1. INTRODUCTION

1.1 Objective and Scope

The objective of this study is to provide a planning context for informed decision making by governments, shipping lines and port authorities in the ESCAP region. It does this by providing detailed, quantified and internally consistent forecasts of the maritime container transport serving the countries in the ESCAP region through to the year 2015.

These forecasts cover three broad areas: the container trade volume, the direction of container flows, and the port facilities required to service the trade.

1.2 The MPPM Suite

The study is based on the application of the Maritime Policy Planning Model (MPPM) developed and maintained by the Transport and Tourism Division of ESCAP.

The MPPM suite was consciously developed with an open architecture that encourages user intervention at all stages of the modelling process. In developing the models, ESCAP adopted the philosophy that the international trade and shipping system was far too complex institutionally and operationally to be reduced to a set of deterministic mathematical relationships. The fundamental strategy is to allow the modeller to input as much information as he or she believes can be reliably obtained from exogenous sources, and to present these to the models in the form of a hypothesis. Using these conditions as constraints, the mathematical relationships embodied in the models are used to fill in the gaps, to ensure internal consistency and to provide feedback on the credibility of the modeller's initial hypothesis and suggest directions in which it should be revised.

This approach to modelling inevitably means that producing forecasts is time-consuming, and demands a high level of both modelling expertise and industry knowledge on the part of the modeller. But it also allows the introduction of a host of considerations that defy mathematical formulation, and hence can produce forecasts that are genuinely realizable future states rather than Utopian abstractions.

Two modules of the MPPM suite were applied in this study:

- the Trade module, used to produce forecasts of containerized cargo on a region to region basis, and to partition these trade flows into port-to-port cargo movements; and

- the Liner Shipping Network module, used to heuristically design a shipping network capable of accommodating those cargo flows, to assign

the cargo to the network, and to estimate the total costs of different shipping system configurations.

The full suite of models has been validated in previous studies:

- Prospects for container shipping and port development for ASAEN Subregion (1992), South Asia Subregion (1993), East Asia Subregion (1994) and intraregional study (1997); and
- Regional Shipping and Port Development Strategies under a Changing Maritime Environment (2001).

1.3 Report Structure and Contents

The full details of the forecasts produced by the modelling process would fill many large volumes if produced in printed form. This report does not attempt a comprehensive presentation of the study forecasts. Rather, it attempts to present the salient features of the forecast in a readily interpretable form.

This Chapter 1 provides an introduction to the report. Chapter 2 discusses some of the major changes that have occurred in the container shipping and port environment over the last decades. Chapter 3 is concerned with the economic growth context within which the container forecasts are set, and the magnitude of the increase in container volumes that this economic growth will bring. Chapter 4 is devoted to discussion of the model's forecasts on structural changes in trade patterns.

Chapter 5 examines the implications of changes in trade for the volume of containers that will need to be handled in the ports of the region. The report concludes with the estimates of the port facilities that will be required to meet the projected container handling demand and the investment implications of these requirements in Chapter 6.