support each other in fishing at sea. According to recent survey results about social-economic of the otter trawl fishery, workers of the otter trawl are usually young from 18-40 years old with low education.

#### *Pair trawl fishery*

Similar to the otter trawl vessels, fishing cost for fuel of the pair trawl fishing fleets is largely contributing in the total cost of a trip and this is highest among other offshore marine capture fisheries.

Almost the pair trawl fishing vessels are not using multiple gears. The pair trawl fishing vessels of Vietnam are often organized by fishing groups with 2-10 pairs for each group. Fishing ground is often located in the offshore areas and with high negative impacts on benthic ecosystems and related environment.

#### *Shrimp trawl fishery*

The shrimp trawl fishery is the most abundant in the Northern, Eastern and Southwestern regions of Vietnam. There are two shrimp trawl fishing fleets of shrimp otter trawl and shrimp beam trawl vessel. Normally, the shrimp beam trawl vessels have small capacity from 20-90HP. The main target species of the shrimp beam trawl fishery are shrimp, crab and some small

demersal fishes. The shrimp otter trawl vessels are much smaller in the capacity with only 40-60HP and the target species only shrimp and small demersal fishes. In general, the shrimp trawl fisheries vessels are individually operating without integrating each other. Professional ability of these vessels is not very high and thus it is difficult to manage these fleets.

## *2.2. National legislations for trawl fisheries management*

The specific regulations on managing shrimp and fish trawlers and/or bycatch issues are not sufficient in Vietnam at the present time. Therefore, in the frame work of this project, the regulations on management of the concern fishery, trawl fishery, will be proposed and legislated aiming to apply for trawl fishery in nationwide in the near future.

The Decree No. 33/2010/ND-CP dated on 31 March 2010 of the government regarding the management of fishing operations of Vietnamese organizations and individuals in all marine areas. The Decree focuses on zoning sea waters which categorized sea waters in inshore waters, from lowest tidal level line to 24 nautical miles, and offshore areas from 24 nm upward. The coastal areas up to 6 nm are managed by provincial fisheries management authorities. This is a legal baseline for fisheries co-management implementation in all coastal provinces.

The Instruction No 06-TS/CT dated on 5th May 1984 of the Ministry of Fisheries (MOFI) about important issues related to aquatic resources protection. For the bottom trawl fishery, the minimum mesh size (stretch mesh size, 2a) of the cod-end required for coastal bottom trawl and set nets is ranging from 15 – 16 mm and for the offshore demersal fishing gears is in range of 18 mm (2a mesh size). The closed season (from March to May) are suggested to apply in shrimp fishery for some important shrimp fishing grounds which spreads from the North to the South, including Mi Mieu, Long Chau, Ne – Ghep, Southeast Vung Tau, Cuu Long river outlet, Hon Chuoi – Ong Doc and Northwest Phu Quoc.

The Instruction No. 10/2005/CT-BTS dated December 12th 2005 of Ministry of Fisheries about the prohibition of using high speed trawlers operating in inshore waters. All large gears with high height opening and wide width opening which towed with high speed in the coastal areas within 24 nautical miles from the shore are not allowed to operate. The instructions issued to ensure that aquatic resources in these sea waters are not overexploited and to decrease the conflicts happened among fishermen, especially between small fishing boats, artisanal fishing boats and high speed trawlers.

The Circular No. 02/2006/TT-BTS of Ministry of Fisheries dated March 20th 2006, guidelines on regulation of gear mesh sizes used in fishing

operation for all marine capture fisheries including gillnetters, trawlers, seiners, etc. The minimum mesh sizes (stretch mesh size) of the cod-end allowed for bottom trawl is ranging from 20 mm (shrimp trawler boat equipped with engine of less than 45 HP) to 30 mm (for the shrimp trawler installed the engine of more than 29-45 HP). The trawlers of more than 150 HP engine capacities allow using the minimum mesh size of the cod-end of 40 mm.

A national working group has been established and implementing issues in relation to the Rebyc-II CIT project and for the trawl fisheries management of Vietnam (Annex 1 and 2).

