

TECHNICAL PAPER 5.

PATROL VESSELS FOR FISHERIES MONITORING, CONTROL AND SURVEILLANCE

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WHAT IS A FISHERIES PATROL VESSEL?

A fisheries patrol vessel is a vessel used to ensure compliance to fisheries laws and regulations both of a national and international nature.

A patrol vessel starts to become a Coastguard vessel when additional tasks are added to its mission, such as immigration, pollution control, search and rescue, and police activities. These may also require a vessel with different technical abilities, beyond those of a purely fisheries patrol vessel.

A Coastguard vessel can soon turn into a Navy vessel if additional tasks of national security and defence purposes are placed upon it.

This paper addresses only the fisheries patrol vessel.

WHY WOULD YOU CONSIDER USING A FISHERIES PATROL VESSEL? – IDENTIFY YOUR NEEDS

The following list is not exhaustive, but it indicates reasons why countries may consider using a patrol vessel as part of their MCS system:

- To prevent fishing in areas closed for management reasons.
- To prevent fishing out of season, i.e., in closed seasons.
- To prevent the use of illegal gear among licensed vessels.
- To prevent unlicensed vessels fishing in any area.
- To prevent illegal catches, including undersized fish, illegal by-catch, etc.
- To prevent dumping.
- To ensure correct reporting of catches.
- To ensure correct reporting of fishing activity.
- To deploy observers or scientific personnel onto fishing vessels.
- To provide support to other platforms, such as patrol planes and VMS.
- To provide a service function to the fishing fleet, such as diving facility, medical assistance, technical assistance, etc.

If you are considering using a fisheries patrol vessel for any of the above or other reasons, your first step must be to clearly define both your needs and the relevant stakeholders within the fishing sector. This is a simple but important starting point, but must be systematically followed

to cover all possible considerations. It is recommended that you include all relevant stakeholders in this discussion and invite comments on your findings.

This process will clearly define the type of vessel needed and the equipment required on board. Be aware of the difference between “*need to have*” and “*nice to have*.”

SUITABILITY OF A FISHERIES PATROL VESSEL TO MEET YOUR NEEDS

This is the background for the feasibility of using a patrol vessel for your identified needs. It is important to analyse the information to obtain a clear picture of your environment and to assess if the patrol vessel is the most suitable and effective solution.

Information gathering

The following are examples of the type of information that will be useful:

- A list of fisheries and management methods in use.
- Status assessment of fisheries, i.e., new or old, vulnerable or steady.
- Estimate of level of illegal activities and related economic losses.
- Value of fishery.
- Nature of the area to be patrolled.
- Political support for the enforcement of fisheries laws.
- Other control measures.
- Other MCS platforms or operations in the area.
- Alternative solutions, with cost estimates.
- The legal framework: both laws to break and action when broken (powers, legal action, fines).

Analysis of suitability

Determine if a patrol vessel is suitable to fulfil your identified needs, and if a patrol vessel does this best alone or as an element in an integrated MCS solution. This is an analytical assessment that can be done in many different ways. A matrix is often an easy way to present the results of such an assessment.

The following table is a simplified example, and remember that all matrixes require in-depth explanation in additional text, where all conclusions are justified clearly.

Option	Extent meeting management requirements	Adequacy of the legal framework	Cost harmonized with the value of the fishery	Extent of political support	Net value
Patrol Vessel	5	2	3	3	13
Coastguard	3	3	2	4	12
Navy	1	5	1	2	9
Regional MCS	4	2	5	2	13
Observer programme	3	3	4	1	11
VMS	1	2	3	4	10

Human and logistical assessment

This part of the assessment relates to the resources available and any constraints the organization is facing. Analyses of the following factors are required:

- (i) **Human resources capability** Do the personnel have the required knowledge to operate and develop the operation, or will outside assistance or training programmes, or both, be required?
- (ii) **Resources available** What budget frame is probably available in the short and long terms? This includes human resources (salary, training, equipment, etc.) as well as investment and running costs (maintenance, fuel, food, spare parts, technical assistance, etc.) of the vessel. You must be sure that you are able to operate the platform after the initial investment.
- (iii) **Support, maintenance and logistics** Will local or regional organizations or companies be able to support and maintain your new platform? What kind of purchase routines are required within the government (i.e., will they complicate an otherwise efficient operation)?
- (iv) **Infrastructure** Are the necessary port facilities in place? Is any support and assistance required from Navy or Coastguard sources ensured through a concept of cooperation?

