

VU Research Portal

Cooperative Decision Making in River Water Allocation Problems

Moes, N.

2013

document version

Publisher's PDF, also known as Version of record

[Link to publication in VU Research Portal](#)

citation for published version (APA)

Moes, N. (2013). *Cooperative Decision Making in River Water Allocation Problems*. Tinbergen Institute.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

E-mail address:

vuresearchportal.ub@vu.nl



Nigel Moes

Cooperative decision making in river water allocation problems

Rivers, and the bodies of water they flow into, constitute the most important regional source of fresh water in the world. Asymmetric dependence on water resources has been at the heart of several conflicts between upstream and downstream water users. Global institutions, such as the United Nations, have tried to reduce the number of these conflicts by promoting (the study of) multilateral agreements between water users. In this dissertation we present recent developments in the modeling of river water allocation problems by combining principles from international watercourse law with methods from (cooperative) game theory. More specifically, we focus on the problem of distributing the welfare that results from optimally allocating the water that flows in a river among the agents (e.g., countries, cities, firms) located along the river. We extend a single-stream river water allocation model from the literature to situations in which the river is allowed to have several tributaries (and distributaries). In addition, we allow the countries in an international river water allocation model to be composed of different water users. Finally, we also analyze the difference between the rival and non-rival use of river water by introducing a river pollution model.

Cooperative decision making in river water allocation problems

Nigel Moes