### ***2.3. Limitations on trawl fisheries management in Vietnam***

- Circular No. 02/2006/TT-BTS issued on March 20, 2006 for guiding the implementation of Government Decree No. 59/2005/ND-CP on production conditions and trading of fisheries products and Circular 62/2008/TT-BNN May 20, 2008 amending and supplementing a number of provisions of Circular No. 02/2006/TT-BTS have been developed and approved. However these Circulars are based only on old scientific research that has not been updated recently.
- Activities on trawl fisheries data collection have not been fully collected and unsystematic and thus it is very difficulties on assessment of marine resources and hence management of trawl fisheries. There were some research implemented but funding sources for the data collection activities are limited and this has been seriously affecting the accuracy and reliability of the research results.
- Fisheries surveillance activities at sea and at landing sites have not been appropriately considered on fisheries management of Vietnam in general and in trawl fisheries in particular. Therefore, many illegal and unregulated fishing activities have been still frequently occurring in the trawl fisheries.
- Increasing total number of trawl vessels has been occurring on trawl fisheries in Vietnam over the past few years. However, these increases have revealed many problems such as unsustainable development, insufficient and uncontrollable fisheries management, uncontrolled number of fishing boats and many fragmented and small-scale fishing operations. Illegal fishing has still been occurring and has seriously been threatening marine resources sustainability especially in the coastal areas.
- Shrimp and fish trawlers operate in coastal areas may have some negative impacts to estuary habitats and MPAs, sea grass beds. However, no study on this matter has been conducted.



- MCS system on Vietnam's fishery management is very weak. Fisheries inspection is not good enough to implement MCS activities. The sector is rather to be open access situation. Government is managing to control fishing effort, however, this task demands on high efforts in terms of finance, man power, etc.
- Lack of legal and institutional frameworks for effective management of bycatch and trawl fisheries.
- Insufficient data and information on bycatch and impacts of trawl fisheries on the marine environments and habitats.

#### *2.4. Management needs of the trawl fisheries in Vietnam*

- To overcome the above mentioned shortcomings and to better manage the trawl fisheries in order to maximize the efficiency of using these resources while also conserving the marine ecosystem, the development and implementation of suitable management measures for the trawl fisheries of Vietnam is urgently needed. This can increase the optimal and sustainable use on fisheries resources of Vietnam while conserving marine ecosystems by mitigating the impacts of fishing activities through the adoption of the precautionary approach and environmentally friendly fishing. Therefore, at the national level, establishing a specific legal framework for the trawl fisheries management (i.e. a Circular) is very necessary.
- On the other hand, review existing legal, policy and institutional frameworks are also needed to make sure that there is no overlapping in legal and policy arrangements.
- Vietnam has established several legal frameworks to manage its fisheries in general including trawl fisheries. However, there is an urgent need to take forward and supports ongoing national process of revision of relevant Circulars/Decrees.
- Reduction of the overall fishing effort of the trawl fisheries in whole the country would likely be the most effective management intervention to make the fishery more sustainable and at the same time it would also reduce the non-sustainable bycatch.
- Investigations on gear selectivity on trawl fisheries are very necessary to improve trawl selectivity and this can be a useful complementary measure together with solutions on overfishing.
- National policies should promote the complete elimination measures of trawling activities in the near-shore areas and pay more attention on enforcement activities to implement such management measures.

- Co-management could help in finding adequate solutions on trawl fisheries management at least in the coastal areas. It has particular potential for smaller vessels operating in near-shore areas. Larger vessels are likely to have weaker linkages to local communities, with distant owners, potentially impeding co-management.

### 3. Management needs at provincial level (Kien Giang)

#### 3.1. Overview marine fisheries in Kien Giang province

##### 3.1.1. Total fishing vessel and landings of Kien Giang

Marine capture fisheries of Kien Giang have been developing strongly and have significantly contributed to the province's socio-economic development, food security. In 2003, there were only 7,390 vessels fishing vessels with a total capacity of 989,655 HP, primarily operating in coastal areas and total catches of about 286,000 tones. By 2012, the total number of fishing vessels reached to 12,425 units with an increase of nearly 2 times higher than in 2003, the total engine capacity was over 1.6 million HP with a 1.7-fold increase compared to 2003. Total catches reached at 421,201 ton with a 1.4-fold increase compared to 2003 (Table 1). This increase may appear a negative sign for unsustainable development of fisheries sector in Kien Giang province.

