



**European Bank**  
for Reconstruction and Development

# Sub-sectoral Environmental and Social Guidelines: Small Scale Port Development

## ***PROCESS DESCRIPTION***

Small scale port development involves the planning, construction and operational phases of the development of warehouses, jetties, fuel depots, maintenance areas and small scale facilities for tourism. This guideline also covers ancillary activities such as construction of minor roads.

Small scale ports have the capacity to receive vessels in transit for refuelling, waste transfer or for the transfer of cargo. They may include a dry port which is used to store containers or conventional bulk cargo connected to the port by rail or road.

The guideline does not cover harbour dredging, construction of ferry terminals, fish processing facilities or large scales development for tourism.

The approach to the development of small ports is dependent on the intended nature of the port, target traffic (volume and vessel type), berth length, required facilities, turn around time capacity for receiving vessels, natural environment, including surveys of existing waters regarding navigation and berthing capacities, access to good transport links, roads, rail or waterways, availability of a labour force to operate the port, and the degree of modification required and potential environment impact of the small port development.

## ***KEY ENVIRONMENTAL, HEALTH AND SAFETY RISK/LIABILITY ISSUES***

Port developments should have undergone some form of master planning and have an environment statement prepared which should outline the natural environmental capacity of the proposed small port and the inherent risk to the environment of the proposed development.

## ***Habitat Destruction***

In preparation for development, land clearance may lead to temporary environmental impacts including habitat removal, changes in water quality, and increased sedimentation issues. In receiving waters, inland waters or coastal waters these impacts have a cumulative effect on aquatic environments.

Construction brings the requirement for temporary roads, equipment and labour, materials haulage by water and road transportation, temporary accommodation and welfare requirements. These may temporarily impact local natural habitats due to increase in noise, risks of uncontrolled discharges, dust and other emissions.

## ***Water Pollution***

Marine and freshwater pollution is the largest risk associated with ports and should be considered prior to decisions on development. Aspects of normal operation of shipping vessels may cause pollution incidents. These discharges may occur while moored/docked in port. The main discharges to receiving waters in ports are losses of anti-fouling coating, bilge, accidental and deliberate discharge of oily water and discharge of sewage and other waste. Discharges are subject to limitations, which are enforceable by coastal states, port authorities and the country of ship's registration. Some vessels may knowingly discharge liquid waste into receiving waters before entering small ports, to reduce waste management changes (for more detailed information on the environment and social impacts associated with water transportation see the EBRD Water Transportation Guideline).

Construction of the port will lead to water runoff into surrounding waters before drainage can be installed, this water will collect suspended



solids and any oils or debris present in the area to be developed.

### ***Waste water***

The principal source of waste water will be during port operation. Increasingly vessels are being encouraged to retain waste water on board for treatment, this should then be disposed of in the port. The port development should include facilities for vessels waste water treatment. This will either be a connection to the municipal waste water treatment works or the installation of a waste water treatment works as part of the port development. Authorities will set limits on the treatment requirements for this waste. These will be set out in a permit.

### ***Solid Waste***

Solid waste will be created during the construction of the port. Transport and disposal of excavated soil and construction waste may be a significant issue notably on urban sites, and should be carried out in accordance with all legal requirements.

Hazardous and solid wastes may include contaminated soil, construction debris, waste fuel and lubricants, oil filters and batteries

Potential pollution problems include:

- Dumping of construction debris into or near watercourses or surface water drains;
- Storage, treatment and transportation of contaminated soils;
- Residual paints and solvents in containers.

During port operation it is expected that visiting vessels will discharge waste. Technical problems can be encountered during the transfer of waste

from ship to shore. Segregation of waste is encouraged but waste reception receptacles vary from port to port nationally and internationally. Facilities are dependent on the receiving capacity of the port.

Waste management facilities installed on board vessels provide means of adequately assessing the needs regarding discharge of waste to port facilities. This enables small ports to manage waste and minimise the impact on off site and on site facilities and reduce the burden to physically restricted land systems, especially in developing countries.

### ***Air emissions***

Dust will be created during the construction process. The most significant emissions to air are associated with port operations and are associated with combustion emissions from vessel engines and boilers. Emissions are mainly sulphur dioxide, nitrogen oxides, carbon dioxide, carbon monoxide and fine particulate matter.

### ***OTHER POTENTIAL ENVIRONMENTAL, HEALTH AND SAFETY RISK/LIABILITY ISSUES***

#### ***Liquid Wastes***

- Wash water, oily water from bilges and tank cleaning, and engine fluids such as oil, hydraulic fluids, lubricants, and anti-freeze are among the waste liquids generated by during maintenance shipyard activities.
- Fuelling facilities are another potential generator of waste liquids. Hydrocarbons, glycols and other pollutants in these liquids can come into contact with waterways and aquatic life through spills and leaks from storage tanks.



