

Mekong River Commission Procedures for Notification, Prior Consultation and Agreement Form/Format for Reply to Prior Consultation of the Don Sahong Hydropower Project (DSHPP)

1. **Replying State:** Kingdom of Cambodia
2. **Date of reply:** 26 January 2015
3. **Replying Agency:**
 - **Name:** Cambodia National Mekong Committee (CNMC)
 - **Mailing Address:** # 364, Monivong Blvd., Phsar Deumthkov, Chamkar Mon, Phnom Penh, Cambodia, P. O. Box 2214, Phnom Penh 3
 - **Tel.:** (855-23) 216 514
 - **Fax:** (855-23) 218 506
 - **E-mail:** cnmc@cnmc.gov.kh
4. **Contact person/facilitator:**
 - **Name:** Cambodia National Mekong Committee (CNMC)
 - **Mailing Address:** # 364, Monivong Blvd., Phsar Deumthkov, Chamkar Mon, Phnom Penh, Cambodia, P. O. Box 2214, Phnom Penh 3
 - **Tel.:** (855-23) 216 514
 - **Fax:** (855-23) 218 506
 - **E-mail:** cnmc@cnmc.gov.kh
5. **Name of the proposed use/project:** Don Sahong Hydropower Project (DSHPP)
6. **Location of the proposed use/project:** On Hou Sahong Channel of the mainstream Mekong River, approximately 1,5km upstream (North) of the Cambodia-Lao border.
7. **Nature of the proposed use/project:** Intra-basin use during wet and dry season.
8. **Date of receipt of the documents:** 25 July 2014
9. **Replying to the proposed use/project:**

Regarding the Prior Consultation of the Don Sahong Hydropower Project (DSHPP) and based on the views and concerns consolidated from the outcomes of the national consultation meetings, and the MRCS Technical Review Report, CNMC has the following views, concerns, and recommendations:

- 1) In general, Cambodia supports the socio-economic development of Lao PDR and it is indeed necessary to promote regional economy and well-being of people as well.
- 2) According to the 1995 Mekong Agreement and its Procedures and related Guidelines, any proposed use of the Mekong River water, especially mainstream water use must comply with the principles of “*sustainable, reasonable and equitable use of water and should not cause any significant harmful effects to the neighboring countries*”. Cambodia has the view that the DSHPP has not fully fulfilled and complied with the above-mentioned principles.

- 3) As the DSHPP site is close to the Cambodia-Lao border, hence the potential negative impacts to Cambodia is inevitable. In this regard, trans-boundary environment and socio-economic impacts assessment must be conducted in the downstream areas, particularly areas adjacent to the project site, the Cambodian Mekong River and the Tonle Sap Great Lake, prior moving to the project implementation.
- 4) The DSHPP will block the entire Hou Sahong channel, which is the most important year-round migration route, especially in dry season for many species of fish. The impacts studies conducted by many renowned experts and scientists within and outside the MRC framework have shown that the DSHPP will cause significant harmful effects to the Mekong River, downstream riparian countries and people. The proposed mitigation measures by clearing the Hou Sangpheuk and Hou Sadam channels as alternative fish migration routes are not replaceable to Hou Sahong channel.
- 5) The project studies and related documents submitted by the project developer are not credible and comprehensive due to:
 - Lack of supporting data and information.
 - No baseline data and information on physical and biological resources and socio-economics for both within the project site and outside with trans-boundary nature, which formed the basis for changes assessment as well as impacts.
 - Lack of detailed studies and analysis on potential impacts on sources of incomes, food security, livelihood, and public health of potentially affected people, especially downstream communities.
- 6) Due to the fact that many uncertainties and concerns remain unsolved, it is therefore additional time is required for the MRC Secretariat, International Expert Groups, the MRC member countries, and other relevant institutions to continue carrying out in-depth studies and detailed assessment on trans-boundary environment and socio-economic impacts when comprehensive technical and scientific data and information become available and as the results of these studies and analysis they will form a proper and solid basis for the MRC to deliberate and decide on how to avoid, minimize and mitigate the potential harmful effects caused by the project.
- 7) In principle, Cambodia appreciates the assessment on the DSHPP and the Technical Review Report conducted by the MRC Secretariat. Cambodia requests that the comments and recommendations raised in the Technical Review Report and in the proposed in-depth studies and detailed assessment on trans-boundary environment and socio-economic impacts as indicated in bullet point number 6 above be addressed by the Notifying Country.

