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Conflict mediation in the water and sanitation sector: And how to reach solutions

Thematic Overview Paper 22
By: Jan Teun Visscher
Reviewed by: Jeroen Warner and Rocio Bustamante

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Edited by: Peter McIntyre, UK

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- An Overview Paper with all the latest thinking
- Case studies of best practice, if applicable
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- Easy access to the main principles of the topic — in this case conflict mediation in the water and sanitation sector — based on worldwide experiences and views of leading practitioners
- Links to more detailed explanations and documented experiences of critical aspects of the topic on the world wide web if available

1 Introduction

Conflicts over water supply are typical of villages in the Nakanbé River watershed in Burkina Faso, as in many other places. This region suffers from poor rainfall and an uneven geographic distribution of water supply facilities. With a shortage of handpumps, women have to line up and wait to use the pumps. Conflict may become visible if women jump the queue, resulting in shoving and clay water jugs being smashed. It may remain invisible, but deeply felt if, for example, a village chief's wife goes to the head of the queue or when certain wells are declared to be sacred, restricted to such uses as preparing traditional medicines rather than for general water supply. It may include friction along ethnic lines, for example, when different ethnic groups bring livestock to the watering station (MacMIllan 2001). http://www.scienceinafrica.co.za/2001/august/handpump.htm

By the 1990s over-abstraction of groundwater was an important problem in Gujarat, India, as water for agriculture was pumped out of the ground using subsidised electricity. In the village of Shihori, for example, the number of tubewells for irrigation in a radius of 5 km increased from 86 in June 1993 to 117 in November 1994. Over the same period the water in community wells, the main source of water for most people, fell dramatically. A solution to this was not found by dealing with the real problem of over-abstraction, which would have required addressing the conflict of interest between water users. Instead, a donor funded project was developed to pump water from more than 10 kilometres away (Visscher and van Wijk, 1995).

Around the city of Chennai, South India, groundwater is abstracted from local wells outside the city and brought by tankers into Chennai. While some farmers make good money selling water from their wells, others lose access to a precious resource for agriculture or village water supply. Problems of this kind are often felt locally but go unnoticed in the wider world. In this case, however, community protest movements, mainly led by women have sprung up to defend community water rights and protect local access to water for livelihoods (Butterworth et al., 2007).

Water scarcity is just one problem that may lead to conflicts. Others include conflicts over water quality or privatisation of water supply services. Controversy over water privatisation often dominates media coverage, although the number of private companies is very small in comparison with public ones. To Ghanaian lawyer, Rudolf. Amenga-Etego, for example, the biggest obstacle to wider water access is water privatisation, especially large-scale privatisation schemes backed by the World Bank and the International Monetary Fund. He mobilised labour unions, rural residents, and many other Ghanaians to oppose a World Bank and IMF push for water privatisation in Ghana. In early 2003, in the face of public pressure, the government agreed to suspend the project (Nijhuis 2004). http://www.grist.org/news/maindish/2004/04/20/nijhuis-etego/.

This is not an isolated case. In Bolivia private companies were forced by public protests to give up their contracts in Cochabamba (Box 1) and La Paz. Urban water conflicts to do

with private sector participation exist in many other countries, as detailed by UNESCO (2006). http://unesdoc.unesco.org/images/0014/001490/149032e.pdf

On the other hand, Chile has 'privatised' its urban water supply, seemingly without many problems allowing the government to free up resources to invest in rural areas. In this case the government maintains a clear handle on tariffs and provides subsidies to the poorest sections of the population to the satisfaction of the users and the providers who are allowed a reasonable profit. The issue in this Thematic Overview Paper however is not to take a stand against or in favour of privatisation but to provide some tools, ideas and experiences that may be helpful to mediate in situations where it is becoming a conflict.

It is also important in this context to recognise, as will be discussed later in more detail, that problems around privatisation and other water supply and sanitation issues may be a sign of deeper unresolved problems in society. In such cases the conflicts may be used by some actors for broader political purposes, and solutions may require societal change rather than mediation, as some actors may not be interested in solving the problem but in using the conflict to reach other goals.

Box 1. The water war in Cochabamba

Between September 1999 and April 2000 many people in Cochabamba protested fiercely to the signing of an agreement under which a private consortium Aguas del Tunari obtained the concession of the municipal water company SEMAPA, and which led to an increase in the water tariff. The protest was also against the Water and Sewerage Law number 2029 which included a regulatory framework that affected the water rights and water uses of the rural population. The conflict went through different stages including negotiation, broken promises, mediation and escalation and received a lot of media attention. Communication proved a major problem. One of the leaders of the protest indicated for example: 'because the government did not listen we took an extreme decision that Aguas del Tunari had to leave'. In the end, the government gave in, stopped the contract, and included civil society in the management board of SEMAPA. Stopping the contract came at the expense of a multimillion dollar lawsuit which eventually was halted by the government buying the shares of Aguas del Tunari. Unfortunately from 2001 onwards the water service of SEMAPA deteriorated (lower coverage, less continuity in supply, more unaccounted for water and more staff per 1,000 connections), implying that the local population has lost out as well. On the other hand this conflict and several others strengthened community leaders and community movements in Bolivia and resulted in the establishment of a new government that indicated in 2006 that it will strengthen the sector, under the perspective that water is a public good and that government has to play a role in its allocation and delivery. The challenge remains to incorporate these ideas into a strong legal framework and put these plans into practice.
Sources: CERES, 2005, Gaschütz et al. (2007)

Problems also arise in sanitation and solid waste disposal, resulting, for example, in conflicts around the location of wastewater treatment plants and landfill sites. Problems do

not necessarily always have negative outcomes. Sometimes they may lead to very positive results, as shown in Box 2. Water and sanitation conflicts will not go away unless the roots of the problems and the related conflicts of interest are clarified and addressed. In many cases, those involved try in the first instance to find technical solutions to their problems as described in the example of Shihori, India, at the beginning of this section. However, technical solutions often do not increase the availability of water or stop the production of waste, but just shift the burden from one place to another.

Box 2. Women, water and community ownership in Gujarat, India

The NGO Utthan helped and supported the emergence of a community based group called Mahiti, in Bhal, Gujarat. Together they were able to initiate a women's movement in Bhal focused around the issue of access to a safe and regular supply of drinking water. The Bhal women successfully pressurised the Gujarat Water Supply and Sewerage Board (GWSSB) to approve a project that sought to promote decentralised rain water harvesting structures such as plastic lined ponds, roof water collection tanks, etc. Their success inspired another small but noteworthy and successful social protest by women against the exploitative indigenous money lending system run by the Darbars - the most powerful and violent caste in the area. Not only did the money lending system of the Darbars crumble against the pressure but it gave the women a very good opportunity to organise themselves into vibrant community groups that acquired ownership rights over all forms of resources.

India Together (2001)

http://www.indiatogether.org/stories/utthan.htm

A changed mindset is needed towards helping stakeholders or their representatives look at the roots of the conflict, clarify their interests and power relations and to jointly for feasible solutions. This will explore t his process, particularly in conflicts that relate to water supply and sanitation and to a lesser extent to the broader area of water resource management.

A considerable amount of information about conflict management relates to humanitarian assistance and peacekeeping, but only a limited number of resources specifically relate to water supply and sanitation. SWH (2004) found that most of the information on conflict management in the water sector relates to transboundary issues while only recently has conflict research related to conflict inside a state also come into focus.

1.1   What do we mean by conflict?

The word conflict has many connotations, ranging from a state of open prolonged fighting to a situation when two people (groups of people, nations or states) wish to carry out acts which are mutually inconsistent. "They may both want to do the same thing, such as eat the same apple, or they may want to do different things which are mutually incompatible" (Nicholson, 1992). Such a conflict is resolved when a mutually compatible set of actions is worked out. Some argue that this does not apply to deep rooted conflicts. Lazarte (2006), for example, distinguishes between 'conflicts of interests' that can be resolved through negotiation, and 'structural conflicts' that are very difficult to negotiate as they relate to the

organisation of society and often are based on the unequal distribution of resources. He also indicates that many conflicts are a mix of different types of conflicts involving social as well as political aspects and that the 'logic' of the action of the actors involved differs from the logic of the conflict. Actors act on the basis of their own perceptions that may be based on a subjective collective memory and not on objective facts. Indeed such deep rooted problems may require a change in society. In this type of conflict an analysis of the problem is needed in much greater depth to explore what course of action may be possible.

