Water and Ethics

ETHICS AND WATER RESOURCES CONFLICTS

J. Martin Trondalen and Mohan Munasinghe

UNESCO International
Hydrological Programme

World Commission on the Ethics of
Scientific Knowledge and Technology

Water and Ethics

ETHICS AND WATER RESOURCES CONFLICTS

J. Martin Trondalen and Mohan Munasinghe

UNESCO International
Hydrological Programme

World Commission on the Ethics of
Scientific Knowledge and Technology

Series on Water and Ethics, Essay 12

Published in 2004 by the United Nations Educational,
Scientific and Cultural Organization
7, Place de Fontenoy, 75352 Paris 07 SP (France)
Composed by Marina Rubio, 93200 Saint-Denis
Printed by UNESCO

ISBN 92-9220-027-5

Printed in France

Preface

This essay is one of a series on Water and Ethics published under the International Hydrological Programme of UNESCO. A Working Group on the Use of Fresh Water Resources was established under that programme in 1998. Preliminary drafts on fourteen aspects of this topic were prepared under the guidance of this Working Group.

An extended executive summary was prepared by J. Delli Priscoli and M. R. Llamas and was presented to the first session of the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST) held in Oslo in April 1999. At the latter meeting, COMEST established a sub-commission on the Ethics of Fresh Water under the Chairmanship of Lord Selborne. The first meeting of this sub-commission was held at Aswan in October 1999. A 50-page survey by Lord Selborne on the Ethics of Fresh Water, based on the above meetings and documents, was published by UNESCO in November 2000.

Since then, the original draft working papers have been revised under the editorship of James Dooge and published on CD ROM as an input to the Third World Water Forum held in Kyoto in March 1993. These are now being published in printed form as the first fourteen titles in a series of Water and Ethics

These essays are written from the point of view of experts on different aspects of the occurrence and use of fresh water who are interested in the ethical aspects of this important subject. They do not purport to be authorative discussions of the basic ethical principles involved. Rather, they aim at providing a context for a wide-ranging dialogue on these issues between experts in diverse disciplines from the natural sciences and the social sciences.

James Dooge
John Selborne

This particular essay summarises recent developments in regard to the complicated decision-making processes required to harmonise the interests of those who are parties in a water-resources conflict. It discusses the nature of the 'yardstocks' required to assess the ethical components of the objectives, the means and the consequences involved in both domestic and international sectors.

J. Martin Trolldalen is Chairman of the Joint Executive Group of the Oslo Water Academy and Mohan Munasinghe is the Chancellor of the Water Academy.

Contents

1. Introduction

The relationship between ethics and water resources conflicts could be discussed from various perspectives. This is especially true if 'ethics' is defined as: 'a discipline dealing with good and evil and moral duty' (UNEP, 1994). In conflict situations, the notion of 'good and evil' is more tempting to apply by parties involved than 'moral duty'. Most parties to a conflict can easily label the adversary as the 'evil' and themselves as 'good'. A Third Party is often asked to design a 'yardstick' where the good and evil may be positioned and weighted.

The perspective of this essay starts therefore from the notion that most parties are neither good nor evil, but are working out compromises of 'moral duties' as a part of a complicated decision-making process. The focus here is therefore of what a 'yardstick' could look like, and possible ways of applying the 'yardstick' for national governments and international organisations.

Most leaders probably devote little time to self-conscious consideration of the morality of their decisions. Those who do it, probably rely on a set of inherited values that weigh relative costs and benefits. It is a utilitarian ethic that provides moral bounds to an otherwise undefined power field. All political leaders at the national level, most decision-makers and at the national level, and some decision-makers at a regional level face the necessity of balancing specific national political objectives against international concerns. This is indeed relevant for questions pertaining to water resources management and allocation.

In recent history, water has been a matter of national concern. There are a number of databases summarising water conflicts throughout the World. An example of a comprehensive database is the Transboundary Freshwater Dispute Database in the Department of Geosciences at the Oregon State University (http://www.transboundarywaters.orst.edu). This database includes information on 3,600 events involving confrontation or agreement from 1820 onwards classified on a numerical scale from war (–7) to unification (+7). There is essential information on more than 400 international freshwater agreements and basic information on climate, land cover, population, gross domestic product, irrigated areas, dam density, and water stress (Wolf, 1999). An extensive annotated bibliography is also available (Beach et al., 2000).