**Table 1. Total fishing boats registered in the province.**

Order	Year	Registered vessels	Total capacity	Total catch (tons)
1	2003	7,390	989,655	286,000
2	2004	7,565	1,059,110	295,500
3	2005	7,700	1,170,446	305,565
4	2006	7,332	1,173,450	311,618
5	2007	7,255	1,189,255	315,157
6	2008	11,142	1,257,325	318,255
7	2009	11,650	1,321,082	353,147
8	2010	11,907	1,426,218	375,687
9	2011	12,287	1,586,781	396,900
10	2012	12,425	1,696,231	421,201
11	Up to Nov 2013	10,714	1,730,918	400,164

##### 3.1.2. Trawl fishing fleets

Kien Giang's waters are belonging to Southwestern areas of Vietnam with favorable natural conditions for marine fisheries sector development. In recent years, the province's fishing boats has increased rapidly both in term of quantity and size. According to recent annual report of the province,

there are total 12,425 fishing vessels registering at the province with total 1,696,254HP including many different gear types such as trawler, gillnetter, purse seiner, longliner, vessel carriers... Of those, the trawl fisheries are the most abundant in the province with total of 3,265 units accounting for 26.3% in total number of vessels of the province and with total capacity of 1,220,006 accounting for 72% in total capacity of all vessels in the province. There are 2,434 pair trawlers (74.5% in total number and 88% in total capacity of trawl fishing fleets in the province) (Annex 7).

### *3.1.3. Landing sites and fishing ports*

Kien Giang province has three districts called Ha Tien, Kien Luong, Phu Quoc districts which shrimp and fish trawlers are the most abundant. In practically, Ha Tien is more dominated in total number of fishing boats. Ha Tien fishing ports and fish market are located relatively close to the district center (downtown). The new fishing port is established aiming to move the present one far from center area which is considered more convenient to fishermen and people living in downtown, tourisms etc.

### *3.2. Legal documents issued by province on trawl fisheries management*

Implementation of the National Fisheries Laws, the provincial fishing management authorities have established many legal documents under the fisheries law. Following is list of some existing legal documents issued by the Kien Giang People's Committee in relation to trawl fisheries.

- Directive No. 24/2004/CT-UBND dated on 12/11/2004 by Kien Giang Provincial People's Committee to protect coral reefs in the provincial waters.
- Directive No. 05/2005/CT-UBND dated on 31/3/2006 by Kien Giang Provincial People's Committee to prevent pair trawl fishery operating at coastal and purfering zones, and other protected areas.
- Decision No. 1622/QĐ-UBND dated on 09/10/2006 by Kien Giang Provincial People's Committee to protect fisheries resources.
- Decision No. 30/2008/QĐ-UBND dated on 16/9/2008 by Kien Giang Provincial People's Committee to regulate fisheries management measures on waters of the province.

- Decision No. 18/2011/QD-UBND dated on 07/4/2011 by Kien Giang Provincial People's Committee to regulate fisheries management measures on waters of the province.
- Decision No. 2601/QD-UBND dated on 14/10/2009 by Kien Giang Provincial People's Committee to establish some nursery areas in Kien Giang's waters.

### 3.3. Institutional arrangements on fisheries management in Kien Giang

Department of Agriculture and Rural Development (DARD) is agency under managed by the Provincial People's Committee in term of administratively procedures and by Ministry of Agriculture and Rural Development in term of technical issues. Under the DARD, Sub-Department of Capture Fisheries and Resources Protection (Sub-DECAFIREP) is responsible agency on fisheries management in Kien Giang province. Following is flow chart of the management authorities in Kien Giang province dealing with agricultural issues.

