



018530 - SWITCH



Sustainable Water Management in the City of the Future

Integrated Project
Global Change and Ecosystems

D 6.1.4 A handbook of appraisal and communication tools to assist conflict resolution and minimize barriers to effective decision-making.

Organisation name of lead contractor for this deliverable: IRC International Water and Sanitation

Period covered: from M1 to M60
Start date of project: 1 February 2006

Date of preparation: January 31, 2010
Duration: 60 months

Revision [final]

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	PU
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

SWITCH Briefing Note Training Manual Conflict Resolution
<p>Audience</p> <p>The audience of the training manual are professionals that provide training to practitioners that are involved in urban water management or the facilitation of multi-stakeholder platforms.</p>
<p>Purpose</p> <p>The purpose of the training manual is support the capacity development of practitioners that are involved in urban water management.</p>
<p>Background</p> <p>Urban water management is a complex and wicked problem that easily gives rise to conflicts between groups of stakeholders. A better understanding of conflict resolution methods will support practitioners in their endeavour to come to well balanced and well negotiated solutions to these complex problems.</p>
<p>Potential Impact</p> <p>The potential impact of this training manual is an improved capacity of urban water management practitioners to avoid or resolve conflicts between different stakeholder groups. The case study on urine diversion in Sweden has already been used to guide the design of a large-scale housing project with urine diversion toilets.</p>
<p>Issues</p> <p>The main issue is that many practitioners involved in urban water management have a predominant technical background. In some cases, this might make it difficult to deal with underlying causes of conflicts between stakeholder groups.</p>
<p>Recommendations</p> <p>The training manual needs to be considered as guide for future trainers who should adapt the training curriculum to the background of the trainees, their working environment, and duration of the training programme. The training manual can also be used as a tool for self-study.</p>

Facilitating conflict management and decision making in integrated urban water management

A resource and training manual

Jan Teun Visscher and Joep Verhagen (ed)

Contents

Preface.....	4
1. Introduction.....	5
1.1 The urban context in water management.....	5
1.2 Integrated Urban Water Management	9
2. Collaboration and planning	11
2.1 Enhancing collaboration in IUWM.....	11
2.2 The lifecycle of multi stakeholder platforms.....	12
2.3 Level of planning and collaboration	17
3 Overview of IUWM-related conflicts.....	19
3.1 Megacity Chennai in conflict with surrounding villages, India.....	20
3.2 Water mafia” in Asian cities	21
3.3 Peri-urban water conflicts in São Paulo, Brazil.....	23
3.4 Extreme flooding creates impetus for change in England	24
3.5 Management and communication problems in Northern Island	25
4 Communication and decision making for conflict reduction	27
4.1 Effective communication.....	27
4.2 Transparent decision making	30
5. Conflict resolution approaches.	36
5.1 Introduction.....	36
5.2. Conflict perception and response	37
5.3 Approaches to conflict management	38
5. 4 Approaches involving multiple actors	41
6 Learning about facilitating IUWM processes and conflicts	45
References.....	46
A1. Two descriptive case studies and intervention strategies	52
A.1.1: Challenging the use of prepaid meters in South Africa	52
A1.2 Water conflict in metropolitan Cebu, the Philippines	54
Annex 2. The tanneries of Villapinzon, Colombia	56
Summary	56
A1.1 Introduction	56
A1.2 Approach.....	59
A1.3 Solution	59

A1.4 Lessons learned and next steps	61
References.....	62
Annex 2 Stakeholder conflicts in Kullön Sweden	64
Summary	64
A2.1. Introduction	64
A2.2. The story of the conflict – resolving the deadlock.....	65
A2.3 Experiences from resolving the conflict.....	71
References.....	71
Annex 3 Case response sheets	72
A3.1 Case response sheet Villapinzon.....	72
A3.2 Case response sheet Stakeholder conflicts in Kullön Sweden	74

Preface

This publication is developed in the context of the project “Sustainable Water Management Improves Tomorrow’s Cities’ Health” (SWITCH). This is a five years European Union-funded action-research project led by UNESCO-IHE and involving 34 partners from 15 different countries on four different continents.

The focus of the SWITCH project is some of the key sustainability challenges in urban water management. In a number of cities around the globe, it set out to test what was needed for a transition to more sustainable urban water management through a combination of demand-led research, demonstration activities, multi-stakeholder learning and training and capacity building. The rationale for this non-conventional mix of activities was that it would encourage more relevant research to be undertaken, and facilitate better use of research findings in decision-making. Winning the engagement of key stakeholders in each city was considered central to making the shift towards more sustainable and coordinated urban water management.

This publication draws together experience developed in the SWITCH project, combining it with other information. It addresses the issue of Integrated Urban Water Management (IUWM) with a special emphasis on decision making and conflict management. It includes both training and resource materials that will be helpful for facilitators of and participants in Multi-Stakeholder Platforms and particularly platforms related to Integrated Urban Water Management. It comprises three original case studies that have been in such a way that they can be easily used for training sessions. For each of these studies also a response sheet was prepared which is particularly meant for the trainers.

The document was prepared by Jan Teun Visscher and Joep Verhagen from IRC with specific inputs from their colleagues Erick Baetings for chapters 2 and 4.1, Amélie Dubé for chapter 1.1 and Cor Dietvorst for chapter 3 and one of the case studies. The case study of the Tanneries in Colombia was prepared by Monica Saenz from the University of Los Andes in Bogota and the one on urine separation and re-use in Kullön Sweden by Mats Johansson from Ecoloop and Elisabeth Kvarnström from Stockholm Environment Institute (SEI) in Sweden.

1. Introduction

Decision making in integrated urban water management (IUWM) is getting more and more complex and involves many formal and informal stakeholders. No longer can single actors decide the course of events. Stakeholders may not be properly represented in existing decision making platforms and may have very diverse and conflicting interest. This training manual brings together information about stakeholder participation, decision making and conflict resolution in IUWM to support transparent decision making and effective conflict resolution

This first chapter provides an overview of the main urban characteristics in relation to Integrated Urban Water Management (IUWM). Chapter two presents approaches to partnership building and Learning Alliances to bring stakeholders together to establish a better and broader basis for planning and decision making. Stakeholder involvement is particularly important as choices will have to be made and implemented which requires that actors are being heard and are involved. Reality is often different and severe problems arise in IUWM as shown by some examples in Chapter three.

Chapter four discusses two crucial aspect being communication and decision making which may turn out as a cause of conflict instead of contributing to solutions. Chapter five provides an overview of conflict resolution approaches and the document ends with a brief discussion in chapter six on the previous chapters and an indication how the three case studies of specific water conflicts where external actors tried to help finding solutions can be used for training.

