

# Too Much Water or Not Enough

How Can We Wisely Use This Unpredictable Vital Resource?

Proceedings of the  
First W4W Colloquium  
*March 22, 2011*  
held at Geneva's History of Science Museum  
*on World Water Day*



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On March 22, 2011, the Workshop for Water Ethics (W4W) group held its first scientific colloquium at Geneva's History of Science Museum. The event brought together various stakeholders and thinkers involved with the issue of water's ethical value. The discussions were moderated by journalist Laurent Bonnard.

This document is a summary of the day based on notes taken by two members of the group, Christoph Stucki and Laurence-Isaline Stahl Gretschi, supplemented on occasion by the speakers' texts and illustrations.

## Acknowledgments

What could be a more appropriate place for contemplating the "ethical challenges of water" than the History of Science Museum in Geneva's Perle du Lac district? It was the head of the museum, Laurence-Isaline Stahl Gretschi, who made the W4W focus group's dream of holding its first conference there come true. The W4W group, the speakers, and the approximately forty participants would like to warmly thank her for her welcome and her people skills.

This colloquium could never have been thought of or gotten off the ground without prof. François Dermange of Geneva's Autonomous Faculty of Protestant Theology. He encouraged me in the context of my academic research, which he directed. It is also to him that I owe IRSE's moral support.

I am very grateful for the unflagging support of the W4W group's members, who are listed below in this leaflet. It greatly facilitated my search for a quality moderator and speakers for the colloquium. I also express my deepest gratitude to the speakers, who were invited to express themselves under the capable leadership of Laurent Bonnard, whose sense of humor and timing greatly enlivened the day.

Thank you to Anne Petitpierre-Sauvain, François Münger, François Dermange, Renaud de Watteville, and Cédric Lombard, for contributing their expertise and taking part in the discussion with an enthusiasm that encouraged a rich exchange with a highly motivated audience. The meeting brought together both seasoned and young students of this issue, and it is the W4W's hope that these March 22 encounters will lead to further exchanges that can give rise to new projects.

These acknowledgements would be incomplete if I did not express my thanks to Nicolas Vachicouras, who lent his talents to W4W to prepare the invitation flyer, and to Laurence-Isaline Stahl Gretschi for her work on the layout of these proceedings.

## The W4W Group's Members



**Benoît Girardin** is currently the president of PIASS, a private university in Rwanda, and a professor of political ethics at the Geneva School of Diplomacy and International Relations, a university institute. He has extensive international experience, having been responsible for Swiss cooperative development efforts in Cameroon, Pakistan, and Romania, then later for evaluation, finally serving as the ambassador to Madagascar. Initially, he had earned a doctorate in theology at the University of Geneva in 1977.



**Evelyne Fiechter-Widemann** holds a master's degree from New York University. She is currently a legal counsel for non-commercial partnerships, a Swiss Bar Association mediator, and a doctoral candidate at the Geneva Faculty of Theology. She served as a deputy judge on a judicial commission of CRUNI (Geneva's administrative court) and taught Swiss and international law at the Collège de Genève. She was a member of the Swiss Church Aid (EPER) foundation's board and also that of the International Museum of the Reformation.



After studying at the University of Geneva, **Laurence-Isaline Stahl Gretschi** spent fifteen years as an archeologist specializing in prehistory, both in Jura Canton (for construction related to the Trans-Jura freeway) and at the University of Geneva. Following the defense of her dissertation in sciences, she was hired by Geneva's History of Science Museum, which she has headed for seven years. In 2009 the museum created an exhibit on hydropower in Geneva.



**Christoph Stucki** earned a master's degree in civil engineering at the Swiss Federal Institute of Technology in Zurich, then specialized in analyzing the behavior of materials at the Swiss Federal Laboratories for Materials Science and Technology (EMPA). He next joined an engineering firm in Lausanne before moving to the Institute for Transport Planning at the Swiss Federal Institute of Technology in Lausanne to develop a railway network planning model. In 1980 he transitioned to Geneva's public transport system, first as a planning engineer responsible for network facilities, and later as the general manager. He is now the president of Unireso, the cross-border transport fare network for a basin encompassing parts of France, Vaud, and Geneva.



**Gary Vachicouras**, a doctor of theology, studied at the Holy Cross Greek Orthodox School of Theology (Brookline, Mass.), the University of Paris IV-Sorbonne, and the University of Athens. He was a teaching fellow at the Ecumenical Patriarchate's Orthodox Center in Chambésy-Geneva and the executive director of the Foundation for Interfaith and Intercultural Research and Dialogue. His involvement in higher education has touched on human security, especially through his teaching, innovative research, and intergovernmental dialogue.



After being trained as a professional IFR pilot, **Renaud de Watteville** traveled and created Swissmate, an event company. For over 20 years he managed projects in Switzerland and abroad for Switzerland Tourism, Philip Morris, Nestlé, Swatch, Red Bull, and Nescafé. In 2008 he started Swiss Fresh Water, which developed a low-cost decentralized desalination system intended for use by low-income populations. This was an opportunity for him to make a real human difference by making his experience available for a high-impact industrial project.

## W4W Objectives

### Introduction

The W4W is an apolitical civic-minded interdisciplinary platform that brings together notable figures from the theological, ethical, political, scientific, economic, and legal spheres who share a common concern for water challenges in a globalized world.

