

1 INTRODUCTION

One main task of the Cumulative Impact Analysis (CIA) has been to estimate the cumulative impact on hydrology. All reservoirs have an impact on the hydrological balance their purpose being flood control, water supply, irrigation or hydropower generation. This section presents the hydrological changes caused by future large projects, mainly hydropower, within Mekong catchment, whereas the resulting flow and water levels in Mekong are presented in the main report and the methodology in Annex 2.

The future variation in water flow in Mekong depends on the future number and size of active storage of seasonal reservoirs. The cumulative impact of Nam Theun 2 depends on other reservoir development and the regulation of the other reservoirs.

The largest potential projects are mainly located in Lancang, and in the Nam Ngum, Nam Theun, Se Kong and Se San basins.

In the CIA one scenario is the situation in 2010 and the other in 2025. The selection of projects within scenario 2010 is based on projects under construction or close to financial closure. For the 2025 lists from MRC and National Power Development Plans has been used.

Because of limited time available, the work on the hydrological impact of future reservoirs have been simplified. Small HPP and Run-of-river projects are not included. For multipurpose projects the irrigation demand will have an impact on the reservoir operation and thereby the potential energy production and downstream water balance. An optimisation of the total output from the basin, both energy production and irrigation utilisation, has not been carried out.

Optimal reservoir operations are particularly difficult to forecast for multipurpose projects and model assumptions must be made regarding abstraction for hydropower, the volume of storage dedicated to flood protection and/or irrigation.