Details of above-mentioned comments, concerns and recommendations are as follows:

a) Fisheries

- The DSHPP will block the entire Hou Sahong channel, which is the most important migration route for many fish species in dry season. In addition, this dam will divert up to half of average of the Mekong dry season flow from Hou Phapheng, Hou Sadam, Hou Sangpheuk and other channels into Hou Sahong channel for the purpose of hydropower generation.

- There is uncertainty on the effectiveness of the proposed mitigation measures by clearing the Hou Sangpheuk and Hou Sadam channels as alternative fish migration routes.
- Due to the fact that the project site is located nearby the Hou Sangpheuk and Hou Sadam channels and with strong and drastic flow change at the outlet of the dam, it is uncertain that whether those two proposed alternative channels (Sangpheuk and Sadam) will be suitable and attractive for upstream fish migration.
- There is no appropriate engineering model indicating that the designed fish friendly turbines will properly ensure fish migration through and it has no mitigation plan to assure that there will be less fish mortality caused by bladed strike, pressures and shear from the turbine operation.
- The engineering design for the improvement of fish migration and fish monitoring is not clearly detailed and the proposed mitigation measures have not been tested and even never been implemented in the Mekong River Basin.
- The potential impacts on trans-boundary fish migration, rare and endangered fish species and especially the inter-relationship between Mekong River, the Tonle Sap Great Lake, and the Mekong Delta have not been studied or assessed.
- If the proposed trans-boundary fish migration mitigation measures were not working or ineffective and in this regard, there would be significant negative trans-boundary and basin-wide impacts on fisheries and biodiversity. Consequently, there would be significant negative effects on livelihood, sources of incomes and food security of Cambodian communities.
- Changes of water flow in the river and channels will cause negative impacts on deep pools, which are the most important natural habitats for the sustainability of many Mekong fish species.
- Noise and vibration generated from both the construction and operation phases will cause significant negative impacts on Irrawaddy Dolphin population, which is sensitive and endangered species, living downstream in the Cambodian Ramsar Site adjacent to the project site.
- Changes of water pH in deep pools (Irrawaddy Dolphin habitats) caused by calcareous effects from the first stage after removal of cofferdams will significantly affect Irrawaddy Dolphins and even make them death instantly.

b) Water Quality

Dam Construction Phase (Blasting and excavating river/channel bed):

- High water turbidity due to the increase of suspended solid and dissolved solid concentration containing abnormal chemical substances from dam construction will impact daily livelihood of downstream communities, vegetation, animal and ecosystem, especially in dry season.
- Suspended sediments and suspended solid (including residue and rock debris) from dam construction will fill up the deep pools downstream.

- The increase of organic pollutants from construction site, worker residents, canteens, incidental spills of fuels and gasoline from trucks and concrete cleaning will pollute water quality downstream.

Operational Phase

- River water quality will be changed due to the change of sediment concentration, because of water diversion for power generation process, water release and sediment flushing from the dam reservoir. The sediments could cause positive and negative impacts since they have various physical, chemical and biological features.
- Various substances generated from hydropower plant maintenance will pollute water quality downstream.

c) Flow, Sediments, Biodiversity and Ecosystem

- There is a lack of environmental flow analysis. It is important to consider other changes such as water velocity, channel morphology, etc.
- Water level and flow measurement were not comprehensively considered. The limited field records could hence lead to under- or over-estimate of flows distribution in the project area.
- Flood analysis and mitigation measures during construction were not considered, especially the drainage of floodwater from the cofferdams, which can be overtopped and creating potential impacts of water pollution incidence downstream.
- The results from the hydrological models were not extensively illustrated. They were mainly used data at Pakse (based on data correlation between the 2 areas of Pakse and the DSHPP), which were not explicitly specified on separated period of wet and dry season.
- Developer's project documents have stated that the DSHPP is a run-of-river plant with minimal active storage, intended that there would not be a significant change in the total Mekong flow. However, in dry season or dry year, there would be significant changes in flow regime in all channels in the Mekong mainstream, in the project area. There will be drastic increase in flow regime in Hou Sahong channel, due to the diversion of water for designed hydropower generation purpose and consequently, there will be drastic decrease in flow regime in other channels that may lead to the potential negative impacts on fish migration, Phapheng tourist areas, downstream area in Cambodia adjacent to the project site, and the Ramsar site etc., which affect the environment and socio-economics of the downstream areas.
- Water level and flow regime in the river could be potentially impacted by the DSHPP operation, which required technical and scientific in-depth studies.
- Cumulative retention of sediment by the DSHPP and other Mekong dams will cause significant negative impacts on biodiversity, aquatic life, and lowland agricultural areas, which have not been studied.