Water is a natural resource that was long considered a free good. Its status is changing as awareness of its increased scarcity grows, and especially as it is used abusively (polluted and wasted, especially in agriculture).

Indeed, this resource is increasingly threatened not only by increasing demand from the public, agriculture, and industry, but also by climate change.

To meet the demand and avoid “water wars” by defusing water-related conflict, the public sector—in partnership with the private and community sectors—must create appropriate conditions for managing this resource fairly and sustainably.

W4W has set the following goals for itself:

1. Conceptualize and explain the ethical dimension—essential for identifying and implementing solutions—of fair and sustainable water management in a globalized world.
2. Contribute original thoughts that could influence the creation of a favorable environment for implementing MDGs 3 and 7.
3. Take these solutions’ interdisciplinarity into account.
4. Using a pluralist and ecumenical approach, establish contacts with existing ethical focus groups, for example IRSE, Gloethics.net, the Institute of Business Ethics, and similar entities abroad.
5. Involve influential private-sector players, university researchers and students, and civic-minded associations.
6. Organize colloquia on the topic of water’s ethical challenges in a globalized world, provide targeted information to decision-makers and influential stakeholders, and exchange thoughts in networks and on blogs.

# Water As a Human Right, Water As a Public Good, Water As an Economic Good

Evelyne Fiechter-Widemann, Attorney and founder of W4W

## Introduction: Justice for Water

The main goal of this colloquium is to pose the question of **Justice for water**—that is, its fair distribution in a globalized world—as the twenty-first century begins.

As long as everyone on Earth had to go down to the river to quench his or her thirst and wash, such a question never came up. Things changed after the industrial and hydraulic revolutions: humankind's relationship to water was radically changed.

## Water's Diversity and Multiple Management Concepts

Water is elusive in its diversity. It is used for many things, for example, as a source of energy or for shipping. However, we are not talking about this kind of water but rather water as a resource that is necessary for life, hygiene, irrigation, industry, and our luxury needs (swimming pools, for example).

Long ago, the Romans were already thinking about the complexity of the legal framework needed to ensure that water would be distributed wisely. They considered running water to be a common good, while groundwater was private, with rights of *usus*, *fructus*, and *abusus*.

In our day and age, given the challenges we face due to overuse of resources in general and water in particular, the legal frameworks governments have adopted to date are being reexamined, and new concepts are being proposed. Specifically, in 1992 a new principle, water as an economic good, was embraced by five hundred WMO experts meeting in Dublin to prepare for the Rio Conference on Sustainable Development. Echoing this concept, that of water as a human right was developed and adopted by the UN General Assembly in July 2010. I have learned that outside of the UN context, in 2005, churches in Brazil and Switzerland also issued a Declaration on Water As a Human Right and a Public Good.

In my opinion, these tensions between UN institutions themselves and civil society with regard to their opposing concepts for water, are worth our attention. Indeed, the positions taken have an impact on the decisions made by many players or "stakeholders," as we say these days—that is, governments, businesses, and civil society. Some people deplore the contradictory positions taken by those who support a right to water and the defenders of water as an economic good. The result of such obstructions at the level of theoretical discussions is to make the most interested parties of all, those who are thirsty, wait even longer.

Is there not some way to find a happy medium that would unite the positions of the two sides?

Let us take a look at these three concepts:

### 1. Water As an Economic Good, with the Question Tied to Its Value and Its Price

The moment a good begins to become scarce, economic theory enters the picture.

Such was the premise of the 1992 Dublin Statement's authors when they gave water an economic value. Some writers do not hesitate to call the concept proposed for water in Dublin a truly revolutionary one, since until then water had been considered a free good, like air. It was also considered a good of little value, as recalled by Adam Smith's famous paradox of water and the diamond in *The Wealth of Nations*: despite its usefulness, water has little exchange value, whereas a diamond, which is not very useful, has a high exchange value. The aim of the Dublin concept was to combat waste, especially in agriculture.

What impact did, or might, this new concept have on water? I will answer with three points.

- A. The first is the example of the Aral Sea, which is at risk of drying up. If water had a value, perhaps the irrigation of cotton fields, which require a great deal of water, would be rethought and better water management practices adopted.
- B. The impact on property ownership is certain: this notion legitimizes the private sector.
- C. With regard to its political and psychological impact, this new concept could polarize a globalized world, with worries

that the rules of the market would not take into account the social, environmental, spiritual, and cultural significance of water.

This point is important, and to avoid such polarization, it might be useful to distinguish between an economic good and a market good. These concepts are often confused.

In fact, water does not obey the supply and demand principle as does, for example, petroleum, and it is not a market good. In my opinion, the broader notion of “economic good” allows us to take into account a number of factors other than price.

## **2. Water As a Human Right**

This has become a fixed expression, almost set in stone. But what is its scope and what are the expectations of a thirsty person?

We can consider this using an example: by virtue of the human right to water, could a Bedouin in the desert demand that pipelines be built so he could benefit from the same access to water that we have?

First I will give a legal answer, then an ethical one.

A. As a human right, water is what is known as a positive freedom, in contrast to a negative freedom such as a prohibition of torture.

This positive obligation implies a duty to help. But to help whom? Upon whom is the obligation imposed? We can instantly see the dilemma and the answer: it is impossible to determine both who is obligated and who should be helped. Governments have clearly understood this and have issued simple statements with no legal force whatsoever.