This publication however focuses on conflicts that have a reasonable chance of being solved by involving the actors in a process of mediation. It embraces the definition proposed by Wallensteen (2002) that "conflict […] (is) a social situation in which a minimum of two actors (parties) strive to acquire at the same moment in time an available set of scarce resources". This definition covers many aspects of the conflicts of interests that may arise in relation to water supply and sanitation particularly if a 'clean environment' is taken as a scarce resource. However scarcity is not the only cause of water and sanitation conflicts, so it seems better to say that conflict is "a social situation where one party tries to profit from a given situation or tries to solve its own water supply and sanitation problems in such a way that it negatively affects other parties". From this perspective, conflicts may remain hidden if the other parties do not realise that they are negatively affected or can be open when they realise it and do not accept the situation.

Conflict needs to be managed to avoid escalation which may turn into a situation with 'winners and losers'. This TOP reviews different options for conflict management, putting special emphasis on mediation to encourage dialogue and shared action to resolve many water supply and sanitation conflicts. Mediation puts actors in the driving seat to jointly solve their problems based on a careful review of interests and options. Many water and sanitation conflicts arise from lack of information and communication, uninformed perceptions, a mix of facts and emotions, poor or unjust distribution of limited resources and shifting burdens without benefit.

People try to solve problems as they perceive them, often without taking into account the interests of other actors. The crux of the matter is therefore to help actors understand the problem from different perspectives. In mediation this is done by bringing actors together in a structured way to explore problems and potential solutions. Solutions to water supply and sanitation conflicts usually require a variety of actors to agree to take action. This makes it important to look at conflict mediation as a process that does not just end with an agreement, but also includes the step of putting this into practice. It is also important to put the dialogue between the direct actors into context, as not all problems can be resolved between the direct actors and may require action at higher government levels for example, if subsidies are needed to solve water supply problems in very poor communities. A municipal government may have to decide on a location for a sanitary landfill (a solid waste landfill which isolates waste from the environment) against the wishes of people living in the area, but it may be the only option. Even so, this still requires dialogue and proper compensation.

1.2   Some key questions

Finding solutions to conflicts requires answers to a number of key questions:

- What are the problems, taking into account that these may be complex and require complex solutions?
- Who are the actors and what are their 'positions'; how do they lose out or benefit?
- What interests are at stake?
- How can solutions can be found involving the actors (as they are part of the problem, they therefore have to be part of the solution)?
- Can the problem be turned into an opportunity allowing benefits to be enlarged and better shared?

1.3   Contents of this TOP

This TOP explores current thinking about conflict management in the water and sanitation sector. It provides a quick overview that helps readers to become acquainted with the issue and guides them to further reading if they want to proceed with the topic. The TOP contains the following sections:

- **Water and sanitation conflicts and actors:** an overview of prevailing problems and key actors and some of their interests.
- **Options for conflict management:** an overview of approaches to conflict management and resolution.
- **Mediation:** the concept of principled negotiation, and the role of facilitation, and the post mediation process.
- **The mediator:** skills and techniques needed for conflict mediation.
- **Case studies**: examples on the application of conflict management approaches.
- **TOP resources:**
    - o   TOP articles, books, papers
    - o   TOP websites
    - o   TOP contacts
    - o   TOP references

1.4   Target audience

The potential audience of this TOP primarily consists of people working in the water and sanitation sector. It includes individuals who want to understand more about the way to analyse, understand and help to manage conflicts.

2   Water and sanitation conflicts and actors

Different types of conflict exist in the field of water supply and sanitation (Box 3). Some open conflicts are very visible and can be easily linked to the actors involved, whereas in other cases people may not even realise that they are part of a conflict. What about just leaving a tap in your house or yard open? Who realises that this may deprive users in higher locations in the community from water or that, if the tap is not metered, the cost of wasted water has to be met by other community members or other funders? This typically hidden conflict often particularly affects the poorer sections in the community.

Box 3. Examples of common conflicts in water supply and sanitation
Water supply conflicts
- People (usually women) with similar interests fighting over access to wells, jumping the queue to spend less time sometimes making use of their 'social position'
- People leaving their tap in the house open (when supply is irregular) leaving people living at higher elevations without water supply
- Community members not paying their water fees
- Community members not able to afford connection fees to the water supply system that is usually constructed with considerable government and donor subsidies
- Water sellers establishing monopolies to keep the price high
- Different user groups competing for (scarce) resources. This may be a conflict over access to wells between communities and cattle owners, between different tribal groups or between urban and rural areas. It may be visible but also remain 'hidden', for example when water tables are drawn down for irrigation, leaving community wells dry.
- Water supply interests competing with other interests including water for food, water for industry and water for nature. This may also include complex transboundary conflicts between nations
- Short term interests (political or financial gains, meeting coverage targets etc.) conflicting with long term interest of sustainability

Sanitation and solid waste conflicts
- People practising open field defecation or unsafe disposal of faeces maintaining the risk of disease transmission for community members with a sanitation facility
- Unhygienic disposal of drainage and garbage causing problems for others and particularly for down stream water users
- Informal waste collectors fighting over garbage, as waste is too valuable to waste
- Location of waste water treatment plants, sanitary landfills or other disposal facilities
- People fighting over waste water use

Well-intentioned water projects may unintentionally lead to significant conflict. To reach as many people as possible, project rules may insist that a water supply is used only for drinking water, yet people usually need water for multiple uses. This 'hidden' conflict is a main cause of poorly functioning water systems as people draw more water from the system leaving others with a poor or non-existent service. Some conflicts may be ad-hoc whereas others may be structural and embedded in society. A common denominator is

that most conflicts do not solve themselves. This often requires external facilitation that includes posing 'revealing questions' to help actors communicate and find solutions.
A lack of communication between actors and their limited access to information results in people basing their attitude and behaviour on their individual perceptions.

Water supply and sanitation conflicts always involve multiple actors and multiple 'positions' that are based on underlying interests and emotions that need to be addressed. Table 1, although not exhaustive, shows that water supply and sanitation conflicts may range from being quite simple to being very complex, because of the broad range of actors and diversity of interests. This is not inherently bad as more stakeholders may imply access to more resources (knowledge, technology, etc.).

Table 1. Example of potential actors in water supply and sanitation conflicts

Actor group	Actors	Potential interests
Domestic users	All human beings	- A minimum quantity of quality water for survival - A reasonable quantity for hygiene and household use and for (vegetable) gardening and livestock for a reasonable tariff - A luxurious quantity - Acceptable level of sanitation
Farmers	Farmers who influence or compete over water sources or who use water supply systems	- Subsistence agriculture and livestock - Income from cattle and/or irrigation and product development (coffee washing etc.) - Income from water vending - Extension of production area causing deforestation or overgrazing - Potential use of waste as fertilizer
Industry	This ranges from home (small scale) industry to large scale industry	- Overriding interest is income and (reasonable) profit (for stakeholders) - Water for workers - Water for production process (washing etc.) - Water for products (beer, bottled water) - Cheap waste (water) disposal
Water and sanitation service providers	Ranging from small scale community organisations to large private sector agencies	- Personal gain (income, respect, status) - Re-paying loans - Profit for stakeholders
Contractors and suppliers	Individuals and small and large companies	- Income (making a living) - Profit (for shareholders)
Tourism	Local and externally owned tourist industry	- Water for clients - Water for nature
Government	Politicians and government officials	- Ensure water supply for survival and adequate household use - Giving different user groups access to a fair water share - Prevention of environmental contamination and disease transmission - Personal gains (votes, bribes, kickbacks, pressure from lobby groups)

Although this TOP is not about conflicts over access to water resources it is nevertheless important to understand that this is an important cause of conflicts that relate to water supply. The growing urban population and industry require more water and this leads to significant problems. In Bolivia, for example, this has already led to many conflicts which often not properly resolved, partly because adequate water legislation is not in place (Box 4.). Important conflicts also exist or will emerge between nations that share transboundary fresh water sources, and climate change will only increase the problem. The web site of the global policy forum http://www.globalpolicy.org/security/natres/waterindex.htm) presents many articles about this type of problem and claims that more than 50 countries on five continents might soon be caught up in water disputes, unless they move quickly to establish agreements on how to share reservoirs, rivers, and underground water aquifers.

