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## 3. Port management

### SUMMARY

Irrespective of the size of an existing or projected port, whether it is for beach landing or a conventional port, that facility cannot be abandoned in the belief that it would run by itself. Experience has demonstrated that this is not so and that the facility has to be managed to ensure that it is used and maintained correctly over the period of its useful life and for a government to meet its responsibilities under international law.

Therefore, this chapter addresses a wide range of issues, from beach landing sites to integrated port facilities catering for fishing vessels and non-fishing vessels and ships. Thus various types of port management schemes are illustrated and how to select an appropriate option commensurate with the size of the port or landing facility, stressing nevertheless the responsibilities expected of selected regime and individual members.

The principal objective of this chapter is to ensure that the reader would be able to relate to specific management structures and issues under discussion and have a more clear understanding of individual and corporate responsibilities in the management and use of a facility.

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### 3.1 PORT MANAGEMENT STRUCTURES

The most effective way to run a fishing facility, whether it be for beach landing or a fully-fledged port, is through the establishment of a management body for the facility, representing the interests of all stakeholders. The right to do so, however, is not always resident in national law. The chief duties of a port management body are to ensure:

- compliance with the laws, regulations and other environmental directives governing the fisheries sector (overfishing legislation, sizes of nets, closed seasons, etc.);<sup>1</sup>
- compliance with the regulations for the use of the facility (landing fees, bulk handling charges, sale of potable water, bulk fuel, etc.);
- compliance with environmental conservation measures adopted by the planning authorities (waste recycling, spent-oil recovery, wet wastes disposal, etc.);
- compliance with food safety and hygiene requirements;
- integration with other users as in the case of a non-exclusive facility for fishing vessels (landing jetty may double as a passenger landing stage for coastal taxi boats); and
- transparency in the decision-making process (to prevent private interests from taking over a public facility through unfair practices).

In order for the port management body to perform its duties effectively, it must:

- be commensurate with the size of the facility and the responsibilities expected of it (one person could be enough for a small beach landing but a group of persons would be necessary inside a harbour with a large fleet of canoes, plank boats and other types of vessels);
- be adequately funded to function as intended (landing fees and handling charges should reflect current maintenance and running costs);
- represent the whole spectrum of users of the facility (if the facility doubles as a passenger landing, then the interests of the passengers must also be taken into account);
- allow for consultation between the various users (if one of a multitude of user subjects the landing or port to abnormal stresses, then this should be reflected in the maintenance charges).

#### 3.1.1 Size and composition

Because of the diversity of situations and circumstances in which fishermen operate, it is extremely difficult to present ready-made solutions for the size and composition of a port management body. However, there are four major areas where management input is required:

- the day-to-day management of operations (unloading, sorting, icing and onward movement plus any other activity that the landing may be used for) and general maintenance;
- financial administration of the facility (fees for services rendered, licensing, sale of water and fuel, etc.);
- landing statistics; and
- administration of hygiene standards throughout the facility.

It follows that a typical port management body is generally composed of a minimum of four persons: a harbour master, an accounting officer or bookkeeper, a fishery statistics officer and a hygiene/pollution controller. A fifth person may assist the harbour master with maintenance issues when the need arises. Whereas the harbour

<sup>1</sup> Attention is drawn to the *Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing* adopted by the Conference of FAO in November 2009.

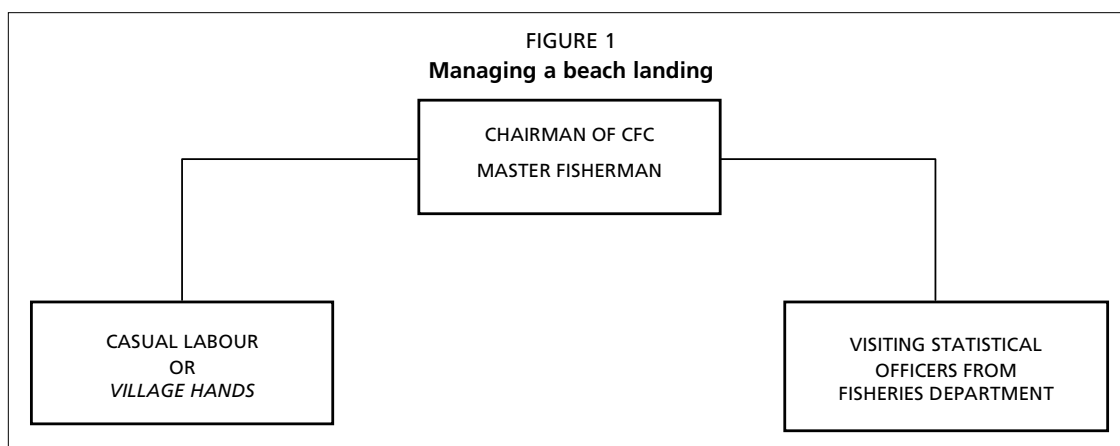
master's job is a full-time occupation, the other posts may be either full-time or part-time, depending on the throughput of fish at the harbour facility and the availability of trained staff.