We find ourselves faced with a prerogative that creates a hope but is not claimable, at least until it is enshrined in a constitution—which, I will add in passing, is the case in South Africa, a pioneer in this area. In other words, in a lawsuit, a court will not find in the desert Bedouin’s favor and will not order pipelines to be built.

B. So is this concept of a human right to water completely useless?

No, because it raises an ethical question. Water and its unequal distribution on Earth create a deep feeling of injustice. Why do we have sufficient high-quality water here, while in some countries men and women do not have a decent minimum to allow them to live with dignity? Can one then say that if the government here ensures the minimum basic level of “water security,” it should concern itself with this injustice?

Now we are getting into philosophical questions, and I would like to mention the current philosophical debate that brings to light a concern for social justice at the global level.

The question that justice theoreticians are asking is whether the principles of justice that apply within the borders of a country or region, such as Europe, can be adapted for worldwide use. That is to say, can the Western world’s distributive justice criteria be considered universal?

There are at least two opposing theories, the first espoused by John Rawls and David Miller; the second by van Parijs. The former consider that cultural context and the individual characteristics of each community, such as values, ties of solidarity, customs, language, and religion, shape the criteria for justice, and their scope cannot be universal. In contrast, for van Parijs, globalization has erased borders and one can speak of a global community to which the criteria for distributive justice can be applied—although such criteria must be clarified for the context of the globalized world.

But this difference does not place Rawls and Miller squarely in the camp of those indifferent to the fate of the most destitute. Neither does it number van Parijs among those who empathize with countries whose people suffer from poverty. On the contrary, the former speak of a duty that is incumbent upon liberal societies—which Rawls describes as “decent” (meaning those that recognize the international principles of public reason)—to render emergency assistance to societies whose socio-economic system prevents them from providing their members with the decent minimum. David Miller even sees intervention as a duty of rich countries to ensure that poor countries’ minimum needs are met. Such aid cannot be more than supplementary, however, to the extent that the poor countries’ governments have done everything possible to improve the lot of those for whom they are responsible. Only in specific instances where they continue to be dogged by misfortune should action be taken.

Some people ask whether such positions are not more a matter of charity than of justice.

Prof. François Dermange believes that the debate about global justice has reached a dead end, but that Adam Smith's thoughts on the division of labor as the key to the economic system, as discussed in *The Wealth of Nations*, could provide a way out. Even though this theory dates back to the eighteenth century, it remains highly relevant today in the sense that it is an emphatic reminder of humans' capacity to interact according to their abilities.

In Smith's famous example of the philosopher and the porter, both have a role to play in a spirit of mutuality. So the "Scottish Enlightenment" philosopher is not so very far removed from Amartya Sen's "capabilities." Sen feels that it is important to encourage the development of everyone's possibilities, regardless of what he or she is or the country in which he or she lives.

### 3. Water As a Public Good versus Water As a Private Good

Water's classification as a public or private good, that is, its class of ownership, is of interest for the water supply issue. The official theory of public goods, first proposed in 1954 by Samuelson, holds that a public good has three characteristics:

1. it is not divisible
2. insolvency does not exclude its use
3. there is no rivalry in the acquisition of it

The typical example is air. In contrast, a private good is divisible, its use by the insolvent is excluded, and its acquisition is subject to rivalry.

What is the case for water, which is what interests us here?

As I said at the beginning of my talk, water is elusive in its diversity. If it is abundant and clean, there is no rivalry or exclusion, and it is a public good. But if it is scarce or polluted, the criteria for a private good will come into play.

Should we conclude from this that we should reject the positions of both right-to-water supporters and others who consider water an economic good?

I would answer that we need to weigh interests and find a balance in order to move beyond polemic. Two concepts are possible: that of an imperfect public good and that of a common good.

A. Economists came up with the concept of an imperfect public good for goods that meet the criteria for a private good but have political, social, and human importance. This is indeed the case for water.

This concept was probably at the heart of the heated debates in Switzerland before that country opted for the public sector in all cantons except Zug. At the international level, we should note that most countries have taken the public approach, with a few exceptions such as Great Britain and Chile.

B. The concept of a common good is aptly illustrated by two examples, the ancient canals or bisses in Valais and the similar aflaj systems in Oman. A common good's advantage is that it allows for shared management and the preservation of mutual interests. These shared interests would serve as the basis for an ethical pricing policy that would take into account social, environmental, and research and development costs as well as investment and accident risks.

In my opinion, the best concept to use will be dictated by local circumstances, including geographical and especially political and sociological factors. Supplying water requires considerable financial investment, management of which can be public in the case of a strong government well versed in the rule of law.

On the other hand, in cases where the government is deficient, private or community management could be wise, with the clarification that such management is not possible unless a community worthy of the name actually exists.

### Conclusion

Here is my viewpoint on the structuring of these three concepts—water as a human right, as an economic good, or as a public good.

1. Water as a human right is appropriate as applied to the amount of water needed for survival.
2. With respect to the amount of water needed for hygiene and health, the concept of water as a public good is appropriate in a country with a strong government that can maintain the infrastructure.
3. Classifying water as an economic good could guide regulations intended to limit waste, especially in agriculture.
4. For luxury needs, however, there is no reason not to apply market rules.

