Hydrol. Earth Syst. Sci. Discuss., 4, S444–S446, 2007
www.hydrol-earth-syst-sci-discuss.net/4/S444/2007/

Hydrology and Earth System Sciences Discussions

Interactive comment on "Rivers we can't bring ourselves to clean – historical insights into the pollution of the Moselle River (France), 1850–2000" *by* R. J. Garcier

Anonymous Referee #1

Received and published: 2 July 2007

This paper aims to present today's river basins as a new object both natural and social that result from a long and complex structural (e.g. geomorphology) and social history (e.g. power relations, "mentalités"). This project is well presented in the first half of the paper then, illustrated by the Moselle River case study from 1850 to 2000. Such a large vision of resent pollution issues is most welcome in a special issue of HESS and I strongly recommend its publication. Garcier is also opening a new discussion on the basis of the Moselle stakeholder analysis claiming that "social consensus [integrated water management, stakeholder involvement. . .] does not necessarily benefit the river environment" and that at some periods the industrial pollution was considered as normal. Such analysis, which has also been done in the Ruhr -also not quoted by Garcier-,

could probably be made in other industrialized regions of Europe (e.g. Meuse, Silesia).

The paper is very well written and the references are well listed. I still have some minor comments and suggestions for figures improvements.

1. Shift the order of appearance of figs 1 and 2.
2. Add some detailed references (e.g. civil engineers in charge of river management in section 3.1).
3. Precise river reaches concerned by fish-kills and fish-less state (#3.3) in 1910 and 1920; where is the new cocking facility?
4. In 3.2, the Rhine-type barges reach Nancy through the channelized Mosel or through the extension of the Sarre canal?
5. Could you differentiate more the river management types in France and Germany between 1870-1918 ? Has the German type been generalized to the whole basin after 1918?
6. You write that before 1850 the river network was in pristine state (I would rather say “subpristine” since the land cover was already much controlled by Humans), yet in the fig.5 the organic pollution is already very high in 1870. The construction of sewage stations has probably been progressive (e.g. Nancy in 1880) therefore the BOD theoretical budget cannot be based on the total basin population gradually connected to the sewer system (probably difficult to get).
7. The figure 5 concerns the organic pollution which has been made target of basin authorities from 1964 to 1990. You mention other forms of pollution as salt and toxic substances. The salt issue has been addressed much later as you correctly state it. The toxic substances pollution in such a mining and industrial district is still very much understated (e.g. heavy metals) and its heritage can

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be much longer than organic pollution and salinization. The trajectories of such pollution issues might therefore be quite different from those of the figure 5, also the mine/industries shares of pollution will be predominant. Could you discuss this point ("need for further studies"?)

8. Can the figure 2 (Meybeck's graphic) be applied to the Mosel? I guess the dates will change and will be specific for each water pollution issue (here figure 2 concerned only the organic pollution°.

Figures

- Fig 4 is not clear if printed in black and white.
- Fig 1. Where is the basin boundary for your budget (presented in fig.5)? Can you add the former political limits in 1870-1918?

Details

- Lyons instead of Lyon's
- Population -equivalent

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 4, 1697, 2007.