Over the last eighty years however, states have learned to deal with water in relation to neighbourhood rather than as an international ethical matter. The role of water in terms of psychology, symbols, economics and function are shared across all

cultures. Water has demonstrated its ability to build confidence and its utility as a convenor of parties even in situations where they otherwise are not talking (Delli Priscoli, 1998).

One may argue that contemporary political acts are subject to moral judgement according to three criteria of *ends, means* and *consequences* (Hoffman, 1987). An assessment of the underlying principles of such a 'yardstick' must be done in relation to the principles' *objectives,* the *means* available for the parties and the *consequences* of application in relation to domestic and international sectors. Consequently, an integrated assessment of all three aspects will be complex and is hard to do, even at an overall level. The nexus of 'ethics and water resources conflicts' must therefore always be assessed in a case by case fashion.

This line of argument underlines the fact that – despite the existence of some generally accepted international principles for co-operation on water resources, or for sustainable development strategies – one should be careful in drawing 'quick-fix conclusions' on 'good and evil' in water disputes, especially from an ethical point of view.

A discussion of ethical issues must also be seen in relation to i) what kind of conflict, ii) driving forces behind such conflicts, and iii) types of conflict management tools in the following, an overview is given over the three clusters.

2. Ethical issues

2.1 Types of water conflict

Because the world's water resources are not evenly distributed according to political boundaries, water disputes have many characteristics that extend beyond national borders. That makes the discussion of 'ethics and water resources disputes' even more complex. Accordingly, it is difficult to define a conflict or dispute simply in terms of one nation versus another (see also Trondalen, 1993). Many conflicts start at a local level, but then escalate into an international one involving more than one nation. Some conflicts may have a regional or even a global dimension. The three main geographical levels of IECs can be categorised as follows:

2.2 Driving forces behind conflicts

An assessment of ethical issues in relation to driving forces behind *international* water conflicts is little different from conflicts arising at a local level. Man-made national

borders and additional difficulties such as national sovereignty, i.e. a country, claiming power over its 'own' water resources, complicate the conflict management process at this level. The basic types of conflict arise from:

- incompatible goals related to access to, control over and unsustainable use of international water systems themselves (for example, through water diversions, dams and reservoirs);
- problems created by utilising the international water systems (for example, salination as a result of irrigation, changed water flow as a result of regulation: pollution from industry using water in the production process: sewage from cities and communities);
- effects from other activities affecting the river systems (for example,eutrophication, pollution from industries which do not use the water resource in the production process, soil erosion and silting of watercourses following deforestation or overgrazing).

2.3 Water conflict management

Decision-makers are faced with ethical dilemmas by choosing conflict management tools. International water disputes can be approached in various ways, ranging from *prevention* and *avoidance* to *settlement* and *resolution*. Each approach must be applied differently according to whether the conflict is in an incipient or latent stage, or in an acknowledged and manifest stage.

- *Prevention* is defined as an active planning attempt to identify areas of conflict and to remove or minimise their causes. Preventive measures can include legal arrangements, policy changes and other activities at local, regional and global levels, including awareness raising and public participation, environmental impact assessments and exchange of environmental data.
- *Avoidance* is a reaction to a situation where incompatible goals have emerged.
- *Settlement* aims primarily to alter the symptoms of the conflict and is often a non sustainable agreement that retains the possibility of re-emergence of the conflict.
- *Resolution* is a mutually acceptable, sustainable agreement that eliminates the root causes of the conflict. There are distinctions between conflict resolution within the realm of legal obligations and conflicts resolution through less formal channels.

  The term conflict management embraces all four stages identified above.

Although, political leaders and others are faced with ethical choices and dilemmas in dealing with various types of disputes as well as selecting conflict management tools, one of the most interesting ethical discussion is centred around what kind of principles are the actors applying and arguing in promoting their cause. In the search for fundamental principles, the 'Rio Declaration', or the so-called 'Agenda 21' from the

United Nations Conference on Environment and Development (UNCED) reflects perhaps the most common international agreement on principles for sustainable development.