In summary, I think that concepts should inherently enlighten and not divide.





## Do Water's Challenges Require Mobilization of All Sectors of Society, including the Private Sector?

François Münger, Head of Water Initiatives at the Swiss Department of Development and Cooperation (SDC)

### *W4W Summary*

*Water is a major strategic issue, a global challenge. Consumption of it has increased by a factor of six in 100 years, while the population has tripled during the same period, leading to problems such as sanitation, production, maintenance (or restoration) of ecosystems, and sometimes water's complete degradation.*

*The most important of these is sanitation. Worldwide, only one in two people has running water available. The distribution of global consumption is 70% for agriculture, 20% for industry, and 10% for human needs. We must achieve integrated water resources management (human beings, industry, agriculture, and nature).*

*Public-private partnerships (PPP) are needed in order to develop projects. Current discussions about multinationals are eclipsing some excellent work done by the private sector. In particular, the SDC is working with Nestlé, Syngenta, and Holcim.*

### *Political principles/guidelines/private-sector participation—toolbox*

*The ISO is taking up the new area of standardization of potable water management services. It is focusing its efforts on water supply management, preservation of water supplies in crises, and the efficiency of distribution networks.*

*Many startups for managing green tech are being launched in poor countries and they need support.*

*"Virtual water" principle for making something (water needed in relation to water polluted). Example: manufacturing a car takes 400,000 liters of water, 1 kilo of beef needs 15,000 liters, and 1 kilo of wheat requires 1,300 liters.*

*NB: 80% of Switzerland's water footprint is outside of the country!*

Now, at the beginning of the millennium, water is a strategic issue of critical importance, but this is not new. It is a common good of humanity that has shaped our past history and will affect our future as well.

Potable water, sanitation, and water for food production are vital. It is also of the utmost importance that we leave enough water for nature in order to maintain ecosystems and, in return, to benefit from what they can offer us. Water is also at the heart of industrial and energy production.

The water sector is facing unprecedented changes.

In the twentieth century the world's population tripled, while during the same period water consumption increased sixfold. Climate changes are also complicating the picture. Added to this is the degradation of water quality: each day, two million metric tons of untreated wastewater are discharged into the world's aquifers and surface water.

### **The threat of a global water crisis is real. It is expressed in different ways:**

- The potable water and sanitation scandal: about one billion people still do not have access to potable water and 2.6 billion have no sanitation. Only one out of two people has a tap at home.
- Another expression of the crisis is the risk of a shortage and its consequences for agricultural production. Agriculture will need to increase production by 50% by 2030; it already currently consumes 70% of all fresh water used. If things continue as they are, it is estimated that by about 2030 half of the world's population will live in areas where demand exceeds the available usable resources.

The concept of integrated water resources management is used: certain amounts of water are allocated to meet demand in four major categories of use:

- household water
- agriculture water
- industry water
- nature water

These four categories compete for a limited resource, and there are inequalities among them in terms of their political and economic weight. One can cite the example of nature, in comparison to the economic and political weight of agriculture or industry. But there are also great injustices in how decision-makers take the interests of urban and rural areas, and of course the rich and the poor, into account.

Access to potable water and sanitation has gained status through its recognition as a human right, which has also lent it a special, necessary weight. Such recognition also goes beyond the MDGs by highlighting some new values (such as water quality and quality of services, accessibility, and affordable rates).

But there are also misunderstandings about this right to water, especially where the private sector's involvement in potable water services and sanitation is concerned.

Even so, PPPs remain an option. They supply technical expertise and managers in the urban environment, rural areas, and small towns alike. Such increased capacity is especially important for local authorities, who in the context of decentralization must meet a huge demand for services with often very limited financial and human resources.

Discussions on this issue have focused too heavily on international companies, forgetting the importance and development potential of the domestic private sector and small local entrepreneurs, for example, operators in Mauritania's small towns, or Plastiforte/Aguatuya in Bolivia. Currently, this local private sector is often the only party present to ensure minimal service in underprivileged urban areas.

A few years ago the SDC, together with the State Secretariat for Economic Affairs (SECO) and reinsurance company SwissRe, engaged in very extensive international dialogue to develop some principles for implementing such projects.

The principles were built around core values, especially potable water as a human right, due regard for sustainable development, fair participation in processes, and good governance. These guidelines are structured around ten or so key principles, including responsibility to the poor, protection of resources, and transparency. In no way do they constitute a neoliberal vision promoting the privatization of services or abdication by the State. Water is not charged at a market rate!

Furthermore, participation by civil society is of the utmost importance, especially by representatives of the poor, as partners in implementing, supporting, and monitoring these processes.

We feel that by taking this prudent, participatory, and transparent approach, the PPP concept can make an important contribution, but it is only one option, and one which if chosen must in no case be a condition that is imposed by financing institutions.

As already mentioned, however, the question of "water" must not be reduced to the single issue of drinking water.

As you know, it takes 400,000 liters of water to manufacture a car. This is "virtual water," that is, the amount that is needed to make products or provide services plus the polluted water so generated. This total amount is a product's water footprint, a relatively new concept.

The private sector is essential in reducing this footprint. So to this end, we have entered into some partnerships with major Swiss companies, especially in southern countries. The interest here lies in the fact that we need to reduce, not only factories' footprints, but also those of their suppliers (agriculture, mines, etc.). Moreover, globally speaking, Switzerland is a driving force behind ISO standards concerning the water footprint.