## *Contaminated Soil and Groundwater*

Construction and operation of the port will include the requirement for bulk storage of oils and diesels. If incorrectly stored and handled spills or leaks could occur that could result in contamination of soil and groundwater.

## *Collision*

Collision occurs on construction sites as a result of moving equipment and vehicles. A lack of designated vehicle and pedestrian paths can result in collision.

Once the port is constructed collision of vehicles operating at the port could occur resulting in injury.

## *Slips, Trips and Falls*

Many people work at height on construction sites and falls from height are common. Use of ladders and scaffolding equipment increase the risk of falls. Uneven surfaces and poor housekeeping on a construction site can result in slips, trips and falls on the same level.

Vessels have a high incidence of falls from height, whether from ladders, overboard or into cargo holds.

## *Site Security*

A construction site is often subject to trespass, vandalism or theft. This can result in an increase in environment, health and safety risks. Each site should be properly secured to prevent unauthorised access.

## *Confined Spaces*

Excavations on construction sites can present a risk to workers where their construction is incomplete or access is unrestricted. One of the greatest risks is cave-ins.

## *Machinery*

All equipment should have safety guarding and workers should be issued with appropriate personal protective equipment to protect against unavoidable sharp items and edges.

## *Noise and Vibration*

Moving equipment, generators and machinery will create noise and vibration on construction sites which can lead to long term occupational health and safety problems.

## *Exposure to extremes in temperature*

Workers are typically outside on a construction site and are susceptible to variations in temperature, either heat and the sun or cold.

## *Falling objects*

Vessels are often constructed of many levels and falling objects are a hazard. These can be unsecured equipment on board or poorly loaded and secured cargo. In addition, personnel can be hit by falling/moving objects during loading, securing and unloading.

It is typical for over head cranes to be installed in ports to facilitate movement of cargo, incorrect loading or failure of this equipment could result in serious injury.



## **KEY SOCIAL, LABOUR AND COMMUNITY RISK/LIABILITY ISSUES**

### ***Changes in land use***

Development of a port facility may change existing and future land uses, impacting on the public amenity of the water body. Depending on the traditional uses of the water body, this may have social impacts.

### ***Visual Impact***

The existence of the port and vessels docking for loading and unloading might create a visual impact to neighbours.

### ***Recreational use***

Impact on recreational use of river banks, shorelines, coasts and wetlands include interference with recreational activities such as angling, boating, diving and bathing and walking due to the health and safety risks oily water presents to river bank, coast, wetland or shoreline.

### ***Noise***

A port can be a 24 hour operation which can result in noise nuisance for neighbours.

### ***Congestion***

Increased truck movements to and from the port along local roads could result in congestion and nuisance.

## **FINANCIAL IMPLICATIONS**

- Injuries may lead to increased payroll costs to replace skilled workers and lost production time;

- Capital investment may be required to comply with new environmental, health and safety requirements;
- Fines, penalties and third party claims may be incurred for non-compliance with environment, health and safety regulations.
- Environmental liability associated with coastal or river bank damage due to poor piloting and anchoring is the responsibility of the owner of the vessel or country of origin.
- Liability for accidents, non-compliant activities, transit losses, damages and long-term environmental impacts lead to financial implications for operator and countries of vessel origin.
- The visual and olfactory impact of oily water releases could result in compensation claims for loss of income and long-term damage and degradation of impacted infrastructure including restaurants, hotels, industries abstracting water for processes, marinas, private home owners, and compensation of fishing industry for loss of fish stock and destruction of equipment.

## **IMPROVEMENTS**

### ***Environmental Improvements***

- Regular inspection should be carried out of all bulk containment on site to prevent leakage and product loss;
- Provision of secondary spill containment for storage;
- Ensure that bulk storage areas are locked to prevent unauthorised use of materials or vandalism;



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- Good housekeeping should be maintained at all times on site (both construction and port operations);
- Avoid the use of cement, paper or board and sealant and glazing formulations using asbestos fibre as filler;
- Control or eliminate on-site burning of waste materials;
- Adopt techniques to minimise dust and vapour emissions e.g. air extraction equipment, covering scaffolding, hosing down road surfaces and cleaning of vehicles to control dust;
- Recycling waste water to reduce consumption of mains water;
- Check integrity of site drainage system to reduce accidental spills;
- Waste water treatment facilities, such as:
  - Settling tanks or other separators for silt laden material prior to any outflow into a water course;
  - Collection channels leading to oil and/or silt traps, particularly around areas used for vehicles washing or refuelling.
- Solid and hazardous waste must be removed and disposed of by appropriate contractors at licensed waste facilities;
- Undertake contaminated land surveys prior to excavation working commencing;
- Segregate waste that can be salvaged, re-used or recycled;
- Adopt sensitive strategies with regard to trees, water courses, plant or animal species or habitats, landscape or archaeological features on or around site;
- Time construction periods to avoid sensitive ecological periods;
- Adopt working practices aimed at minimising disturbance of, and reducing spread of, any existing ground contamination.

