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Hydrology and Earth System Sciences Discussions

Interactive comment on "Metal contamination budget at the river basin scale: a criticalan alysis based on the Seine River" *by* L. Lestel et al.

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Clarification of the definition of fluxes and flows We changed the title in order to make clearer the originality of our own procedure (the F2A approach). The paragraph on the definition of Fluxes and Flows has been rewritten in order to be more explicit and put earlier in the text (from page 1799 to the introduction). We changed the first sentence of the conclusion in order to be clearer. Steffen et al. (2004) spoke about local to global scale and not about combined fluxes/flows analysis.

Origins of some data, calculation methods. Miscellaneous data are generally economical data from various sources. We explain this more explicitly in Table 1. Figures 2, 3 and 4 have been homogenized: letters of Fig. 2 have been reported in Fig. 3 and Fig.4. We developed the explanations related to Fig. 6 in the text, in order to better

explain how we deduced the percentage of unknown sources.

Uncertainties of the resulting estimates We determined data precision range for many fluxes and flows (Table 4) but this is rather confusing since we more often think in term of uncertainties rather than precision. We thus change the range in Table 4.

Comparison of the Seine case with other rivers International references about metal fluxes circulation in the environment have been added in the introduction. A comparison of the Seine River with other European rivers has been added as a new paragraph (4.4) just before the conclusion. The Seine river is among the most contaminated rivers, but a general decline in metal content is observed in the 1960 as for the other rivers. A figure has been added to illustrate this point for Zn.

Other answer to referee 1 About his question on the particular events such as huge floods, transporting 90% of flood sediments and 99% of particulate metals: The sediment transport during floods is not relevant here since we are considering 5y averages based on bimonthly SPM analyses and daily suspended sediment fluxes at river mouth and/or annual flood deposits which are representative of high flow periods.

Editorial / technical comments We made the corrections suggested by the referees.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 4, 1795, 2007.