

CHAPTER 1

INTRODUCTION

1.1 OBJECTIVE

The sustainability principle, to be discussed in detail in Chapter 2, calls for an integrated consideration of economic, social and environmental issues related to development, while addressing both intra- and inter-generational equity.

The objective of this report is to translate the general sustainability principle into the reservoir context and to provide a set of concrete planning, design and management criteria that could be used for selection of a reservoir option that compares favourably to other reservoir and non-reservoir alternatives.

In order to fulfil this objective, the present report has the following aims:

- (1) To review the current status and anticipated future needs for reservoirs in order to develop a new approach that can address existing criticisms of reservoirs.
- (2) To analyse the general notion of sustainable development and to interpret it in the context of reservoirs.
- (3) To discuss non-reservoir alternatives to be integrated with reservoir options for sustainable water resources management.
- (4) To present selected reservoir design and management techniques that can help implementation of the sustainability principle.
- (5) To show selected examples of design and management of existing reservoirs highlighting different aspects of sustainability.
- (6) To present a checklist which may guide sustainable reservoir development and management in practice.

1.2 BACKGROUND AND SCOPE

Water storage is the basic means of controlling water availability over time and in space. Storage of water, needed in vast quantities in virtually every human activity, is essential for human beings as well as other living species.