3. Sustainable development

3.1 The concepts

Adoption of the Stockholm Declaration in 1972 confirmed the need for common action to be taken to protect the environment. The Stockholm Conference was a landmark in the development of the international community's growing awareness of many global environmental problems. Principle 24 of the Stockholm Declaration stresses the duty of governments to co-operate through multilateral or bilateral arrangements, or other appropriate means in order to control, minimise or eliminate adverse environmental effects. Principle 21 of the same document, which is frequently referred to, states explicitly that: 'States have, in accordance with the Charter of the UN and principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction'. (UNCHE, 1972)

Even though this Principle is part of non-binding text, there are many indications that it has become a rule of customary law. Principle 21 has been referred to and reaffirmed in several declarations and international conventions, which have been negotiated since the Stockholm Declaration. For example, the 1979 Geneva Convention on Long Range Transboundary Air Pollution referred to Principle 21 as 'expressing the common conviction of States'.

Principle 21 did not represent revolutionary new thinking in terms of states' obligations to refrain from actions within their territories that could cause environmental harm to other states; similar obligations have been recognised in 1941 in the Trail Smelter arbitration (UN, 1949), in the 1957 Lake Lanoux arbitration between France and Spain (UN, 1957), and in the 1968 Gut Dam arbitration between Canada and the United States (Erades, 1969)). These cases applied the principle of 'good neighbourliness', which recognises an obligation of states to ensure that activities under their jurisdiction to not cause damage to the territory of neighbouring states.

To-day, the question remains to be resolved on how to achieve a development that does not destroy or undermine the *ecological, economic* and *social* basis on which

continued development depends; the so-called *sustainable development*. The concept of sustainable development, which came into vogue following the *Brundtland Report* and UNCED, has been accepted as a goal for both developed and developing nations, embracing, as it does, the integration of economic growth, environmental protection and social progress. Achieving sustainable development, however, is not easy since the three goals are often perceived as being mutually exclusive. This, in itself, has led to global debate and dispute over the sustainable development and management of the global commons.

It is a well-known fact that the distribution of natural resources rarely, if ever, coincides with political or administrative boundaries. In other cases, such as of fixed deposits, like mineral resources, conflicts are only likely to arise over disputed territorial boundaries. In the case of fluid or mobile resources (like water and fish stocks), transboundary problems are much more common and have frequently led to claims and counter-claims by neighbouring countries over rights to share in the natural resource.

At the national and regional level, where environmental issues are much more sharply focussed, susceptible to narrow self-interest and emotionally charged disputes, are usually framed as competing individual claims to transboundary resources rather than as problems in the joint development of shared resources for the common good. The growth in potential for environmental disputes, however, can be seen both as an increasing threat to international security and an opportunity to assist nations to move towards a more sustainable future, based on the principles of equity and justice. This principle of converting perceived 'zero-sum' confrontations into 'win-win' situations which, in essence, is the crux of sustainable development, is one of the most important elements of preventing and resolving conflicts (International Committee of the Red Cross, 1998).

3.2 The yardsticks

If one accepts the notion of sustainable development as an objective for a nation or a similar entity for their water utilisation, there are sets of principles that have been developed over time both through practice (customary law) as well as through international agreement (international law). Wolf (2000) has reported on an interesting study of the age-old customary practices on sharing water between nomadic people in dryland areas and on the lessons which are applicable to international conflicts on water. One useful starting point is defining what kinds of water resources are normally shared, and their classification. International resources, such as international watercourses, or rivers have been described in different ways. Some countries characterise such watercourses as 'transboundary', others as 'international',

and some even use the term 'common property resources'. The various nations apply these terms according to their perceived interpretation of the concepts and their legal and practical implications.

Traditionally, the definitional question of the water resources and rights in question are being analysed from either an upstream or a downstream perspective. From an ethical and practical perspective, however, an *interest-based perspective* is quite different from the conventional upstream-downstream doctrine. This more modern viewpoint subsumes the earlier approach, and is based on the concept of *sustainable development*. As described, it relies on a balanced application of three of the most important principles dealing with international resources – the principles of:

1. Social equity;
2. Economic efficiency; and
3. Environmental protection.

This essay therefore argues that an ethical perspective on water resources conflicts should include a discussion on these principles. A 'moral duty' can hardly be isolated from these internationally accepted principles.

3.3 International agreements

All the members of the United Nations accepted a document entitled Agenda 21, among whose recommendations, include four main principles in order to achieve sustainable development at the local, national and international levels.

1. The *Polluter Pays Principle,*
2. The *Precautionary Principle,*
3. The *Principle of national responsibility for transboundary pollution* (including subsequent compensation),
4. The *Principle of institutionalised or mandatory Environmental Impact Assessment.*

All four principles have been embedded in several major recent international environmental conventions, such as:

- The *Basel Convention* (international transportation of hazardous materials)
- The *Montreal Protocol* (protection of the Ozone-layer)
- The *Forestry Protocol,*

and more importantly

- The *UN Framework Convention on Climatic Change (UNFCCC)* – a second-generation convention.