Box 4. The community of Taquiña and the beer factory

 A conflict arose because the beer factory reduced the source of the water supply and irrigation of the community of Taquiña. The underlying problem is that the water rights of parties involved are not clear. The community has taken different actions including requesting the regional government to intervene to blocking the entrance to the factory and destruction of part of the water infrastructure which led to police intervention and wounded community members. Eventually discussions were initiated between the community, the beer factory, the municipal government and the regional government. The factory claims that they bought the land with the water sources from the community leaders and have made a considerable investment which gives them to right to impound and manage the water. On their part the community argued that their rights are embedded in customary law and users rights under the land reform and that the water always has reached the community. The parties reached an agreement with three key points: The community is owner of the irrigation system (that is also the source for drinking water and the factory) where all users including the factory have rights; the community obtains a key to access and enable them to manage the impounded water source; The factory will not ration the drinking water supply; and the regional government provides resources to adjust the course of the irrigation canal that runs along the factory. So far however the agreement has not been signed and the conflict may revive.
Source: PROAGRO, 2007

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3   Different options for conflict management

Conflict is often considered negative and is for example associated with heated debate and war, with winners and losers. Whereas indeed these types of conflicts exist, many others are non-violent in nature and may be a prime source for change and development. In this publication the emphasis is on the latter type of conflicts that indeed may be solved by the actors involved with some external guidance.

Conflict is a basic and important fact of life. Competition and conflict are unavoidable in all societies that comprise diverse groups. Whether these groups are defined by ethnicity, religion, ideology or class, they have different interests, needs and values and unequal access to power and resources.

Conflict is an inevitable and necessary feature of domestic and international relations. In fact conflicts may lead to very creative solutions that represent a 'win-win' situation for the actors involved as is shown in several of the case studies in this TOP. As indicated by Forester (2007) quoting Lisa Beutler: "Conflict is better than apathy; Whenever there is conflict in the room, it means there's energy to work on something".

Our general understanding of conflict has a critical bearing on our response to its emergence in specific situations (Box 5). If conflict is considered to be inherently destructive, then our efforts are bound to be directed towards suppressing or eliminating it. Such efforts are more likely to heighten than lower the level of tension.

If we view conflict as normal and inescapable, then the challenge lies in managing it constructively. The challenge is not the elimination of conflict, but rather, how to effectively address conflict when it arises (UNDESA and CRC, 2001). In some cases this will be relatively easy, but if conflicts are embedded in society and are a sign of underlying inequities and (mis)use of power, this may be very complex and may require societal change which could take decades. Nevertheless, it is very important to realise that conflicts do not have to be destructive and positive things can happen as a result as Coser indicated as long ago as 1956 (Box 6).

Box 5. Conflict management is both a science and an art

Conflict is an inevitable part of life and needs to be managed. This can be done 'negatively' by avoidance or force, often resulting in aggravation of the situation. Sometimes (temporary) force however may be needed in case of emergencies for example forcing people to leave their home in case of imminent flooding, etc.

Conflict can also be managed positively through negotiation, joint problem-solving and fostering consensus building.

Acquiring better understanding of the tools and the skills involved in positive management approaches is important to gain confidence in trying to solve conflict in a constructive manner. Two key aspects in conflict management are: i) The need for parties involved to understand the problem whilst realizing that conflict assessment is often subjective as it is based on perceptions and world views and ii) the dialogue between parties to find acceptable solutions, (based on the assumption that it is possible to find solutions by talking. If that proves not possible other means will be needed or the conflict may remain unresolved).

Box 6. Positive results of conflicts (Coser, 1956)

- Conflict helps establish our identity and independence. Especially at earlier stages of our life they help to assert our personal identity as separate from the aspirations, beliefs and behaviours of those around us
- Intimate relationships require us to express opposing feelings such as love and anger, which if used constructively can deepen relationship
- Conflict can build new relationships and coalitions. During the process of conflict and its resolution, parties who had no previous relationships may find out that they have common interests and then build coalitions to achieve common goals or fend off common threats
- Conflict serves as a safety-valve mechanism which helps to sustain relationships, at times through the assistance of a third-party, as it may allow people to vent-up hostility and reduce tension
- Conflict helps parties assess each other's power and in cases where there is an imbalance of power can work to redistribute it
- Conflict establishes and maintains group identities as they help individuals to understand how they are part of a certain group and mobilise them to take action to defend the group's interests
- Conflicts help to create or modify rules, norms, laws and institutions and thus encourage change

Different approaches can be distinguished in conflict management (Figure 1), which may have applications in different situations. For example, whereas mediation may be best to build consensus, it is not be the best approach to quickly evacuate an area when flooding is eminent.
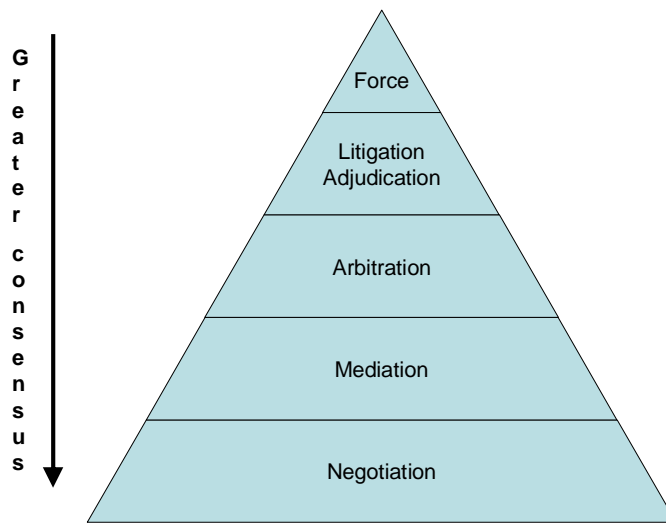
Figure 1. Conflict resolution pyramid (adapted from Viñuales and Celaya, 2006)

The approaches indicated in Figure 1 are well documented by different authors and can be summarised as follows:

Force, using power or even violence to resolve the conflict, often ignoring or suppressing the interests of the weaker parties; Fights over water resources are well known, but a non-violent example of the use of power may be connection fees set by a water supplier that are unattainable for poorer people in a community. Force may also include social protest and social mobilisation as in the case of the water war in Cochabamba (Box 1).

Litigation, adjudication, involving a judge or a magistrate imposing a decision after hearing legal argument from parties involved in the conflict; this links to the complex field of water legislation (http://en.wikipedia.org/wiki/Water_law). An interesting example is the water tribunal in South Africa which hears cases over water conflicts http://www.dwaf.gov.za/WaterTribunal/default.asp.

