PORT REFORM TOOLKIT
SECOND EDITION

FRAMEWORK FOR PORT REFORM

THE WORLD BANK
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1. INTRODUCTION AND OBJECTIVES

The process of institutional reform is complex. Most countries undertake the kinds of fundamental institutional reforms that shift boundaries between the public and private sectors less than once in each generation. Hence, in most countries the knowledge necessary to carry the reform process forward needs to be built up from a near zero base. The Port Reform Toolkit (Toolkit) is designed to shorten the learning curve for institutional review and renewal by providing background information, concrete examples of successful and unsuccessful reforms, and specific tools and methods that policy makers and reformers require to proceed with the confidence that genuine knowledge affords.

The complex reform process through which the Toolkit navigates policy makers is a worthwhile journey. While the reasons for engaging in port reform are many and varied (as discussed in Module 3), the benefits are real and can be quantified as they accrue to exporters, consumers, shippers, and entrepreneurs. A successful reform program will help free governments of unnecessary expenditures, releasing funds for high priority social programs; ease bottlenecks to trade and economic development; and motivate the adoption of new regulations that protect the environment and improve worker and navigational safety.

Generally, the benefits the main stakeholders can expect from port reform include:

- **Governments**: At the macroeconomic level, improvement of external trade competitiveness by reducing transport costs, particularly the cost of port services, and improving port efficiency at the sea/land interface; at the microeconomic level, easing the financial burden on national budgets by transferring part of port investments and operating costs to the private sector, and incidentally, raising revenues from asset divestitures.
• **Transport and terminal operators:** More cost-effective port operations and services, allowing for more efficient use of transport assets and better competitive positions in transport markets, and more business opportunities in growing sectors (for example, container operations).

• **Shippers, exporters, and importers:** Reduced port costs and, potentially, lower maritime freight rates, allowing lower costs of imported goods and intermediate products and enhanced competitiveness for exports.

• **Consumers:** Lower prices for consumer goods and better access to a wider range of products through improved access and increased competition between suppliers.

Two illustrative examples of port reform benefits are Colombia and Argentina. In Colombia, the liberalization of port labor practices along with the transfer of most port services to the private sector resulted in large and rapid improvements in productivity, lower fees for port users, and very attractive returns for the concessionaires (see Box 1). Similarly, in Argentina, the improvements following the concessioning of terminal operations in Buenos Aires have been dramatic: port charges and shipping tariffs declined sharply, labor productivity nearly quadrupled, and cargo volumes have jumped by more than 50 percent (see Box 2).

The objective of the Toolkit is to provide support for policy makers in undertaking sustainable and well-considered reforms to public institutions that provide, direct, and regulate port services in developing countries. In particular, the Toolkit offers public officials with support in:

• Understanding the need for and challenges associated with sector reform and institutional redesign in light of the changing business environment affecting port operations.

• Choosing among options for private sector participation and analyzing their implications for redefining interdependent operational, regulatory, and legal relationships between public and private parties.

• Preparing legislation, contracts, and institutional charters to govern private sector participation.

• Managing the transition to increased private sector involvement.

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**Box 1: Port of Cartagena (Colombia) Performance Improvements since Private Concessioning in 1994**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Containership waiting time</td>
<td>10 days</td>
<td>&lt; 2 hours</td>
</tr>
<tr>
<td>Containership turnaround time</td>
<td>72 hours</td>
<td>7 hours</td>
</tr>
<tr>
<td>Gross productivity/hour</td>
<td>7 moves/ship hour</td>
<td>52 moves/ship hour</td>
</tr>
<tr>
<td>Berth occupancy</td>
<td>90 percent</td>
<td>50 percent</td>
</tr>
<tr>
<td>Cost per move</td>
<td>$984</td>
<td>$224</td>
</tr>
<tr>
<td>Bulk cargo productivity</td>
<td>500 tons/vessel/day</td>
<td>3,900–4,500 tons/vessel/day</td>
</tr>
<tr>
<td>Hours worked per day</td>
<td>16</td>
<td>24</td>
</tr>
<tr>
<td>Cargo dwell time</td>
<td>30+days</td>
<td>2 days</td>
</tr>
<tr>
<td>Port costs</td>
<td>$984/per move</td>
<td>$222/per move</td>
</tr>
</tbody>
</table>


*Note: COLPUERTOS is the former national public port entity and SPRC is Sociedad Portuaria Regional de Cartagena, a regional port entity resulting from the reform process.*
Resources that address port institutional reform in a comprehensive and systematic way or that clearly explain the processes involved in re-engineering public port institutions are not readily available. The Toolkit is designed to fill this knowledge gap and to provide port reformers with decision support tools, tested and proven institutional reform tactics, and guidelines that represent “best international practice.”

The Toolkit draws together practical institutional designs and alternative approaches for increasing private sector involvement without compromising the public interest. It presents best international practices in a manner that is relevant to decision makers, and is designed to be easily understood by nonspecialists. It supplements general points with specific examples drawn from recent port reform activities around the world.

While the main audience for the Toolkit is public officials in developing countries who are responsible for port sector reform, the Toolkit should also be of interest to other government officials, to executives of port service companies and shipping companies, as well as port consultants and companies that use port services.

In addition to this introduction, this framework module includes the following sections:

- Context for the Framework Module
- The Port Business Environment
- A Road Map for the Port Reform Process
- Implementing Port Reform: Pulling It All Together

2. CONTEXT FOR THE FRAMEWORK MODULE

The Toolkit is made up of eight modules. The first of these, this framework module, sets the stage for all of the other modules that follow. It provides a unifying “decision framework” that policy makers can use to guide them step-by-step through the processes of reforming and re-inventing port institutions. It also provides a common language and a set of concepts that are used throughout the Toolkit and that represent the common language port reformers use in communicating with their various constituencies. Importantly, the Framework Module also includes a road map for the other modules that follow. It explains the interrelationship of these modules with one another, and their relevance to the framework presented here.

This module lays out an ordered set of decisions that are linked together functionally as well as temporally. For each decision, the Toolkit attempts to articulate the principal options and alternatives available to policy makers and assesses the expected consequences associated with each option based on recent international experience. The framework is presented in the form of a “decision tree” that provides a
context for understanding the subsequent modules, which are summarized briefly below.

