Annex 40

1. Responses to Comments of Romanian Party on Documentation and Information Provided by the Ukrainian Expert during the 3rd Meeting of the Enquiry Commission (Geneva, 28 October 2005)

Comments to Annexes 15, 16 and 17

The map shows those shallow sections of the river channel that have depths below 8.4 m. This map reflects the actual data of echo-sounding surveys completed in 2000-2004, which can be used for:

1) the next project phase ;
2) identifying the potential areas of concern in terms of potential increase in sedimentation rates in the future.

As regards the navigation route cross-sections in the 37.0-37.5 km section, the increase in the hydraulic section in a single location does not reflect the whole picture of flow distribution between the secondary branches of the river. The dredging operations have been planned/carried out upstream of the Cemovca Branch head (47.0-49.0), which means the increase in flows discharged through this section.

The general estimate made by the Ukrainian specialists indicates that the flow redistribution margin as a result of the Phase 1 of the project would be within 0.8% in the low-flow period, according to the results of modeling exercise examining changes in the hydraulic resistance throughout all sections of the Chilia Branch after dredging. Given that there has been a 4.2% decrease in the river flow discharged through the Chilia Branch over the past 10-15 years (with the same margin of increase in flow received by the Tulcea Branch), it is obvious that the Tulcea Branch will continue to receive a larger proportion of river flow.

Comments to the Conclusions:

The available information is adequate to estimate the dredging requirement for the full-scale project development (Phase 2) or any other scenario. The tables detailing the dredging operations, along with the map showing the locations of shallow sections, can be used to derive the required depth.

The vertical reference datum is the Baltic datum. Depths are referred to the Baltic system of coordinates. Flow regime assumption: 99% flow probability level.

Key design parameters of the Navigation Route (Phase 2) are presented below.

Table 1 – Design Parameters of Navigation Route Sections

No.	Section Name (conventional)	Section Boundaries*, km	Section Length, m	Route Width (Bottom), m	Route Depth, m**		Slopes
					Phase 1	Full Scale	
1	Sandbar section	–1,898 – 1,534	3432	100	7,65-8,32	8,72-9,52	1:9
2	Sea – Vylkove	1,534 – 10,000 10,000 – 20,585	8466 10 585	60 120	7,0	8,4	1:6
3	Vylkove – Ismail Chatal	20,585 – 116,000	95415	120	7,0	8,4	1:6; 1:1,5
4	Ismail Chatal - Reni	116,000- 170,360	54360	120	7,0	8,4	1:6

* All linear coordinates are related to a fixed location of Vylkove Gauging Station (18 km from the Bystre Branch mouth).

** For design purposes, the following lowest navigable water levels (99% probability) were used:

Gauging Station	Prut River Mouth	Reni	Ismail Chatal	Ismail	Chilia	Vylkove	Bystre Branch (10 km)	Seaward Delta Edge
Estimated Water Level, m ABD	0,49	0,41	0,17	0,05	-0,18	-0,24	-0,26	-0,48

Table 2 – Dredging Volumes for the Phase 2 of the Danube-Black Sea Navigation Route

Work Phases	Dredging Volumes, m^3
Sandbar Clearance, total	**4500378**
Including Reni – Ismail Chatal section	79720
Ismail Chatal – Vylkove section	3978900
Including shallow areas (km): 112,50 – 115,00	*16800*
76,00 – 77,00	*42300*
71,00 - 75,50	*349800*
68,50 – 71,00	*95650*
64,00 – 68,50	*437900*
60,00 – 64,00	*555310*
46,50 – 53,00	*611800*
33,00 – 39,00	*369800*
31,00 – 33,00	*276000*
26,00 – 31,00	*583300*
20,50 – 26,00	*640300*
Within the Starostambulske Branch	*365790*
Within the Bystre Branch	*75968*
Seaward Access Channel	**1190000**
Construction (auxiliary) channel near the protective dam	**33120**

Comments to Annex 25:

The effects (including the transboundary effects) associated with the construction of the seaward access channel are considered to be insignificant. The operational effects are generally less significant than those of the construction phase. It is therefore expected that the effects associated with the operation of this channel would be insignificant.

Comments to Annex 26:

The dredges operate in different locations and at different times. The maximum in-stream dredging capacity includes 8 dredges, with the maximum daily duration of dredging operation being at 8 hours during 1 day. The maximum width of turbid water plume is 100 m. Based on this, the actual sum of lengths of turbid water plumes is not higher than 17% of the total length of shallow sections.

The biomass concentrations in the Danube water are not significant, therefore the reintroduction of biomass-related nutrients is not likely to result in a significant change in water quality even in the event of massive loss of aquatic biota. There are two potential factors that may have led to an increase in the nutrient levels in water: 1) the most likely cause of an increase is the reintroduction of nutrients contained in the bottom sediments as a result of dredging operations. It is our estimate that the simultaneous operation of 2 dredges may result in a 16% increase in phosphorus concentrations (relative to the background concentrations) within a dredged section. 2) any noticeable input of nutrients is possible in autumn, upon the completion of the wetland vegetation lifecycle.

Comments to Point 10:

The monitoring results mentioned in Point 10 relate to the year of 2005, whereas the silty sediment layer was removed earlier in 2004. The current dredging media is sand, therefore one should not sum up the figures provided for silt and sand in the table, which reflects a sequence of different soil types.

Comments to Points 11 and 12:

We will collate and present materials pertaining to the hydrobiological observations and surveys.

Comments to Points 17 and 18, to Annex 27:

Annex 27: The Ptashyna Spit (Island) has been actively growing in the recent years, showing a tendency of merging with the nearest coast. This would undermine its value and role of being a safe habitat for nesting birds. Therefore the protective dam has an additional environmental function of maintaining the current state and stability of the Ptashyna Island by controlling/preventing erosion processes.

Comments to Points 13, 14, to Annex 28:

The wealth of factual material provided in the “Documentation…” (October and December 2005) is very much appreciated. This material was handed over to the monitoring group for review and planning the future monitoring efforts.

We would like to reiterate the fact that the effects of the Ukrainian navigation route on the existing physical characteristics of the Chilia Branch riverbed are very minor and no channel-

straightening is involved in the navigation route project. The navigation route occupies a relatively small width within the river channel, and the total length of dredged sections (even under the full-scale development scenario) would be below 40% of the total length of the navigation route between the sea and Ismailsky Chatal, with their widths being significantly below the total cross-sectional widths of the navigation route itself in the respective locations. The total area of dredging sites is only 1.5% of the total river section. The advantage of this navigation route is the maximum possible use of natural river depths for the major part of its length.

Based on this, the comparison between the environmental impacts of navigation canals constructed/operated in the Romanian part of the Danube Delta and those of the Ukrainian navigation route is considered inappropriate, since the latter would be only able to slightly enhance or slow down the natural processes of delta development, being consistent with the general development trend.

2. Design Parameters of Protective Dam (Seaward Access Channel):

Total designed length (full scale development, i.e. after completion of Phase 2 – 2830 m
Designed length – Phase 1 – 1040 m
The length of completed section – 350 m