Arbitration, involving an external party (accepted by the parties to the dispute) imposing a decision after hearing the arguments of the parties involved in the conflict; an example is the conflict between the San Diego County Water Authority officials and the Imperial Valley water officials over an historic deal involving the annual purchase of billons of gallons of water. After two years of private haggling, the argument was taken to arbitration by a panel of judges who will issue a binding ruling on the validity of a 2004 economic study saying that the deal benefited both parties.
http://www.nctimes.com/articles/2007/03/18/news/top_stories/21_13_533_17_07.txt

Conciliation, involving a neutral party acting as a go-between the parties. The process has no legal status and the conciliator meets with parties, helps them to list and clarify and reframe their objectives, and tries to come to solutions meeting consecutively with partners (shuttle diplomacy); Successful conciliation ends with the signing of a binding agreement between parties. Viet Nam's BOT (Build Operate and Transfer) laws include procedures for dealing with disputes. The legislative regime provides that the parties must first seek to resolve the dispute by means of conciliation. Failing this, disputes between the BOT contractor and ancillary contractors are referred to a Viet Nam arbitration body, an ad-hoc arbitrator, a different country's arbitrator or an international arbitrator depending upon the method agreed in advance by the parties.
http://www.adb.org/Documents/Books/Developing_Best_Practices/Water_Supply/appendix.pdf

Mediation, involving a neutral party providing procedural assistance is a voluntary process which is based on vesting of decision-making authority in the parties involved in the conflict. The mediator structures the process and creates a safe environment for parties to discuss the conflict and jointly find solutions. This process will be further explained in the next chapter;

Negotiation, the process in which parties resolve their conflict without help from outside, refers either to competitive processes (positional negotiation) or cooperative efforts (interest-based negotiation). In positional negotiation, parties make offers and counter-offers and typically start to converge on a solution which both parties find acceptable. The process may include bluff on both sides about positions and strengths and weakness in order to gain a favourable outcome. Interest-based negotiation is designed for parties who have a need to create or maintain healthy relationships. Parties discuss the issues which face them and instead of focusing on competitive measures and winning the negotiation, they collaborate by looking to create solutions which maximise the meeting of their interests, values and needs.

In some literature, the term negotiation is also used for facilitated processes. An interesting publication is Snyder (2003), which addresses the human dynamics at work in a difficult and contentious water negotiation. It includes ten guidelines for organising and managing negotiations:
- Initiating negotiations is difficult. A government agency is often in a better position to initiate the process than a private party but needs to do so without compromising its ability to actively participate in the negotiation
- A contentious dispute often requires conflict assessment by a neutral third party
- Negotiations need to be structured in such a way that all parties are respected;
- A realistic but firm deadline is an essential component
- It is essential to address the dilemma about whom to invite to the negotiation table – only key players or (representatives of) all those impacted by the conflict
- Fragmented authority over water issues is a major impediment to successful negotiation and may require creative solutions
- Joint fact finding is essential to avoid each side trying to prove the other side wrong

- In most cases negotiations should not be attempted without the help of a neutral mediator
- Adequate funding for the process is important
- Negotiations will fail unless each party, in addition to advancing it own interests, also looks at opportunities to advance the interests of its opponents

Snyder (2003, http://www.colorado.edu/Law/centers/nrlc/publications/RR29_Negotiating-Water-Conflicts.pdf) also includes an interesting case study of failed conflict resolution and mediation over water claims in the Klamath Basin in Oregon, USA.

Which approach to conflict resolution is most relevant in any given situation depends on several factors, including the seriousness of the conflict, the time frame and also the culture. In America, for example, the goal of mediation is to satisfy parties' interests and reach win-win agreements, whereas the traditional way in Hawaii of resolving conflict is to restore relationships damaged by the conflict. The process evolves around parties' feelings and emotions (Merry, 1987 http://www.colorado.edu/conflict/peace/example/merr5972.htm Wolf, (2000)). Wolff (http://www.transboundarywaters.orst.edu/publications/) provides another example of cultural differences in his description of the way the Berbers of the High Atlas Mountains and the Bedouin of the Negev Desert deal with water resource conflicts.

4 Mediation

In conflict situations that concern water supply and/or sanitation, solutions often require mediation by a person or an organisation. The reason for this is the complexity of conflicts and potential solutions, the different disciplines that are often involved, the diversity of actors and the need for an active dialogue among parties to benefit from all available insights and resources.

Mediation is the process of facilitating and accompanying actors in a conflict to clarify the problem and jointly find friendly and reasonable solutions. Ideally the creative process leads to finding win-win solutions. The facilitator helps the actors to move away from bargaining over locked-in positions, to a process called principled negotiation or negotiation on merits (Fisher and Ury, 1991:). The aim is to:

- Produce a wise agreement, if agreement is possible. One that meets the legitimate interests of actors to the fullest extent possible, resolves conflicting interests fairly, is durable and takes community interests into account
- Adopt a process and possible solutions that are efficient
- Ensure that the relationship between actors is improved, or at least not damaged.
http://www.colorado.edu/conflict/peace/example/fish7513.htm

Interest in mediation is growing and countries are putting mechanisms into place. Canada, for example, already has a Federal Mediation and Conciliation Service for dispute resolution between trade unions and employers.

4.1   Four basic points in principled negotiation

The four basic points in principled negotiation define a straightforward method that puts the actors in the role of problem solvers and can be used under almost any circumstance:

- Separate the people from the problem, to avoid emotions blocking possible solutions. Actors need to learn how to jointly face the problem instead of each other
- Focus on interests not positions, because the aim is to meet the legitimate interests of the actors, which in conflict situations may be hidden by the actors out of fear that they may weaken their bargaining position
- Develop multiple solutions to choose from, searching for options for mutual gain
- Insist on using objective criteria, independent of the will of either side, to choose the solution.

4.2   The mediation process

The main steps involved in conflict mediation according to Fisher and Ury (1991, http://www.colorado.edu/conflict/peace/example/fish7513.htm) are:
- Clarifying the conflict and the main stakeholders

- Creating a workable relationship
- Establishing the (underlying) interests and views of parties
- Creative identification of options for mutual gain
- Reviewing opposing interests in a reasonable manner
- Weighing and choosing potential solutions

To this we need to add the post agreement process since solutions that were agreed upon need to be implemented. As indicated by Ertel (2004): "Many deals that look good on paper never materialize into value-creating endeavours". It is important to see the choosing of the solution as the beginning of a process and not the end.
http://entrepreneur.typepad.com/news/2004/11/harvard_negotia.html

4.3   Clarifying the conflict and the main stakeholders

Where different stakeholders can see a shared problem and recognise their interdependence in the persistence of the problem and in facilitating the solution, they may be prepared to enter into a constructive solution-oriented dialogue (Röling 1994). The first step therefore is to explore the problem together with the actors, taking into account that many problems are based on misunderstandings and, more importantly, to raise their awareness that they are part of the problem and therefore also have to be part of the solution. The Burkina Faso case study in the section on TOP cases is a clear example of a stakeholder analysis of an extensive problem. Problem analysis can also be done by a facilitated workshop with stakeholders or their representatives.

As the aim of mediation is to facilitate the process in which actors together develop and choose a solution or choose to maintain the status quo, it is essential to identify and invite all important actors or their representatives to the process.

People have their own perceptions about the situation based on their world view, their values and their emotions. Conflict does not always represent objective reality but is based on subjective thinking and emotions of the people involved. We look at conflict through the lenses of our spectacles, interpreting events according to our pre-suppositions. When dealing with a problem as a mediator it is essential to untangle the situation and to deal with the substance separately from the emotion, the relationship, and to hear the different sides of the story. This is feasible if parties are prepared to treat substance and relationships separately on their merits.

To untangle the situation, the mediator can meet the parties separately, applying the skill of active listening to really try to understand the views and ideas, putting him or herself in their shoes. People tend to see what they want to see, selecting information that confirms their point of view. Always remember that whereas a mediator needs to understand the point of view of the parties involved, this does not imply agreeing or disagreeing with it, unless it is harmful for others, in which case the mediator may decide to withdraw from the process. The advantage of separate hearings for the parties is that it is then easier to

separate problems and emotions. When the parties then meet together, the mediator, in consultation with the actors, may opt to present the problem situation in a 'neutral' way.

4.4   Creating a working relationship

It is essential for the mediator to establish a working relationship with the parties to conflict and between all those engaging in the process. This starts with the mediator being trustworthy, showing themselves to be impartial and giving equal opportunity and time to parties. Another aspect is to stress that parties are voluntarily involved in the process because they want to try to solve the problem. During the process, possible earlier fights and misgivings are 'temporarily' buried. The mediator can talk to parties separately to get a better understanding of the problem while also working on the emotions, but the main challenge is to ensure that parties can communicate in a reasonable way. Several of the TOP cases clearly show how mediators work on the relationships. This may be directly with the stakeholders as in Burkina Faso, but also by initiating preparatory activities with people who are willing to engage as in the case of Belen. Eventually the enthusiasm of participants may bring in the others.

