

Optimisation of the Manantali dam water management using a seasonal forecasting information

J.C. Bader (1), J.P. Lamagat (2), J.P. Piedelièvre (3) and **J.P. Céron** (4)

1. Institut de Recherche pour le Développement, Montpellier, France
2. Institut de Recherche pour le Développement, Dakar, Sénégal
3. Météo-France, CNRM, Toulouse, France
4. Météo-France, Direction de la Climatologie, Toulouse, France

(Jean-Pierre.Ceron@meteo.fr / Fax : +33 561 078 309 / Phone : +33 561 078 310)

Optimizing the satisfaction of requirements generated by a multi-purpose dam, while minimizing its impact on the environment and on traditional human activities, in a context of low water resources, are the goals laid down for the Manantali dam on the Senegal river. Because of the reduced length of the rainy season, the water managers must decide by mid-August on the flood support level required over the September-October period in order to preserve flood recession crops, as well as hydro-electric energy production till the next rainy season. In such a framework, the seasonal forecasting of rainfall for the coming September and October is a crucial information for allowing the best decision. Accordingly, the IRD, Météo-France and the OMVS have developed a water management model which makes use of the seasonal forecast issued beginning of August from the ARPEGE climate model, adapted both in space and time for optimisation purposes. This application works since 2005 in an operational mode. The benefits of such an application are important in terms of economical, environmental and social points of view.