

## **ENVIRONMENTAL IMPACT ASPECTS OF RECREATIONAL NAVIGATION INFRASTRUCTURES**

### **TERMS OF REFERENCE**

#### **1. Historical background - Definition of the problem**

Recreational navigation infrastructures are more and more diffuse on territories of countries economically developed. In several cases these are complex infrastructures with very high number of final users. The success of a marina facility consists in the creation of a place of attraction for boaters, residents and not boaters visitors, often located in places of high naturalistic interest and beauty.

Common concerns, especially by local officials, include potential environmental impacts. Therefore, territory integration and environment respect and preservation are the more actual goals for recreational navigation infrastructures, both in highly preserved sites as in more crowded zones. It's nowadays imperative that navigation infrastructures shall meet these goals by identifying the involved environmental impact and mitigating negative impacts of development.

Under some conditions and correct planning, recreational navigation can help in growing awareness toward nature and in preserving and maintaining the environment. In some cases, lands considered not attractive, thanks to the realisation of a sustainable marina facility, can be successfully converted in a destination of leisure and amenity both for boaters and non-boaters. This will involve new spaces for community, including areas for public nautical services, social and leisure activities and events (f.i. marine sports activities, races, shows, etc.).

To be environmental friendly, marina facilities shall be planned and designed taking into account 'green' utility and mooring systems, by using environmental friendly techniques, technologies and materials. Boaters should be environmentally educated, by adopting a proper code of practice. This procedure will constitute the best practice in marina planning and design in the next future.

The approach must be the one introduced by "Working with Nature" PIANC position paper. This approach is fundamental for recreational navigation infrastructures that often insist in the most environmentally sensitive locations

## **2. Objective of the study**

To understand and identify the actual environmental impact of recreational navigation infrastructures. To give an overview of “next generation” recreational navigation infrastructures, from planning and design point view, in order to ensure the best integration with territory surrounding, and the environmental sustainability, until best practices for a good efficiency.

## **3. Earlier reports to be reviewed**

RecCom WG 12: Recreational Navigation and Nature.

RecCom WG 5: Standards for the construction, equipment and operation of yacht harbors and marinas, with special reference to the environment.

Working with Nature, PIANC position paper.

EnviCom related initiatives (e.g., greenports, sustainable navigation, and PTG CC).

## **4. Matters to be investigated**

Marina facilities and other infrastructures planning, design, construction and efficiency; environmental impact assessment.

## **5. Method of approach**

Typical of multidisciplinary WGs.

## **6. Suggested final product of the Working Group**

The product should be a paper report with a CD/DVD enclosed. The report shall include case studies.

## **7. Desirable disciplines of the members of the Working Group**

Marina planners and designers, marina managers, environment experts, urban planners, environmental impact experts, ecologists, environmentalist association representatives.

## **8. Relevance for countries in transition**

The report will be a very useful tool for supporting decisions in planning and design. It will contribute to increase the quality standards in design, construction and managing recreational navigation infrastructures.