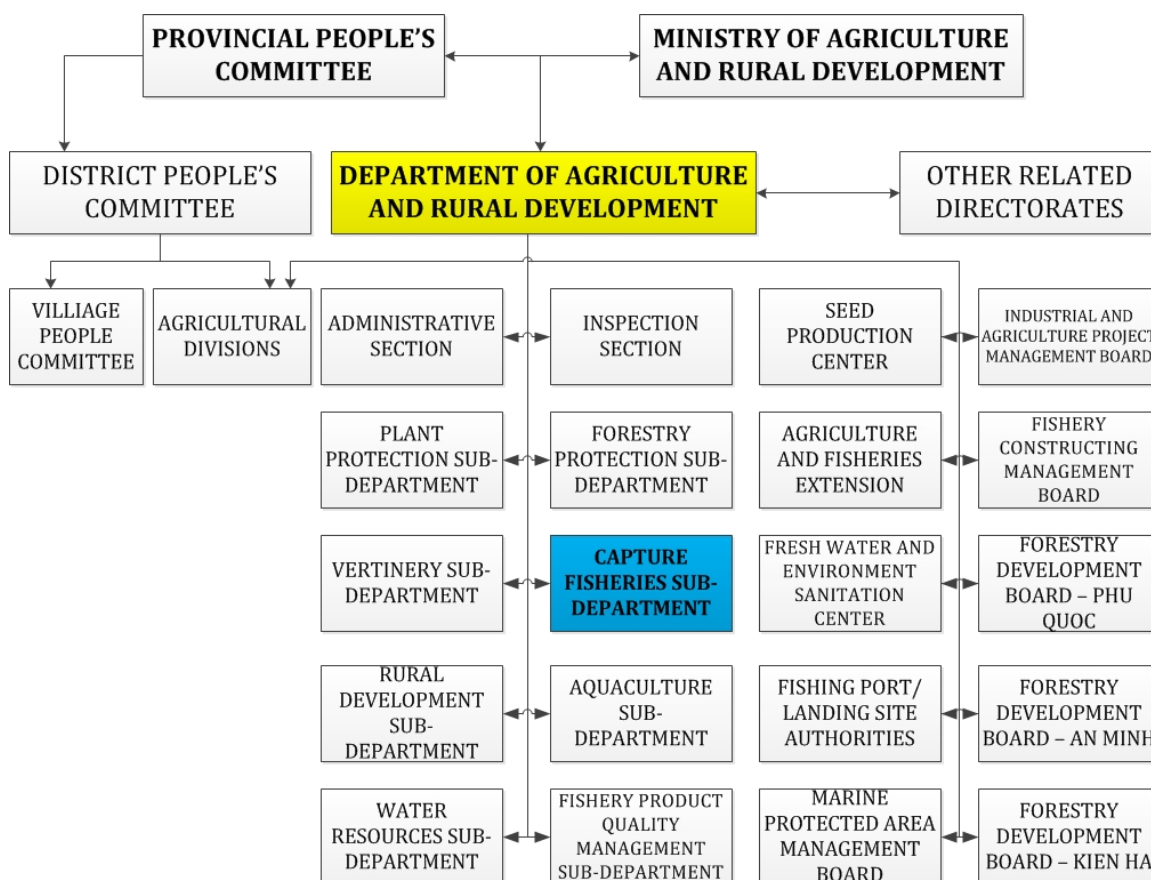
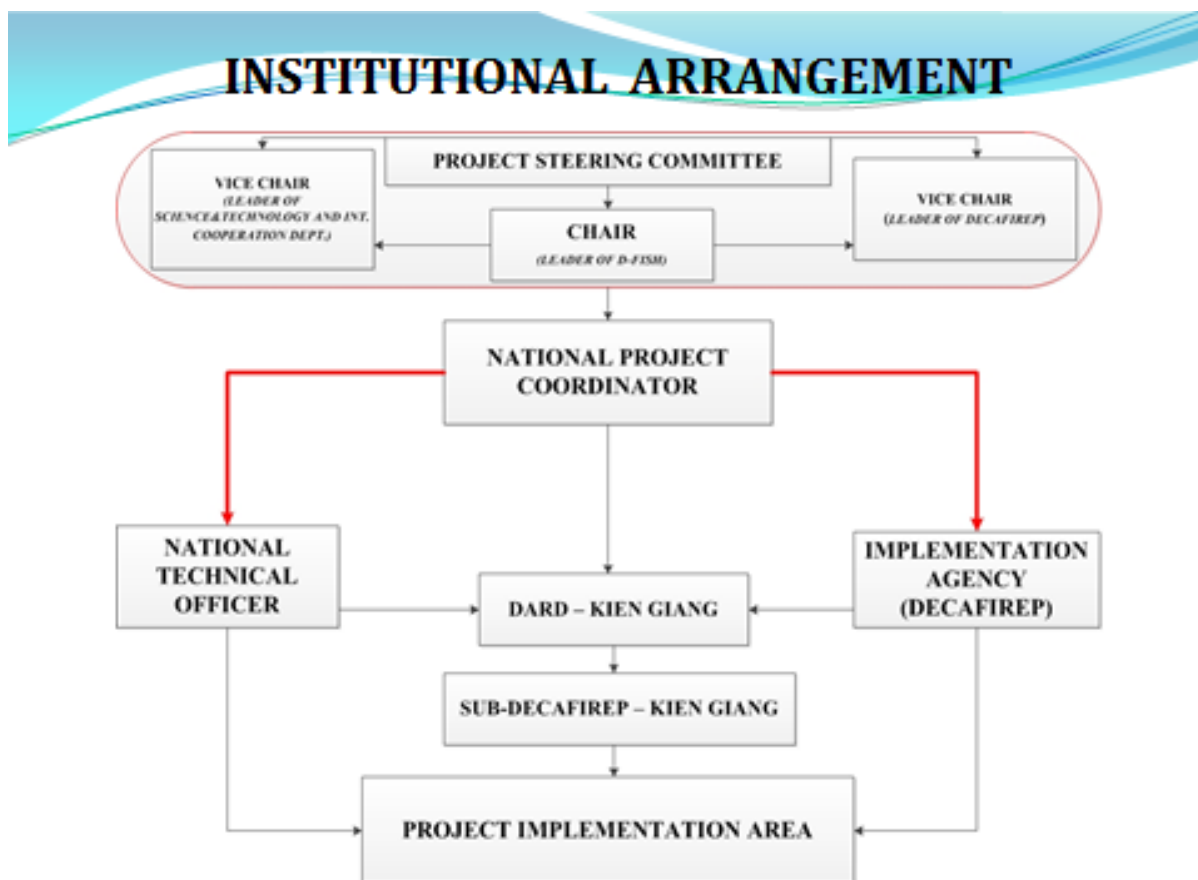