- **Module 2**: The Evolution of Ports in a Competitive World. This module outlines the roles and functions of ports and the forces shaping port dynamics in the 21st century. Readers of this module will place their ports in the context of current and historic port developments and understand the major trends shaping the ports of the future.

- **Module 3**: Alternative Port Management Structures and Ownership Models. This module describes different port structures and ownership models and identifies their strengths and weaknesses. Upon completion, readers will be able to determine the most effective, efficient, and feasible structure for their ports, while taking into account each country’s or community’s unique economic, political, and social environment.

- **Module 4**: Legal Tools for Port Reform. This module focuses on the legal and contractual options for port reform and examines their strengths and weaknesses. Readers of this module will come to understand and develop specific port reform measures and legal frameworks based on the port’s and government’s economic, financial, political, and social goals and objectives.

- **Module 5**: Financial Implications of Port Reform. Risk allocation among port stakeholders, potential sources of funding for the reform process, and pricing port services to achieve revenue and public policy objectives are highlighted in this module. Readers of this module will appreciate port finance and its relationship to reform as well as how the financial risks and rewards vary from one reform option to another.

- **Module 6**: Overseeing the Economic Public Interest in Ports. This module defines the public interest and describes the oversight mechanisms and techniques and elements of the public interest. It provides a solid understanding of oversight mechanisms and methods; the role of regulatory bodies, inspections and audits; reporting requirements; and the interplay between competition and regulation.

- **Module 7**: Labor Reform and Related Social Issues. This module focuses on the institutional, legal, and industrial frameworks for port reform; establishing a productive dialogue among port stakeholders; rationalizing the workforce; and overcoming roadblocks. Readers will learn to plan for and implement rationalization of port labor in a manner that treats affected parties fairly while achieving essential efficiency and economic improvements.

- **Module 8**: Implementing Port Reform. How do you get from concept to effective implementation of port reform? This module offers practical advice on how to take the many elements of port reform and put them into a procedurally logical and politically feasible sequence of steps that maximizes the chances for success.

A wider range of reform models and public-private partnership formats exists for the delivery of port services than for any other infrastructure-intensive service sector. This is because the ensemble of services provided by seaports is vast and requires more diverse and specialized skills and involves more categories of service than other public-private institutions. Although the Toolkit does not elaborate on all models available to sector reformers, it does define the options on either end of the public-private spectrum as well as the most common risk-sharing arrangements, such as concessions and terminal operating leases. Importantly, it also provides tools for assessing hybrid options and for understanding their merits and risks.

In dealing with reform in the port sector, the World Bank has tried to pool knowledge from around the world. This knowledge is abundant:
over the past 13 years, more than 200 transactions have been completed that involve increased private sector participation in the port sector (see Boxes 3 and 4). The problem confronting public policy makers when they take up the challenge of port reform is not a lack of information, but rather a lack of useful knowledge to help them navigate through their own process of reform.

The Toolkit uses a diversity of communication media to convey knowledge and insight to its users, including narrative text, mini case studies, graphics, and stylized representations of decision processes. The World Bank’s objective is to provide a comprehensive, easy-to-use tool for port reform.

3. THE PORT BUSINESS ENVIRONMENT

Three broad forces, detailed below, are generating momentum for port reform in developing and industrialized countries alike:

- External forces of competition and technology from the shipping industry.
- The acknowledged financial and operational benefits of private participation in infrastructure development and service delivery.
- The diversification and globalization of investors and operators in the port industry.

First is the need to restructure port operations to deal with the external factors that affect port viability, including national competition for global markets, changes in port and transport technology, and increased competition among ports. Port institutional models developed in the 19th and early 20th century significantly constrain ports from competing effectively on a service quality basis, limit their agility and market responsiveness in mobilizing resources, and constrain their ability to share risks with private sector partners. In planning how responsibility for future port development and operations will be divided between the private and public sectors, and in deciding on desired levels of investment to be funded or guaranteed from public sources, policymakers must increasingly regard the competitiveness of their port(s) in relation to other ports in their region, and compared to the supply chain alternatives available to their users. In general, these alternatives are more abundant today than they were 15 plus years ago. Consequently, the port business is more competitive today than it was when most port authorities were originally chartered. New institutional models are needed for this new era of increased competition.

The second force generating momentum for reform is private participation in infrastructure

### Box 3: Port Projects with Private Participation in Developing Countries

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
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</thead>
<tbody>
<tr>
<td>1992</td>
<td>9</td>
</tr>
<tr>
<td>1993</td>
<td>15</td>
</tr>
<tr>
<td>1994</td>
<td>19</td>
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<td>1995</td>
<td>25</td>
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<td>1996</td>
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<td>1997</td>
<td>23</td>
</tr>
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<td>1998</td>
<td>26</td>
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<td>1999</td>
<td>20</td>
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<td>2000</td>
<td>22</td>
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<td>2001</td>
<td>10</td>
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<td>2002</td>
<td>7</td>
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<td>2003</td>
<td>13</td>
</tr>
<tr>
<td>2004</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>220</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Project</th>
<th>Number</th>
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<tbody>
<tr>
<td>Concession</td>
<td>106</td>
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<tr>
<td>Divestiture</td>
<td>14</td>
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<tr>
<td>Greenfield project</td>
<td>82</td>
</tr>
<tr>
<td>Management and lease contract</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>220</td>
</tr>
</tbody>
</table>

Source: PPI Database, World Bank
Box 4: Investments in Port Projects with Private Participation in Developing Countries by Project Type, 1992–2004

