The effect of uncertainty on conflict and cooperation in international water negotiations: Israeli-Palestinian Case Study

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Uncertainty and Negotiations

Motivation

- Uncertainties are inherent to both resource management and international relations.
- They play a large role in transboundary water governance.
- Theory claims that uncertainties can bring parties together or that they can impede cooperation.
- Few studies have examined how uncertainties affect the propensity for promoting conflict or cooperation.
- Little literature has focused on how the interaction between uncertainties impacts countries' ability to develop cooperative water governance.
Uncertainty and Negotiations

Research Questions

- What types of uncertainties are raised in international water negotiations?
- Which parties raised them and for what purpose?
- What mechanisms were proposed for addressing uncertainties raised?
- Did these uncertainties and mechanisms tend to promote/require cooperation or unilateral action?
Theoretical background

Uncertainty triggers cooperation

- Information/certainty have a negative impact and deter cooperation (Maddison 1997; Young, 1994)
- Scientific uncertainty can not only foster cooperation, but can also enhance treaty effectiveness (Oliveira 2008)

Uncertainty triggers conflicts

- When costs are positive and benefits uncertain, countries are unlikely to cooperate (Cooper, 1989)
- Uncertainty can enables countries to defect from cooperation on grounds of ‘not proven’
- Correlations between high levels of rainfall variability and the likelihood of violent conflict (Miguel et al. 2004; Levy et al. 2005; and Hendrix and Glaser 2007)
Data Set

- Israel-PLO Interim Water Agreement
- Negotiation protocols of 47 Annapolis meetings of high level and technical officials in 2007-2009 that discuss water
- Source: Al-Jazeera “Palestine Papers” leaked documents
- Gives insight into actual negotiations, rather than just end product (e.g., treaty analysis)
Israeli – Palestinian Case Study

Methods

 Categorized protocols to see which types of certainties were raised.
 Categorized type of mechanisms proposed: Negotiations, Legal, Infrastructure, Data/Study
 Examine how mechanisms and uncertainties effects cooperation:
  • effect on power implications
  • spillover effects
  • Change of forum requested
  • Solution Disputed/accepted
  • Cooperative/unilateral solution
  • Open-end VS reduce uncertainty and complete contract
<table>
<thead>
<tr>
<th>Object</th>
<th>Type</th>
<th>Examples</th>
<th>Mechanisms</th>
</tr>
</thead>
</table>
| **Physical**            | Inherent  | • Temperature fluctuations  
                        • Precipitation variability  
                        • Identification of all relevant carbon sources and sinks  
                        • Understanding weather-related feedback loops  
                        • Evaluation of scientific evidence  
                        • Estimation of distributional aspects of physical impacts  | • Flexible water allocation mechanisms  
                        • Joint storage projects  
                        • Information sharing  
                        • Joint scientific research  
                        • Scientific boards  
                        • Agreement on triggers for policy implementation  |
| **Social**              | Inherent  | • Population growth rates  
                        • Future resource prices  | • Information sharing  
                        • Cost sharing mechanisms  
                        • Markets  |
| **Technical / Technological** | Inherent  | • Types of future technologies  
                        • Future technological needs  | • Joint research and development  
                        • Third party involvement  |
| **Incomplete Knowledge** | Incomplete | • Impact of policy mechanism choice  
                        • Partners and rivals preferences and bargaining strategies  
                        • Perception of vulnerability by constituents, rivals, and partners  
                        • Risk tolerance / averseness (self and others)  | • Stakeholder engagement  
                        • Prior notification rules  
                        • International law  
                        • Conflict resolution mechanisms  
                        • Third party arbitration  |
| **Interpretation**      | Incomplete | • Effectiveness of adaptive technologies  
                        • Costs of future technologies  | • Joint research and development  
                        • Third party involvement  |
|                         | Interpretation | • Determination of Best Available Technologies  
                        • Equitable distribution of risks and/or cost-sharing  | • International standards  
                        • Expert panels  
                        • Third party assessment  |
Uncertainty and Negotiations
Israeli – Palestinian background
### Table 2 – Uncertainties raised by type and party

