

**Evaluation of the EIA for the
Proposed Upper Mekong Navigation Improvement Project**

Report Prepared for the Mekong River Commission – Environment Program

by

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December 2001

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A. Project Brief

This report responds to a request from the Mekong River Commission (MRC) to evaluate the EIA for the Upper Mekong River Navigation Channel Improvement¹. The MRC's project brief expressed a particular interest in an evaluation of the socio-economic aspects of the EIA document.

In responding to the project brief, this report first presents an overall assessment of the EIA and makes some general observations about the impact assessment. This is followed by general comments on the social impact assessment within the EIA. A more detailed assessment of the EIA's contents is presented in the third main section of this report.

B. Overall Evaluation

The summary assessment of the EIA is that it is *substantively inadequate* and in many places *fundamentally flawed*. This assessment is based on the following general observations in regard to the EIA, a review of the social impact assessment (section C of this report), and the list of more specific points that follows in section D of this report.

The EIA is inadequate in that it is not based on assessments of the full range of potential impacts. In general it omits assessment of long-term impacts associated with the operation of the waterway following the proposed works. Of utmost importance are projections of the long-term impacts on the hydrology of the river, impacts on river and riparian ecosystems, and the impacts associated with the actual use of the waterway. In terms of the ongoing effects (ie., post-project), freight and passenger movements (volume, purpose, length, etc) must be estimated. It appears that nothing of this sort has yet been conducted, even though in section 6.2.2.4 (p. 105) it is noted that a study into projections of vessel movements was conducted in 1994 and there is an explicit recommendation that these projections be updated! Also overlooked are the possible ongoing economic costs to the riparian nations that are likely to be associated with channel maintenance (ie., dredging) – for the relatively poorer countries (especially Laos), this is likely to be a significant economic burden.

The EIA also overlooks the cumulative and secondary impacts that are likely to be associated with the project, including notably the impacts of increased economic activity that the EIA repeatedly refers to. For example, there is no discussion of secondary pollution impacts that might occur as a result of industrial developments arising from the improved navigability (eg., section 7.2.1.1 recognises that air pollution will be caused during construction but states that "after the operation is completed, the air quality will resume to the original level" (p. 114)). The impact assessment pays scant attention to the downstream environmental, social and economic impacts. There are also likely to be significant changes arising from the potential for increased tourism and an increase in natural resource exploitation. These will quite possibly have important implications in social, economic and environmental terms and must therefore be acknowledged in the report.

¹ Joint Experts Group on EIA of China, Laos, Myanmar, and Thailand, *Report on Environmental Impact Assessment The Navigation Channel Improvement Project of the Lancang-Mekong River From China-Myanmar Boundary Marker 243 to Ban Houei Sai of Laos*, September, 2001.

Much of the analysis that is reported in the EIA appears to be based on little more than speculation, subjective judgements, or unsubstantiated research. For example, section 5.7.4 suggests that: "The construction of the project will be positive to the sustainable development of the economy of the Lancang-Mekong River drainage area" (p. 96). However there is absolutely no analysis in the entire report to substantiate this claim. On p. 92 the report claims that "The Project will eliminate the visual impacts within the waterway, widen the channel and make the natural scenery at both sides of the channel more attractive" – on what basis are the impacts on visual amenity made? Claims are made on p. 71 about the long-term impacts on fisheries, purportedly based on experience with similar projects in China. However, the report presents no evidence whatsoever about studies conducted in China that would support the claims made.

The EIA falls short also in that it does not systematically consider alternative courses of action. At about p. 15 and in the following pages two alternatives are specified for the navigation works, but no information is presented as to how the two alternatives were selected and why only two alternatives were considered in each case. More generally, the report is basically silent on the issue of alternatives to the navigation project (including the standard 'do nothing' option), other than the inclusion (at p. 91) of a highly generalised comparison of transport modes based on EU research (which is neither sourced nor adequately explained).

C. Social Impacts

The social impact assessment is inadequate in four main respects:

- a) The analysis of social impacts is almost exclusively limited to those that would be associated with the navigation channel works. To the extent that social impacts are considered beyond this, the analysis is limited to speculative comments about the possible longer-term economic benefits. An SIA scoping document relating to this project prepared for the Government of Laos² identified a wide range of possible longer-term social impacts, including:
 - *Local Area Impacts* - Impacts on food security; impacts on cultural sites and aesthetics; interruptions to existing patterns of river use; implications for water supply and use (eg., bathing, drinking); impacts (positive and negative) on human health as a result of changes in water quality; diet, and incidence of disease, improved access to health and educational services; reduced local flooding, as a result of improved downstream flows; the effects of accidents involving vessels which might result in local and downstream water contamination.
 - *Downstream Impacts* - Riparian villages downstream of the project (ie., south of Ban Houei Sai) might possibly be affected, primarily by changes in the flow regime and water quality.
 - *Regional Economic Impacts* - The question of utmost importance is how the economic benefits (and costs) will be distributed among the riparian countries. It seems inevitable that the improved navigation would have significant secondary effects in terms of economic development along the river. There will be easier access to forest and agricultural resources, and for tourists. Both positive and negative effects will flow from this development and there are likely to be significant cumulative social and environmental impacts.