1.1 The urban context in water management

The urban environment is known under different names such as cities, towns, metropolitan areas and is defined in different ways between countries. Definitions may be based on the size of the population, population density, or urban type of land use. Historically, the first settlements are the result of task specialization and mechanization which enhanced food production. In combination with population growth more individuals and resources became available to produce other goods (manufactured goods, trade, services). As a result, economies of scales became possible, making urban areas grow in importance and in number over time (Mumford, 1961). The effect of this growth is very important. In 2008, for the first time in history, the urban population outnumbers the rural population. This trend will continue and by 2030 there will be some 5 billion urban dwellers, 81% of humanity. Most of this growth is taking place in the developing countries and especially in small and medium sized towns. The effect will be particularly notable in Africa and Asia where the urban population will double between 2000 and 2030 (UNFPA, 2007).

To exist, sustain and grow urban areas need vital natural resources including water in sufficient quantity and quality and be able to dispose of their waste. This may cause growing conflicts among different groups of urban inhabitants and between them and the rural hinterland, as pressure on resources increases and the negative environmental impact from inadequate waste and drainage water and waste disposal becomes stronger.

Three important criteria can be used to characterise urban areas:

- Population density
- Population diversity, and
- Presence of urban services

Population density, the number of habitants per square kilometre, can vary considerably in urban areas and in some countries is used as part of the definition. In Canada for example urban areas has a minimum of 1000 population and 400 persons/km² (Statistics Canada, 2001) whereas in Japan, the minimum required density for urban areas is 10 times higher – 4,000 persons/km² (Wikipedia 1). When population density reaches a certain threshold in a geographical region, the landscape supporting the population will feature a continuum of human construct. This is an important characteristic of urbanization. Land use within the urban area is diverse and shows the effect of intensive competition for land and resources. This is also reflected in the price of land which in central areas in Dakar (Le monde, 2010), Senegal may be 1500 Euros/m² and 30,000 Euros/m² in Geneva, Switzerland (Wilkenson, 2010). Land in urban areas is an interesting investment but the competition for this vital resource can also become a major source of conflict and speculation (Box 1).

Box 1. The land market as source of conflict

Land in urban and peri-urban areas in India is a safe investment because of increasing prices. It provides a security for old age particularly in the developing world in the absence of a pension system. Land transactions are often paid largely in cash which is particularly attractive for people involved in the informal part of the economy which may have substantial undeclared cash (black money). Buying property provides an opportunity to invest this money. Furthermore a network of urban administrators, local politicians, and land brokers act as the lubricant for an often illegally operating land market that makes it relatively easy to purchase land in urban fringe. A related problem is that part of the dwellers in urban slums have invaded the area and have no land titles. This makes the provision of water and sanitation services complex as it is often seen that the provision of these services is a first step to legalization of slum areas.

Baken (2000)

Population diversity is often considerable in urban areas both in terms cultural and economic standing of individuals and groups that shape the population. Cultural standing in terms of political, cultural, professional and ethnical background and religion as well as income may have an important influence on water consumption patterns and size and composition of waste streams. This may vary over the geographical area in the town and with that also water consumption and waste patterns, thus adding to the complexity of Urban Water Management which needs to be understood by the actors involved.

Presence of typical urban services such as transport hubs, administrative centres, and a large service industry with a regional outreach is another characteristic of urban areas. The concentration of economic and administrative activities makes urban areas the engine of the economy in many countries. The density and diversity makes that large markets are created which are influencing the national but also the local economy, but at the same time may represent major challenges in terms of service provision (Box 2).

Box 2 Challenging service provision

Dharavi in Mumbai is one of Asia's largest slums with an estimated population between 600,000 and 1 million people living on 1.75 km² (population density between 300,000 and 600,000 persons/ km²). Providing basic services to the population poses enormous challenges – daily a minimum of 20 million litres of water needs to be brought in whilst 500,000 kg of faeces and 2 million litre of urine need to be evacuated. Dharavi is a centre of bustling economic activities – it estimated that the area produces goods worth US\$ 500 million on annual basis.

Source: <http://en.wikipedia.org/wiki/Dharavi>

A city has to provide services to its population to be attractive, liveable, and grow. This includes water supply, waste and storm water collection and waste disposal, services which often under intense and constant pressure. For sustainable and affordable service delivery to the urban population a number of dimensions have to be in place (Moriarty 2008, Verhagen and Ryan, 2008):

- Policies and a good regulatory framework has to be in place
- Technologies have to be suitable to the local context
- Local capacity and skills need to be available to manage the systems
- The entire life cycle cost of interventions need to be affordable.

The situation is however even more complex as urban areas export their impact outside their own area. They have a large ecological footprint that may put adjacent areas under considerable stress. Natural resources are consumed daily in great quantities and these have to be acquired outside of the city boundaries to satisfy the need of a concentrated population. To support urban needs, urban peripheries are depleted from their natural resources (Allen et al. 2004).

The urban characteristics described above are complex and pose a real challenge to water resource managers within and outside urban areas. Rapid urbanization, increasing water scarcities, growing waste streams, competition for space combined with a strong fragmentation of the urban water sector makes integrated urban water management complex. Even more so because decisions regarding urban services may have an impact on the city as a whole or only on particular neighbourhoods and may affect some dwellers more than others.

Defining urban actors

In democracies, citizens or associations of citizens manifest their interests and expectations when participating in debates related to decision-making on the provision of service. So they may be an important actor and can elect the administrative authorities of their choice by voting. Management and administration of cities may take the view of ordinary citizens into consideration but at the same time are often closely connected to power groups including political parties and the financial and private sector. Also it is important to realize that some groups such as people living in slums may have a very weak 'official' voice when it comes to representation in decision making processes and even no security of tenure (Box 3).

Box 3 Representation problems for large groups of people

Kibera alone for example, which is the largest slum in Nairobi (Kenya) with an estimated population between 350,000 and 1,000,000 inhabitants (Unhabitat, 2006) has no official weight in the decision-making process.

The poorest and least well educated people, and people who are disadvantaged in other ways, by virtue of sex, religion or occupation, are those who are most likely to try to solve problems through big men (people with some influence often from their neighbourhood and are more involved rallies of political parties. Better-off people seek to solve their own problems, go directly to government or have recourse to legal action. They are (relatively speaking) active in associations rather than in politics

(Harriss, 2005).

Local governments, including cities, metropolitan or regional authorities as well as district and even neighbourhood councils are considered to be closest to the citizens. They act within the powers that have been constitutionally delegated by higher level of government. Their power can vary greatly from country to country, but even where they are more powerful

central government still plays an important role in urban areas, by dictating the broader policy agenda on health, environment, education, etc. Another difficulty is that different levels of government overlap. In Burkina Faso for example municipal government seems to have little say in urban water and sanitation services as these are provided by ONEA, a national governmental agency (www.oneabf.com). Another example is shown in Box 4.

