The aim of this exercise is to provide you an opportunity to assess the performance of different plans for simple water resources system. You have already seen this system in lecture (System Performance Indicators) and it can be found in the textbook of Loucks and Van Beek (2005\textsuperscript{1}). The system includes: one river, two users (the environment, and an irrigation district) and one reservoir. The river system with and without the reservoir is shown in the figures below.

The reservoir winter operation policy is to store as much of the winter’s inflow as possible. The summer release policy is to meet each year’s projected demand if possible. Further details of the operating policy are given later and in Chapter 7, Section 9.3 of Loucks and Van Beek (2005).

The system has been modeled under 2 scenarios
1. Without the reservoir; and
2. With the reservoir.

Assignment:
Using the results of modeling the system (see Excel spreadsheet from class webpage), compute the Reliability, Vulnerability and Resilience for both the “without Reservoir” and “with Reservoir” scenarios.

\textsuperscript{1} Loucks, Daniel P. and Eelco van Beek, \textit{Water Resources Systems Planning and Management: An Introduction to Methods, Models and Applications}, Chapter 7, Section 9.2 “River Basin Simulation” pages 219 – 222, UNESCO, Paris, 2005