² Scoping Document on the Social Impact of the Proposed Upper Mekong Navigation Project. Report Prepared for the Mekong River Commission – Environment Programme, Monash Environment Institute, Australia, August 2001.

These longer-term social and economic implications of the project should have been assessed in the context of the EIA.

- b) The distribution of costs and benefits is not adequately analysed in the EIA. Almost inevitably, the positive and negative aspects of this project will be unequally distributed amongst the four riparian nations. This is a fundamental consideration in the context of the social impacts, yet the distributional implications are completely overlooked by the report. The report is probably correct in suggesting that some economic benefits will accrue (though these should be estimated appropriately), but it is not at all clear that all four nations will benefit equally. Similarly, both environmental and social impacts will be apportioned unequally amongst the nations and it is quite possible that the nations which stand to benefit least from this project in economic terms will be the same ones that bear the greatest burden of the environmental and social costs. In particular, while Laos is unlikely to benefit to any great extent economically, the nation is likely to confront considerable issues relating to secondary economic development (especially forestry and tourism), it may be substantially burdened with ongoing costs associated with channel maintenance, and it will almost certainly experience the greatest environmental impacts, both within the construction area and downstream. In terms of the distributional effects, several questions must be addressed:
1. What direct economic benefits will accrue to each of the four riparian nations as a result of the project works?
 2. What will be the ongoing costs to each nation in terms of maintaining the navigability of the channel?
 3. What will be the impact on the economies of each of the nations of an increased flow of goods and services? Of particular interest would be the implications of increased downstream flows of goods and services from China and Thailand on the economy of Laos.
 4. What are the likely secondary economic impacts (eg., forestry, tourism) of improved navigation in each of the four nations?
 5. What will be the social consequences (eg., in terms of food security, health, risk of accidents, cultural values) arising from environmental changes brought about by the project and its operations, and how will these impacts be distributed amongst the people of the four riparian countries?
- c) In terms of the social impacts, what little actual analysis that is presented in the EIA appears to be based on a questionnaire/consultation process (pp. 101-107). The methodology is not explained, the questionnaire is not presented in the report, and there is very little information presented about who in fact was interviewed, nor how they were selected. Moreover, the consultation process appears only to have been carried out in China and Thailand, as no results are presented for either Laos or Myanmar. The EIA scoping report prepared for the MRC³ makes reference to a questionnaire schedule and concludes that "the questionnaire is patently inadequate as a basis for the SIA" (p 2). This judgement of the questionnaire, which it would seem

³ Scoping Document on the Social Impact of the Proposed Upper Mekong Navigation Project. Report Prepared for the Mekong River Commission – Environment Programme, Monash Environment Institute, Australia, August 2001.

was the basis for the social impact assessment reported in the EIA, raises serious questions about the validity of the conclusions drawn regarding social impacts.

d) In stark contrast to internationally accepted EIA/SIA practice, the assessment of the proposed Upper Mekong River navigation works has not been accompanied by an acceptable public participation process. The MRC⁴ has suggested that public participation should involve:

- Decision-making processes that allow full and active stakeholder representation;
- Decision-making processes that are accepted as legitimate by stakeholders;
- An understanding amongst decision-makers and stakeholders of each others' concerns;
- Trust and confidence by the public in decision-makers and the project;
- Provision for public participation to improve key decisions; and
- Acceptance by the stakeholders of the legitimacy of key decisions.

There is no evidence in the current EIA that any of these provisions in respect of public participation have been satisfied.

D. Specific Comments

The comments in this section are organised according to the main headings and chapter numbers of the EIA report.