Some players are even suggesting a water offsets market similar to that for carbon offsets (although in principle I think this is not necessarily a good idea, their real relevance in mobilizing funds for water must be analyzed).

Another aspect is that now that we are talking so much about green technologies, we dream that they might also help advance such fundamental causes as the war on poverty.

In this sense, considerable progress has been made in recent years in terms of reliability and cost reduction for membranes. This is a good opportunity for water treatments.

Several startups and small and medium-sized businesses in Switzerland and around the world are undertaking technological developments to meet water's challenges, with a clear desire to help serve the bottom of the social pyramid in developing and emerging countries while being environmentally responsible.

The specific challenges for these courageous startups are difficult. In addition to the technological aspect, they include having a solid business model that provides for the operation and maintenance of equipment and the constraint of producing water at the local price. I believe that such commitments must be supported.

# The Role and Reach of the “Polluter Pays” Principle in Water Management

Anne Petitpierre-Sauvain, Honorary Professor, University of Geneva

## THE POLLUTER PAYS PRINCIPLE

“Polluter pays,” a type of causality principle, requires that the costs of environmental harm be paid by those responsible for the damage, i.e., the polluters. This goal is met only if such costs include not only restoration and cleanup but also the prevention of more damage later. So the costs of prevention should also be paid by the potential polluter.

The principle applies to all external costs or “externalities” (i.e., the social costs resulting from environmental damage). It demands internalization of expenses for preventing and mitigating environmental harm as well as those for taking suitable steps with regard to the polluter’s liability. It is also expressed through incentive taxes that both provide the resources needed to cover the costs of environmental protection, and show the real cost of products and services, thus giving it an informative and educational function.

In international law, the polluter pays principle first appeared on May 26, 1972 in OECD Recommendation C(72)128 on Guiding Principles concerning International Economic Aspects of Environmental Policies, and on November 14, 1974 in Recommendation C(74)223 on the Implementation of the Polluter-Pays Principle. In a more general context, it is included in Principle 16 of the Rio Declaration.

## POLLUTER PAYS PRINCIPLE AND ACCESS TO WATER

### QUESTIONS ABOUT THE PRICE OF WATER

Should water have a price? If so, should it correspond to “internalization” of costs?

- Costs of eliminating another water service?
- Costs of water-supply infrastructure?
- Costs for wastewater removal and treatment?

Who in the chain of production and consumption should pay the costs?

Does the right to water (as a necessary good) preclude payment for it, even as a function of the polluter pays principle?

Does the right of access include the right to pollute? If so, what are the limits?

Should a public water service corresponding to the human right be created? Who should pay for it?

## POLLUTER PAYS PRINCIPLE AND RESPONSIBILITY

### QUESTIONS ABOUT WATER USES

Should some uses of water be prohibited (excessive pollution)...

- based on the treatment costs arising from them?
- based on the type of impact on water quality (harm to biodiversity)?
- based on the type of impact on water availability (negative effects on other users’ rights)?

If all uses are permitted, how should the costs be distributed?

- based on the amount taken (internalization of costs)?
- based on third-party rights (liability)?

Is a competitive water market conceivable?

- if not, how should allocation be managed?
- if not, who should pay the costs of water use?

## The Social Justice Focus in Sustainable Development: Some Challenges of the Current Philosophical Discussion

François Dermange, Professor of Ethics, University of Geneva

### *W4W Summary*

*The “social justice” focus in sustainable development, a link between economic development (the concept of need, especially the needs of the poorest), environmental protection (for example, a government limitation on certain technologies), and social justice.*

*The Brundtland Commission report (1987) defined social justice as coverage of the essential needs of the poor, to which a preferential option must be given:*

- *helping the poorest*
- *limiting the use of resources.*

*Internalization of costs has a regressive effect on the poor.*

*The 1992 Rio conference shifted the focus (it used the Brundtland criteria but reinterpreted them):*

*At this summit, the interdependence and indivisibility of the three focuses of sustainable development were stated for the first time. However, social justice was replaced by peace, which became the third focus along with economic development and environmental protection.*

*As far as distributive justice was concerned, Rio abandoned the idea of giving priority to the needs of the poor, preferring instead to talk about giving priority to development in the most vulnerable countries (principle 6) and eradicating poverty, reducing disparities, and meeting the needs of the greatest possible number of people.*

*Next, F. Dermange spoke about distributive justice. The 1648 Treaty of Westphalia, which ended the Thirty Years’ War, created a triple separation between law and morality, law and policy, and domestic and international law. While this system became established in Western democracies, its first principle suffered a gradual erosion. The other Westphalian principles do not seem to have been revisited, especially the idea that the State is the sole source of law in domestic law and the sole topic in international law.*

*For twenty years, the global justice debate has revolved around the question of knowing whether the models of justice developed within States were also valid between States. At the risk of oversimplification, a single model came to be widely used in Western democracies: that of John Rawls. For the record, in his book *A Theory of Justice* Rawls (1921-2002) explained the following two principles of justice in lexicographical order:*

1. *The principle of greatest equal liberty: every person must have an equal right to the greatest fundamental liberty, with the same system of liberty for all.*
2. *The difference principle, which allows social and economic inequalities provided that*
  - *the inequalities are associated with functions and positions open to everyone in a context of fair equality of opportunity;*
  - *any improvement in the lot of the most advantaged people is accompanied by an improvement in the lot of society’s most disadvantaged people (this is called the “maximin principle”).*