<table>
<thead>
<tr>
<th>Year</th>
<th>Concession</th>
<th>Divestiture</th>
<th>Greenfield Project</th>
<th>Management and lease contract</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>160</td>
<td>–</td>
<td>88</td>
<td>–</td>
<td>248</td>
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<tr>
<td>1993</td>
<td>346</td>
<td>–</td>
<td>149</td>
<td>3</td>
<td>498</td>
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<tr>
<td>1994</td>
<td>850</td>
<td>–</td>
<td>149</td>
<td>–</td>
<td>999</td>
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<tr>
<td>1995</td>
<td>653</td>
<td>–</td>
<td>1,364</td>
<td>4</td>
<td>2,021</td>
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<td>1996</td>
<td>411</td>
<td>30</td>
<td>1,257</td>
<td>–</td>
<td>1,698</td>
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<tr>
<td>1997</td>
<td>2,165</td>
<td>80</td>
<td>1,649</td>
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<td>3,894</td>
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<tr>
<td>1998</td>
<td>827</td>
<td>6</td>
<td>433</td>
<td>8</td>
<td>1,275</td>
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<td>1999</td>
<td>1,777</td>
<td>29</td>
<td>667</td>
<td>–</td>
<td>2,473</td>
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<tr>
<td>2000</td>
<td>398</td>
<td>400</td>
<td>1,611</td>
<td>1</td>
<td>2,409</td>
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<tr>
<td>2001</td>
<td>825</td>
<td>–</td>
<td>442</td>
<td>3</td>
<td>1,271</td>
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<td>2002</td>
<td>334</td>
<td>38</td>
<td>976</td>
<td>7</td>
<td>1,355</td>
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<tr>
<td>2003</td>
<td>781</td>
<td>–</td>
<td>1,131</td>
<td>–</td>
<td>1,911</td>
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<td>2004</td>
<td>117</td>
<td>–</td>
<td>1,231</td>
<td>3</td>
<td>1,351</td>
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<tr>
<td>Total</td>
<td>$9,644</td>
<td>$583</td>
<td>$11,147</td>
<td>$28</td>
<td>$21,402</td>
</tr>
</tbody>
</table>

Source: PPI Database World Bank

**Database Definitions**

**Divestitures.** A private entity buys an equity stake in a state-owned enterprise through an asset sale, public offering, or mass privatization program.

**Greenfield Projects.** A private entity or a public-private joint venture builds and operates a new facility for the period specified in the project contract. The facility may return to the public sector at the end of the concession period.

**Management and Lease Contracts.** A private entity takes over the management of a state-owned enterprise for a fixed period while ownership and investment decisions remain with the state.

**Concessions.** A private entity takes over the management of a state-owned enterprise for a given period during which it also assumes significant investment risk.

and superstructure. In recent years, world governments and lending agencies have come to acknowledge that private sector participation can be a powerful force for enhancing the performance of port assets, as with other infrastructure assets. National and regional seaports are realizing that they cannot compete effectively without the efficiencies offered by private operators and, equally importantly, without access to capital provided by private investors. In response, there has been a steady increase in recent years of private participation in port operations around the world. Countries with recent experience of port reform include Argentina, Brazil, Canada, Chile, China, Colombia, Egypt, Estonia, Germany, India, Indonesia, Japan, the Republic of Korea, Latvia, Lithuania, Malaysia, Mexico, Mozambique, Nigeria, Oman, Panama, the Philippines, Poland, Russia, Tanzania, Thailand, and the United Kingdom. Moreover, the pace of private investment in the sector is accelerating. As Box 4 demonstrates, private investment in the sector has increased progressively since 1990. Over this period, private sector investment in ports increased from $243 million in 1992 to $3.9
billion in 1997, and to a cumulative amount of more than $21 billion by the end of 2003.

The private sector, which has driven recent port development, has rapidly matured and has organized itself into distinct specialized subsectors. Today, the port services industry is a $50–55 billion global business that is expected to grow to $75–80 billion in 2009 and includes several distinct specialized segments.

The third force affecting reform is the development of a global market for port development services, with specialized niches each containing a number of international companies that offer specialized service capabilities. The market today broadly includes four groups of operators:

1) The first wave of “global stevedores,” the first to have expanded their operations internationally from a strong home base.

2) The second wave, comprising regional operators now entering the international market following the success of their predecessors.

3) Shipping lines, investing in terminals.

4) Niche investors, looking more specifically at small- to medium-scale facilities.

The top five global operators accounted for more than 28 percent of the total container handling market in 2005. The second wave includes 10 or so stevedoring groups mainly from the United States, Europe, and Asia, and is now challenging the first global stevedores on new development opportunities. The major shipping lines are reorganizing their terminal operations as separate corporate entities to also enter the market. The niche investors, a dozen identified so far, can be expected to continue to carve out specific market segments in the future.

But in this market, as well as in the shipping industry, consolidation has changed the competitive landscape, at least between the different groups above, and within the groups themselves. The consequences of consolidation for regional competitive conditions could be significant, and will require due attention from public authorities. The structure of this global industry should, therefore, be considered by policy makers when adopting specific reform models. Module 2 provides a detailed overview of prevailing trends in the global port and maritime industry.

The range of services ports offer differs widely. So, too, do the service reputation and established commercial relationships with carriers that global service operators can bring when they are selected as investors or operators. In general, modern ports offer two kinds of services: core and value-added services. The core services provided by most ports include, but are not limited to:

- Marine services:
  - Access and protection.
  - Pilotage.
  - Towage.
  - Vessel traffic management.
  - Fire protection service.
  - Chandling.

- Terminal services:
  - Vessel tie-up services.
  - Container handling and transfers.
  - Traditional breakbulk and neobulk cargo handling.
  - Dry and liquid bulk cargo handling.
  - Container stuffing and stripping.
  - Bagging and packaging.
  - Cargo storage, acceptance and delivery.

- Repair services:
  - Dredging and maintaining channels and basins.
  - Equipment repair and maintenance.
  - (Dry dock) ship repairs.
~ Container and chassis repairs.

- Estate management services.
- Information management services.

A number of these services can be outsourced to specialized private sector service providers via a number of different methods. In general, the appropriateness of specific methods is determined by two main factors:

- The nature of the service itself (for example, public responsibility or commercial activity): Public responsibility, for instance in vessel traffic management, means that regardless of the arrangement adopted to deliver the service, the ultimate operational and legal responsibility for the service remains with the public sector, usually the port authority. This is critical when considering how to optimize service delivery while keeping up with the public characteristics of the service. Commercial activities in ports also entail some level of public responsibility, but to various degrees. The minimum is usually the duty for the port authority to ascertain the qualifications of service providers operating on the public domain through a licensing process. Equally significant is the requirement for a port authority to ensure the availability of basic port services, including commercial services, to all users on a nondiscriminatory basis.