4.5   Establishing interests and views

People are very used to 'bargaining' and tend to be locked into positions, which may make it difficult to reach agreement and damage relationships. The thrust of mediation is to move towards exploring the underlying views, perceptions and interests and identifying the relevance these have for the actors. Often interests lists are established separately by parties with help of the mediator(s) covering both content and if applicable relational issues. These interests can be prioritised and subsequently shared between parties. In the case of Burkina Faso researchers and interviewers established the conflicts and interests and used these as a basis for workshops with stakeholders. In the case of Belen community members were trained to do this type of activities themselves with some limited outside support.

4.6   Creative identification of options for mutual gain

As the problems and interests are clarified, parties can start to identify options for mutual gain. The underlying concept is that parties jointly try to find a solution. Usually three categories of interests may exist: shared, neutral and opposing interests. The essence is to start the process by trying to find solutions to problems related to shared and neutral interests, and deal with the opposing interests last, when already potential gains have emerged from the process. It is also important to break problems down in such a way that they are manageable for the actors.

This approach will make it easier to review opposing interests in a reasonable manner and, if necessary, to seek objective indicators or external advice to solve the last differences. Most of the cases in the section on TOP cases and examples use a workshop approach to identifying options for mutual gain. It may also be feasible, and sometimes necessary, to

work with subgroups. In Belen, a community meeting was established to initiate a process that was continued by a committee that reported back to the assembly. Working separately with men and women may necessary in some conflicts. In Ecuador, it was found when working with separate groups that women wanted latrines close to their homes while men wanted them at a considerable distance from the house. Prior to discussing this issue latrines were constructed away from the house and the 'conflict' remained 'hidden'.

4.7 Weighing and choosing the potential solution

When at the end of the process a preferred solution emerges, parties are still not bound to this result. Each party will have to consider whether they find the solution better than their best alternative to a negotiated agreement (BATNA). If their decisions are positive, an agreement is signed and sealed between parties. It may be helpful to bring in independent advice for controversial aspects. This may help people to understand better whether certain claims and interests are 'reasonable'. Another aspect that may help is to rank potential solutions for example on the basis of technical and financial viability, environmental impact and social aspects, including inclusiveness of the poor and gender sensitivity.

4.8 The post agreement process

As indicated by Ertel (http://entrepreneur.typepad.com/news/2004/11/harvard_negotia.html 2004), it makes quite a difference whether you see the choosing of the solution as the end or as the beginning of the process. In the latter case it becomes important to be sure that parties indeed can implement the chosen solution. An implementation mindset needs to be achieved which requires taking into account five key aspects:
- Undertake an exercise with the actors to imagine what sort of problems they will encounter 12 months down the road
- Help the actors to agree to something they can deliver and help them to prepare
- Make alignment a shared responsibility of the actors
- Send one unified message which implies that actors should be briefed together and perhaps trained to be able to provide the same messages to their respective constituencies
- Manage the process like a business exercise and include post-mediation reviews

5 The mediator

The mediator plays a crucial role in the process by helping the parties to remain in dialogue and to use their energy to come to solutions while focusing on the future not the past. The mediator has to be recognised and trusted and this may be achieved at organisational level through the use of well-known and well-respected people.

The mediator brings three key issues to the table:
- A method to structure the process and to separate content from emotions
- Skills to guide the process and the actors setting some ground rules
- An open, impartial and respectful attitude

It is very important the mediator helps people to use the methods outlined in section 4, as people in conflicts tend to go about things in a chaotic way.

5.1 Important skills and techniques

Some of the important skills of mediators (Fisher and Ury, 1991; Kent and Touwen, 2001) include:
- Active listening: using both verbal skills and non-verbal behaviour to show interest and learn to understand the content
- Asking open-ended questions that do not contain any judgment or criticism
- Objectivity, validating both sides, even if privately preferring one point of view
- Identification and stating of controversial points as well as underlying emotions or needs, as often it is difficult for conflicting parties to express these points, reframing controversial points in such a way that tension and blaming are reduced
- Dealing with emotions, helping to bridge gaps in communication and avoiding parties losing face
- Recognising the interests of parties
- Ability to recognise and apply different communication techniques including meta-communication, (communicating about the communication process itself, showing the parties how they are communicating and putting question marks where needed)

Many of these skills can be taught and learned through training, particularly through role play. In such training exercises, other participants can be asked to observe the mediator using a checklist (Box 7).

Box 7. Observer's checklist on mediation (Kent and Touwen, 2001)

Did the Mediator:
- Establish a safe and supportive environment for both parties?
- Encourage parties to put themselves in the other party's place?
- Encourage parties to discuss interests and needs?
- Discuss the significance/implications of not reaching agreement?
- Get parties to focus on the future instead of the past?
- Identify areas where there was common ground between parties?

Active listening is a crucial skill; training brings the realisation that few people really listen. Often people are more concerned with their own ideas or already formulating their next intervention and barely hear what is being said. A good way to overcome this is by asking parties to restate the point the previous speaker raised.

The mediator has to steer the process and it is essential to redirect "fouls" (name calling, put downs, sneering, blaming, threats, bringing up the past, making excuses, not listening, getting even) immediately. Where possible you reframe the negative statement into a neutral description of a legitimate present time concern.

5.2   Basic attitude of the mediator

The basic attitude of the mediator is built on his or her own norms and basic beliefs and is reflected in behaviour, body language etc. Important behavioural aspects in mediation include:
- Being impartial
- Trustworthy
- Self-assured
- Interested in people and their problems
- Service oriented
- Patient

The training manual developed by Kent and Touwen, 2001 provides some interesting tips for mediators (box 8). http://www.ifuw.org/training/pdf/conflict-facilitator-2001.pdf

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Box 8: Tips for mediators

- Push each of the parties into the other parties' "shoes" so they may see what the situation looks like from other party's point of view.
- Slow down when needed, in order to give one of the parties more time or to give time for the mediator to decide how best to continue.
- Retain the confidence of both parties by spending equal amounts of time with each of them and by responding fairly to their concerns.
- Push a party a little if they are being unreasonable, preferably not by telling them but by asking for example what they would consider a reasonable outcome and then ask if they think the other party would agree with such evaluation. This is called "reality control" and it helps to see whether the perception of all parties is realistic.
- If a confidence is broken, an apology is essential and can help start building a new confidence. Sometimes it requires mutual apology, sometimes not.

Kent and Touwen, 2001

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6 TOP cases and examples

Some case studies are presented here that give examples of conflict situations and possible solutions. It is interesting that few documented cases of mediated interventions in local water supply and sanitation conflicts are available on the Internet, in comparison to the greater amount that can be found about managing transboundary freshwater disputes and water catchment management. Readers are invited to send relevant case studies to IRC so we can make these available to a wider public.

6.1 Burkina Faso: Managing conflict at the village handpump

http://www.scienceinafrica.co.za/2001/august/handpump.htm

Beginning in 1999, the Centre d'études, de documentation et de recherche en économie sociale (CEDRES) at the University of Ouagadougou initiated a project with support from the International Development Research Centre (IDRC) that aims to improve the management of local water resource conflicts. CEDRES provides scientific supervision, administrative and technical support, and professionals experienced in working with professionals.

The project team identified stakeholders from 19 villages in three different sub-zones of the Nakanbé watershed. The stakeholders included:
- Local users: men, women, girls and boys, also including market gardeners, livestock raisers, brewers of beer, merchants, brick makers, millers, and builders
- A local administrative layer of stakeholders including prefects, village chiefs, clan chiefs, and land chiefs
- Large water users such as the national water and sanitation company, the national hydroelectricity company, and local industries
- Market gardening groups, cattle herders, fishers
- Representatives of the city of Kongoussi, which draws its drinking water from Lake Bam
- Other stakeholders with power or influence over water issues such as the Ministry of the Environment and Water, large donor programmes, an inter-state training school on water resources and rural engineering, government research institutions, and administrative and political representatives.

