



PIANC

The World Association for
Waterborne Transport Infrastructure

MarCom

PIANC WG 158

MASTERPLANS FOR THE DEVELOPMENT OF EXISTING PORTS.

TECHNICAL GUIDELINES

TERMS OF REFERENCE

1. Historical background - Definition of the problem

Port masterplans are a truly strategical tool for the competitiveness of a port. They should ensure the technical, environmental and financial feasibility of infrastructure within a framework of possible development of a port area with time, well before the conceptual and detailed engineering design stage. Thus, port planning is the combined result of a multidisciplinary approach to the matter. In fact, on the basis of reliable traffic forecasts, one should take into account several different disciplines in order to be able, as a final result of specialized studies and surveys, to optimize port layout and port zoning. All that should be carried out in the light of the main boundary conditions, i.e. the maximum potential port capacity (also related to effective rail-road accessibility from land) and urban/environmental constraints. Among the most important aspects to be taken in mind:

- Logistics aspects
- Urban aspects (port-city relationship)
- Technical aspects
- Economical and financial aspects
- Social items
- Environmental aspects
- Safety aspects (especially for dangerous cargoes)
- Security aspects

Port masterplans should be rather flexible tools indeed, in order to be adapted with time as the needs of the port may change, sometimes abruptly.

These items were clearly pointed out during MarCom Special Session "Ports of the future" which took place in Estoril (Portugal), during PIANC World Congress in 2006.

During that session it was shown the overall result of the work carried out by a PIANC Task Force, based on the valuable feedback gained by means of a questionnaire distributed at international level.

From the discussion raised during PIANC Special Session, it was clear that port planning is a "hot topic" nowadays, worthwhile being faced with a proper PIANC Working Group.

2. Objective of the study

The study should critically review the actual state-of-the-art in port planning, mainly focusing the attention to the conceptual/strategic aspects and to the possible methodological approaches rather than to the administrative procedures and to rules and regulations (which can vary a lot from country to country).

Then, the study should provide general guidelines on port planning. In the annexes, some significant case studies could be briefly introduced and commented.

3. Earlier reports to be reviewed

There are not specific earlier PIANC reports in this field of interest.



4. Matters to be investigated

Review on the best methodological techniques in order to ensure a coherent **process** in the drawing up phase. How to better define the existing **problems**, then the **objectives/performances** of a port masterplan (taking into account local constraints) and how to outline possible effective (and sometimes alternative) **strategies**, able to fulfill objectives/performances. How to choose the “best” infrastructural strategy and how to optimize it (in terms of port lay-out and port zoning). How to manage a port masterplan with time (feedback analysis).

5. Method of approach

Further collection of all the useful information and documents, on the basis of what has been already collected. Define the table of contents and organize the Working Group, assigning specific tasks (and a deadline) to each member. Define the best format for obtaining an easy-to-use document.

6. Suggested final product of the Working Group

Technical Report providing guidelines for masterplans related to the development of existing ports, underlining main principles and recommendations. Then, the Report does not deal with new port infrastructure to be planned. It deals with the main general outlines related to the port development (port lay-out; port zoning; general performances to be fulfilled), not with the detailed planning and design of port terminals.

Special emphasis on:

1. possible methodological approaches to port planning, pointing out critical aspects and possible solutions (the “**process**”)
2. a commented general check-list of the annexes of a port masterplan (the “**product**”), such as reports, traffic statistics and forecasts, surveys, technical studies, model test and real-time simulator reports, environmental studies, cost-benefit studies, economical/financial studies; charts; diagrams; graphics etc. (to be adapted from case to case)
3. a selected list of the current **technical standards** (IAPH, among them) and **codes of practice** (international and/or national) and of the selected bibliography commonly used for the specific technical aspects of a port masterplan (principles/criteria of port lay-out)
4. selected **case-studies** in the annexes (pointing out “lesson learned” from them)

7. Desirable disciplines of the members of the Working Group

Port authorities managers, port planners and designers, specialized professors, governmental managers, port security experts, environmental experts, economic experts, urban planners.

8. Relevance for countries in transition

The Report could have a highly meaningful added value for countries in transition, based on the fact that they truly have a significant need of “know-how” in port planning techniques, in the light of an environmentally sustainable development of port infrastructure.