- The nature of the assets required to deliver each category of service: The assets required to deliver many marine services, for example, are mobile and can be moved at relatively low cost from one port to another. Most of the assets required to provide access and protection or to deliver terminal services, however, are immobile, and have long economic lives. Moreover, the use of these long-lived assets is indivisible among discrete service units. In other words, a large portion of their costs are fixed regardless of the volume of service units over which it is amortized.

For the purposes of defining asset “rights” of ownership, lease, rental, casual use, and so forth, it is helpful to differentiate port assets into three categories: 1) long-lived, high cost infrastructure (for example, breakwaters, channels, and turning basins) in which incremental benefit can only arbitrarily be assigned to individual port users; 2) long-lived, high cost infrastructure (for example, quays and terminals) for which incremental use and benefit can be apportioned in various ways and assigned to discrete service delivery systems; and 3) superstructure and equipment whose use is clearly associated with specific users and specific service delivery systems.

Much of the preparation for port institutional reform therefore involves:

- Identifying the critical basic public functions and public responsibilities that will define the role of the national and local public authorities in charge of the port sector.
- Identifying the assets needed to support each function and category of service, assessing the adequacy of these assets, and determining which services and related assets to package together and which among these to tender to private investors or operators.

Box 5 presents the most common options for transferring specific categories of rights to reposition specific categories of core port services from the public to the private sector. The different port models indicated in the table are defined and discussed in Module 3.

In addition to providing core port services, increasingly ports are delivering nontraditional services to their customers as well. These nontraditional services typically expand the role of port service providers in the supply chains of shippers. These services create value for shippers by expanding the scope of markets they can economically access by reducing the delivered cost of products they sell, or by reducing the cost to complete buy/sell transactions. These services allow ports to participate in specialized port service niches and to differentiate themselves from
competing ports by means other than price and turnaround times.

Improving logistics is now a widely accepted means for companies to improve their competitiveness. Logistics, in short, is a procedure to coordinate all aspects of the manufacturing and distribution process to ensure the delivery of the right products to the right markets at the right time. The key elements to develop an advanced logistics strategy usually include:

- Understanding the cost and operating behavior of the entire supply chain and using this understanding to inform decisions about where to locate manufacturing, assembly, and distribution centers.
- Promoting strong relationships with carriers and vendors that include quality certification procedures.
- Designing a flexible transportation system that allows for quick routing and mode selection changes.
- Integrating the logistics information system with the manufacturing and purchasing processes.

There are a significant number of activities that can be classified as value-added services in the field of logistics. Generally, they fall into two categories:

- General logistics services, including storage, loading and unloading, stripping and stuffing, groupage, consolidation, and distribution.
- Value-added logistics (VAL), including activities such as repackaging; customizing; assembly; quality control; testing; repair; on-terminal auto-accessorizing; grain storage and fumigating; news print storage and transfer; and in-container garment assembly.

- General value-added services, commonly known as VAS, may include such services as equipment maintenance, equipment renting and leasing, cleaning facilities, tanking, safety, security services, offices, and information and communication services of various kinds.

VAL activities, in particular, are growing in importance as producers concentrate on meeting the demands of customers for high quality specialized products. New players in this field—third-party logistic services providers—have emerged to take over parts of the production chain (assembly, quality control, customizing, packaging, and so forth) and of the after-sales (repair, reuse) service.

Ports are in a natural position to participate in this logistics revolution, bringing together all modes of transport, information systems, and land for the construction of facilities. Undoubtedly, containerized and general cargo have the highest VAL potential.
4. A ROAD MAP FOR THE PORT REFORM PROCESS

Embarking on port reform requires a strong vision combined with proper planning and organization. The following sections will highlight the main components for putting together a road map for the port reform process, which are elaborated further throughout the toolkit, and include setting of objectives to policy decisions; methods of involving the private sector; public interests oversight; financing and risk allocation; legal framework; labor reform; and implementation.

4.1. Setting Reform Objectives and Planning for the Creation of Value

Port reform should only be undertaken after a full and complete assessment of the objectives that public officials are trying to achieve. Institutional reform or, indeed, private sector involvement, should not be an end in itself, but only a means to achieve specific and well-defined public interest objectives. The objectives underlying port reform may be as varied as the need to expand or to modernize container handling capacity, the desire to stimulate the growth of a distribution-based economy centered on a regional hub port, or the need to reduce government expenditures on the sector so that limited public funds can be applied to other more pressing social needs. In any case, the private provision of port services and infrastructure is only one tool among others that are available to officials to solve specific problems and to achieve specific public interest objectives.

Thus, the decision process should begin with the consideration of the objectives that port reform is designed to achieve. Module 3 reviews those possible objectives in greater detail.

The delivery of port services has become an increasingly risky undertaking. Increased competition between or among ports, large capital outlays, more specialized investments, and the expansion of port activities beyond traditional services all increase the possibility of economic losses from port operations. Considerations of risk and return on social capital should figure prominently in deliberations of public policy makers concerning public interest objectives underlying port reform.

All of the reform design issues touched on above need to be assessed in the context of the operating scale of a particular port and the interest and willingness of private companies to invest in the particular set of services offered to them. For example, intraport competition for services such as stevedoring or terminal operations may be feasible in a large volume port, but not feasible in a small volume port.

Modules 3 and 6 describe circumstances under which competition for licenses, rights, or franchises may be an effective way to sustain competition and maintain incentives for continuous service enhancement. The modules also identify circumstances under which competition in the market may not be feasible. Furthermore, Module 3 in particular discusses advantages of designing competition between or among private operators into the tendering process for the delivery of specific categories of service.