<table>
<thead>
<tr>
<th>Type</th>
<th>Israel</th>
<th>PA</th>
<th>US</th>
<th>Both Israel-PA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Uncertainties Raised</td>
<td>17</td>
<td>23</td>
<td>4</td>
<td>3</td>
<td>47</td>
</tr>
<tr>
<td>Physical</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>9 (18%)</td>
</tr>
<tr>
<td>Social</td>
<td>11</td>
<td>20</td>
<td>1</td>
<td>2</td>
<td>34 (68%)</td>
</tr>
<tr>
<td>Technical</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>7 (14%)</td>
</tr>
<tr>
<td>Inherent</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>5 (10%)</td>
</tr>
<tr>
<td>Interpretation</td>
<td>9</td>
<td>13</td>
<td>2</td>
<td>3</td>
<td>27 (53%)</td>
</tr>
<tr>
<td>Incomplete Knowledge</td>
<td>7</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td>19 (37%)</td>
</tr>
</tbody>
</table>
Figure 2 – Mechanism types proposed
Mechanism by Object of Uncertainty

- **Technical**: 41% Negotiations, 17% Law, 0% Defer to Committee, 17% Infrastructure, 33% Data/Study, 0% Other
- **Social**: 7% Negotiations, 14% Law, 0% Defer to Committee, 0% Infrastructure, 0% Data/Study, 0% Other
- **Physical and Technical**: 100% Negotiations, 0% Law, 0% Defer to Committee, 0% Infrastructure, 0% Data/Study, 0% Other
- **Physical**: 33% Negotiations, 0% Law, 33% Defer to Committee, 33% Infrastructure, 0% Data/Study, 0% Other
Mechanism Type by Party

<table>
<thead>
<tr>
<th>Party</th>
<th>Open-ended</th>
<th>Reduced</th>
<th>Complete Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isr</td>
<td>42%</td>
<td>42%</td>
<td>17%</td>
</tr>
<tr>
<td>Pal</td>
<td>42%</td>
<td>21%</td>
<td>37%</td>
</tr>
<tr>
<td>US</td>
<td>25%</td>
<td>50%</td>
<td>25%</td>
</tr>
</tbody>
</table>

Legend:
- Open-ended
- Reduced
- Complete Contract
<table>
<thead>
<tr>
<th>Indicators for conflict &amp; cooperation</th>
<th>Type of mechanism to address uncertainties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negotiations</td>
</tr>
<tr>
<td>Power implications</td>
<td>50%</td>
</tr>
<tr>
<td>No power implications</td>
<td>50%</td>
</tr>
<tr>
<td>Spillover effects</td>
<td>71%</td>
</tr>
<tr>
<td>No spillover effects</td>
<td>29%</td>
</tr>
<tr>
<td>Change of forum requested</td>
<td>7%</td>
</tr>
<tr>
<td>Change of forum not requested</td>
<td>93%</td>
</tr>
<tr>
<td>Disputed</td>
<td>50%</td>
</tr>
<tr>
<td>Accepted</td>
<td>7%</td>
</tr>
<tr>
<td>Neither disputed or accepted</td>
<td>43%</td>
</tr>
<tr>
<td>Cooperative</td>
<td>47%</td>
</tr>
<tr>
<td>Unilateral</td>
<td>0%</td>
</tr>
<tr>
<td>Open-Ended</td>
<td>83%</td>
</tr>
<tr>
<td>Reduced Uncertainty</td>
<td>8%</td>
</tr>
<tr>
<td>Complete Contract</td>
<td>8%</td>
</tr>
</tbody>
</table>
Conclusions

- Israeli-Palestinian water negotiations are dominated by uncertainties
- Most of these uncertainties are social and political
- The types of uncertainties and their frequency were functions of the professional position, their national affiliation, and the forum in which the negotiations took place
- The type of uncertainties influence the mechanisms suggested to address them
- Uncertainties related to water, and mechanisms were often linked with uncertainties related to other issues
The uncertainties faced by the negotiators were discussed cooperatively. Some of the mechanisms were discussed less cooperatively.

The effect of the mechanisms on cooperation varied both across mechanism types and according the indicator used to evaluate them.

Restructuring the negotiations differently may have mitigated these risks to some degree:

- More space and mandate to expert committees
- The water channel should be the first or the last issue discussed