At the extreme lower end of the scale, when the landing is an artisanal beach landing, the harbour master may do all the work himself on a full-time basis and only hires workers or local village hands for specific jobs, such as repair work, cleaners, etc., when the need arises. Fisheries officers would then visit the site occasionally to gather statistics information. As the facility increases in size and importance, even the five persons mentioned above would not suffice and additional personnel would be taken on to monitor port security, fishing practices, auctioning and cleaning operations. School teachers are often employed as part-time officers in their respective field of expertise (biology and mathematics or science).

At the extreme upper end of the scale, when the port is an industrial distant fisheries port, an autonomous, municipal, state or even a private management body may be set up to run and manage the facility.

### 3.1.2 Artisanal landing

At the village level, the management body could consist of the community fishery centre (CFC) or a similar organization of fisherfolk. Although the facilities and services within a small village landing may be quite modest, there is still need for an organized form of management (Figure 1).

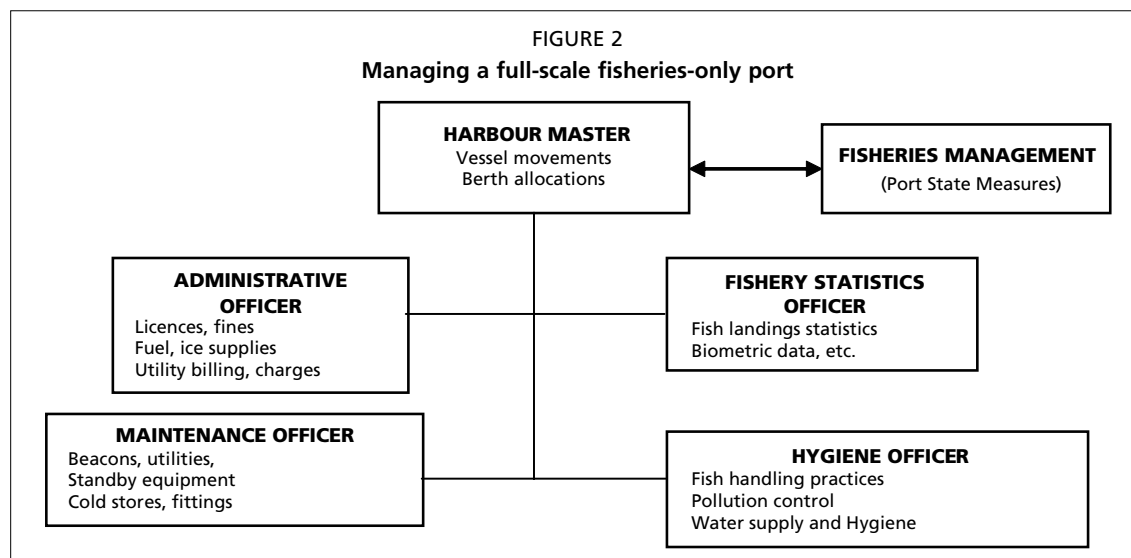


In developing countries, a master fisherman is normally appointed to run the landing with the power to hire casual local labour when the need arises. The master fisherman answers to the chairman of the CFC or directly to the village head. Fisheries officers may visit the village on a regular basis or local staff may be trained in the correct methods of recording fish landings.

### 3.1.3 Coastal fisheries port

A coastal fisheries port, with its myriad of fishing vessel types, which may range from simple paddle canoes all the way up to 12 metre trawlers and shrimpers, is the first type of port that requires a proper full-time management body installed in proper office space in the fishing port.

The minimum of five persons is required for the proper functioning of the port but generally a few extra staff members are always required, especially during peak landings (Figure 2). A port of this size is quite frequently run by the department of fisheries but in some countries a fishermen's cooperative is set up under the auspices of the department of fisheries to run the port on a commercially viable basis.