Where competition “in the market” for specific categories of port services is not workable, competition “for the market” may still be an option for protecting the public interest. While continuing and robust competition among multiple service providers is the best way to ensure low prices for services rendered, such competition may not be feasible in all port environments due to physical constraints or small cargo flows. In such an environment, it is still essential to maximize the economic benefits of competition and to minimize the risks associated with monopoly service through competitive bidding. For the provision of still other categories of service (for example, those that have significant consequences for the efficient use of assets for both shipping lines and for terminal operators), retention of these services in the public domain may be the best option. Module 3 addresses this issue of packaging core and noncore services into bundles for private participation.

Port reformers should carefully choose the objectives they seek to achieve before settling on
any specific reform model because different objectives will require different types of reforms. Options for private sector involvement, investment, and risk sharing range from open entry to service contracts, management contracts, leases, joint ventures, control of corporate entities and concessions all the way to full divestiture. Differing forms of private sector involvement result in different allocations of risk, different responsibilities for government, and different types of government oversight. Module 5 delves into the issue of risk sharing at greater length.

4.2. Reform Policy Decision Context

The port reform decision process must begin with the clear definition of the objectives that the reforms are intended to achieve. The next step is to delineate all of the key institutional design and reform decisions needed to move the process to a successful result. Next, for each decision point along an ordered reform path, options and alternatives should be developed and assessed. In particular, all of the possible outcomes resulting from the selection of any specific option need to be fully evaluated with respect to the stated objectives of reform.

A useful tool for laying out the port reform process and feasible options is a decision tree. Key branches comprising this port reform decision tree include:

- Methods of private sector involvement.
- Modes of public interest oversight.
- Port sector funding: Financial implications and risk allocation.
- Legal framework adaptation.
- Service packaging and asset restructuring.
- Labor adjustment and settlement.
- Implementation responsibility.
- Sequencing transactions.
- Transaction preparation.

For each of these key decision points, several options exist. Box 6 shows a notional decision tree leading port reformers through the many steps involved in the process.

4.2.1. Methods of Private Sector Involvement

The nature of private sector involvement in the port sector will be prescribed by the adoption of a specific institutional model. To assist port reformers in determining which model might best apply to their circumstances, Module 3 describes four port management models that cover the spectrum of private sector involvement in ports, including: the public service port, the tool port, the landlord port, and the private service port.

Within these models, a broad array of options exists with respect to the specific form the public-private partnerships may take. These can significantly affect the agility and responsiveness of service providers, their market orientation and efficiency, and their decision-making autonomy.

Box 6: Port Reform Decision Tree

Source: Author.
The appropriateness of specific models for particular ports needs to be judged, ultimately, by how well they help achieve the objectives of the reform program. However, a number of other factors should also be considered, including:

- The strategic fit with the identified needs of the existing and potential market.
- The competitive consequences for other ports in the same range.
- The compatibility with other approaches to public-private partnerships used in other transport infrastructure projects as well as other sectors of the economy.
- The fit with the investment capacity and interests of potential strategic investors.

4.2.2. Modes of Public Interest Oversight

The two key issues involving public interest oversight are what powers and authorities need to be retained by a public oversight body after reform, and how that body needs to be constituted and at what level of government it needs to operate.

As noted above, increased private sector participation in the delivery of port services should be viewed as an instrument to achieve well-defined public interest objectives. Thus, a key element in port reform must be the creation of a mechanism to protect the public interest and make certain that the objectives of reform are met. In creating such a mechanism, it is important to keep public statutory and regulatory oversight responsibilities separate from commercial activities.

Government oversight typically takes several forms, such as strategic planning, technical regulation, and economic regulation. Planning the future development of ports and sharing those plans with private developers who can help implement them is a continuing responsibility of governments. As discussed above, every port’s vision of its future needs to be realistically set in the context of its commercial environment and its competitive position versus other ports. It must also take into account the likely effects of proposed increases in capacity on regional markets, since one country’s efforts to increase its share of regional trade typically evoke competitive responses.

Thus, regardless of which port reform model is selected, strategic transport planning will remain a critical responsibility of governments. Enhancing international competitiveness requires, among other things, implementing and maintaining a cost-effective transport system, with the port interface being a critical link to international markets. A national ministerial body, therefore, should be in charge of developing the long-term strategic vision for national waterfront development plans. The port reform vision should also encompass other land transport reforms to ensure the complementary development of interconnected links in the transport infrastructure. Many examples exist around the world of the inefficiencies and bottlenecks created when road and rail links are not developed at a pace adequate to handle increased port activity. Further, this planning effort will have to take into account various stakeholders’ interests in the long-term development of coastal areas within the framework of a national Integrated Coastal Zone Management (ICZM) policy.

4.2.2.1 Regulatory Oversight: Economic and Technical Issues. Safety is a major concern with ship movements in and around port mooring and berthing areas and with cargo handling operations ashore. Requirements for handling and storage of hazardous cargoes must be clearly spelled out in port regulations and should be based on international conventions with due allowance for specific local conditions.

Technical regulation of operations is required to ensure compliance with security, safety, labor, and environmental protection standards, as well as to set and monitor appropriate minimum performance requirements (especially if competition is weak). Forms of technical regulation and the necessity for them do not change significantly with port reform. Consequently, technical regulation is not dealt with in detail in the Toolkit (more information on the safety and
handling of hazardous cargoes can be found at the International Maritime Organization’s Web site www.imo.org).

A complex set of mutual obligations typically bind private operators and users to act in concert and in compliance with the rules in the provision and use of port services. The development and enforcement of operating rules and regulations represents another oversight responsibility that most public authorities assume or retain as part of their essential functions. Module 4 elaborates on the kinds of mutual obligations among private service providers and between them and public service integrators that are needed to ensure the safe and efficient delivery of services. These technical regulations are typically articulated in a set of port rules and regulations. Module 4 will discuss the content of a model set of rules and corresponding enforcement mechanisms that have been used effectively in various port reform efforts. Finally, this module also describes the legal sources such as decrees, laws, contracts, licensing agreements, and sectoral policies used to define and enforce obligations on private operators and port users.