Field researchers and community workers surveyed village-level stakeholders and a sample of households to identify the main conflicts and problems related to water resources. Problems included
- Social conflicts, such as jumping the queue at handpumps which resulted in fights, or friction when other ethnic groups arrived at the watering station with their livestock
- Technical problems as there were too few pumps and they were not well maintained

- Health risks due to lack of oversight by local water management committees causing contamination from the area around the hand pump by cattle

In September 2000, the different types of conflict were discussed at a two-day roundtable, which for the first time brought together community-level stakeholders and stakeholders from government, the private sector, and from academic circles. The participatory process was reinforced by exploring the viewpoints, concerns, and reasoning of stakeholders. About six weeks later, the project team worked with the roundtable delegates from the 19 villages to report back to their communities on proposed solutions. The communities were then asked to each select three solutions for implementation.

Progress was rapid as people in several villages already were taking action to resolve some of the problems, including planning to introduce water fees to raise money for a handpump; manually construct wells and other infrastructure and to establish support management committees. Moreover, the roundtable discussions seemed to have triggered a response from the government to speed up the possibility of new water installations. The project recognised that although some conflicts can be solved by social action others need technical interventions. The project took advantage of the momentum that was generated by implementing at least one of the three chosen solutions (such as repairing broken pumps and wells, creating water holes for cattle) in each village.

The project is now in its second phase using the 'pilot communities' to spread this approach to other communities. For further information contact
Dr Nlombi Kibi, Projet CEDRES, nlombi_kibi@hotmail.com or nlombi.kibi@bf.refer.org
Dr Guy Bessette, People, Land and Water Program Initiative, IDRC gbessette@idrc.ca

6.2   Belén: How to change ineffective management

http://www2.irc.nl/manage/stories/belen.html

The village of Belén in Guatemala, a community with 290 houses and a population of 2,038, had an important water supply problem. Their system built by the government water company UNEPAR with help of the community in 1984 and extended in 1993, was failing to provide a satisfactory service and some users no longer paid their water fees.

The water committee approached UNEPAR several times, but support did not materialise. Things started to change when a participatory action research project led by Agua para el Pueblo (ADP) and supported by IRC reached agreement with some community members to start working in this community. Initially the water committee was not part of this group. They indicated that: "If you bring pipes, money or something, we can work; if not, we're only wasting our time".

Members of the community group formed a group of 'local researchers' to work with ADP. Their focus was clear as expressed by one of the women in the group "First, let's fix the water problem and once the people see there's water, maybe the committee can be

changed". The team members were trained and thereafter started a participatory assessment of the problems using several techniques including structured interviews, matrix ranking, transect walks, and historical timeline. The results (Box 9) were discussed in a community assembly.

Box 9. Problems identified in the Belen water supply
- Low water pressure, with water failing to reach several users
- High water use by some for productive use (cattle raising, coffee production etc.) or for 'swimming pools'
- Illegal connections
- Inadequate regulations
- Inadequate maintenance and repairs
- Part of the users, particularly the better off and the younger families not paying

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An important decision was taken in the community assembly that the local investigation team would form part of a water committee support group. This started a process that was not easy as the water committee felt that the support group had no right to see the books, but eventually the situation was resolved with the community.

Based on the problem analysis and suggestions for solutions made in community assemblies, the committee made an improvement plan. Elements included defining budgets, the role of the committee, functions of local personnel, administration, regulations, and fees. This plan was validated at a community assembly where it was agreed to adopt four priorities:

- Provide water to all beneficiaries
- Search for ways to collect the fee from all the beneficiaries
- Look for finance to rehabilitate the system
- Begin the paperwork to legalise the new committee.

The process turned out very well in the end as the committee was able to:
- Establish new regulations for the water supply, matching the local situation
- Improve fee collection and maintenance of the system
- Obtain some external financial resources to improve parts of the system
- Obtain legal status for the committee
- Build rapport with the community

For further information contact Fabian Gonon of SER (serxela@terra.com.gt) in Guatemala or Ton Schouten (Schouten@irc.nl). You can also visit the IRC website for other project stories. http://www2.irc.nl/manage/stories/simple.html

6.3 Improvement of public services in Faget, Romania

http://www.partnersglobal.org/case_studies/gg_romania_faget.html

Partners Romania Foundation for Local Development (Partners-Romania) implemented a program in Faget to improve local water supply and garbage collection services by improving the knowledge and skills of local government officials in these areas and by improving communications among representatives of citizens, local government, and public services providers from the private sector. The UN Habitat manual *Total Quality Maintenance of the Operation and Management of Public Services*, translated and adapted into Romanian, was used in this problem-solving process.

Partners-Romania then organised a seven-day workshop for local officials, including the mayor and deputy mayor, public services managers and technical staff, and representatives from the private sector. Discussions focused on identifying and analysing the problems, prioritising them, and developing possible solutions. The absence of water meters was identified as a key problem as well as the lack of proper trucks and cans for garbage collection. Participants appreciated the problem definition process, saying, "a well defined problem is half solved."

Stakeholders who had an interest in fixing these problems were identified and action plans were developed to move from the planning stage to implementation. Since the workshop, a water meter system has been installed, and inhabitants of Faget are more satisfied with the water supply service. The waste collection service has purchased new trucks and provided garbage cans to households, and Faget is now perceived by its citizens to be a cleaner city. Faget's participatory process to problem solving has since been used as a model for the towns of Brasov, Oradea, Suceava, Craiova and Piatra Neamt.

For further information contact Partners-Romania (http://www.partnersglobal.org/centers/centers_romania.html) at: fpdl@fpdl.ro

6.4 Payment for environmental services in Chaina, Colombia

http://www.cifor.cgiar.org/pes/publications/pdf_files/colombia_experience.pdf

This is an interesting case where it was proposed that the community would pay a fee to cattle owners and agriculturalists to protect the water shed. This was proposed a few years ago but unfortunately no information is available how this interesting idea worked out in practice.

6.5 Social mediation of water conflicts in Aragon, Spain

http://www.ecodes.org/pages/articulos/documentos/iniciativa_social.pdf

This article presents a social mediation initiative initiated by the Fundación Ecología y Desarrollo (FED) in the Aragon region of Spain. The conflict arose between irrigation farmers who are eager to build reservoirs in a small catchment area to expand the volume of water available for irrigation and environmentalists who want to protect the catchment area and are totally against building reservoirs. A major step was made when in a process encouraged by FED in 1999 the parties decided to end their long standing conflict through dialogue. The first step was to create a joint vision about the area at stake. FED invited a group of 38 well known people who had not taken a public stand in the issue to participate in the initiative. Then the 13 most relevant parties were invited to explore the situation and to listen to each others views which resulted in 90 proposals and/or interests. These were submitted to all parties with the question which they could accept and which not. This already led to 18 shared proposals/interests. However in the end parties did not sign up. In 2004, FED was invited by the regional government to reinitiate the Social Mediation Initiative and to link it the newly installed Water Commission. This time it went much better, partly because the work was done on an issue by issue basis and much stronger emphasis was placed on the interests of actors. Agreements on several issues now exist. A few relevant lessons include:

- Complex problems often involve complex solutions
- All interests need to be valued
- It is crucial that the public administration participates in the process and encourages positive actors
- You have to deal with reasons and emotions
- Shared agreements based on consensus are easier to implement
- Each conflict needs its own methodology.

6.6   Water conflict in metropolitan Cebu, the Philippines

CEBU ftp://ftp.fao.org/docrep/fao/005/y4503e/y4503e01.pdf

This case study focuses on resource and policy conflicts over the management of watersheds and water supply service 1.4 million citizens of metropolitan Cebu (Metro Cebu) in the Philippines. Located on the island of Cebu in the central Philippines, Metro Cebu is fast approaching the limits of its land and water resources, as a result of economic growth, population influx and industrial development. The local water utility, the Metro Cebu Water District (MCWD), can only meet 30 percent of total water demand. Other users rely on groundwater from private wells. Unregulated groundwater pumping and reduced recharge resulting from urbanisation have caused saltwater intrusion into coastal aquifers. If growing demand cannot be met by other water sources, the aquifer faces irreversible harm. Recent estimates point to a water deficit in 2020, even if all planned water supply projects are operational by 2015. Local water shortages seem inevitable unless MCWD regulates coastal wells and upgrades distribution systems. A water shortage in the near future remains the main motive for calls to protect the three inland watersheds – the Mananga, Kotkot and Lusaran – that could provide future sources of water for Metro Cebu.