Box 4 A complex government structure in Bhuj, Gujarat, India

The town of Bhuj is a Municipal Corporation which places it directly under the control of the district collector. Corporations are more autonomous in dealing directly with the State Government. The Bhuj Municipal Corporation consists of:

- (a) the Municipal Council consisting of elected councillors representing each of the 12 wards of Bhuj headed by a Mayor which is allowed to levy taxes such as a property tax, vehicle tax and taxes for services such as water supply, garbage collection, and street lighting; and,
- (b) a State appointed Municipal Commissioner, an Indian Administrative Service (IAS) officer heading the executive wing.

In addition to the Municipal Council the Revenue Department (Collectorate) headed by the District Collector, who reports to the State Government plays an important role. This Department, amongst others, is responsible for:

- cadastre and land records;
- control land use; collection of land tax; and,
- control over urban water bodies (the Irrigation Department is under the purview of the Collector).

A third authority operating at the municipal level in Bhuj is the Bhuj Area Development Authority (BHADA). This is an Urban Development Authority (UDA) entrusted with the development of development plans for its area which is wider than the area covered by the Municipal Corporation. UDAs report to State Departments and were established to coordinate urban development at the State Level and to compensate for the presumed lack of local capacity. UDAs have taken over some responsibilities from Municipal Corporations which has not reflected positively on collaboration.

This administrative set-up is fertile ground for institutional conflicts, political interference, and unclear responsibilities. In urban fringe areas the situation is even more complex as these have become urban due to population growth, but are outside the municipal boundaries and thus governed by the rural administration which is not geared to dealing with urban problems.

Source: Verhagen and Mihir Bhatt 2006

The private sector is also a major player in urban areas, as it represents the economic interest in the city, not only with the everyday businesses, but also through organisations like chambers of commerce. They influence the employment market but may also be involved in the water market. In sub-Saharan Africa small entrepreneurs are a crucial part in the water chain by selling water for a living and in some cases for considerable profit on a commercial basis (Kariuki and Schwartz (2005).

Different Civil Society Organizations may also be an important actor. This may include organizations such as registered charities, non-governmental organizations, community groups, women's organizations, faith-based organizations, professional associations, trade unions, self-help groups, social movements, coalitions and advocacy groups. Most of these organizations primarily represent and defend the interest of their members by trying to influence decision making and implementation in the city. They also act as communication channels by sharing information among their members. Carley et al. (ed) (2001) stress that the interaction between the state the market and civil society is complex and involvement of the latter in planning and decision making about urban services, especially in developing countries, may be very diverse. They stress that new and democratic urban social movements and networks can play pivotal for sustainable urban environments.

In addition to formally recognized interest groups and stakeholders, there are others that have no formal representation and try to use informal channels to influence decisions that are made by urban authorities. This includes for example private urban developers, but also in some cases illicit organization using illegal means to get their way.

In view of the involvement of different actors and levels of government it is often not so obvious that local administrations make the final decision. But even if they do so than still they may focus on (their own) short term results and may not sufficiently look at long term interests of their citizens and their diversity in culture and socio-economical standing, to enable an equitable provision of services. Moreover, decisions taken in (and for) urban areas have a large environmental impact on the surrounding rural areas as well, where dwellers have no voice at all in the decisions that are taken in the urban foreland.

1.2 Integrated Urban Water Management

In many urban areas and particularly in the developing world water management practices are not integrated and perhaps even non existing. The more common situation is that cities draw water from the surrounding hinterland and sometimes from large distances, provide some form of (sometimes costly) treatment before using and polluting it. The resulting waste water seeps into the subsoil or is discharged. In many cases, the urban waste water is discharged with no or only limited treatment creating a considerable burden to the downstream environment and downstream users. As a consequence of this form of water (mis)management the ecological footprint of urban areas is much larger than needed and does not adhere to the Dublin principles that were established in 1992 (Box 5).

So it is crucial to move away from the traditional linear model of managing urban water supply and embrace IUWM which finds its roots in the Dublin principles (Van der Steen, 2007). This change will require a paradigm shift that requires strong communication and learning. The essence is that the management of water resources needs linking of social and economic development with environmental protection within a basin or catchment area whilst closely involving all stakeholders.

Box 5. The Dublin principles established in 1992

1. Freshwater is a finite and vulnerable resource, essential to sustain life, development and the environment
2. Water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels
3. Women play a central role in the provision, management and safeguarding of water
4. Water has an economic value in all its competing uses and should be recognised as an economic good

<http://www.gdrc.org/uem/water/dublin-statement.html>

The components of IUWM

IUWM can be defined as “the practice of managing freshwater, wastewater, and storm water as components of a basin-wide management plan. It builds on existing water supply and sanitation considerations within an urban settlement by incorporating urban water management within the scope of the entire river basin” (Tucci, et al., 2009). IUWM covers a wide range of topics such as water supply, flood protection, public hygiene, protection of urban water bodies, waste water treatment, sanitation, water demand management.

The wide range of – mainly technical – research that was carried out within the SWITCH programmes illustrates this. Technical aspects are important but most of the conflicts are of a different nature and find their roots in the competition of scarce resources and the management of and decision making over these resources as will be shown in the examples presented in Chapter three as well as in the case studies.

The wide range of issues included in IUWM and the large number of diverse actors sometimes with overlapping roles and mandates makes it difficult to come to integrated approaches across the urban water cycle, across an entire city, and across different disciplines and institutions. The complexity of IUWM is further compounded by the growing scarcity of water and its economic and social importance, and the urban political realities. The combination of these factors makes IUWM a complex and wicked problem. Such problems have “incomplete, contradictory, and changing requirements; and solutions to them are often difficult to recognize as such because of complex interdependencies (Rittel and Webber, 1973).

Verhagen et al (2008) indicate that every wicked problem is essentially unique and dynamic. Solutions cannot be simply replicated but need to be reinvestigated and adapted for each specific situation. Solutions are often inventive or creative and require a ‘group effort’. Perfect solutions do not exist – they are not true or false but rather more or less suitable for a specific problem. Views on problems and solutions are subjective and often context dependent. Different stakeholders hold different viewpoints and preferences and this makes it problematic to judge the quality of the solution. Wicked problems can never be completely solved. They can only be improved and are often negotiated compromises between many stakeholders.

The dilemma that many parents face raising their children is a good example of a wicked problem from a totally different sphere: each and every child is unique, their view on the problems is very subjective and defines the kind of solutions, an upbringing is never perfect and always can be improved, and finally the way that children are being brought up continuously changes the problem.

Solutions to wicked problems are always outcomes of a process of creating a common language and negotiating a solution that is acceptable to most of the stakeholders. Multi-stakeholder platforms such as Learning Alliances (Morris, 2006) provide a platform to urban stakeholders for this purpose. However, this negotiating process is often painstakingly slow and prone to conflicts. Careful facilitation, transparent communication and decision making process are of key importance as will be further discussed in chapters 4 and 5.