Figure 1. Organizational structures of agencies responsible for fisheries management in Kien Giang.

### *3.4. Management needs for the Kien Giang's trawl fisheries*

- Overfishing in the coastal waters may be the fundamental problem in the Kien Giang province and this overfishing is closely linked to fishing overcapacity (>3000 trawlers (including otter and pair trawl) are registered in the province, Annex 7).
- There is a need to reduce fishing capacity especially for trawl fisheries in order to recover marine resources including their marine ecosystems. This reduction can be implemented under other FAO project in Vietnam to support Vietnam in the development and implementation National Plan of Action to reduce fishing capacity in general and trawl fisheries in particular.
- Reduction of the overall fishing effort would also likely be the most effective management intervention to make the fishery more sustainable and to reduce the non-sustainable bycatch in Kien Giang and this should be considered in the provincial legal frameworks.
- Registration of new trawling vessels is currently possible only if its engine size is larger than 90 HP. These vessels are allowed only to fish in off-shore areas. Hence, the policy is to phase out the trawl fishing effort from the near-shore areas and move it into the deeper waters. That will apparently reduce the share of the non-sustainable bycatch because in the deeper waters there are less species.

**Annex 1: Flow chart of the working group on project implementation and the trawl fisheries management arrangement of Vietnam**



**Annex 2: List of member of national steering committee (established by a Decision No. 211/QĐ-TCTS-VP)**

1. Mr. Pham Anh Tuan, Deputy Director General, Chair of NSC, Directorate of Fisheries
2. Mr. Hoang Dinh Yen, Deputy Director, Vice Chair, DECAFIREP
3. Ms. Nguyen Thi Trang Nhung, Deputy Director, Vice Chair, Science and Technology and International Cooperation.
4. Mr. Tran Tri Vien, Deputy Director, member of NSC, DARD
5. Mr. Duong Xuan Trung, Deputy Director, member of NSC, Sub-DECAFIREP Kien Giang.
6. Mr. Le Tran Nguyen Hung, Head of Division, member of NSC, DECAFIREP.