Economic regulation, which usually aims at monitoring market entry and pricing, is necessary when competition is weak or nonexistent. Conversely, when significant competition develops, either internally or externally, the need for strong economic regulation decreases. Indeed, when competitive pressure is well established, there may be little reason to maintain any price regulation other than a requirement to publish tariffs, a continuing prohibition against undue discrimination against similarly situated port users, and retention of a mechanism by which the government can monitor the competitiveness of the market and investigate alleged anticompetitive activity. The level of competition faced by an individual port, therefore, has important implications for the nature and degree of regulatory oversight of port operators. Ports with abundant intraterminal and interterminal competition require minimal economic regulation.

In general, the difference in public sector responsibilities before and after institutional reform is the difference between “rowing” the boat and “steering” the boat, respectively. Postreform oversight powers are typically indirect and designed to induce socially beneficial actions on the part of the private sector. Oversight may involve the creation of incentives for private sector investment, the tendering of investment opportunities, compatibility of all private investments with a master plan, and coinvestment under certain circumstances. Module 6 discusses various aspects of economic public interest oversight in depth.

4.2.2.2. Oversight Administration. Once the areas for continuing government oversight have been defined, it is necessary to determine an institutional framework for administering the oversight. Port administration may be centralized or decentralized; each approach has its strengths and weaknesses. Centralized administration permits a broader national economic and multimodal perspective for directing port development policy. Decentralized administration permits a more narrow local perspective that aligns port development with the economic interests and priorities of municipal or regional economies.

In addition to discrete national and local approaches to port oversight responsibility, a two-tiered option also exists. For example, a national port council can be formed, to which local port authorities report. Under the best of circumstances, this two-tiered arrangement allows for the balancing of national and local interests and the reconciliation of both through deliberative processes. In the worst of circumstances, the two-tiered bureaucracy may lead to excessive interference in port operations and management or contradictory policies that interfere with planning and investment decisions.

The degree of decentralization in policy making and regulation should:

- Reflect the objectives of the port reform program.
• Consider the institutional capacity and authority of the relevant levels of government.
• Provide a balance between national economic goals (such as seamless transport flows and export promotion) and local concerns (such as labor activity, environmental degradation, and industrial development).

In addition, whether port regulatory responsibilities should be concentrated at the central level or decentralized to the local level should be looked at with two concerns in mind: the consistency of the approach with those generally followed throughout the country, and the need for a transparent and efficient user-friendly regulatory system. The former would call for some sort of nationwide unit, likely at the ministerial level, although at arm’s length from the ministry of transport to guarantee independence; the latter could lead governments to consider local (state/province) regulatory units closer to the field and, therefore, better able to tailor decisions to meet local conditions.

To provide for a clear separation of policy and regulatory responsibilities at both the national and local levels, a three-tier institutional framework has also been employed effectively. For example, under the assumption that reforms will result in a landlord port arrangement with commercial activities fully carried out by private operators, the new public oversight framework could be devised along the following lines:

• A central body comprising senior representatives from relevant ministries, municipalities of port cities, and port authorities would work out national port policy and strategic planning objectives, and would establish the main sector regulations to be enforced by the port authorities.
• The port authorities, autonomous public institutions or public joint-stock companies, would be granted the right to use state-owned land; administer, maintain, and develop port infrastructure assets; manage and enforce navigation safety measures; enforce environmental protection regulations; monitor the concessions and leases governing private sector activities in the port area; and market the port to attract new investors.
• The private operating companies would carry out commercial activities related to cargo traffic management and handling and market their services to attract new port users.

In such a setting, the national body serves three key roles: it establishes the basic rules of participation to be applied by all entities, public and private; it regulates the public port authorities, in particular with respect to their infrastructure pricing policies; and it provides an appeal level for dispute resolution in case private commercial operators believe they are unfairly treated by their local port authority and regulator.

4.2.3. Port Sector Funding: Financial Implications and Risk Allocation

The two key issues concerning financial risk are:

• Which categories of port assets should private investors be at risk for providing, maintaining, and repairing versus those for which the public sector will be responsible?
• On what basis should user fees or subsidies be used to cover the cost of long-lived port assets?

Module 5 describes the many types of risks involved in port projects and assesses the risks associated with the reform models developed in Module 3. Module 5 also identifies the financial tools that decision makers can use to systematically assess the financial risks and potential rewards associated with specific investment programs. (A financial simulation model to assess the viability of specific investment operations is also included as an Appendix to Module 5). Port reformers should carefully consider what risks the public sector can afford to bear and on what basis specific risks should be transferred.
to the private sector. Port planners have available to them a number of risk mediation tactics, which are also described in Module 5.

Port operations require several categories of long-lived assets, some of which are inherently more amenable to private investment and user fee recapture than others. For some long-lived, high cost infrastructure assets, such as breakwaters, channels, and turning basins, charges for incremental use can only be assigned arbitrarily to individual users because the marginal benefit derived from using this common infrastructure significantly outweighs the marginal cost of replacing it. Consequently, a charge schedule developed by a private developer and based on user benefits could result in monopoly profits and less use than economically desirable. Port assets also include long-lived, high cost infrastructure, such as quays and terminals, whose incremental use can be meaningfully assigned to users and whose marginal cost and marginal benefit can be balanced through a number of price regulation regimes or intraport competition. Finally, port assets include long-lived superstructure and equipment whose use is closely associated with specific users and specific service delivery systems. Equipment is a mobile asset and can be competitively provided or easily redeployed. On-dock storage and transshipment facilities can be awarded through competition and assigned to their most productive use through open tender.

All three categories of assets can be provided or maintained by the private sector. However, from the perspective of private investors, the first category involves the greatest risk, has the longest payback, and involves the highest risk tradeoff between their ability to set prices independently without regulatory constraint and the level of investment they are prepared to make. In general, private investors are prepared to make larger investments when they are unconstrained by regulators or when the price schedules (including escalation mechanisms) they propose in advance of awards are accepted and locked in for a long term. In other situations, the funding of long-lived, high cost infrastructure remains in the public sector and is charged back to users though a number of different regimes. Modules 3 and 6, respectively, deal with the operational and institutional aspects and the regulatory aspects of charging for port infrastructure.

Most port charges involve some combination of public components for the support of publicly financed common use infrastructure and private components for the provision of terminal infrastructure. The combination of these two pricing factors determines the competitiveness of ports compared to other competing ports. In general, the greater the degree of competition, the less the need for regulatory intervention. Module 6 discusses the limited set of circumstances under which regulatory intervention into pricing decisions made by private service providers may be appropriate.