### 3.1.4 Offshore fisheries port

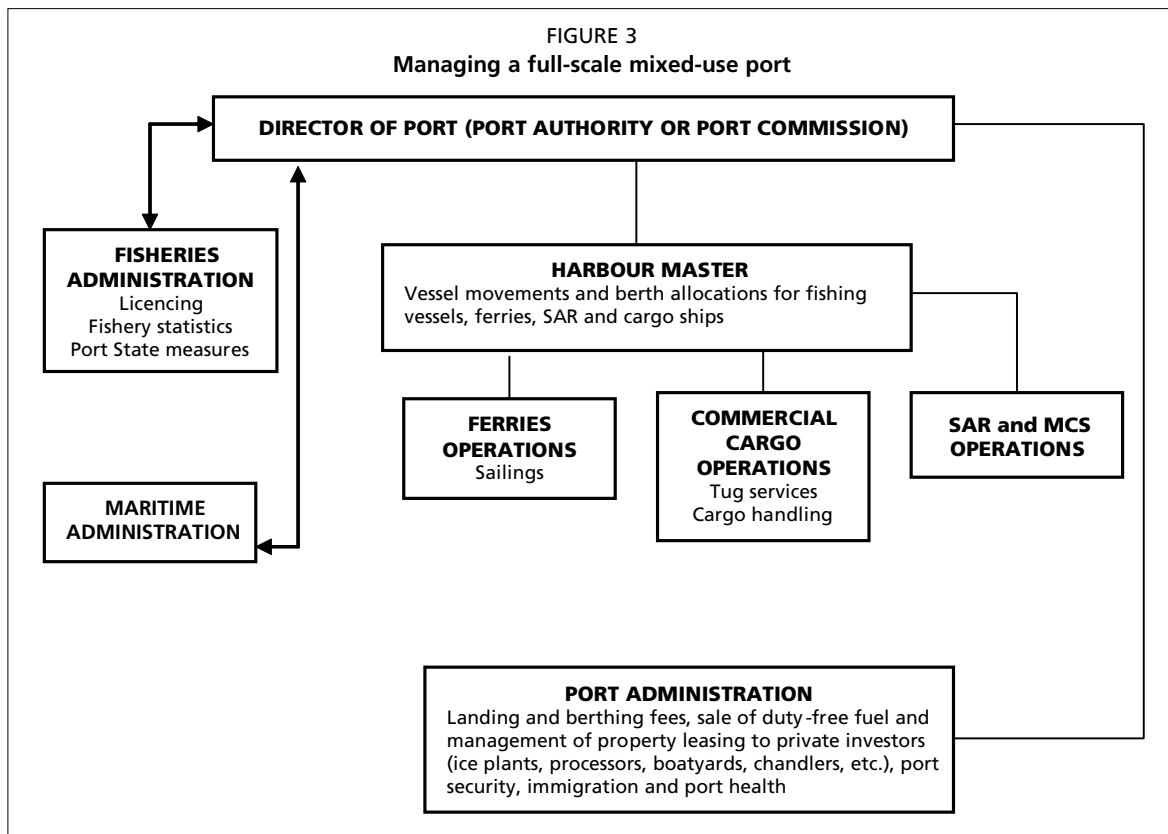
The landside facilities of an offshore fisheries port are considerably larger and more complex than those of a coastal fisheries facility. This type of port is normally within an urban environment and may also be used for:

- exporting fish and fishery products directly to foreign destinations;
- basing coast guard assets; and
- ferry operations to neighbouring ports or countries.

In such cases, the fisheries port management body would operate within the context of a port administration where all the stakeholders would be represented, especially the country's national port authority (sailings to foreign destinations), immigration and police (point of entry/exit), coast guard (SAR), fisheries department (landings, hygiene, and monitoring, control and surveillance [MCS]), and travel operators (ferries). A port director would normally be appointed from the port authority or the coast guard to run such a port.

The ownership of this type of port varies from country to country and depends on the number of activities carried out from the port. Some countries classify ports as municipal, regional or central government depending on the throughput and source of funding. Others lump all sea ports under the national ports authority, while others still place all fishing related ports under the care of a fishing ports authority to distinguish them from commercial ports. In the former type, the port management body is commercially oriented while in the latter it is fisheries oriented. Figure 3 illustrates the hierarchy of a typical mixed-use port.

It is not uncommon for such ports to be run privately or under autonomous trusts or commissions, in which case the port director answers to an autonomous body. However, both fisheries and maritime administrations have an impact on the use of harbours in line with regulations in respective acts as mentioned in Chapter 1.