These widely accepted international principles have implications also for activities in other international sectors that utilise natural resources, such as energy, trade, tourism, and transportation.

The global atmosphere, forests and water resources have been receiving greater attention in recent years, and will continue to be on the top of the international agenda. Perhaps the best developed among global environmental agreements is the UNFCCC (UNCED, 1992). It was adopted in May 1992 at UNCED in Rio de Janeiro, and entered into force in March 1994. The most important step since then has been the Kyoto Protocol agreed at the Third Meeting of the Parties to the UNFCCC in Japan in December 1997. In the Protocol the developed countries agreed to reduce overall emissions of greenhouse gases (GHG) between 2008 and 2012 to at least 5% below 1990 levels.

In parallel to the deliberations for both the 'Protection of the Ozone-layers', the 'Forestry Protocol', and the UNFCCC, the UN prepared (through the International Law Commission) principles for an international agreement of 'Non-navigational use of international water-courses'. After more than ten years of deliberations, the UN General Assembly agreed on a final text on the 21st of May 1997. Although three major upstream states, China, Turkey and Brazil voted against the agreement, the convention includes widely accepted international principles. This agreement follows the tradition of the *second-generation conventions* and *protocols* as mentioned above.

3.4 The principles

In terms of extracting appropriate and widely accepted principles from the existing international environmental agreements, the UNFCCC is perhaps the most useful. The precautionary principle is interpreted here to mean that lack of knowledge is not a valid reason for inaction, especially if such inaction implies potentially disastrous consequences. The polluter pays principle is recognised by urging the industrialised countries to take the lead role in shouldering the burden of the response strategy. It is also possible to recognise three main lines of argument:

- Article 5 of the UNFCCC underlines its **economic** underpinnings by stressing sustainable economic growth. From this viewpoint, for example, the target for acceptable levels of future Greenhouse Gases (GHG) accumulations in the atmosphere are ideally set by reducing GHG emissions to the point at which the marginal costs of such mitigation are exactly equal the corresponding marginal benefits from avoided future damages. Another economic efficiency requirement is that mitigation measures should be undertaken at least cost (i.e. in the cheapest way).
- The UNFCC also sets out the basis for **social** equity. Article 3 mentions the special needs of the developing countries, while Article 4 recognises their right to treat economic and social development and poverty eradication as the first and overriding priorities, and points out the obligation that developed countries have

to take the lead in mitigation measures. This aspect has been further expanded through the Kyoto Protocol, which establishes emissions reduction commitments only for the developed countries.

- Finally, Article 2 of the convention clearly stipulates the **environmental** viewpoint in terms of the ultimate objective of avoiding dangerous interference with the climate system through anthrpogenic GHG emissions. Various scientific groups most importantly the Intergovernmental Panel on Climate Change (IPCC) are working to establish what constitutes safe or acceptable limits for atmospheric GHG concentrations. At first, the complementary principle prohibiting pollution and assigning responsibility were limited to the protection of the territory and resources of other states. They were later extended to cover protection of the marine environment in general, including the high seas. More recently, they have been extended to cover the protection of common areas, resources and the environment as a whole.

4. Applying the yardsticks

4.1 The broader aspect

All states that are Parties to the UNFCC are therefore in general agreement with the underlying principles described earlier. An incremental approach based on these principles should be used to develop mutually accepted agreements between adversaries.

International literature gives many examples of applications of these three principles on national water resources. There are however, few international examples of such applications, and even fewer when the political situation is somewhat strained. One example of a pragmatic 'water agreement' under hostile political conditions, is the Kariba hydroelectric dam between Zambia and Zimbabwe (which was at that time the breakaway state of Rhodesia). There are other relevant cases of water agreements among European countries.

At first, the complementary principle prohibiting pollution and assigning responsibility were limited to the protection of the territory and resources of other states. They were later extended to cover protection of the marine environment in general, including the high seas. More recently, they have been extended to cover the protection of common areas, resources and the environment as a whole.