### Annex 3: Mission Schedule on 8-11 April 2013

<b>Date</b>	<b>Time</b>	<b>Details</b>	<b>Remarks</b>
8 Apr. 2013	1800-1900	Leave Thailand for Ho Chi Minh City (HMC), Viet Nam	
	1900-2100	NTO, D-FISH's other staffs leave Ha Noi for HMC Stay overnight at Ho Chi Minh city	
9 Apr. 2013	0600-0700	Travel from HCM to KienGiang.	By air plane
	0900-1200	Meeting with DARD and Sub-DECAFIREP KienGiang. Discuss on following issues: - Existing data collection status in the province; - Human resources on data collection under REBYC-II project; and - Other matters in relation to data collection	NTO, D-FISH's other staffs and REBYC Staffs, DARD, Sub-DECAFIREP KienGiang
	1400-1700	Visit fish landing sites and meeting with fishing port authorities. Discussion on Cooperation on data collection activities under REBYC-II project and observe the Management system of Kien Giang landing sites	NTO, 2 D-FISH's other staffs and REBYC Staffs, DARD, Sub-DECAFIREP KienGiang
10 Apr. 2013	0800-1100	Visit processing companies and observe trawler, trawling company, fishmeal factories and etc.	NTO, D-FISH's other staffs and REBYC Staffs, DARD, Sub-DECAFIREP KienGiang
	1300-1800	Return and stay overnight at Ho Chi Minh City	By car
11 Apr. 2013	0630-0830	Leave Ho Chi Minh city for Ha Noi	By air

#### Annex 4: Mission Schedule on 25-28 December 2013

<b>Date</b>	<b>Time</b>	<b>Details</b>	<b>Remarks</b>
25 Dec, 2013	18.10-20.10	Leave Ha Noi for Ho Chi Minh (HCM) City	Stay overnight on HCM city
26 Dec, 2013	06.00-07.00	Travel from HCM to Kien Giang	By air plane
26 Dec, 2013	08.00-17.00	Participation on training workshop on the data collection	
27 Dec, 2013	08.00-12.00	Continue to participate the training workshop on the data collection	
27 Dec, 2013	14.00-15.00	Meeting with DARD - Kien Giang to discussion on how to set up data collection system on trawl fisheries including bycatch sampling	
	15.00-16.00	Meeting with Sub-DECAFIREP Kien Giang to overview trawl fisheries information/data	
28 Dec, 2013	07.30-11.30	Leave Kien Giang for Ha Noi	By air



**Annex 5: Agenda for workshop to train for local staffs on data collection**

<b>Time</b>	<b>Content</b>	<b>Facilitator/presenter</b>
<b>Day 1: 26/12/2013</b>		
08:00 - 08:15	Registration	DECAFIREP
08:15 - 08:25	Introduction of participant	DECAFIREP
08:25 - 08:35	Opening remark	Leader of DECAFIREP
08:35 - 08:45	Welcome remark	Leader of DARD Kien Giang
08:45 - 09:15	Introduction on project's activities in the first year	DECAFIREP
09:15 - 09:45	Introduction on roles and importance of fisheries data collection in the trawl fisheries management	Consultant
09:45 - 10:15	Tea break	All participant
10:15 - 12:00	Introduction of indicators and parameters on fisheries statistical task	Consultant
12:00 - 14:00	Lunch break	All participant
14.00 - 15.00	Collecting basic information/data in fisheries management	Consultant
15.00 - 15.30	Discussion	All participant
15.30 - 15.45	Tea break	All participant
15.45 - 16.45	Continued the discussion section	All participant
<b>Day 2: 27/12/2013</b>		
08:00 - 09:00	Basic fisheries data collection methodologies in fisheries management	Consultant
09:00 - 09:45	How to define sampling scope and number of samples in fisheries data collection	Consultant
09:45 - 10:15	Tea break	All participant
10:15 - 11:15	Introduction some data collection forms on trawl fisheries data collection (including bycatch data collection form)	Consultant

11:15 - 12:00	Introduction on how to develop sampling strategies	Consultant
12:00 - 14:00	Lunch break	All participant
11:15 - 12:00	Using collected trawl fisheries data in trawl fisheries management	Consultant
14:00 - 15:00	General discussion and course evaluation	Consultant
15.00 – 15.30	Break	All participant
15.30– 16.00	Closing the meeting	DARD Kien Giang and DECAFIREP leaders

**Annex 6: List of participants on workshop to train for local staffs on data collection and management needs evaluation**