### 3.1.5 Distant fisheries port

The landside facilities of a distant fisheries port comprise mainly of fish processing or forwarding operations and all the products landed at the port are either already frozen or already processed and packaged aboard factory vessels. Distant fisheries ports almost invariably sit in an urban environment due to the requirement of factory workers to run the processing operations.

Ownership and management of distant fisheries ports are similar to offshore fishing ports except for the fact that only large vessels are handled in the fisheries area, such as large trawlers, factory trawlers and mother ships and vessels engaged in the transshipment of fish and fisheries products.

## 3.2 MANAGEMENT BODY

### 3.2.1 Harbour master

The harbour master is the single most important person inside a harbour and decides how a harbour facility is used. Ideally, harbour masters should generally be recruited from former captains of vessels, who are usually fully conversant with maritime regulations and the navigational and operational needs of fishing vessels. In addition, a good harbour master should also be knowledgeable in:

- maritime law, seamanship, cartography;
- maintenance of infrastructure components (hydrography, dredging, beacons, fendering and, to a lesser extent, public lighting, cold storage, etc.);
- fishery statistics, national licencing arrangements, fishing gear regulations, etc.; and
- public hygiene and pollution prevention.

Generally speaking, the smaller the harbour or fishery landing, the more knowledgeable the harbour master has to be (to compensate for a smaller management body with fewer staff). In cases where a number of fish landing places exist a few

kilometres apart, such as along big river estuaries or long rectilinear coastlines, one good knowledgeable harbour master may be employed full time to look after more than one facility. The principle tasks of the harbour master include:

- day-to-day management of the facility (ensuring that all users are following regulations);
- berth allocation and vessel traffic management; and
- implementing vessel arrival timetables in line with auction schedules.

### 3.2.2 Administrative officer

Whether full-time or part-time, the administrative officer has the task of keeping the harbour's books in order. The tasks would include:

- keeping a record of all the licenced craft operating from the facility, liaison with those responsible for the issue of a licence to fish and, where applicable, the register of the vessels and keep records as may be required.
- accounting for the cash receipts for harbour dues and fish handling charges;
- sale of potable water and fuel to vessels inside the port facility; and
- administer the fines imposed by the harbour master.

In busy ports, the administrative officer usually asks staff to assist in duties. The administrative officer, whose work generally decides the size of the harbour's operating budget, reports directly to the harbour master.

### 3.2.3 Maintenance officer

The maintenance officer, whether full-time or part-time, is generally charged with keeping the harbour infrastructure in good working order. If the harbour is too small to support even a part-time maintenance officer, the duties fall on the harbour master himself. Typical duties of a maintenance officer include:

- regular maintenance of the harbour beacons (batteries, cables, lamps, etc.), light fittings, fences, painting of steel structures, maintenance of port boundary; and
- occasional maintenance of the harbour's water supply system (replacing corroded pipe work, leaking taps, unblocking water drains, replenishing the chlorinators, ensuring the waste collection receptacles are in good working order and that the port's wastes are being handled according to the approved waste disposal plan, ensuring that the generator or pumping equipment is serviced regularly or that the right spares are available, etc.).

The maintenance officer reports directly to the harbour master. In cases where a number of fish landings exist close to one another, a full time maintenance officer may be employed to look after a number of facilities.

### 3.2.4 Fisheries statistics officer

The fisheries statistics officer, whether part-time or full-time, is usually a government employee (fisheries department) seconded to the port management body. The officer's duty is to compile statistics on the resources being harvested. The importance of accurate fishery statistics cannot be adequately stressed in today's climate of overfishing, stressed stocks, quotas and habitat degradation. His observations must include:

- name of vessel and its licence to fish as well as details of its registration;
- quantity of species harvested;
- individual fish sizes and/or weights, especially undersized fish; and
- wholesale prices fetched at the local auction (unless already computerized).

The fisheries statistics officer usually fills in data forms supplied by his department and these are sent to his headquarters for analysis. This work is of the utmost importance if fisheries are to be developed on a sustainable basis, because if the landed fish sizes suddenly drop it is this officer who will sound the first alarm bells that the resources are being overfished. Nowadays, computer programmes are widely available for this data to be filled in and sent to head office in real time, especially if linked to a computerized system. With the advent of area-wide WiFi networks running off the mobile telephony system, Private Virtual Networks or PVNs are easily set up and enable data to be transmitted in real time. Although vast quantities of data are normally generated, the use of dedicated statistical software makes the mundane task of reducing the numbers to valuable reference statistics an easy task.

