

ADAPTATION OF HAUT-SAINT-FRANÇOIS DAM MANAGEMENT PLANS TO CLIMATE CHANGE



CONTEXT

The management of multiple-use dams provides a unique opportunity to examine the process of adaptation to climate change, as it constitutes one of the rare fields in which the existing state of knowledge is sufficient to evaluate the complete range of tools for identifying potential adaptation options.

Accordingly:

- hydro-climatic modelling tools are available for establishing scenarios on the impact of climate change on decision-making parameters (water flow rates and levels);
- with respect to critical thresholds (water flow rates and levels), vulnerabilities are known and explicitly quantified according to use;
- there are close relationships with representatives of the main users;
- adjusting management plans constitutes an easily explorable initial lever for adaptation.

OBJECTIVE

Develop an adaptation method in the field of water resources and generate an initial series of options for adapting management plans for Haut-Saint-François dams.

RESULTS

- As decision-making and management parameters and priorities were known and quantified, the identification of climate scenarios, given the associated uncertainty, is the most critical and limiting aspect of obtaining usable results.
- Simple and potentially acceptable adaptation solutions, such as reducing normal operating levels or staggering reservoir emptying and filling, could be incorporated into dam-management plans while ensuring that the existing compromise among various water-resource uses is maintained (extreme high- and low-water levels, however, are not included in this type of solution).
- The adaptation options advocated differ depending on the climate scenarios analyzed, and are thus not transferable from one scenario to another.

PROJECT START DATE AND LENGTH

2005-2006 • 11/2 years

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PARTNERS

- Centre d'expertise hydrique du Québec (CEHQ)
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FUNDING

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IMPACT

In addition to initiating the incorporation of climate-change adaptation measures in the field of water resources, the study was well publicized and attracted interest, not only from the scientific community, but also from stakeholders involved in watershed management.

While producing a preliminary series of results and identifying research avenues to offset existing shortfalls, the study also made it possible to lay the groundwork for broader deliberations that will act as a basis for many activities under Quebec's climate-change action plan.