1. Summary

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| Pg 9 | The source of the air quality standards is not noted. |
| Pg 10 | The source of the water quality standards is not noted. |
| Pg 10 | As specified here, it would seem that the geographical scope of the project is limited to the immediate area of the navigation works. This overlooks the potential secondary effects, particularly those that would be realised downstream. |
| Pg 11 | As specified here, it would seem that the temporal scope of the assessment is limited primarily to the construction phase. This is borne out in the remainder of the report, which indeed is focussed primarily on the construction period, to the exclusion of an adequate assessment of the ongoing impacts. |

2. Project Description

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| Pgs 15 - 20 | In the description of the project works, only two alternatives are identified. The report is completely silent on the question of how the alternatives were selected and of why there are only two alternatives considered in each case. |
| Pg 37 | Table 2.2.4.3 is basically meaningless – what do 'more' and 'less' actually mean? The direction of impact is often ambiguous (for example, is it being suggested that the project would bring about 'more' terrestrial ecology?) and there is no indication of magnitude of impact. The forecast impacts are restricted to those associated with the construction phase only. |

3. Survey of Existing Environment

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| Pgs 38-58 | While it does not have a particular bearing on the EIA itself, the descriptions of the four countries is very uneven in both quality and coverage. Generally, the value of this information is doubtful as it is presented at a level that is not really appropriate to the project (ie., these background statements need to be tied much more closely to the local context in which the project will actually be situated). |
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⁴ Mekong River Commission, *Hydropower Development Strategy*, November 2000.

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| Pg 60 | Data in table 3.2.2 includes readings only up to 1986 – is there not more recent information? |
| Pgs 61-63 | Adequacy of the baseline water quality data is questionable. There are apparently only 3 sites (over 330 km) at which basic water quality parameters have been measured. It also seems that the data in the tables are based on at most only 3 sampling dates (for Chiang Saen Port), and only once for two of the locations. Furthermore, despite what it says in the tables and graphs, it seems most unlikely coliform is measured in mg/l. |
| Pgs 63-64 | Air quality is not a major issue in terms of this project, but like the water quality data, the baseline information is not very good – four sites and only one “on-the-spot survey” (p. 63). |
| Pg 64 | Noise is also unlikely to be a major factor, however the baseline information is still possibly inadequate (two sample points). |

4. Identification of Environmental Impact Factors

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| Pg 65 - 67 | The outline of the anticipated environmental effects is really inadequate. It fails to acknowledge the full range of possible effects and the emphasis is very much on the impacts in the construction phase (as elsewhere in the report). |
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5. Environmental Impact Assessment

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| Pg 68 | The text refers to the incidence and distribution of fish species, but there is no indication as to the source of these observations. This brings into question the conclusions to the effect that there will be minimal impacts on fish. |
| Pg 70 | Various claims are made here about the minimal impacts of similar projects on aquatic ecosystems in China. However, there is no supporting data and there is no reference to the studies on which these claims are based. |
| Pgs 69-72 | The report does not consider comprehensively the effects on aquatic invertebrates and plants; changes to their populations may have flow-on effects on fish or other species. |
| Pgs 70-72 | Section 5.1.2 concludes that fish stocks and patterns of migration will not be significantly affected but it does not identify the conditions that facilitate fish passage to important habitats (eg., spawning grounds) |
| Pgs 70-72 | Section 5.1.2 fails to discuss the impacts on fish and other aquatic species during operation of the navigationally improved river (eg., the effect of altered hydrological regime or water quality, or increased river traffic) other than the suggestion that “After completion of the works, the living environment for fishes can be gradually resumed” (p. 71) |
| Pg 72 | The dependence of native plants, birds and animals on the river system has not been documented (section 5.1.3), bringing into question the claim that they will not be affected. |
| Pg 72 | Section 5.1.5 (soil loss analysis) contends that the excavation and blasting will cause no vegetation loss, soil loss or soil erosion but the report contains no information in support of this conclusion, eg., description of materials to be excavated. |
| Pg 73 | It is claimed that the project will have an insignificant effect on water level, and refers reader to Appendix 1 for relevant calculations, but the Appendix/calculations are not included in the report. |
| Pg 75 | It is not explained why the reduced velocity should be considered as a positive outcome of the project. |
| Pgs 79- 80 | Section 5.2.6 provides a summary of the impacts of the project on hydrology and refers to surveys and observations conducted “by specialists from China, Laos, Myanmar and Thailand” (p. 80)”; information about these |