### 3.2.5 Hygiene officer

The hygiene officer, whether part-time or full-time, may also be someone from government (ministry of health) seconded to the port management body. With the rising importance of fish as a primary source of healthy food, concern on the possibility of tainted fish entering the food market chain has been rising. The hygiene officer has to ensure that:

- the handling of fish or fish products is carried out according to international standards of hygiene in order to prevent contamination during handling;
- only sanitary standard water is used to wash fish for onward sale and that samples from the port's water system are regularly tested in an approved laboratory;
- the port area and its immediate surroundings are not fouled-up or invaded by sewage, rats and other vermin;
- that the port's hygiene facilities are kept clean and functional; and
- that contaminants (diesel, oil, petrol, etc.) do not come into contact with the fish.

The hygiene officer usually reports to both the harbour master (who acts on the hygiene officer's observations) and to the ministry of health. In many instances, the hygiene officer is based inside the ministry of health and covers and regularly visits more than one facility, such as, for example, abattoirs, factories and cold stores in the vicinity of the port.

## 3.3 STAKEHOLDER PARTICIPATION

Practically all the management strategies used to date to manage fishing ports may be described as top down, and these have not always resulted in the sustainable management of the port or landing facility. Nowadays, various participatory styles of management, commonly referred to as bottom-up or community-based management, are being introduced to foster a greater involvement of all the stakeholders in the management process and, as a result, greater transparency. The underlying premise is that the stakeholders are empowered both by this participation and by the sharing of responsibilities for the general upkeep and housekeeping inside the port.

In terms of participation, there is a need to describe the participant groups – not only fishermen or owners of vessels, but also other groups that may have a stake in the operational matters of the port and the extent to which these various stakeholders should and may participate. Concern is raised regarding the participation of a range of stakeholders with diverging interests as this might become counterproductive and may make daily management of the port impractical.

Participation will also expose disagreements among some of the stakeholders that may require additional discussion, thereby slowing down the decision-making. There are also concerns about the possibility of conflicts of interest if certain stakeholder groups are allowed an upper hand in the day-to-day management of the facility.



The stakeholders in a typical artisanal landing may comprise:

- owners of individual paddle or small two- to three-person canoes (self-employed fishermen);
- owners of large canoes or trawlers, employing 10- to 20-person crews (normally investors);
- crew associations (local village hands)
- unloaders (local formal and informal beach hands);
- fish mammals;
- fish smokers;
- other processors;
- ice suppliers;
- fuel and fuelwood suppliers; and
- transporters.

Further up the scale, in coastal or offshore fishing ports, the fisheries sector may be sharing the port with other users or the port may be located in an urban area. These additional stakeholders may comprise:

- other institutions (coast guard and police, municipality);
- other sectors of the economy (restaurants and hotels); and
- transport (ferry operators).

Participatory types of management, where responsibilities for port management functions are shared between fisheries and various user groups, are generally referred to as involving some level of co-management. In artisanal landings and coastal fishing ports, a legally-constituted fisheries cooperative or fisheries management organization (FMO) could be set up to co-manage the port and specific roles and tasks delegated to the various participants. The composition, the participatory skills and the capabilities of the various interest groups involved will affect how the cooperative functions. If responsibilities are fully devolved to a particular organization such as a cooperative or an FMO, then the approach may be described as community-based management.

Near the upper end of the spectrum (offshore or distant fishing ports), there may be arrangements for a forum for dialogue between stakeholders and the management authorities, but final decisions may still be made by those representing the owners/operators of the port.

In between the foregoing there may be arrangements where the fisheries authority has delegated much of the management responsibility to stakeholder groups, but where the authority retains certain key or basic overall decision-making powers.

Regardless, the objective of these approaches is to increase the participation of stakeholders and the transparency of the management process.

### 3.4 FISH QUALITY ASSURANCE

Assuring fish quality and food safety in a fishing harbour is aimed at reducing post-harvest losses and to ensure the proper handling of fish at sea as well as on shore so that the fish leaving the fishing port is of an assured quality and safe for human consumption. There are no specific regulations for the proper handling of fish on board vessels and at the fishing ports. However, both national and third country notifications and guidelines exist on food safety regulations covering cleanliness and sanitation of food contact surfaces, transportation boxes and water used in the processing chain. To achieve the desired quality assurance, food safety regulations should be integrated into a best management practice plan.

### 3.5 BUSINESS PLAN

Each facility, whether it is an artisanal landing or a fully-fledged port, should operate independently and generate enough revenue that can be used for the day-to-day maintenance and management operations.