*This principle of justice is not applicable worldwide.*

*Rawls gives an example reminiscent of the grasshopper and the ant. If there are two countries with comparable resources, and one decides on a pastoral lifestyle while the other chooses industrialization, and if the second country then becomes wealthier than the first, the second will not be forced to subsidize the needs of the first, which must bear the consequences of its decision.*

*From this standpoint, the answer to the widespread poverty in “grasshopper” States lies not exclusively in a redistribution policy that would unfairly transfer the cost to the “ant” States, but instead in how the “grasshopper” States see themselves.*

*The causes of a people’s prosperity are to be sought in its political culture and the religious, philosophical, and social traditions that underlie the basic structure of its political and social institutions, and also in the industriousness and cooperative abilities of its members, with their political virtues being the glue that holds everything together.*

*Should we impose a global redistribution system? Adam Smith defends this principle: the function of the economy is to create wealth and, to a first approximation, redistribute it.*

*F. Dermange concludes that the ethics of water is not a question of water, but one of human dignity.*

## Discussion and Questions for the Speakers

*Question to A. Petitpierre-Sauvain: And if not, what other structure could be suggested? A quota system?*

*A. Petitpierre-Sauvain's reply:* A market needs framework conditions. Can it manage allocation of the resource, or not? What about the poorest people? An irrigation system? Allocation should be managed by governments.

*E. Fiechter-Widemann's reply:* South Africa has regulated water distribution in set amounts sufficient for a family of eight people. Equality is impossible, considering that some families have more than eight people and others less than that. It is not rare for the latter to sell their extra water to golf companies for irrigating golf courses! As a result, too many people are left without enough.

*F. Mürger's reply:* The cost of potable water has never been completely privatized. What would be a totally fair price be?

*F. Dermange's reply:* If the market does not determine the allocation of water, then who does? That might create other problems.

*A. Petitpierre-Sauvain's reply:* Other framework conditions are necessary, or there is no market.

*Question by C. Sommaruga: What is happening with Japan's water and pollution by radioactivity?*

*F. Dermange's reply (with a nuclear waste expert from the audience):* water is the worst enemy! Problem of storing waste in Switzerland—a political question that must consider interests stretching over thousands of years and generations.

*A. Petitpierre-Sauvain's reply (former member of the nuclear plant construction commission):* On condition of having a real solution, with cost figures, for the waste and for dismantling facilities. These parameters ought to have an effect on costs. So the real costs need to be factored in so that water can be allocated according to market rules (which has not been the case). The same is true for technological accidents and water pollution (because it affects many places).

*F. Mürger's reply:* A third of all human beings do not have toilets with running water; 70% of waste goes into the water without treatment. At an international level, include all stakeholders who have an interest in a given water source, set priorities via international law, positions depend on entities that often have contradictory objectives; if there are questions about the use of groundwater that need to be settled among several countries, then in case of a lawsuit the governments concerned can turn to the International Court of Justice.

*Question:* Will the cost of treatment change access to water?

*F. Mürger's reply:* Is it normal to use water to transport waste (e.g., fecal matter)?

*A. Petitpierre-Sauvain's reply:* The question is one of choice of technology. Do technological alternatives exist?

*Comments by J.-B. Charrin (WaterLex), international human rights specialist:* **Water is an enforceable right in certain countries (such as South Africa).**

International law's contribution is made through framework conditions (procedural law) to include public participation and set priorities.

*Comments by E. Fiechter-Widemann:* UN bodies such as UNEP/UNDP that are based on a "human rights and social dimension" vision object to the IMF's vision, which banks on need and the economic aspect. They cannot reach agreement! It is of the utmost importance to reconcile them in order to find concrete solutions for the world's 1.5 billion poor people.

*Comments by A. Petitpierre-Sauvain:* A concrete example is a pollution case in India's Supreme Court. The court incorporated the conclusions from Rio and as a result, there are now procedures and courts to which people can turn to complain about water access problems.

*Comments by F. Mürger:* In South Africa, the first twenty liters are free, then you pay for the rest. But there is still a problem of subsidies that some receive and others do not.

*Question by Claude Bernard (geochemist):* **With regard to the problem of aquifers shared by two countries that use different legal systems to manage them: what authorities develop or regulate them?**

*Students' reply:* there are many, it all depends on the government structure: Court of justice (if the countries are members of the same group) or special systems of government (depending on any agreements signed): courts of arbitration. But some governments are reluctant to sign international agreements.

*F. Dermange's reply:* Natural resources are global or shared, therefore their liabilities must also be subject to shared management, and this becomes a question of ethics.



Real-World Example

## **Swiss Fresh Water: A Low-cost Decentralized Desalination System for Low-Income Populations?**

Renaud de Watteville, founder of Swiss Fresh Water, co-presenting with Cédric Lombard, founder of Impact Finance Management and Atelier Incandescent

**Swiss Fresh Water (SFW)** has developed a small inexpensive machine that operates by reverse osmosis and produces 50 to 90 liters of water per hour using power from solar panels. Water costs start at 0.007 francs per liter depending on where the apparatus is used. The machine is easy to maintain and well adapted to any kind of country. It enables micro-entrepreneurs to devote their efforts to selling water to a very localized customer base.