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| | studies (results, dates, etc) should be included in the report. |
| Pgs 80-83 | Non-pollution-related impacts such as increased traffic interfering with fish/aquatic organisms and with fishing equipment/practices are not acknowledged. |
| Pgs 82 -83 | The short paragraph on the effects of port construction contains no useful information; it is unsubstantiated speculation. |
| Pg 87 | It is not at all clear how the estimate of a 90% reduction in accidents was arrived at. |
| Pgs 87-88 | Risk consequences are described in general terms only – there is no quantitative risk assessment. |
| Pgs 89-90 | The text here on social impacts is highly generalised and not supported by specific information nor background research – it is entirely speculative. |
| Pg 91 | The information on the environmental effects of alternative transport modes (table 5.7.2) is of doubtful relevance. The source of the information is not provided, and it is doubtful whether the information has applicability in the context of the Mekong. A more rigorous and systematic comparison of alternatives is needed. Additionally, the paragraph under the graph (p. 91) misrepresents the data – waterways will not “reduce energy consumption”, “reduce land occupation” etc. – the correct interpretation is that it will affect the various graphed parameters, but to a lesser extent than alternative transport modes. |
| Pg 92 | The claim that scenery will be improved as a result of the project appears to be based entirely on a subjective assessment. It is unlikely to be substantiated by a reliable visual assessment analysis (for which there are standard methods). |
| Pg 92 | It is suggested that the project will promote tourism to the area, though there is no indication that this has been assessed in a reliable and systematic way. Moreover, there is no assessment of the secondary environmental and social effects that might arise from increased tourism. |
| Pg 96 | The social impacts identified are either (a) unsubstantiated claims as to possible economic spin-offs (which may or may not be realised in practice), or (b) the short-term, construction related impacts, (ie., ongoing social impacts associated with altered hydrology, effects on aquatic ecology, and the impacts of increased river traffic are not addressed). |
| Pg 96 | Claims here in regard to improved international relations are purely speculative. |
| Pg 96 | The report offers no systematic predictions of the actual goods flows that would bring about the suggested economic benefits. |

6. Public Awareness

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| Pg 98 | The public awareness (cf. public consultation) processes appear to have been carried over a very short period of time (3-5 days) – as such, they are most unlikely to be credible. |
| Pg 98 | The public consultation project should have been extended to public interest groups, as well as members of the public and government agencies. |
| Pgs 99-100 | There are no survey results reported for either Myanmar or Laos, raising the question as to whether the surveys were actually carried out. |
| Pgs 101-107 | The reporting of the survey results is not of an acceptable standard. In some cases percentages are used (when the results are supportive of the project), in other cases loose terms (eg., ‘some’) are used. The reporting of the results must be far more systematic and rigorous. |
| Pgs 103-105 | The comments relating to Laos are simply not appropriate – they are proposals as to what analysis should be carried out, not an analysis of what has been done. This is inappropriate for an EIA report. |

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| Pg 105 | The survey analysis for Myanmar is totally inadequate. The fact that only 20 people were consulted also indicates that the process itself was far from satisfactory. |
| Pgs 105-106 | The reported numbers of people either not knowing sufficient details about the project or who are opposed to the project should have been considered more substantively. |

7. Mitigating Measures and Monitoring

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| Pg 108 | The measures described for the mitigation of the social impacts are all focussed on the short-term construction impacts (which follows from the fact that the longer-term socio-economic impacts are not considered at all in the report). |
| Pgs 108-113 | The report does not set out the mitigation measures that should be implemented where unexpected or cumulative impacts occur. |
| Pgs 108-111 | It would be prudent for the EIA to recommend that each country should establish and implement appropriate monitoring and oversight concerning the possible increased natural resource exploitation, trade and tourism activities that the project might bring about, in order to avoid <i>unsustainable</i> development |
| Pgs 114-116 | This 'profit and loss' analysis is simply a restatement of selected impacts. It offers no useful attempt to consider the balance between the projected costs and benefits. Moreover, the social analysis in this section is focussed entirely on unsubstantiated and assumed economic spin-offs. |
| Pg 117 | The proposed environmental monitoring schedule is patently inadequate – it is insufficient in terms of the proposed frequency of monitoring, the number of monitoring sites, and the range of parameters to be monitored. |

E. Summary

The project works covered by this EIA constitute only the first phase in a much larger plan for navigation works on the Lancang-Mekong River. In relative terms, the environmental and social impacts associated with this first phase can probably be described as slight to moderate. The expected extent of impact, however, does not remove the obligation to conduct a thorough, comprehensive, and credible environmental and social impact assessment. This is all the more important, in light of the proposal to carry out further navigation works, which will almost certainly lead to more significant impacts.

The EIA is unacceptable in many respects. Far too much of the content is based on speculation, the data that is used is patently inadequate, longer-term impacts are almost entirely overlooked, and the cumulative impacts (both social and environmental) are essentially ignored. Looking at the social impacts in particular, the report does not consider the ongoing effects that might arise, the analysis appears to be based on a flawed methodology, and the essential requirement of effective public participation has been overlooked.

The report as presented could not be accepted as an adequate account and evaluation of the environmental and social impacts associated with the proposed channel navigation works.