Preliminary cost assessment

A preliminary cost assessment is necessary to ensure that not only are resources available for the initial purchase of the required vessel, but also to determine the long-term needs for running the ship. It is advisable to investigate the second-hand market as well as the price for new construction. A shipyard should be able to provide the necessary information.

Again, a matrix is convenient for presentation of the findings.

Weather conditions	Operational limits	Endurance	Manning	Capability	Investment cost (US\$)	Running costs (US\$)
Calm sea	Inshore to 4 n.mi. offshore	24 hours	2 officers 2 crew	Non hostile boarding and inspection	0.5 million	100 000
1-2-m wave height	Inshore to 12 n.mi. offshore	36 hours	4 officers 6 crew	Night operations; hostile boarding; inspection and arrest	2.5 million	500 000
All weather conditions	to 200 n.mi.	16 days	6 officers 9 crew	Night operations, hostile boarding, inspection and arrest	8-10 million	1.5 million

Feasibility Analysis

The last part of the assessment should always include a feasibility analysis of the new vessel. There are obvious factors that will stop the project immediately, like lack of infrastructure or money. Other issues may not be that obvious until a study has been carried out.

An example of a simplified feasibility analysis in the form a table is presented at the end of this paper.

ALTERNATIVE SOLUTIONS

Alternative solutions should always be identified and compared to the primary idea (in this case the patrol vessel) to give a complete assessment. Options to consider include:

- **Regional cooperation** Regional sharing of MCS resources is an alternative that can enhance regional or bilateral cooperation and increase efficiency in a larger perspective.
- **Charter** Charter of a vessel can in many cases be a cheaper solution than running your own vessel. This depends on the experience of your organization, national policy and

the timeframe of the operation. You can charter a vessel for a certain number of days per year to reduce costs.

- **Donor assistance** Help can be sought from other countries with expertise in the field. This is particularly favourable if the country qualifies for donor assistance. However, this solution can have pitfalls, including:
 - the assistance provided does not match the earlier specified needs,
 - the donor country gives unsuitable or technically outdated equipment, or
 - the donor country has commercial interests on the agenda related to technical support, subsidizing of its own industry, or direct interest in the fishery. This can consequently result in an unsuitable vessel.
- **Other MCS platform or sensor** Be aware that other solutions and different MCS platforms may give the same or better results at more favourable prices as well as with less training required. These solutions should be compared to ensure the best possible solution within the economic framework.

TO BUY A NEW PATROL VESSEL

If the analysis of the situation concludes that a new patrol vessel is needed and justifiable, the next step is to establish the *preliminary requirements* of the new vessel. This is a technical report for which it is recommended that either maritime consultants or a classification association be employed to produce. This report should outline main and secondary functions, operational requirements, relevant national and international regulations and obligations, technical specifications, required infrastructure, market evaluation, product identification and cost estimates.

If there are no suitable solutions available off the shelf, the next step is to hire a naval architect to design the new vessel. These drawings and specifications can then form the basis for tenders from shipyards invited to give quotations.

Scenario	Meets management needs	Meets human resources needs	Infrastructure available	Political support	Meets maintenance and logistical needs	Investment costs available	Future costs available	Comments
1	✓	✓	No	✓	✓	✓	✓	Not feasible. Regional co-operation an option
2	✓	✓	✓	No	✓	✓	✓	Not feasible before management convinced
3	No	✓	✓	✓	✓	✓	✓	Not feasible.
4	✓	No	✓	✓	✓	✓	✓	Training or outside personnel required. Charter is an option to be investigated.
5	✓	✓	✓	✓	No	✓	✓	Local expertise has to be established
6	✓	✓	✓	✓	✓	No	✓	Not feasible. Regional co-operation an option.
7	✓	✓	✓	✓	✓	✓	No	Not feasible. Alternative solution to be assessed.
8	✓	No	✓	✓	No	✓	✓	
9	✓	No	No	✓	No	No	✓	
10	✓	✓	✓	✓	✓	✓	✓	Buy patrol vessel