2. Collaboration and planning

This chapter addresses two crucial aspects of IUWM: encouraging collaboration and joint planning, both essential in view of the large number of stakeholders involved. It will particularly address multi-stakeholder platforms including Learning Alliances.

2.1 Enhancing collaboration in IUWM

Ideally stakeholders would establish a *partnership*, a collaborative agreement between two or more parties in which all participants agree to work together to achieve a common purpose (e.g. improved IUWM) and to share risks, responsibilities, resources, competencies and benefits. Partnerships can be voluntary but also legal agreements and are characterised by partners having "added value" and seeing a win-win situation where through sharing and working together everybody gains more.

The complexity of IUWM however implies that the win-win situation may not be obvious for all stakeholders and some may lose considerable (legal or illicit) benefits, making true partnerships difficult to achieve. The better option seems therefore to be to strive for establishing *Multi-stakeholder platforms (MSP)* which can be defined as a negotiation process where stakeholders involved in a problem or specific issue come together to look for solutions (Faysse, 2006). Another definition is that of "a decision-making body (voluntary or statutory) comprising different stakeholders who perceive the same resource management problem, realise their interdependence for solving it, and come together to agree on actions for solving the problem" (Steins and Edwards, 1998). With stakeholders being "someone who has got something to lose (or win) with respect to a scarce resource" (Warner, 2005).

In the context of IUWM it is very important to try and involve all those with a legitimate interest in issues at hand in the MSP process, and not just a few interest groups. Viewed in that perspective an MSP involves:

1. Creation of a space of interaction between different types of stakeholders to enhance mutual understanding, building trust and strengthen social learning.
2. Establishment of a shared vision and through consensus, agree on roles, priority actions and sharing of resources to achieve change members cannot achieve on their own.
3. Development of mechanisms to prevent or solve potential conflicts.

Varma et al. (2009) indicate that MSPs have been proposed as a very good way to improve planning and coordination, to involve marginalised groups, and to increase learning and uptake of innovations in water management. In that they distinguish between *primary* stakeholders that are fundamentally affected by the problem and *secondary* stakeholders that create a link between the stakeholders and may act as mediator. MSPs should allow for a structured dialogue among stakeholders on how to achieve sustainability gains in IUWM and how to enhance cooperation and mutual learning.

It is important, however, to stress that MSPs are not a panacea. They are prone to potential conflicts because of complex membership constellations and to be successful require resources, expert facilitation and an initial phase for visioning, information sharing, role definition and development of a plan of action.

Learning Alliance for IUWM

The SWITCH programme has embraced the concept of Learning Alliances (LA) as strategic approach to IUWM in the cities participating in the project. LAs find their roots in research and development organizations trying to find better ways to scale up and out their research findings and innovations. Hence, an LA is a special form of an MSP aiming particularly at introducing innovation, and often with limited and only informal decision making power. Lundy and Gotret (2005) indicate for example that they see the LA as a process jointly undertaken by research organizations, donors, development agencies, policy makers and private business to identify, share and adapt good practices in research and development. Verhagen *et al.*, 2008 broaden this and define an LA as a series of interlinked stakeholder platforms from a given innovation system that seeks to achieve a widespread impact through the up-scaling of an innovative approach. Through working on the agreed-upon underlying problems, and contesting and evolving together potential solutions (i.e. action research mode), it is anticipated that mechanisms for addressing institutional constraints and enhancing institutional learning will be generated. In that sense, Learning Alliances are more geared towards doing things differently – making solutions work in a particular setting – rather than doing different things.

The concept of Learning Alliances revolves around the core premise that only an integrated comprehensive approach, which gathers all the parties involved for the start of the research programme (i.e. practitioners, researchers, policy makers, and activists), enables coping with the various deficiencies associated with research (Moriarty et al., 2007). The LAs in SWITCH created an environment where researchers became much closer to policy makers and practitioners. The mutual learning is an important step to improve IUWM. This experience makes it relevant to reflect on the process to establish a stakeholder platform or learning alliance.

2.2 The lifecycle of multi stakeholder platforms

An important aspect to take into consideration is that multi stakeholder platforms have a life cycle (Table 2.1). They start, develop and grow over time and then may flourish or already start to decline if success is not being achieved. Understanding this issue is of crucial importance as it implies that an MSP or a learning alliance is a temporary body that may change over time and cannot overtake the formal governance function the local or municipal government has. So it is temporary organization that may be revitalised if new change is needed. Figure 1 shows that each of the phases in the lifecycle comprises a number of key elements that require attention and action. Some of these phases may be more difficult than others.

Table 2.1. Multi-stakeholder platform lifecycle phases

Exploration	Establishment	Consolidation	Future
<ul style="list-style-type: none"> Identify founding members Define the purpose Explore potential stakeholders 	<ul style="list-style-type: none"> Develop joint vision Establish governance structure Secure resources Create communication strategy and branding 	<ul style="list-style-type: none"> Monitoring progress and impact Review of purpose and challenges Participatory Capacity Building 	<ul style="list-style-type: none"> Decision to finalize the activities when the purpose is achieved or if needed institutionalize the MSP
Based on Evans et al. (2008), Gormley and Guyer-Miller (2007), and Moriarty et al. (2007).			

Moriarty et al. (2007) emphasise that the establishment of MSPs requires considerable effort from stakeholders and facilitators, as stakeholders have a wide array of interests and motivations, and differing levels of power. Dedicated resources and attention are called for to ensure the active involvement of the poorest and most marginalised members of the community.

2.2.1 Phase 1: Exploration

Identifying founding members

Founding members are important to support the development process including the provision of necessary resources (staff, influence and finances). It takes some dedicated people to establish an MSP and it requires focused and dedicated facilitation. A champion – someone that opens doors that remain closed for most others – and sufficient interest of founding members is of essential importance.

Defining the purpose of the platform

Sufficient degree of strategic consensus among stakeholders is needed to develop shared and agreed strategies, and nourish the desire for active cooperation. Without a common cause, arising from shared interests, opportunities and threats, there is no ground to set up a MSP. Initial consensus may exist among the founding members but this consensus needs to be revisited and reconfirmed when the MSP starts to expand. The purpose of an MSP may more or less ambitious. For example it can aim at a relatively simple challenge of information sharing on specific issues or take up the major challenge of improving IUWM which is a far more complicating issue.

Identifying potential stakeholders

It is important to be inclusive in the identification of stakeholders which may be quite complicated as many – obvious and less obvious – actors may have a stake in IUWM (see section 1.1). Mapping stakeholders and their relationships may be useful as a first step with a tool used for stakeholder analysis developed by GTZ (2007). But also other resources are available for example from the EMPOWERS project (Moriarty et al., 2007) as well as a briefing note developed for the SWITCH project by Verhagen, (2007).

