



**InCom WG 141**

## **Design Guidelines for Inland Waterways**

### **Terms of Reference**

#### **Background**

Over the years PIANC and other navigation organizations have researched and published papers and guidance on the design of inland waterway channels. Information identified in the past has related to the size of fairways, sweep of bends, lock and bridge approaches and size of bridge openings. With the development in new technologies and the development of new waterways, it is essential that this information is reviewed and presented in a comprehensive publication to aid designers and operators in their preliminary tasks.

#### **Objective of the Working Group**

To undertake a review of current papers, data sources, current research and experience relating to the design of inland waterways and prepare a PIANC publication giving guidelines to aid designers, developers and operators of proposed and existing inland waterways.

#### **Final Product**

The intent will be to provide a summary of current guidance on the hydraulic design of fairways, approach channels and structures to provide advice to designers etc in order to identify if current standards for the specification of channels and navigation structures in both rivers and canals can be derived at an international level.

A technical brief will be provided to aid the promotion of the document and to be placed on the PIANC website

## **Matters to be Investigated**

The report will consider all the major issues associated with the dimensional constraints associated with the passage of vessels along river or canal channels for both commercial and leisure use.

It will review dimensional issues associated with visibility, current, windage, cross flows, speed of vessels etc.

It is intended that the Working Group should consider the actual dimensions of vessels as determined by already agreed standards such as CEMT, UNECE, USACE, to formulate channel and infrastructure dimensions.

It should consider the use of single and two way working of channels associated with density and supervision of traffic which will promote the economic development of waterways that are marginal either in terms of size or use.

Current research and papers dealing with Climate Change and the minimization of the environmental impact of vessels on a channel ecosystem must also be considered in the review of channel dimensions. Reference to mitigation measures for flood and drought should be considered if at all possible although it is recognized that there is considerable ongoing research which may preclude any conclusions being drawn at the current time.

Reference to all current and relevant PIANC reports is essential. Special attention is drawn to MarCom WG 49 and its report upon the horizontal and vertical dimensions of fairways. Many countries publish design guidelines and the Working Group should avail themselves of this documentation to assist with the preparation of the review process.

## **Desirable Background or Experience of Working Group Members.**

The background and experience may include the following:

- a. Operators and managers of existing waterways
- b. Consultants and navigation engineers
- c. Vessel owners and operators
- d. Representatives of regulatory bodies
- e. Promoters of improvement or new navigation schemes

## **Relevance for Countries in Transition**

The results will help to designers and promoters of new or existing navigations throughout the world and provide guidance to develop and operate safe and economically viable waterways.