Box 7 illustrates how the four port management and operation models array themselves on scales measuring private sector risk and the need for independent government oversight.

4.2.4. Legal Framework Adaptation

To initiate wide-ranging reform, the legal framework that underpins the institutional arrangements of the sector may require significant amendment. To ensure credibility, openness,
and transparency in the reform process, and to attract international participation and long-term financial commitments from potential investors, a sound and precise legal framework for defining public-private partnerships is essential. In particular, prior to any reforms involving build-operate-transfer (BOT) arrangements, governments should enact a concession law spelling out the principles of the process and establishing the rules and responsibilities for each party. Further, governments should consider putting in place a complementary set of regulations describing how the concession law will be applied in practice.

Since there are ways other than concessions for securing private participation in port activities, the national legal framework for public-private partnerships must also incorporate these elements, or at least establish which entity will be responsible for monitoring them. The basis of any licensing process, for example, must be made clear in the law, which can then specify that port authority regulations will articulate more precisely the implementation criteria.

The following legal documentation should be reviewed to assess the need for modification or the need for complementary statutes:

- **Sector laws**: Legislation establishing the national institutional framework governing ports and clearly describing the mandate of all public entities involved.
- **Concession laws or contracts**: Since a widely used option for private sector participation in port activities is concessions, the basic legal framework enabling public authorities to enter into such contractual arrangements must be in place, including a clear and transparent process for awarding contracts and standard contractual language providing for appropriate monitoring arrangements.
- **Port regulations**: The set of provisions governing the daily operations in the port; some may apply universally within the country (for example, environmental protection and labor rules), and some may apply only to specific localities (for example, ship movements, access, traffic safety, and tariff structure).

Since amending a law most often requires going through a legislative process, the earlier in the reform process this can be initiated the better. Sector laws and laws governing contract award and management between public and private entities are the most critical elements to be enacted. Port regulations can usually be put in place by a ministerial decree. Module 4 offers guidance and examples in the drafting of sector laws reflecting the sector model to be implemented as well as guidance on the contents of concession contracts and port regulations.

### 4.2.5. Service Packaging and Restructuring

Once the main institutional options for sector reform are decided upon, the issue of asset restructuring must then be addressed. The two key issues involving asset restructuring are what degree of competition should be designed into port service markets and what assets (and related services) should be tendered as packages for single source awards.

Port assets can be divided among sets of services and tendered as separate packages in a number of different ways. The consequences of either bundling assets (and corresponding services) or unbundling them has a direct effect both on competition among private service providers and on the efficiency with which a port can operate.

In larger ports, competition among terminal operators is both desirable and practical. In smaller ports, competition is less feasible because the economies of scale required to attract specialized service providers are not sufficient to assure them of a reasonable profit while maintaining charges at reasonable levels. Moreover, effective coordination of cargo handling and marine services can be better assured in smaller ports by integrating them in a single source service. Module 6 reviews the consequences of such options from an economic regulatory perspective.
4.2.6. Labor Adjustment and Settlement

The process of port labor reform often requires governments to eliminate provisions from existing labor regimes that unduly constrain flexibility and productivity. Overstaffing, in particular, has been a pervasive feature of most port organizations in both the developing and developed world. Achieving more cost-efficient operations will generally require significant reductions in the workforce. Therefore reducing the workforce in a socially acceptable way must be a prominent concern of public authorities and an integral part of the reform process.

Addressing the overstaffing issue as one of the first steps in the reform process, before involving the private sector in operations, will usually facilitate the overall reform process. Since overstaffing in ports is often the result of government policies that view port organizations as instruments of social policy and natural shelters for the unemployed, governments should take the lead responsibility in resolving this issue. Often this means creating programs to ease the transition of port labor into other sectors. Doing this, in turn, requires the application of significant financial and management resources early in the reform process.

If port services and infrastructure are tendered to the private sector before the labor issue is resolved, for the process to stand a fair chance to succeed, care should be taken that the private operators are allowed to adjust their workforce over time to actual operational requirements and that existing social protection programs will ensure the labor adjustment process will be smooth and not provoke undue labor unrest. This may sometimes require the establishment of special government-funded programs to accompany staff retrenchment, possibly by complementing general social programs with sector-specific assistance made available over a defined and limited period of time.

In all cases, this means that organizational and budgetary resources must be mobilized early in the reform process to ensure appropriate and socially acceptable treatment of potential labor dislocations. In particular, worldwide experience strongly suggests that port labor should be involved in the port reform process from its earliest conceptual phase. Again, experience indicates that the best way to build confidence in the reform process by all affected parties is to broaden the sphere of participation and responsibility to include port users, port labor, and port and maritime employers. Such broad participation will allow all stakeholders to share common concerns about competitiveness of port services and gain a better understanding of how any weakening of this competitiveness would be detrimental to all. This is particularly true for the workforce, which would be the first to bear the consequences of reduced economic activity, both inside and outside the port.

Significantly, the International Transport Workers Federations (ITF), while cautious about the social consequences of port reforms, appreciates the need to improve port efficiency, possibly through increased private sector participation. It insists, however, on the critical need to involve labor unions from the start so that mutually acceptable labor rationalization strategies can be designed to make the whole process both economically and socially sustainable.

Institutions for allocating available work among members of a qualified labor pool based on seniority or some other rank-ordering principle have grown up within most traditional ports. Unions typically control entry into these pools of qualified labor, the result being to close the port labor market to competition and to new entrants. Opening labor markets to competition is one of the objectives sometimes sought by port reformers. In this context, one of the key issues to be addressed is the role of these dock labor boards or union labor pools and how they affect management discretion over the recruitment, qualification, and use of specific employees.

Three key questions arise when considering workforce reductions in the port reform process: Who will be responsible for “buying out” surplus labor, when in the process will labor separation negotiations be completed, and
on what basis will postreform labor-management relationships be conducted?