An innovative distribution model aims to maximize local impact and ensure optimal water quality by connecting the system to Switzerland through telemetry (to keep ahead of maintenance needs).

**Impact Finance** is an investment fund that is participating in developing businesses with a major social, environmental, and economic impact. It has worked with SFW to define its local distribution model and is helping to implement the first pilot project in Senegal. Given the pilot project's success, it plans to invest in SFW. It has also established an impact monitoring system for the businesses, which helps us to understand a project's total impact throughout its value chain and over time.

*Some specifics on the machine, from a 2010 text by R. de Watteville*

SFW is developing a machine and a low-cost, decentralized distribution and maintenance system.

- For the private market, all is clear! Classic distribution.
- For the BoP (bottom of the pyramid) segment, things are different!

People earn between 1 and 9 dollars per day. Some have access only to dirty, sometimes brackish water, often of poor quality. They often pay for it, and pay dearly! High-quality fresh water is outrageously expensive...

SFW suggests offering water at an affordable price while avoiding power dynamics, the mafia, and water barons. To this end, it has set up a foundation that buys the machines and rents them to villages and rural communities.

Every liter sold pays for a part of each link in the chain:

- Local wages (kiosk attendant, community, village)
- Maintenance
- Machine rental or administrator
- Depreciation

Any profit is divided among:

- the direct community: water-related infrastructure, purification, toilets, education, well refurbishing, etc.
- the indirect community: installation of new machines in a poorer area.

## The discussion resumes

*Question:* It's a beginning, but there is an element of chance...

*F. Dermange:* This is an example of values that are shared by the stakeholders but not motivated solely by profit. We need to break down the distinction between a public good, a commercial good, and a right because they are starting from the needs. It is a way to subvert the economic game by being very liberal.

Redefining the concept of "impact value" and incorporating conflict prevention would be of interest.

*Question by J. J. Fornay:* **Does the third value correspond to the market?**

*C. Lombard:* Investors want to revisit the values of sustainable finance.

*F. Dermange:* The role of power, power struggles? Take as an example the ancient systems for collective water management (the *bisses* in Valais).

Encourage application of the subsidiarity principle and local values, which differ depending on the country, to make the process efficient, with safeguards.

*F. Münger:* Does "just in time" leave room for error or unexpected local occurrences? Giving power to someone can harm someone else, who later throws a monkey wrench into the works.

N. Kumer presented the "**La maison de la Rivière**" foundation in Tolochenaz.

The goal is to preserve the water's quality until it is used.

This foundation was created to make it possible to research and develop aquatic ecosystems through basic research (in biology and botany, ten years of study of the Boiron de Morges stream), applied research (restoration of watercourses), and environmental education (nature trails and educational presentations, including a tour of the submarine *Forel*).

[www.lamaisondelariviere.ch](http://www.lamaisondelariviere.ch)

## Is Selling Water Good?

Some thoughts by Renaud de Watteville, W4W

November 10, 2010

### Observations

Water is a natural resource that is necessary for all animals and plants, for life!

The power dynamics begin with the puddle or stream where animals come to drink, and underground where tree roots make huge efforts to reach the places where water lies.

This state of affairs also applies to our civilizations, as François Galland of Suez Environnement showed in a speech, though they have added consumer goods, industrialization, waste, and other things to the mix.

The amount of water on earth is “finite,” but its condition changes. It can be clean or dirty, fresh or salt, its geographical location can change, and so on.

As population increases, needs grow...

The quality of our future will depend on how we succeed in managing water resources and needs. Let us not forget that water is perhaps the ultimate trigger for conflict! When someone cannot provide water for his child or his country to drink, it is a matter of the most fundamental value of all: life.

### Is Selling Water Good?

The number of sides to this problem is infinite, so there is not “one single answer.”

Let us consider a concrete example:

We are sitting here at a table, having a discussion and drinking water. We are a hundred meters from Lake Geneva, which provides free potable water. In Geneva, tap water probably costs about 0.05 francs per liter, and yet we buy bottled water at 4 francs for 3 deciliters or 12 francs per liter. Why? Is it the taste? All three taste good. Marketing? Well, maybe a little! Convenience? Probably! (It is delivered, pre-packaged, served, etc.). And that is fine. Work deserves pay, it is our choice, our pleasure, and we are free to do it.

On the other hand, what if we no longer have the choice, for example, if a third party pollutes the lake or the water is diverted for commercial purposes or geopolitical ends? That would force us to either buy water or move away to survive. On that day when our families have no more to drink, we will rise up and fight. Ethically, we will probably find valid ways to justify it!

Between these two extremes, between good and evil, falls the “more or less,” and this is where it becomes difficult—very difficult—to set rules!

One of these rules might be that things must be “win-win” at all levels:

- all work deserves pay
- naturally available resources must remain available
- the structures and “product” can be improved but without restricting the existing solution
- do not stop free access to an existing well on the pretext that it has been refurbished; do not disturb an existing balance
- in contrast, as an addition to an existing well we can propose an alternative of better water at an affordable price
- any profit generated by water must be used for the benefit of the community; that is one point of view (City of Lausanne vs Suez)

We can talk about “community,” but what constitutes a community?