### ***Health and Safety Improvements***

- Provision of personal protective equipment (PPE) that is fit for the task to prevent injury and maintain hygiene standards. Staff should be trained in the correct selection, use and maintenance of PPE;
- Train workers in correct use of machinery and safety devices;
- Install mechanical lifting aids where possible and rotate work tasks to reduce repetitive activities;
- To reduce the risk of noise exposure isolate noisy equipment and rotate tasks to minimise time spent in a noisy area over an eight hour period and provide personal protective equipment where people have to enter noisy areas;
- Restrict access to excavations and confined spaces;
- Identify less hazardous materials to be used on the site;
- Undertake cable/service surveys prior to excavation work;



- Use tools fitted with water suppression to reduce dust and vibration;
- Restrict noisy activities to day time hours;
- Employ dust suppression on site roads;
- Avoid reversing vehicles and if this is required use a “banksman” (guide);
- Provide vehicles with a designated access route to avoid sensitive communities, such as, schools;
- Install a one way system and/or designated turning area;
- Install walkways to separate people from vehicle movements to reduce risk of collision;
- Ensure a safe means of access between vessel and shore to prevent falls;
- Provide appropriate fall arrest equipment;
- Restrict access to confined spaces and other high risk areas.
- Note whether the plant discharges to a local watercourse or the municipal wastewater treatment works;
- Check condition of water at the port, is there evidence of oil or debris?
- Check the condition of storage facilities for chemicals;
- What is the standard of “housekeeping” on site? Do areas look clean and tidy? Look for evidence of any recent spills or releases of raw materials/product;
- Are staff wearing Personal Protective Equipment?
- Check signage around the site:
  - Does it convey the health and safety risks?
  - Are fire exits and/or evacuation routes clearly marked?
  - Are there demarcated routes for pedestrians and vehicles?

## ***GUIDE TO INITIAL DUE DILIGENCE SITE VISITS***

During the initial site visit, the issues will vary according to the type and stage of port development and depending on the level of environment, health and safety management already introduced. While visiting the site it is important to discuss and review the following:

- Check the condition and efficiency of any wastewater treatment plant present and location of discharge points;
- Is fire fighting and first aid equipment available?
- Check that solid waste storage and disposal (storage equipment) is in a good condition;
- Check that waste disposal takes place on a regular basis;
- Note whether waste is segregated;
- Check that waste storage areas are clear of debris and that skips are covered to prevent waste escaping, for example, check that waste

- containers have lids or are stored in an area with a roof;
  - Have the premises been inspected recently by the regulatory authorities for health and environment? What were their findings?
  - Check for automatic safeguards on machinery to prevent accidental injury.
  - Check that wages and working hours are consistent with the average for the sector and national standards.
  - Does the organisation have insurance in place to cover the recall of contaminated products? Have there been any recent product recall incidents?
  - Have there been any recent incidents on site such as fatalities, fires/explosions, spills? Is insurance in place to cover such incidents?
  - Does the business plan have line items for Environment, Health and Safety improvements?
  - Check the conditions and duration of validity for all permits;
  - If the investment or refinancing will led to restructuring of the company, what will be the potential impacts on health and safety at the operational, employee welfare and wide community impacts level?
  - If the company plans to invest in new technology, what will be the impact on human resources, in particular health and safety and employee welfare?
  - Check the conditions and duration of validity for all permits;
  - Check that labour standards, contracting and remuneration are in line with national law and are consistent with the average for the sector
  - Check that hours, including overtime, are recorded and staff should receive written details of hours worked and payment received
  - Has the company received inspections from the local labour inspectorate in the previous three years? Have these resulted in any penalties, fines, major recommendation or corrective action plans;
  - Does the organisation have a grievance mechanism which allows employees to raise workplace concerns?
  - Are employees free to form, or join, a worker's organisation of their choosing?
- Take note/ask questions relating to any activities that address the improvements listed in the improvements section of this document.

## ***ACTION PLANS***

Dependent on the individual port operation, select appropriate improvements from the list above to include in the action plan. As a minimum, any business should be required to have the following in place:

- Operational procedures to manage environmental, health and safety risks;
- Monitoring programmes;
- Improvement objectives, targets and project plans;
- Training for personnel;



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- Regular inspections, checks and audits with records to demonstrate achievement of the required level of performance against legal requirements and improvement action;
- Emergency plans for environment, health and safety accidents or hygiene non-compliance;

Management review/demonstrated involvement in environment, health, safety and hygiene management.



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### ***REFERENCES AND ADDITIONAL SOURCES***

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