The selection process may be a combination of asking for volunteers, but some actors may need to be approached actively to seek their participation. A champion can play a crucial role in this. Ridder et al. (2005) suggest that stakeholders that were already identified may be asked to suggest other stakeholders and particularly those with a say in decision making and implementation and those that can potentially block developments. The process however needs to be very open to avoid creating antagonists before even starting. The core belief is that well informed stakeholders who communicate effectively with each other on a regular basis will find locally appropriate solutions to pressing water related problems (Moriarty et al., 2007). But this requires that actors who often are excluded or exclude themselves are invited to the table and helped to make their points. A related point is to make sure that participants actually represent their ‘constituency’ and not just speak on their own behalf.

The structure of the MSP is important as it may facilitate participation of different stakeholders. It can be considered as was for example the case in the Learning Alliance in Cali to not just focus on one MSP, but establish different platforms which function around sub-themes of IUWM, as this can create a lot of flexibility for stakeholders to participate in areas of their main concern whilst also keeping abreast of the results of the other platforms.

Another important aspect of stakeholder analysis is to gain understanding of the positions and interests of the different actors. This is often not easy as it requires confidence among actors and even then some may not want to disclose their genuine interests. This issue is particularly important if conflicts arise and will be addressed a bit more in chapter 5.

2.2.2 Phase 2: Establishment of the MSP

While establishing an MSP it is very important to create time and resources for the development of a vision, a governance structure and a communication strategy

Developing a joint vision

A joint vision creates purpose, common direction and guidance for the MSP and helps it to reach its objectives. Visioning is used to come to a shared understanding among a group of stakeholders about the main IUWM-related problems which affect them, and to develop a vision of how they would like the local level water management and service delivery to be at some time in future. The central question in visioning is: how do we want our urban water environment to be in 20 or 30 years?

An important advantage of joint visioning is that this allows participants to help model the MSP and use the vision as a basis to develop a long-term plan. It is a good way to explore the common ground among participants. Moriarty et al. (2007) stress that a vision must be more than an unattainable wish-list. It needs to be rooted in a good understanding of the situation and in prevailing trends and potential risks and constraints for achieving the vision. A good vision is the first step and needs to be followed by realistic scenario building and development of a clear strategy (see Box 6). Both visioning and the development of scenarios need to be supported by data and research.

Box 6. Visioning, Scenario building and Strategy development

The EMPOWERS Approach to Water Governance: Guidelines, Methods and Tools (Moriarty et al., 2007) includes specific tools for visioning, scenario building and strategy development.

Visioning is used to develop a precise and shared description of how a group of stakeholders would like the water resources and water services some future time

Scenarios are consistent descriptions of possible future situations; stories about the way the world may turn out tomorrow. Such narratives are to be based on current trends, particularly looking at factors with highest uncertainty but largest potential impact. By contrasting the scenarios with the vision a plan of action can be developed or the vision can be adjusted if the emerging scenarios show that it is not sufficiently realistic

Strategy Development is about making decisions in a fundamental strategic direction. Identifying broad groups of possible actions and identifying how challenges posed in achieving the vision can be overcome. It sets the basis for making detailed plans.

Moriarty et al (2007) www.empowers.info

It is important to realize that developing a vision is not a one-off event but as shown by Moriarty et al., (2007) it is part of a management cycle and needs to be revisited and perhaps adjusted over time.

Establishing a governance structure for the platform

Even though the level of formality of a MSP will depend on its context, nature, characteristics and goals, clear and transparent rules of engagement are needed for it to work and be effective. The governance structure refers to the way in which a platform is organised, how it makes decisions and manages its affairs, how it relates to the outside world and how accountability is maintained (WSSCC (2008). These arrangements (Box 7) may vary between MSPs, but also within an MSP and may evolve over time. Governance arrangements need to

be agreed upon with the members of the MSP to avoid disputes and disappointments later on. Many MSPs may have an informal or at best a semi-formal governance structure which can be characterised by not being a legal entity and being managed or coordinated by a steering committee consisting of active MSP members which is supported by a secretariat.

Box 7. Key elements of a governance structure for an MSP

- Shape, form and legal status
- Hosting, financing and coordination of the MSP
- Role and responsibilities of the different stakeholders
- Managing membership and meeting arrangements
- Establishment of sub-bodies to manage important tasks such as a secretariat (day-to-day tasks of organising meetings, developing and agreeing on agendas, sharing information etc.) and an executive body or steering group (more substantive leadership issues, including defining and delivering agreed tasks, monitoring the performance of the MSP, and resolving conflicts)

Shapiro (2003)

Developing an effective communication strategy and branding

Communication is essential to maintain interest among members but also to promote the work of the MSP and influence others as will be explained in more detail in section 4.1. Open public dialogue helps to enhance accountability, build public trust and create conditions for success. Communication requires a clear strategy that defines and describes how best to communicate among members and to other stakeholders about the work of the MSP and needs to be appealing to both audiences. Unfortunately many MSP have a weak communication strategy or no one at all and at best focus on traditional methods to disseminate results (Butterworth et al., 2008).

Branding can be part of the communication strategy and is a common marketing term to identify the goods and services of one organization or group of organizations differentiating them from others. Branding of the MSP can help to increase the profile and support getting the outside world to understand its relevance. Branding will help you to:

- Deliver the message of the platform clearly
- Confirm the credibility of the platform
- Connect and motivate the stakeholders
- Motivates members

Branding will help to distinguish which activities should be identified with the MSP and which with individual members. For others working in the background with a low profile can be more effective, especially in the beginning when the legal status of the MSP has not yet been resolved.

Sustaining the resource base

Strong leadership, skills and resources are essential to facilitate effective multi-stakeholder processes. Although MSPs are expected to have access to a wide range of resources, including people, skills, contacts and experience, they will also need the financial resources to function. Building partnerships can be costly and while the benefits may eventually outweigh the costs, investments needed are too easily underestimated and under-budgeted. Verhagen et al. (2008) state that allocating realistic funding is crucial especially when outsiders initiate change processes. An MSP needs to have dedicated facilitators and its own budget including resources for communication and dissemination activities. This is an important issue to

discuss with the members and needs to be part of the development of the MSP's action plan. Support may include financial and in-kind contributions but needs to be accounted for in a transparent way to avoid misunderstanding (Evans et al., 2008).

2.2.3 Phase 3: Consolidation of the MSP

Maintaining momentum is important to keep the members involved in the MSP. There has to be a rate of return of the time and resources they are investing. Several activities can help in this process.

Monitoring progress and impact of the platform

Monitoring is crucial to maintain momentum and explore whether envisaged impacts are being achieved (Moriarty et al., 2007). Monitoring needs to be linked to the objectives of the MSP and with the activity plan that has been developed. It also needs to include the quality of the relationships between stakeholders (Evans et al., 2008). Monitoring indicators need to be specific Measurable, Achievable, Relevant and Time-bound (SMART) and need to be agreed upon with the MSP members. They also need to be reviewed over time as the initial purpose and its main activities are bound to change depending on both internal factors (the internal dynamics of the platform and its ability to draw in key members) and external factors (the problems, opportunities and threats that affect IUWM (Evans et al., 2008). Monitoring should also include process documentation as an important tool to ensure that changes are not missed.