The main part of a business plan is the financial plan, aimed at producing an economically viable port operation. The financial plan should identify and balance all maintenance outlays and operational costs with the revenue generated. Traditionally, investment costs, replacement costs and capital dredging costs are absorbed by the central government as and when they become due.

Revenue may be generated by:

- berthing fees charged for vessel mooring;
- fish landing charges, related to volumes handled;
- sale of ice, water and fuel;
- third party licence fees for commercial activity within the facility such as boat repair, engine workshops, food and beverage sales, fish stalls, etc.; and
- rent or lease of areas for private development, such as fish processing and packaging.

### 3.6 BEST MANAGEMENT PRACTICES

A fisheries port or landing should be provided with a set of best management practice guidelines for the proper management of the environment in and around the fishing port to achieve the desired level of quality assurance of the handled product. Best management practice guidelines should be drawn up for the following:

- port operations;
- boatyard operations (when a slipway is present); and
- prevention of pollution.

#### 3.6.1 Port operations

In order to avoid, minimize and address potential environmental and management problems arising from port operations, the port management body should:

- comply with national environment and safety legislation to avoid or minimize potential impacts from vessel movements and operational emissions and wastes;
- inform all the port users about the sensitivity of the coastal environment and the potential impacts certain actions may have on the well-being of this environment. This may be achieved by strategically placed notice boards, leaflets and running of regular workshops;
- educate, train and encourage staff to avoid and minimize pollution;
- ensure that all employees (including crews from visiting vessels) follow simple good housekeeping practices to minimize the amount and type of wastes generated;
- draw up and display port users' code of conduct and fines to be levied in violation thereof;
- consider best incentives to vessel operators to avoid or minimize potential effects from vessel operations;
- consider the zoning of certain activities in space or time to address adverse impacts through the creation and enforcement of local by-laws;
- make data routinely collected by the fishing port available to national agencies that have the statutory duty to monitor conditions within fisheries; and
- liaise closely with national conservation agencies to facilitate early identification of potential impacts.

### 3.6.2 Boatyard operations

Vessel repair facilities pose special environmental concerns in a fishing port because of the processes and chemical materials that they use and their proximity to areas where fish meant for human consumption is handled. The area of major concern in a boatyard is hull stripping and painting. The port body should ensure that:

- abrasive or sanding is performed under covered tarpaulin enclosures or boat skirts;
- abrasive or sanding is performed over a horizontal hard impermeable surface, such as concrete, to enable proper cleaning of surface and collection of wastes;
- whenever possible, vacuum sanders are used to limit the amount of dust generated;
- sanding dust and paint chippings be removed on a daily basis and appropriate covered waste containers be provided within the facility;
- a list of the above work practices be posted at the work area for the benefit of the “do-it-yourself” vessel owners who may not be aware of the port’s environmental regulations;
- techniques such as brushing and rolling take precedence over spraying to reduce overspray and solvent emissions;
- all painting be performed under covered tarpaulin enclosures or boat skirts;
- all painting be performed over a horizontal hard impermeable surface;
- whenever possible, solvents and coatings with low volatility be used;
- waste paints, solvents and rags be stored in covered waste containers to prevent evaporation to the atmosphere; and
- workers under the boat skirt be provided with appropriate full-face masks and solvent-resistant gloves.

### 3.6.3 Prevention of pollution

In order to avoid, minimize and address potential contamination problems arising from the day-to-day running of the port, the port management body, through the services of the hygiene officer, should ensure that:

- all food contact surfaces are cleaned and sanitized as per cleaning and sanitation schedule prepared in accordance with the required international standards;
- all the water (both fresh and seawater) and ice utilized inside the port is free of contamination and checked along pre-established national guidelines by approved laboratories;
- all hygiene infrastructure inside the port is in perfect working order and that defects are reported in an orderly fashion and repairs carried out;
- enough stockpiles of detergents and cleansing chemicals are kept on site and stored according to the manufacturer’s instructions;
- the entire port area, including slipway, boatyard and servicing area, is swept and kept clean at all times;
- minor mechanical repairs involving oil or grease are not carried out on the quay or on the vessel deck;
- sewage treatment infrastructure is kept in perfect working order;
- the appropriate waste reception facilities are used as specified (bilge water separator, spent oil tanks, solid wastes bins and wet wastes bins);
- no spillage of fuel takes place within the port confines and fuel/oil absorbent materials are kept ready for use;
- a pest control schedule is implemented and monitored on a routine basis; and
- fines levied for infringements reflect the true cost of the impact on the environment.

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