Opposing positions on the development of watershed resources are highly polarised and each position is supported by a national policy. The 1992 National Integrated Protected Area System (NIPAS) Act is biodiversity conservation legislation that provides the basis for watershed protection policies that local experts believe could maximise the quality and quantity of water for future dams. However, local government, landowners, farmers and business interests oppose the emphasis on watershed protection and its effects on livelihoods and property claims, and base their objections on a 1991 Local Government Code that devolved many government responsibilities to the local level. Conflicting administrative boundaries, property claims and access rights further complicate the local policy context for water resources management.

In 1994, fears of a water crisis led among other things to the establishment of a local civil society coalition Cebu Uniting for Sustainable Water Foundation (CUSW), who applied a community-based natural resource conflict management (CBNRCM) strategy which combines coalition building with land use planning.

CUSW plays a dual role of facilitating public participation in the process, and lobbying for integrated resources planning as a mechanism for mediating conflicts. As an "insider facilitator", CUSW creates a forum, convenes stakeholders and attempts to mediate resource conflicts (Nacario-Castro, 1997: p. 30). CUSW builds a coalition by convening many interest groups around water resources issues and demanding greater public participation in official policy making. The CUSW role of insider facilitator contrasts with other approaches that rely on a neutral, third party facilitator or mediator. CUSW also has clear advocacy goals around water resources management. It seeks a secure, safe and adequate water supply for all sectors and stakeholders in Metro Cebu without privileging the interests of specific groups.
CUSW members believe that an integrated resource and land-use planning process will "help rationalise different interests and serve as a mediation-conflict resolution mechanism" However CUSW's involvement in advocacy has also significantly limited its ability to resolve natural resource conflicts.

CUSW arranged several public consultations based on the identification of 22 sectors or stakeholder groups to represent diverse positions and interests. Each sector elected representatives and prepared a position paper on watershed protection. A 12-point framework for watershed management was drawn up and ratified, based on the position papers and additional consultations in upland villages. CUSW viewed the framework as a guide for its activities and the master plan. They then sought actively to involve watershed communities and achieve broad public involvement.

CUSW is a politically influential coalition. However, its efforts have not yet resolved the major water-related resource conflicts in Metro Cebu. The CUSW approach to CBNRCM remains challenged by traditional and emerging social divisions defined by class, wealth, language and economic alliances. Representatives of many sectors, including upland stakeholders, are actively involved with CUSW, but the coalition is still composed primarily of urban-based professionals, civic leaders, NGOs and government agencies. With a few

exceptions, the participation – and influence – of more marginalised groups such as tenant farmers, the landless and the urban poor remains largely indirect. Initial attempts at resource planning have not substantially eased the major conflicts over watershed management. On the other hand, as a direct result of CUSW lobbying and collaboration, the Cebu City Mayor established the Cebu City Land Use Committee (CCLUC) to develop an interim plan for land use and development in the 34 rural barangays, or villages, of Cebu City. The two-year planning process (1997–1999) involved CUSW, the Cebu City Government, national government agencies and civic groups. The planning area covered most of the three watersheds that are protected under national legislation. Furthermore CUSW participates as stakeholder in a five year project to establish a board for environmental management in Metro Cebu.

7 TOP books, articles, papers

There is a lot of literature about conflict resolution including some on large water conflicts such as sharing water among riparian states. Much less is available on specific water supply conflicts and none on typical sanitation conflicts. This section just lists a few particularly interesting publications. Most can be accessed through internet:

1. Butterworth, J., Ducrot, R., Faysse, N. and S. Janakarajan (eds) (2007). Peri-Urban Water Conflicts. Supporting Dialogue and Negotiation. Delft, The Netherlands, IRC International Water and Sanitation Centre. http://www.irc.nl/page/38645

2. Fisher R. and Ury, W. (1991). *Getting to yes; negotiating an agreement without giving in.* London, UK, Random House. Although written a long time ago it explains the process of principled negotiation very well and illustrates this with nice examples. A summary can be downloaded from http://www.colorado.edu/conflict/peace/example/fish7513.htm

3. Gichuki, F.N., Liniger, H., MacMillan, L.C., Schwilch, G., and Gikonyo, J.K. (1998). *Scarce Water: Exploring Resource Availability, Use and Improved Management.* This paper shows that a basin water accounting system and a good assessment of the actors involved are essential elements to be able to discuss and improve water sharing and management. http://www.cde.unibe.ch/University/pdf/Seiten_15-27_ESAG_Journal.pdf

4. IRC, (2003). *Community Water Supply Management: Stories from the field.* Delft, The Netherlands, IRC International Water and Sanitation Centre. This publication provides different case studies participatory action research on community water supply that overcame considerable conflicts in the participating communities http://www2.irc.nl/manage/stories/simple.html

5. Priscoli J.D. (2003). *Participation, Consensus Building and Conflict Management Training Course, developed for the International Hydraulic Programme of UNESCO.* This extensive resource document relates to water resources management but includes also general information and a number of tools and techniques that may be useful in conflict management. http://unesdoc.unesco.org/images/0013/001333/133308e.pdf

6. Snyder, S.E. (2003). *Negotiating high stakes water conflicts: lessons learned from experienced practitioners.* Colorado, USA, University of Colorado School of Law. This publication reflects on the results of two meetings with practitioners in conflict resolution and mediation. It presents ten guidelines for organising and managing negotiations and an interesting case study of failed conflict resolution and mediation over water claims in the Klamath Basin in Oregon, USA.

http://www.colorado.edu/Law/centers/nrlc/publications/RR29_Negotiating-Water-Conflicts.pdf

7. Swedish Water House (2004). *Water and Local Conflict: a brief review of the academic literature and other sources.* Stockholm, Sweden. This review presents material at the intersection of water issues and conflict studies. It includes academic papers, manuals, evaluations and Internet resources etc.
http://www.swedishwaterhouse.se/swh/resources/20050425162906Water_and_Local_Conflict.pdf

8. Thomasson, F. (2005). *Local conflict and water: addressing conflicts in water projects.* Stockholm, Sweden; Swedish Water House. This concludes with a few recommendations on how the water sector could introduce procedures and practices to explicitly address the issue of local conflicts.
http://www.swedishwaterhouse.se/swh/resources/20051017114417Conflicts_Water_Projects_050823.pdf

9. UNDESA and CRC (2001). *Skills Development for Conflict Transformation.* New York, USA, United Nations Department for Economic and Social Affairs and Centre for Conflict Resolution. This workshop manual aims at strengthening national capacities for handling conflict.
http://unpan1.un.org/intradoc/groups/public/documents/un/unpan001363.pdf

10. UNESCO (2006) *Urban water conflicts* An analysis of the origins and nature of water-related unrest and conflicts in the urban context. Paris, UNESCO. This publication surveys the controversial aspect of the management and, in many cases, mismanagement of freshwater resources in an urban setting. It addresses and characterises the conflicts that arise within large human settlements, due to the economic and social implications of access to and the use of basic water services. It also presents in-depth case studies from cities of various continents.
http://unesdoc.unesco.org/images/0014/001490/149032E.pdf

11. Visuales, V. and Celaya, N. (2005). *La iniciativa social de mediacion para los conflictos del agua en Aragon.* Zaragoza, Spain, Fundación Ecología y Desarrollo. An interesting paper in Spanish concerning a mediation process involving multiple stakeholders to solve water and ecological conflicts.
http://www.ecodes.org/pages/articulos/documentos/iniciativa_social.pdf

8   TOP websites

This section lists a number of interesting Websites with a brief description. As these websites change quickly, readers will have to visit them to get the latest information.

Beyond Intractability
http://www.beyondintractability.org/
A free knowledge base on more constructive approaches to destructive conflict The site includes many references to conflict resolution but hardly any to water supply and sanitation.

Centre for Conflict Resolution,
http://ccrweb.ccr.uct.ac.za/index.php?id=2
The Centre for Conflict Resolution aims to contribute towards a just and sustainable peace in Africa by promoting constructive, creative and co-operative approaches to the resolution of conflict through training, policy development, research, and capacity-building.
The organisation plays a leading role in contributing towards the resolution of conflict and the reduction of violence in Africa.