Measuring and celebrating success, and recognising and learning from failure, both are important and will help to sustain the interests of members and contribute to the effectiveness of the MSP.

Periodic review of purpose and new challenges

MSPs may go through periods of different levels of energy and enthusiasm because of changes in the context, lack of funds, turnover of key members, fatigue or simply due to the realisation of the initial purpose. This can be influenced to a certain extent by occasionally revisiting the objectives of the MSP and identifying possible new challenges. Changes will need the same consensus as the initial objectives and therefore need to be properly guided.

Capacity development

Members of MSPs have almost always different capacities and institutional knowledge and may be keen to learn about new ideas or skills. This may be one of the core issues that, if properly organized, can provide a strong impetus to sustain the MSP. Stakeholders need adequate information and strengthen their capacities to support strategic interventions in IUWM. Members may learn from other members and from outsiders. Thus the challenge is to structure appropriate participatory learning events (courses, workshops and seminars) that stimulate interaction between members. This may include both technical and managerial issues related to IUWM but also negotiation skills and effective conflict resolution mechanisms.

Proper documentation of these learning events and other information about the MSP is of crucial importance. Over time some members will leave and others will join. Such changes can be difficult if no clear and accessible information is available for new members to quickly emerge in the process. Hence, there is a need for adequate documentation and for the creation of a depository of relevant documents.

2.2.4 Phase 4 The future

The IUWM sector has made considerable progress with using multi-stakeholder processes. Many MSPs however have not met initial high expectations among others, according to Faysse (2006) because of an unfavourable context with considerable social inequities, unresponsive institutions and lack of resources. Powerful stakeholders such as government bodies may use MSPs for consultation rather than negotiation and joint decision making. Outcomes then may not enjoy wide stakeholder support and the Stakeholders are likely to start losing interest.

Where a MSP is facing an uphill struggle for survival, DFID (2004) suggests revisiting some of the work carried out in the start-up phase as this is expected to help refocus the MSP and may help identify gaps and areas where attention is needed. They suggest to:

- Be honest about the networks status – ask members for help or suggestions – do they want the network to continue – why – in what format etc.
- Kick start it again with a specific event – make sure you are ready to maintain it again.
- What are the incentives for active participation – can you boost these to make it more appealing
- Consolidate, document and acknowledge what the network has already achieved and then set a new agenda based on current members' interests.

Another reason to end the MSP is when the main job is done, objectives are met and no major challenges are on the horizon. In the case of IUWM however challenges may not so easily be solved and so a long term MSP might be the best approach. Yet in such a case it may be considered if the MSP cannot be transferred into a formal stakeholder's platform for example as part of a catchment management body or an urban WRM committee. This potential transfer of an MSP for IUWM into a more permanent body is made easier if at the start leading stakeholders such as the municipal government had a leading and convening role. Yet it is equally important that relatively 'independent' facilitation was available in the MSP for example in the form of staff of a respected university.

2.3 Level of planning and collaboration

Whereas a wealth of information exists on the development and the lifecycle of MSPs and LAs much less is available on the internal organization in terms of planning, collaboration, and decision making. Ridder et al. (2005) suggest that stakeholders need to be involved as early as possible in the MSP planning process, but at the same time it is important to realise that not every problem requires active involvement of stakeholders at all stages. Three different levels of participation can be distinguished (Adapted from Ridder et al., 2005):

- **Information:** this is the lowest level of participation and concerns providing access to information. This is a good start, but too often the emphasis of the leading organizations is on a one way flow of information with no channel for feedback
- **Consultation:** this means that members (and other interest groups) can react to the proposals of leading members. If these reactions are not properly taken into account however the consultation may become counter-productive and members may turn away from the MSP

- **Active involvement:** this implies that members of the MSP help to determine the agenda and jointly explore and decide upon potential solutions, be involved in taking decisions, and/or participate in implementation.

It is also interesting in this context to look at the information provided by the UK based organization Local Government Employers (Table 2.1). Their overview shows that in the case of an MSP the preferred form is co-ownership, but following Ridder et al. (2005) this not necessarily is need for all aspects the MSP is dealing with.

Table 2.1 Different types of participation in partnerships (LGE, 2010)

Type	Meaning	Explanation
Coexistence	"You stay on your turf and I will stay on mine"	A rational solution where clarity is brought to who does what and with whom.
Cooperation	"I will lend you a hand when my work is done"	Often a pre-requisite for further degrees of participation, where there is early recognition of mutual benefits and opportunities to work together.
Coordination	"We need to adjust what we do to avoid overlap and confusion"	Parties accept the need to make some changes to improve services / activities from a user / customer / community perspective and make better use of their own resources.
Collaboration	"Let's work on this together"	Parties agree to work together on strategies or projects, where each contributes to achieve a shared goal.
Co-ownership	"We feel totally responsible"	Parties commit themselves wholly to achieving a common vision, making significant changes in what they do and how they do it.

The 'lower' levels of participation (e.g. coexistence and cooperation) are often being facilitated or controlled by a small group of stakeholders (the initiators) and as a consequence they often lead to less involvement and therefore less commitment from others. The 'higher' levels of participation (collaboration and co-ownership) require active participation and therefore the full commitment by all. Information is essential for all levels of participation, but not all stakeholders may wish to be involved to the same extent.

3 Overview of IUWM-related conflicts

A magnitude of different types of problems and conflicts exist in IUWM. Some of these are shown in Box 8 and some are presented in more detail as brief case studies in this section which provide some more insight in complexity of the situation.

Short cases include:

- A conflict between urban and rural areas over water in India,
- The operation of a ‘water mafia’ in some Asian cities,
- A waste water problem due to the invasion of an area in Sao Paolo
- Flooding problems in England
- Management and communication problems in Northern Island

Some more detailed case studies of a number of problems and the way they were approached are presented in Chapter six and Annexes 1, 2 and 3. Problems may be very diverse in nature and may include conflicts over resources, unclear mandates, institutional conflicts, planning, investment of resources, water being the scene for political battles, the rural-urban divide. Some are open conflicts that are very visible and can be linked to the actors involved, whereas in other cases people may not even realize that they are part of a conflict (Visscher, 2008).