The recent UN international water agreement clearly shows that the questions of responsibility and liability become even more complex where causal links may be

difficult to establish, such as in the case of the effects of long range water pollution, which may only be discovered at a great distance. Some members of the public may well apply political pressure to force states to meet their primary obligation to pay compensation in cases where environmental damage occurs in spite of attempts to comply with *due diligence*. This would amount to general acceptance of the 'polluter pays' principle. The question of liability also leads to the issue of compensation for *negative* externalities. The 'polluter pays principle' implies that the state where the source of pollution is located will be obliged to pay compensation for international negative externalities, even when the polluting activity is lawful and the state has taken all possible preventive measures.

In the context of most complex watercourse systems, any mechanism must be simple in application, but thoroughly developed and in a water resources economic context as well as taking the present social and political circumstances into account. An incremental approach based on the above mentioned principles may be used to develop a mutually accepted agreement between the states. The following three fundamental aspects should therefore be considered.

Social aspects

- Identify all stakeholders as well as the incidence of costs and benefits of water production and use among them (including externalities).
- Allocate costs and benefits equitably:
  - polluter pays and victim is compensated,
  - gainers compensate losers to help build the consensus.
- Compromise between two polar extremes for re-allocation of water benefits:
  - grandfathering, based on past usage patterns,
  - equal right to meet basic human needs (e.g. on a per capita basis).
- Costs of supplying water to be adjusted to make basic water needs affordable to the poor.

Economic aspects

- Consider all costs and benefits of water production and use from the two rivers (including shadow costs of externalities) for each individual nation.
- Maximise net present value (NPV) through project and policy interventions in the three countries concerned (water will tend to be allocated to the highest value-added uses in each nation).
- Costs of supplying water to reflect full long run marginal costs (LRMC), including externalities.

Environmental aspects

- Water to be treated as a scarce environmental resource – not generally substitutable;
- Both depletion and pollution to be minimised based on dynamic/long term considerations.

There are, however, several avenues to take when applying these principles. These avenues are normally leading to different end-results.

4.2 Prevention and resolution

The most effective way of developing a strategy to control further degradation to the environment is to establish appropriate preventive measures and to make sure that there is flexibility to amend and modify these measures if they prove to be inadequate. Principle 21 of the Stockholm Declaration, which prohibits the inflicting of environmental damage on other States, states that precautionary measures must be taken to minimise negative externalities. Due diligence is the key concept. The Bergen Ministerial Declaration on Sustainable Development in the European Region also stressed that:

> 'In order to achieve sustainable development, policies must be based on the precautionary principle: environmental measures must anticipate, prevent and attack the causes of environmental degradation.'

Some of the most common measures are:

- Awareness-raising and public participation;
- Environmental impact assessments and monitoring procedures;
- Exchange of data, prior notification and fact finding procedures;
- The role of the United Nations as provider of environmental information and consultancy services has given some precedent for other proposals related to conflict prevention.

The 'UN's Convention of the Law of the Non-navigational Use of International Watercourses' is lacking a formal compulsory dispute resolution or settlement mechanism. Where there is provision for dispute resolution procedures, recourse to such procedures is dependent on the parties' mutual consent or common agreement (Article 33 of the Convention). The absence of effective dispute resolution and enforcement mechanisms suggests the need for careful structuring of incentives to encourage and facilitate international compliance (for example, transfer of additional financial resources and transfer of technology).

Investments in water policy are investments in prevention and reduction of humanitarian emergencies and conflict (Trondalen and Wennesland, 1998). Many recent observers note that investments in water resources management can act as an economic insurance policy and serve to actually reduce the funds needed by relief agencies for mitigating effects of several conflicts (McNeely, 1997). They can lead to stemming the flow of refugees; forced and involuntary migration. They can decrease the frequency and intensity of extreme hydrologic events as well as the human and social costs and impacts of such events. They can also decrease the capacity and willingness of others to take political advantage of emergencies.

Investments in water policy can also be far more than reactive fixations. They offer great potential for community building, sustainable development and enhanced democratic governance. There is good evidence that water policy and institutions have historically played such critical roles in civilizations (Delli Priscoli and Hassan, 1997). There is growing experience confirming this in today's world. Indeed, water has become one of the most visible and successful venues for efforts at second track and preventive diplomacy.

4.3 Involvement of third parties

Functionally, inter-jurisdictional and cross-sectoral issues will become more critical to development generally and to water investment specifically, especially on complex multi-purpose projects. Experience indicates that the key to successful multi-purpose projects will be the early generation of creative alternatives and facilitating a sense of ownership among stakeholders in both the alternatives and the process by which the alternatives are generated. This means discussions even before *environmental impact studies*. It means integrating these concerns into to the formulation stages, whether they become public or private projects.