CGIAB (Comisión para la gestión integral de agua en Bolivia): This is an institutional platform of public and private organisations and universities concerned with water resources management and policy development. http://www.aguabolivia.org/ This site is included in this list as an example of a website that comprises interesting information and supports discussion among important stakeholders in Bolivia

Conflict resolution network
http://www.crnhq.org/
CRN provides different materials on conflict resolution and related communication skills. Some materials are freely downloadable.

Cornell/PERC - Institute on Conflict Resolution
http://www.ilr.cornell.edu/ICR/default.html
This Institute is supported by the Foundation for the Prevention and Early Resolution of Conflict (PERC), a non-profit organisation dedicated to "hands-on" engagement in conflict prevention and resolution. The Institute focuses on all areas of conflict prevention and resolution, including those relating to business, environment, communities, civil rights and health care, and what has come to be referred to as alternative dispute resolution (ADR). It does not have information related to water supply and sanitation. The site includes a section on news and announcements, and a comprehensive list of links to sites on the web that deal with conflict resolution, at extension http://www.ilr.cornell.edu/ICR/links.html
The site also links to the Internet-based distance learning program PERC 101, which covers the mechanics of conflict resolution such as mediation, arbitration, negotiation, and litigation.

CRInfo (pronounced "See Our Info") stands for "conflict resolution information source." http://www.crinfo.org/about/intro.jsp. It is a free, online clearing house, indexing more than 25,000 peace- and conflict resolution-related Web pages, books, articles, audiovisual materials, organisational profiles, events, and current news articles.

Global Policy Forum
http://www.globalpolicy.org/security/natres/waterindex.htm
This site presents an overview of articles and analysis that examine international water disputes, civil disturbances caused by water shortages, and potential regulatory solutions to diffuse water conflict.

Institute for Dispute Resolution of the University of Victoria
http://dispute.resolution.uvic.ca/
The Institute for Dispute Resolution (IDR) at the University of Victoria, British Columbia, is an interdisciplinary centre offering training courses on effective dispute resolution and alternative dispute resolution (ADR) theory and practice.

IRC International Water and Sanitation Centre
http://www.irc.nl
The IRC website has a broad range of information on water supply and sanitation including specific information on community involvement and participatory tools that is very useful for conflict mediation. A number of very interesting cases highlight various communities where water supply conflicts were solved by participatory action research and mediation http://www2.irc.nl/manage/stories/simple.html

Swedish Water House
www.swedishwaterhouse.se
The Swedish Water House has a group on local conflict and water that was established in 2003 and is responsible for preparing articles and other project activities such as workshops etc. The group was born out of a private initiative and is made up of researchers and practitioners working in the sectors of development and conflict management. It works with a network of academics, individuals, practitioners and policy-makers investigating the issues of local and intra-state conflict in connection. For further information on the group's activities or comments/questions on the present review please contact Fredrik Thomasson at f.thomasson@telia.com.

Water Wiki, United Nations Development Programme UNDP
http://europeandcis.undp.org/WaterWiki/index.php/Prevention,_minimization_and_resolution_of_conflict_in_local_water_management_projects
UNDP has a comprehensive article on their website titled prevention, minimisation and resolution of conflict in local water management projects, which includes definitions, some case studies, some tools and makes references to other websites that may be of use. They distinguish three main categories of conflicts: a) conflicts between rural and urban areas, b) competing inter-sectoral water claims such as instances where an industry draws heavily on groundwater resulting in falling levels for neighbouring communities, and c) conflicts triggered by policy or lack thereof e.g., absence of clear ownership etc.

9   TOP contacts

Although there are many people working in this field, we have listed only a few who particularly relate to water supply and sanitation and/or development processes. You can find other persons through the different websites presented in this publication. We are interested in expanding our resource base and therefore like to receive suggestions for other contacts. Submit names with a brief explanation to Sascha de Graaf (graaf@irc.nl).

CAP-NET Capacity Building for Integrated Water Resource Management (IWRM) (http://www.cap-net.org/). Cap-Net is an international network for capacity building in IWRM. It is made up of a partnership of autonomous international, regional and national institutions and networks committed to capacity building in the water sector. Contact: Kees.Leendertse@cap-net.org

Danish Institute for Development Studies (www.diis.dk). This institute has several staff working on water conflicts among other on research related to water conflicts in Bolivia. These include Mr. Helle Munk Ravnborg (hmr@diis.dk), PhD, Senior Researcher, Head of the research unit on Natural Resources and Poverty and Ms. Signe Marie Cold-Ravnkilde (smr@diis.dk) (http://www.diis.dk/sw37650.asp)

IRC International Water and Sanitation Centre: has a multidisciplinary team of water supply, sanitation, hygiene and broader water resources management specialists that can be approached through:
John Butterworth: butterworth@irc.nl
Jan Teun Visscher visscher@irc.nl
Sascha de Graaf: graaf@irc.nl

Swedish Water House Group on local conflict and water: a multi disciplinary network of academics and practitioners that can be contacted through:
Fredrik Thomasson at f.thomasson@telia.com

10 TOP courses, conferences and research programmes

We found limited information on courses and are very interested in receiving other suggestions. Submit them with a brief explanation to Sascha de Graaf (graaf@irc.nl).

Dealing Constructively with Intractable Conflicts; An Online Course from Beyond Intractability of the University of Colorado
http://www.beyondintractability.org/DCIC/#1U
This is a college-level web based course. The course focuses primarily on long-lasting, difficult-to-resolve conflicts, but it also has a lot of general conflict resolution material.

CAP-NET Capacity Building for Integrated Water Resource Management (IWRM)
http://www.cap-net.org/. Cap-Net is an international network for capacity building in integrated water resources management (IWRM). It is made up of a partnership of autonomous international, regional and national institutions and networks committed to capacity building in the water sector. It provides different training courses and training materials and links to training institutions that deal with integrated water resources management.

Curso de auto instrucción en manejo constructivo de conflictos, concertación y herramientas para la incidencia política of CEPIS.
http://www.cepis.ops-oms.org/cursomcc/e/index.html
This is an online course in Spanish that includes a section about constructive management of conflicts. Visitors to the web site can take the course and, if they successfully complete it, can do an exam and obtain a certificate.

Fundación UNIR
http://190.129.86.98/portal/index.php?option=com_frontpage&Itemid=1
This foundation in Bolivia was established, among other reasons, to promote action that reduces the cause of conflict by strategic initiatives in the areas of information, negotiation, deliberation and dialogue. The site includes information about a course in conflict analysis and management with universities in Cochabamba, La Paz and Santa Cruz. Since 2005 they also provide training in negotiation and conflict management to civil society organisations.

University for peace
http://www.upeace.org/academic/training/
This United Nations mandated university was established in 1980 to provide humanity with an international institution of higher education for peace and with the aim of promoting among all human beings the spirit of understanding, tolerance and peaceful coexistence, to stimulate cooperation among peoples and to help lessen obstacles and threats to world peace and progress. It provides a course on Conflict Management and Natural Resources. Information on this course can be found by browsing through the academic calendar.

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12 About IRC

IRC facilitates the sharing, promotion and use of knowledge so that governments, professionals and organisations can better support poor men, women and children in developing countries to obtain water and sanitation services they will use and maintain. It does this by improving the information and knowledge base of the sector and by strengthening sector resource centres in the South.

As a gateway to quality information, the IRC maintains a Documentation Unit and a web site with a weekly news service, and produces publications in English, French, Spanish and Portuguese both in print and electronically. It also offers training and experience based learning activities, advisory and evaluation services, applied research and learning projects in Asia, Africa and Latin America; and conducts advocacy activities for the sector as a whole. Topics include community management, gender and equity, institutional development, integrated water resources management, school sanitation, and hygiene promotion.

IRC staff work as facilitators in helping people make their own decisions; are equal partners with sector professionals from the South; stimulate dialogue among all parties to create trust and promote change; and create a learning environment to develop better alternatives.

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