The case of urine diversion in Sweden is such an example. A new housing scheme was developed with a high ecological profile. It included urine separation toilets, but the separated urine was not used for agriculture but reverted back to the sewer system. The inhabitants and the municipality were less focused on environmental benefits than the developers of the area and did not mind the situation. Some even considered changing their toilet for a conventional system. The people that did not agree with the situation were from outside the area and they tried to change the situation. Another example is that many people may not realize that just leaving a tap in your house or yard open may deprive other users in higher locations in the community from water or that wasting the water if the tap is not metered incurs cost that may have to be met by other community members or other funders? This is typically a hidden conflict that often particularly affects the poorer sections in the community.

Box 8: Examples of common conflicts in urban water management

Water supply conflicts

- People fighting over access to water supply with the poorer sections often paying higher prices and having less opportunities
- Community members not able to afford connection fees to the water supply system that is usually constructed with considerable government and donor subsidies
- (Illicit) Water sellers establishing monopolies to keep the price high
- Urban water supply interests competing with other interests including water for food, water for industry and water for nature.
- Short term interests (political or financial gains, meeting coverage targets etc.) conflicting with long term interest of sustainability

Drainage and solid waste conflicts

- Spilling over of septic tanks and uncontrolled disposal of waste water
- Uncontrolled discharge of waste blocking water flows
- Reduction of drainage capacity due to urban constructions creating run off and flooding

Some conflicts may be ad-hoc whereas others may be structural and embedded in society. A common denominator however is that most conflicts do not solve themselves. Often it requires external facilitation that includes posing ‘revealing questions’ to help actors communicate and find solutions. The lack of communication among actors and their limited access to information results in people basing their stand and their attitude and behaviour on their individual perceptions.

Urban water management conflicts always involve multiple actors and multiple ‘positions’ that are based on underlying interests and emotions that need to be addressed. Conflicts may range from rather simple to being very complex because of the broad range of actors involved and the diversity of their interests. The latter is not inherently bad as more stakeholders may imply access to more resources (knowledge, technology, etc.).

3.1 Megacity Chennai in conflict with surrounding villages, India

With a population of nearly 7.5 million, India’s fourth largest city, Chennai, has been historically in water deficit for lack of perennial rivers. As early as 1965 it began being supplemented by groundwater from surrounding villages. In parallel also other actions were taken to meet increasing water demand. This includes the New Veeranam project (initiated in 1967) that brings water from a lake 235 km away from Chennai and the Telugu Ganga project (approved in 1977) that brings water through a canal system from a distance of 406 km. In 2001, the Chennai Corporation began constructing rainwater harvesting (RWH) structures in all corporation-owned buildings and now such structures are mandatory in all new buildings. In July 2010 the first in a series of large desalination plants was inaugurated. Despite these measures the conflict with the adjacent communities continues.

Government water boards and private operators transport groundwater from these villages to the city. Also there many bottled water companies in and around Chennai (200 in 2006). Existing legislation failed to control this groundwater overexploitation which resulted in groundwater depletion and salinization. The results are devastating for the local population as agricultural income has been decimated and employment opportunities dropped dramatically, especially for women. Even the water sellers start to lose out as their wells are drying up. Some inhabitants of the villages started to protest even already in 1972 and others followed suit in 1995. They tried public meetings and petitions to get the village council (Panchayat) and the court to ban water sales, but all efforts failed. As a consequence agricultural land remained uncultivated and partly was sold by the farmers. Landless labourers migrated to the city but some found employment in river sand mining. Sand mining, which reduced water yields considerably, was consequently banned following protests by water-selling farmers. This then led to a series of violent but unsuccessful protests against the Metro Water Board.

Approach to conflict resolution - multi-stakeholder dialogue (MSD)

In 2003 two villages Palayseevaram (pop. 5,285) and Velliyur (pop. 4,379) received support in 2003 from the European Community supported NEGOWAT Project. This project carried out a stakeholder analysis and water resource audits in preparation for a multi-stakeholder dialogue (MSD) in July 2004. The result of this analysis showed a complex picture of the main stakeholders which can be divided in the following groups

- The water selling farmers and well owners which want to continue with their water selling business but some are starting to get problems with wells running dry. They have support from the formal community representatives (Panchayat)

- The non-water selling farmers and landless labourers who have lost or are losing their business and jobs and therefore want the water selling to stop. They have received some support of civil society groups who oppose further exploitation of the villages.
- Public organizations involved (Tamil Nadu Water Supply and Drainage Board and Chennai Metro Water, with the priority to supply water to the population of Chennai)
- Private tankers and water bottling companies with long term involvement to capturing water from the communities to sustain their business

Multi-Stakeholder Platform

Through local partners, NEGOWAT helped form a committee of stakeholders with 64 members drawn from all sections of society. The committee held a series of multi-stakeholder meetings from July 2004 to April 2006 to discuss both threats to livelihoods in the villages and possible solutions to the drinking water problems of Chennai City. The committee reached a decision on two main recommendations:

- As a priority, water reservoirs or tanks in the villages should be restored to protect local agriculture and to supply excess water to Chennai City
- Before launching new mega water transfer projects the government should consider rehabilitation of Chennai's temple tanks and ponds, and wastewater recycling

The project also produced a water resource audit report listing 22 options for tackling Chennai's water problems. The MSD meetings themselves attracted widespread media attention. Unfortunately however the project ended and no further support was available to proceed with the MSD and according to current media reports Chennai City did choose to go ahead with mega water projects rather than rehabilitate existing urban water reservoirs.

This case study is largely based on: Janakarajan, S., et al. (2007), with additional information from Wikipedia 2, and Niranjana, (2010).

3.2 Water mafia" in Asian cities

In Delhi in India, Jakarta in Indonesia and Karachi in Pakistan as well as in other cities in the developing world water mafias collude with public water officials to sell overpriced water to the urban poor. All three cities face common problems: water shortages, water utilities with insufficient funds to maintain systems and extend them to serve poor neighborhoods, and unregulated private water vendors ("water mafia"). This is a lucrative business, with a turnover of some US\$ 87 million in Delhi in 2005 [Singh, 2005], and US\$ 43 million in Karachi [Rodriguez, 2010]. Water is tapped illegally from the public water system or private wells and resold at inflated prices to the poor without or with a rationed piped water connection. In Jakarta, middlemen have taken-over public water kiosks or communal tanks, often charging exorbitant amounts to consumers. In Delhi, even some of the legal water tankers working for the water board (DJB) are selling water meant for poor communities illegally to hotels and shopping malls [IBNS, 2010].

Several actors are involved in these problems with the mafia being primarily interested to block possible improvements in and even vandalizing piped water supply. Urban water utilities are trying to extend their service area, but are often not authorized or financially able to bring piped supply to informal slums. NGO's and consumers organizations are trying to improve the situation for the urban poor and the media are reporting more about corruption, which seems to start to lead to some change.