Waiting to react to a few detailed and narrow alternatives or until a dispute ripens means acting too late. The alternatives become hardened positions. At this point, the process options – usually on the right of continuum – have limited ability to go beyond splitting differences and offer little hope for generating creative options. It will be in a donor's or lender's interests for early and meaningful collaboration and participation to occur in projects they will be asked to finance. The probability of implementation will increase, transaction costs will go down, the opportunities for future co-operation will go up and the security of investments will be improved. Indeed, integrated management, by its very nature, will identify potential conflicts early and provide a forum to raise and meet interest around them early.

One of the most pervasive lessons learned about conflict management is the vital role Third or Neutral Parties have played. The World Bank in the Indus, UNEP in the

Zambezi, the UNDP in the Mekong, other River Basin Commissions, and NGO's in the Middle East are just only few examples (Trondalen, 1993; Trondalen and Wennesland, 1998).

There are many types of Third Party interventions. They range from voluntary arbitration to mediation and facilitation and Third Party coaching. The potential of this range needs to be used more frequently. Each has advantages and disadvantages. Each is suited differently to various tasks such as reacting to ripened conflict or to planning development or preventing conflict. We are just beginning to learn how they fit into water resources conflicts.

5. Conclusions

As stated in the beginning, the relationship between ethics and water resources conflicts can be discussed from various perspectives. This essay has argued that most parties are neither good nor evil, but are working out compromises of 'moral duties' as a part of a complicated decision-making process. The focus was therefore put on what a 'yardstick' could look like, and possible ways of applying the 'yardstick' for national governments and international organisations.

Most leaders should have a more explicit understanding of their inherited values that weigh relative costs and benefits. Political leaders and other key decision-makers will continue to face the necessity of balancing specific national political objectives against international concerns in relation to sustainable development. Water resources management and allocation will for sure continue to evoke ethical choices and dilemmas. Prevention is by far the best ethical choice.

6. References

BEACH, H.L. ET AL. 2000. *Transboundary Freshwater Dispute Resolution: Theory, Practice and Annotated References,* Tokyo and New York, United Nations University Press.

DELLI PRISCOLI, J. 1998. *Strengthening the Capacity of the United Nations in Prevention and Resolution of International Environmental Conflicts,* J. M. Trondalen and T. Wennesland (Eds.). CESAR, Oslo.

DELLI PRISCOLI, J. and HASSAN, F. 1997. *Water and Civilization* (draft). UNESCO, Paris.

ERADES, L. 1969. The Cut Dam Arbitration. In: *Netherlands Tijdschrift voor Internationaal Recht,* Vol. 16.

HOFFMAN, S. 1987. Superpower Ethics: The Rules of the Game. In: *Ethics and International Affairs*, Vol. 1, p. 34.

INTERNATIONAL COMMITTEE OF THE RED CROSS. 1998. *War and Water.* Forum Series, ICRC, Geneva. 112 pp.

MCNEELY, J. A. Armed Conflict and Humanitarian Concerns. How Attention to Environmental Scarcity Can Prevent Human Tragedies. Paper presented at the ICRC Humanitarian Forum, Wolfsburg Center, 8–10 June 1995. IUCN, The World Conservation Union, Gland.

TRONDALEN, J. M. 1993. *International Environmental Conflict Resolution – The Role of United Nations*. WFED/UNITAR/NIDR, Oslo/New York/Washington D.C./Geneva.

TRONDALEN, J. M. and WENNESLAND, T. (Eds.). 1998. *Strengthening the Capacity of the United Nations in Prevention and Resolution of International Environmental Conflicts*. CESAR, Oslo.

UN. 1949. *Reports on International Arbitral Awards* (UNIAA), Vol. 3

UN. 1957. *Reports on International Arbitral Awards* (UNIAA), Vol. 12.

UNCHE. 1972. *The Stockholm Declaration. The Final Act at the United Nations Conference on Human Environment*. United Nations, New York.

UNEP. 1994. *Ethics and Agenda 21*. UNEP, Nairobi.

WOLF, A.T. 1999. Criteria for Equitable Allocations: The Heart of International Water Conflict. *Natural Resources Forum,* 23(1), pp. 3–30.

——. 2000. Indigenous approaches to water conflict negotiations and implications for international water. *International Negotiation. A Journal of Theory and Practice* 5(2).