Are Switzerland and Spain part of the same community? What about Tibet and the arid regions of Central Asia? I believe so! But what do the Chinese think?

Can we divert a river in order to “give away” drinking water? To help an industry become rich?

What can we do? What are our goals, resources, weapons, decisions, opportunities?

The SFW example runs along these lines. Is it ethically defensible? I hope so! But I don't know. Does it come close? I am counting heavily on W4W for some feedback....

## Does Water Have a Cost, and If So, What? Ethical Considerations

Benoît Girardin, W4W  
November 10, 2010

### Seven theses

1. Water as such has no price. It is a public good. The same is true of air and wind. That said, some examples of water are of better quality than others!

2. The things that do have a cost are collecting and protecting spring water, desalination, transport and distribution, treatment prior to use, purification, wastewater treatment, and wastewater recycling. This cost arises from operating and maintaining the infrastructure, not to mention research and development costs and insurance premiums for flood and erosion risks attributable to water's use and distribution.

3. What ought to have a cost is the monopoly or privilege of having the resource available for a specified period of time, during which other aspiring users must obtain their supply elsewhere, or even an absolute corner on the market. The cost of this right of use can then be understood as compensation to the others, and takes the form of compensation paid to the injured or water-deprived groups.

4. When it becomes a rare commodity, water distribution might have, not a cost, but a scarcity tax intended to curb the rash use of it and to minimize the losses within systems. This is the aspect of managing scarcity and discouraging irresponsible use or waste.

5. It is important for water's price to reflect its true cost without omitting associated or hidden costs, lest we encourage waste. Social and environmental costs cannot simply remain externalized. When subsidies are used for the long term, they introduce negative effects that generally tend to benefit well-off and public users. The requirement of cost transparency is paramount.

6. The ethical requirement for price consists in coming as close as possible to the true cost by revealing all components, even hidden ones, and avoiding the addition of exorbitant and unfairly selective profit margins. Any specifications developed by the local community would do well to limit this practice.

7. Other ethical requirements concern...

- fair access and distribution
- responsible consumption that promotes the sustainability of resources and their renewal, as well as efficient distribution and minimization of leaks
- clarification of the responsibilities of countries and inhabitants within a watershed by negotiating riparian agreements defining mutual rights and risks—the taking of water, pollution—and specifying upstream and downstream parties' responsibilities in relation to each other
- specific responsibility for aquifers, given that pollution reaching them may be persistent.

### Operational Consequences

The term "owner" is not suitable for describing the position of the community in the territory where the spring, aquifer, or river is located. "Steward" is preferable.

Springs, aquifers and rivers can be put to use by a community, a public entity, or a subcontracted private company through a public service concession.

An operating lease with operating specifications should stipulate the riparian communities' commitments to responsibility, sustainability, and service: quality, price, repairs, maintenance. The term and/or volume of operation should be limited. Emphyteutic leases can encourage sustainable management, make improvements an attractive proposition, and avoid lax maintenance practices or even outright permanent appropriation.

Operating and distribution contracts must assign responsibility for wastewater or polluted water: purification, cleanup of pollution, discharge, recycling and reuse, and so on.

The "true" cost includes the actual costs of extraction, sustainable management of resources and springs, operation, distribution, maintenance, recycling or cleanup of polluted wastewater, and coverage of research and development costs, as well as investment risks and the risk of accidental damage (flooding and erosion). A profit margin seems appropriate as long as it remains in healthy proportion. Transparency and a stated cost structure must be ensured.

## Open Questions

- How can inadequate maintenance be avoided and professional, fair maintenance be encouraged?
- How can the pitfalls of a lopsided balance of power between communities and the operator be avoided?

Photos

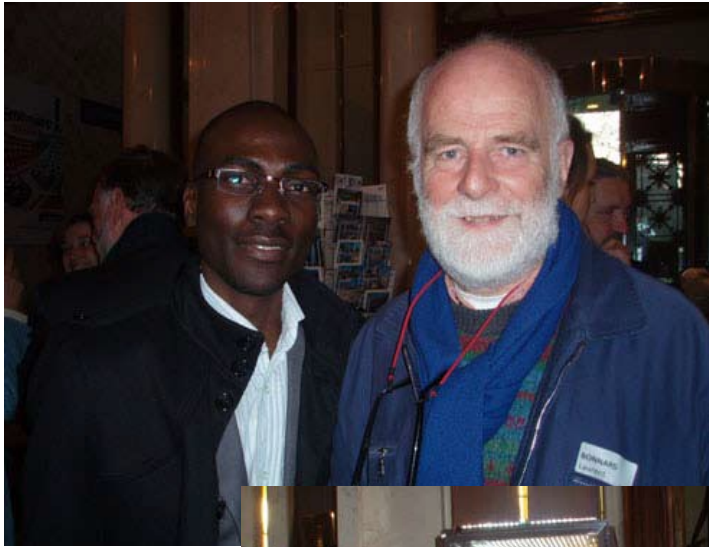
In the first row: B. Girardin  
and  
A. Petitpierre-Sauvain



F. Münger  
K. Sangbana  
F. Dermange

A participant, A.-M.  
Pavalache, with  
E. Fiechter-Widemann





K. Sangbana  
L. Bonnard



J. Rochat  
R. de Watteville  
L.-I. Stahl Gretsch



C. Lombard  
L.-I. Stahl Gretsch





