Monitoring, Control and Surveillance in Fisheries

Working Paper prepared by Jacques VERBORGH for the Seminar on 'Sea Surveillance by Fixed Wing Aircraft' (in celebration of the Swedish Coast Guard Flight Division's 25th anniversary) Culturum Hall, Nyköping, Sweden

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Introduction

The state of most fisheries in the world is worrying, as most of the commercial fish stocks are overexploited. The main cause is overfishing, which results principally from the substantial imbalance between the catching power of fishing fleets and the available resources in the sea. Too much fishing results in depleting stocks and diminishing catches.

The aim of the Common Fisheries Policy (CFP) is to ensure sustainable and profitable fisheries. This requires the establishment and enforcement of measures covering all the activities related to fisheries and fisheries products, from the ship to the shop.

Fisheries Management Measures

Licences are a key tool in most managerial regimes, particularly where it is necessary to limit access to a fishery. Licences are also an important mechanism for imposing conditions on access. For example, coastal States can use licences to impose conditions on foreign fishing vessels (e.g. to install blue boxes, i.e. satellite tracking devices). The licence holder obtains a conditional right to fish (i.e. the right depends on compliance with the conditions of the licence) and non-licence holders are excluded.

The CFP sets annual Total Allowable Catches (TACs), fixing the quantities of fish resources that can safely be fished without endangering the renewal of the stocks. In certain areas, the CFP sets a ceiling to the fishing effort by limiting days at sea.

Technical measures are established to increase the selectivity of fishing gears and thereby allowing young fish to escape from trawls. Zones can be closed on a temporary or seasonal basis to protect spawning or juvenile fish when they congregate in these areas. Catches retained on board have to be recorded in vessels' logbooks for inspection purposes. Minimum landing sizes are set to discourage fisheries targeting young fish.

In the beginning of 2001, specific management plans have been adopted for the recovery of specific cod and hake stocks.

Monitoring, Control and Surveillance (MCS)

In the European Union, the enforcement of these conservation measures is the responsibility of Member States. The competent authorities carry out Monitoring, Control and Surveillance (MCS) operations.

The nature of fisheries activities, which take place over vast areas and involve a large number of landing places, makes it particularly difficult for the authorities to enforce these measures.

Nevertheless, the credibility of a fishing policy depends on effective enforcement. Fishermen will only be convinced that they have to comply with the rules when they have the guarantee that the fish they leave in the sea will not be caught by somebody else in breach of these rules.

MCS Operations

Proper monitoring, control and surveillance require substantial investment in aircraft and patrol vessels, and of course proper staffing. Member States must also have in place the necessary legal or administrative procedures to ensure the follow up and sanctioning of infringements.

In the past, MCS operations merely consisted of sea surveillance and control of landings.

Today, new technology involving satellite based VMS plays a prominent role in fisheries control. Automatic devices installed on board larger vessels automatically send position reports to a land-based station enabling the authorities to monitor vessel movements. Field trials have confirmed the feasibility of detecting fishing vessels with spaceborne remote sensing. These new monitoring techniques will not replace traditional means, but will strengthen them and improve the cost/effectiveness of control.

Why conduct MCS operations at sea?

MCS has traditionally been based on the presence of patrol vessels and surveillance aircraft on the fishing grounds. By doing so, the authorities can achieve a number of prime objectives:

- to stop unlicensed fishing
- to stop fishing in closed areas
- to prevent use of illegal gear
- to prevent discards
- to monitor transshipments
- to assure correct reporting
- …

Furthermore, the regular presence of patrol vessels and surveillance aircraft acts as an effective deterrent.

Patrol vessels

Patrol vessels are used to enforce legislation on the fishing grounds. Boarding parties can inspect fishing vessels and collect evidence on the spot. Patrol vessels can also conduct arrests. They can however only cover a limited area and they are easily detected.

The fleets to be monitored, the sea and weather conditions, etc. will determine the number and the type of patrol vessels required. These can be costly to buy and operate, but they are in many ways irreplaceable.

Aircraft

Aircraft are very useful for surveillance of large areas and can be used in high seas operations. Only aircraft can provide an overall picture of a large fishing zone within a short timeframe. The timely sharing of information collected by aircraft will improve the deployment of patrol vessels and can provide an early warning for landing control. Proof of certain types of infringements can be secured by photographic methods.

However, aircraft cannot be used for checking fishing gear and catches. Air operations may not be possible in adverse weather conditions and at low visibility.

There is a wide range of aircraft available, with different performance abilities, which are suitable for fisheries surveillance.

A suitable aircraft should be able to reach a patrol area in a reasonably short time. Also, in order to cover a wide area during a patrol, the aircraft must have a good search speed, but this cannot be too high, because it must be possible to identify and photograph fishing vessels. It is necessary for the aircraft to remain on task for comparatively long periods, which requires long endurance at slow speed.

The type of operation will determine which mission equipment will be required. Photographic equipment like cameras and videos are primary tools to secure evidence of apparent infringements. Surveillance devices further include radar, FLIR, IR/UV scanners, and computer equipment.

Community financial contribution

Monitoring, control and surveillance are costly. The annual cost of MCS of fisheries activities in the European Union is estimated at 300 M€. This cost must not become prohibitive. Therefore, the EU has been helping Member States since more than a decade. Between 1991 and 1995, the budget was 22 M€ per year. During the period 1996 to 2000, the Community contribution was 41 M€ per year.

The financial contribution towards expenditure incurred by Member States since 1991, for aerial surveillance amounts to more that 50 M€.

Inter-agency Cooperation

In order to reap the benefits from their efforts to combat illegal fishing, the authorities involved must work together.

Within a given country, the Air Corps should talk to the Naval Service, the Coast Guard should talk to the Fisheries Administration.

The competent authorities in one country can usefully collaborate with their counterparts in other countries. In the Mediterranean e.g., the Greek and the Italian Coast Guard work together to monitor driftnet fisheries.

The urgency measures taken by the coastal States in the context of the cod recovery plan in the North Sea have also been an opportunity for authorities to demonstrate synergies.

The same is true for joint control operations in the Regulatory Areas of Regional Fisheries Bodies such as the International Baltic Sea Fisheries Commission (IBSFC) and the North East Atlantic Fisheries Commission (NEAFC).

Conclusions

Fisheries protection is more important than ever to achieve sustainable fisheries and in particular to ensure a level playing field for fishermen.

Sea surveillance has always been and will always be a key element in fisheries protection; nevertheless, one shall continuously endeavour to improve its performance, in particular through the use of modern technologies and through inter-agency cooperation.