- Changes of sediment due to trapping of natural sediment flow, replaced by sediment flushing from the dam's storage will lead to the loss of natural seasonal sediment flow regime and the considerable differences between the natural sediment flow and the sediment flow regulated by the DSHPP Operation.
- Reduction of primary productivity (Zoo-plankton and Phyto-plankton) that supports aquatic biodiversity and ecosystem regeneration and development.
- There are no studies, assessments, and analysis of the importance of, and potential impacts on the trans-boundary ecosystem, and natural riverine and riparian habitats, and aquatic life, especially of the downstream site in Cambodia.

d) Socio-economic

- There is no trans-boundary environment and socio-economic assessment, especially the potential impacts on downstream communities (the Cambodian Mekong River and Tonle Sap Great Lake), whose livelihood depend very much on Fisheries, agricultural intensification and diversification, and eco-tourism, etc.
- There are no studies and discussions for creation of the mechanisms under the MRC frameworks on benefit sharing, monitoring and addressing of negative impacts.

RECOMMENDATIONS

- Further studies and assessment to be conducted by independent international consultant team and be selected under the MRC Framework with involvement of MRC Secretariat, member countries, and most concerned stakeholders.
- The hydrological and sediment monitoring programmes during the project construction and operation would provide a better understanding of changes in flow and sediment regimes, therefore data and information on cross section, location surveys (sediment sampling, bed-load materials, including grain size analysis, etc.), water level monitoring and flow observation before and during project construction and during project operation should be consistently conducted within all year round.
- It is inappropriate to develop not only the flow duration curves for the Hou Sahong and Phapheng fall but also for other channels in the project area. It is utmost important to identify the local probabilistic change in flow regime in the project area.
- A more detailed modeling study should be conducted on the potential changes of flow characteristics of the Hou Sadam and Hou Sangpheuk channels. This study can provide helpful information for considering on the new appropriate alternative fish migration channels proposed by the developer.
- The hydrological models were mainly used of data at Pakse (based on data correlation between the 2 areas of Pakse and the DSHPP), which were not explicitly specified on separated period of wet and dry season, it is therefore required to collect data from the project site to rerun the model in order to verify and furthermore to run the model with data collected from the site for the downstream areas. This work requires the involvement of the MRC Secretariat.

- Flood analysis and mitigation measures during construction should be conducted, especially for the floodwater from the cofferdams.
- Base on the Preliminary Design Guidance (PDG) and the International Norms of Practices for the project with possible significant trans-boundary impacts and to address the uncertainties and concerns of downstream communities and countries, it is required to conduct the following studies:
 - Trans-boundary Environment and socio-economic Impacts Assessment and Cumulative Impacts Assessment in the downstream areas in Cambodia (Project site adjacent area, Ramsar site, Cambodian Mekong river, the Tonle Sap Great lake area, and the Mekong Delta), with the involvement of MRC Secretariat, member countries (national and sub-national level), and other stakeholders.
 - Cost and benefit analysis of the project for the downstream site.
 - In-depth studies and analysis of impacts on sources of income, food security, and livelihood of affected communities caused by the negative impacts on trans-boundary fish migration during and after construction (due to changing of water flow regime and blockage of natural fish migration route) with elaboration of fisheries loss in monetary term and the proposed reliable mechanism to avoid, minimize and mitigate the impacts.
 - Study and compilation of baseline data and information on physical and biological resources and socio-economics by incorporating into the trans-boundary environment and socio-economic impacts assessment as a benchmark for future verification.
 - Study, assess, and analyze the importance of, and potential impacts on the trans-boundary ecosystem, and natural riverine and riparian habitats, and aquatic life, especially of the downstream site in Cambodia.

Additional recommendations:

- To conduct joint monitoring on the DSHPP implementation and its negative impacts using the agreed coping measures to avoid, minimize and mitigate the impacts, especially with regard to the fish migration aiming at improving alternative fish migration routes. The fisheries monitoring programme should be carried out for at least 10 years. Format and mechanism of the joint monitoring should be discussed and financially supported by the Notifying Country. When the joint monitoring programme shows that the engineering designs and modified channels are not properly working, there should be more discussions and agreement on the mitigation measures.
- To formulate mechanisms under the MRC frameworks for benefit sharing and for monitoring and addressing of any identified impacts. Appropriate compensation should be made to the affected state(s) based on the level of damages.
- Information and progress on project status during construction (especially prior to the removal of the cofferdams which can affect the water quality and etc.) and hydropower operation plan (especially with regard to the sediment flushing) should be notified for better preparation.