<b>Ord</b>	<b>Name</b>	<b>Organization</b>	<b>Position</b>
1	Đào Hồng Đức	DECAFIREP	Director
2	Phạm Việt Anh		Officer
3	Nguyễn Tiến Thắng		Deputy Head of Division
4	Ngô Thị Mai Thu		Officer
5	Nguyễn Thanh Bình	Department of Science & Technology and International Cooperation	
6	Nguyễn Bá Thông	National consultant	
7	Trần Đăng Đức	Sub-DECAFIREP-Vũng Tàu	
8	Bùi Văn Tùng		
9	Đình Xuân Hùng	Research Institute for Marine Fisheries	
10	Nguyễn Như Sơn		
11	Đoàn Văn Phụ		
12	Trần Phước Thụ	Sub-DECAFIREP-Bến Tre	
13	Đình Văn Lắm		
14	Trần Vũ Bình		
15	Trần Chí Viễn	Department of Agriculture and Rural Development – Kien Giang	Deputy Director
16	Lê Văn Tính		Officer
17	Dương Xuân Trung	Sub-DECAFIREP-Kiên Giang	Deputy Director
18	Phạm Văn Trung		Officer
19	Ngô Phước Sang		Officer
20	Lâm Gia Khôn	Ngư dân Kiên Giang	
21	Trần Hon		

22	Huỳnh Văn Cáo		
23	Trương Văn Ngữ		
24	Vương Văn Lén		
25	Nguyễn Ngọc Chiêu		
26	Dương Ngọc Hùng		
27	Dương Quang Tường		
28	Thái Văn Học		
29	Nguyễn Văn Nghi		
30	Nguyễn Hoàng Vinh		
31	Trần Văn Út		
32	Trương Văn Hầu		
33	Phan Quốc Việt		
34	Bùi Tấn Minh		
35	Trần Văn Bình		
36	Huỳnh Quốc Tuấn		
37	Huỳnh Nhật Trí		
38	Nguyễn Văn Nhu		
39	Trương Văn An		
40	Lâm Văn Vốn		

**Annex 7: List of fishing vessels registered in Kien Giang province by gear types and capacity ranges**

T T	Gear	Capacity ranges (HP)														Total	
		< 20		20 - < 45		45 - < 90		90 - < 150		150 - < 250		250 - < 400		>= 400			
		Vessel	Capacity	Vessel	Capacity	Vessel	Capacity	Vessel	Capacity	Vessel	Capacity	Vessel	Capacity	Vessel	Capacity	Vessel	Capacity
1	Anchovy PS	0	0	2	67	7	414	9	1,185	55	10,595	139	48,210	20	8,672	232	69,143
2	Scad PS	8	107	4	102	1	74	2	230	11	2,137	93	30,205	3	1,455	122	34,310
3	Light PS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Mackerel GN	0	0	0	0	4	201	3	365	2	348	95	29,805	8	3,390	112	34,109
6	Shrimp GN	71	897	55	1,376	9	506	2	270	4	664	0	0	0	0	141	3,713
7	Crab net	2,249	32,345	559	11,394	380	23,024	19	2,258	71	12,346	9	2,658	0	0	3,287	84,025
8	Otter trawl	4	42	69	2,087	136	7,746	55	6,596	215	36,682	129	41,965	72	33,635	680	128,753
9	Pair trawl	0	0	4	139	1	74	17	2,232	98	16,567	504	175,770	1,848	931,884	2,472	1,126,666
10	Squid LL	793	9,963	544	12,562	108	6,005	30	3,610	43	7,534	11	3,100	2	845	1,531	43,619
11	Crab trap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Fix net	4	50	48	1,265	1	45	0	0	3	504	0	0	0	0	56	1,864
13	Logistic vessels	1	20	10	238	7	416	10	1,205	34	6,211	162	53,145	40	17,890	264	79,125
14	Other	601	6,639	626	15,227	269	14,879	69	7,916	91	15,941	248	79,088	9	3,999	1,913	143,689
<b>Total</b>		<b>3,723</b>	<b>49,955</b>	<b>1,917</b>	<b>44,355</b>	<b>922</b>	<b>53,310</b>	<b>214</b>	<b>25,637</b>	<b>616</b>	<b>107,392</b>	<b>1,297</b>	<b>433,741</b>	<b>1,999</b>	<b>1,000,315</b>	<b>10,688</b>	<b>1,714,705</b>

**Note:** PS = purse seine, GN = gillnet, LL = longline