Theoretically, labor contract issues can be resolved either before or after port services and infrastructure have been transferred from the public to the private sector. Either the public sector or the new private sector operator can manage negotiations and can absorb the liability associated with separating surplus employees. Typically, however, resolving labor separation issues before transactions are completed relieves investors of uncertainty and enhances the perceived value of the investment. In general, it is a good idea to make a clean break in labor contract coverage and the basis for employee selection and work assignments at the same time that the rights to control port assets are conveyed. This may involve not only buying out individual laborers under the terms of existing contracts, but also buying out the contract itself, thereby giving private operators a clean slate to negotiate new agreements. Module 7 reviews in depth the issues relating to labor adjustment policies in port reform and proposes ways to handle them in a manner that meets the joint objectives of institutional reform and social sustainability.


4.2.7. Responsibility for Implementing Port Reform

The key issues of port reform implementation responsibility concern what government agency is responsible for port sector reform and what skills and competencies are required to implement a port sector reform program successfully. The delegation of responsibility for managing port sector reform typically comes in the form of a special decree, law, or other explicit delegation of authority. To what organization of government should this authority be delegated? It is rarely possible for a port authority to reform itself, since the inherent conflicts are too great for even a well-meaning port authority to adopt and implement significant change. Moreover, the work of implementing port reform is diverse and requires special skills. Some of it, for example, involves developing regulatory frameworks, some of it involves labor negotiations, and some of it involves preparing individual transactions.

In deciding which agency of government should manage port reform, many questions arise. Should reform be carried out by a temporary agency of government whose sole purpose is port reform, or should it be delegated to a standing government agency? Should the ministry responsible for ports also be responsible for the process of reform, or should this fall to an agency dealing with privatization generally, and over which the ministry responsible for ports has only indirect control? Should the process be managed at a national, regional, or local level? Should different reform units be organized for “greenfield” port developments and for the privatization of existing facilities? What powers should the reform unit have? How should the unit be funded? To whom will it answer? How will it obtain information from other organizations? Can part of its responsibilities be subcontracted? And importantly, what access will the unit have to key political decision makers?

Often, for the reform process to be implemented successfully, the mandate given to the reform unit must come from the highest levels of government, and the reporting must follow the same route. This avoids frequent interministerial conflicts over competence and jurisdiction. The agencies and individuals comprising membership of the reform unit also must be defined unequivocally by the political leadership.

Several organizational options are available for implementing port sector reforms. One agency can manage the entire process with individual transaction managers within that agency assigned responsibility for completing discrete transactions. Or, multiple agencies can be
assigned responsibility for sector reform and task forces created from these several agencies to accomplish component tasks and to complete individual transactions.

In managing the politics of reform, it is important to account for stakeholder interests and concerns. Stakeholders in ports include labor, existing public agencies, environmental groups, shippers, shipping companies, and other users of port services (for example, fishermen or the navy). Module 8 will examine workable processes for actively including stakeholder interests in policy decisions, or for otherwise factoring their interests into key decisions.

The reform unit will typically require consultant services to assist in the reform process. Issues relating to the use of consultants include determining what skills are needed, the criteria by which consultants will be chosen, the degree to which consultant services should be bundled together, and how consultants should be compensated (for example, a flat fee or a success fee).

Module 8 will provide some insights on these various aspects of implementing the reform process.

4.2.8. Sequencing of Transactions

In addition to preparing the variety of transactions associated with port reform for tendering or other actions, those charged with reform also have to consider the order in which the transactions will be undertaken.

When port operations are transferred to the private sector, the public sector retains only an indirect relationship with the service provider. The new relationship entails new tasks to be performed in the public sector. New skills are required to perform these tasks, requiring a period of training and possible assistance from consultants or advisers from other ports. A range of measures can be adopted to help to build the public sector’s capacity to perform its new role as contract monitor and regulator. Preparing for this new role should be one of the first steps in the reform transaction process.

From the commercial perspective, several possible strategies should be considered when scheduling and programming port reform programs that include several components and multiple transactions. For example, the most valuable assets might be tendered first to attract investors and to increase their confidence in and familiarity with procedures in which they would encounter in future transactions. Another strategy is to offer all components at the same time—a “big bang” approach. This has the benefit of allowing some transaction preparation costs to be shared among several transactions and also allows a new set of competitive conditions to become effective more or less simultaneously.

4.2.9. Transaction Preparation

At implementation, port reform requires the completion of a number of complex transactions in connection with the tendering of service franchises and asset ownership, or use rights. Transactions can be completed only after an elaborate preparation and due diligence process. Two key issues associated with transaction preparation are whether transaction preparation should be outsourced or completed by in-house government staff, and what kind of technical assistance the group responsible for transaction preparation within government will require.

In general, three approaches to transaction preparation are possible:

- Engaging a separate financial advisor for each transaction.
- Engaging one advisor for the entire set of transactions.
- Engaging no outside advisor, instead, learn about transaction preparation by preparing them in house.

Financial advisors add credibility to the claims and representations made in marketing a transaction. They are also helpful in assessing the market for port assets without compromising transaction integrity, and in packaging transactions to be marketable. However, some financial advisors are better than others. Engaging one is
services that are the specific target for reform.
Consequently, financial advisors should be selected with care, using a competitive process as with other transactions.

5. IMPLEMENTING PORT REFORM: PULLING IT ALL TOGETHER

Port reform that shifts the boundary between the roles of the public and private sectors entails four broad categories of preparations:

- **Preparation of a port reform strategy:** Strategic preparation involves careful analysis of the port’s competitive position, strengths, weaknesses, opportunities, threats, role in the national economy, prospects for growth, and other issues. This analysis results in the selection of a particular institutional model and the identification of a set of assets and services that are the specific target for reform.
- **Preparation of redefined authorities and powers:** Redefinition of authorities and powers results in regulations, rules, tariffs, and procedures to ensure that all port activities are adequately coordinated and operate in a manner consistent with the public interest.
- **Preparation of a legal framework:** The legal framework for the port sector must reflect the principles set out in the strategic analysis and the redefinition of institutional rules.
- **Transaction preparation:** This process results in the development of tendering processes that are transparent, open, and competitive.

Box 8 illustrates these four sets of preparations and how they interrelate, and Module 8 explains them in more detail.