Delhi: consumer action

In Delhi, citizens use online public consumer platforms to register complaints about water mafia practices. In April 2009, the DJB reported that it had taken action against 30 complaints about water tanker fraud in one month [Ramachandran, 2009]. The Delhi government honoured a complaint by slum resident Brijesh Kumar to tackle the water mafia in his area after the DJB had failed to take action. Mr. Kumar received a CNN-IBN Citizen Journal award for his action [IBN, 2010]. DJB has announced it would tackle corruption in its water tanker fleet by introducing biometric identification for drivers, a GPS system to monitor tanker movement and a flow meter to account for the amount of water taken and supplied [IBNS, 2010]. It already awarded a seven-year contract to a private company (SPML) to manage water tankers in South and Southwest Delhi [Express News Service, 2011].

Karachi: documenting illegal practices

In Karachi there are no reports of platforms or NGO's that are tackling the water mafia. Karachi city officials sometimes take action by shutting down illegal hydrants but activists claim that they are reopened a week later. The Orangi Pilot Project Research and Training Institute (OPP-RTI) started documenting illegal practices in 2008 [Rahman, 2008]. Findings are disseminated through forums, presentations and meetings but as indicated by OPP-RTI manager the feeling still is that "There's really nothing ordinary Pakistanis can do to stop it" [Rodriguez, 2010].

Jakarta: negotiating with water vendors

In Jakarta, NGOs like Mercy Corps together with water utilities are making efforts to bring piped water to slums. They initiated a pilot project connecting 60 households through a community managed piped system connected through a bulk water meter with the main water system [Veda, 2010]. They have met with strong resistance from the local water mafia and corrupt water officials [Diani, 2009]. After a year-long negotiation, an agreement was reached allowing vendors to continue selling their water while households waited for connections. In June 2010 Mercy Corps officially handed over its system to the community. They expressed the hope that the government and private organisations would embrace their approach as they themselves cannot expand their programme because of inadequate water supply [Schonhardt, 2010].

References

- Diani, H. (2009). Pay up: how the water mafia controls access. Jakarta Globe, 24 Jul 2009. <http://bit.ly/igwj3I> [accessed 18 Mar 2011]
- Express News Service (2011). Contracts for water meters, tankers awarded at DJB meeting. Indian Express, 14 Jan 2011. <http://bit.ly/hmFQYI> [accessed 18 Mar 2011]
- IBN (2010). Citizen Journalists Awards, 2nd edition. CJ Brijesh Kumar - fight against Delhi's water mafia. IBNLive. <http://bit.ly/fdGDKc> [accessed 18 Mar 2011]
- IBNS (2010). Four companies show interests in DJB's move to privatise water tankers. newKerala.com, 07 Jun 2010. <http://bit.ly/gUUCls> [accessed 18 Mar 2011]
- Rahman, P. (2008). Water supply in Karachi : situation / analysis, priority issues and solutions. Karachi, Pakistan, Orangi Pilot Project Research and Training Institute (OPP-RTI). <http://bit.ly/fMumuv>

Ramachandran, S.K. (2009). Delhi Jal Board to strengthen tanker distribution system in the Capital, The Hindu, 28 Apr 2009. <http://bit.ly/gO6nEK> [accessed 18 Mar 2011]

Rodriguez, A. (2010). Karachi 'water mafia' leaves Pakistanis parched and broke. LA Times, 16 Mar 2010. <http://lat.ms/dESkMP> [accessed 18 Mar 2011]

Schonhardt, S. (2010). Jakarta struggles to provide clean water to all. Voice of America, 04 Aug 2010. <http://bit.ly/dHGWUp> [accessed 18 Mar 2011]

Singh, A.K. (2005). Delhi's water mafia does brisk business. InfoChange, Oct 2005. <http://bit.ly/hTvXH6> [accessed 18 Mar 2011]

Veda, T. (2010). The price of clean water. Jakarta Globe. 06 Jun 2010. <http://bit.ly/fR8t4z> [accessed 18 Mar 2011]

3.3 Peri-urban water conflicts in São Paulo, Brazil

Sao Paulo faces important water management problems, not for lack of institutions as highly institutionalised water management structures exist. Also progressive integrated land and water management policies in place are in place but their implementation is weak and low priority is given to sanitation and water quality. Also coordination problems and conflicts exist between municipalities, service providers and regulators. Representation of local communities in participatory bodies is weak and large social inequalities exist including differences in access to information and decision-making. Also problems exist with informal settlements (Butterworth et al., 2007).

These problems affect the extension of services to peri-urban communities and the management of wastewater which are major challenges for the Brazilian city of São Paulo. Some of the largest slums are located in the catchment of key water supply reservoirs for the city. Ironically, legislation aimed at protecting the catchment areas has caused land values to fall, as all the land adjoining them is public, attracting growing numbers of poor migrants. Almost one million people have now settled in the protected areas of the municipality.

The reservoirs receive huge loads of mainly domestic sewage with severe impacts on water quality and the aquatic habitat. Costly water treatment is needed to supply potable water to the city from these polluted sources. Efforts to upgrade services throughout the slums, where most people have access to piped water but not sewerage, have been largely unsuccessful.

Intervention by an external team

A Brazilian research team was invited by the municipality of Sao Paolo to help out with a communication strategy that aimed at convincing inhabitants from the slums that were recently legalised by the Court to install septic tanks. The slum dwellers find septic tanks too expensive, but the municipality thinks that communication will make them change their position. The team developed a computer-based game for multi-stakeholder negotiation. The games are based on the Companion modelling approach (<http://commod.org/>): a three-stage cyclical approach involving field studies, modelling and simulations. The team worked with stakeholders in two sub-catchments: Guarapiranga and Cabeceiras-Tietê. The computer simulation assesses the impact of land-use changes on reservoir water quality, cash assets,

employment and migrant settlements. In both sub-catchments the intention was to strengthen the capacity of local stakeholders in negotiations related to urban infrastructure development and in local-level municipal planning.

Four meetings were held mainly with local actors, with the municipality only participating in two meetings. These meetings helped to improve the relationships between the slum dwellers and the municipality. Also some discussions were initiated about potential cost sharing, but no alternative sanitation options were explored.

Some specific problems encountered by the team were the highly heterogeneous composition of the participant group – with one the one end members having university training and on the other end those with no formal education at all. Opportunity costs differ widely for the participants with some getting salaries from their institutions, whereas others pay their own way and forego income from their livelihood in order to attend the meetings. For the residents interest was often triggered by immediate concerns, such as fear of being expelled from their settlements. They tried to take action but they did not coordinate their strategies with other stakeholder groups. This is where the meetings became quite useful.

The meetings were also used to discuss the operationalization of the new legislation on land and water management. Unfortunately also this intervention was not very successful. In the end three different proposals for this operationalization were developed by different stakeholders. Today the problem still remains, but interest from the authorities is growing as the second State Water Resources Master Plan, approved in 2009, focuses on the conflict over water use. A major project is now underway with World Bank support to improve the water supply and sanitation systems

This case study is based on: Butterworth et al., 2007

3.4 Extreme flooding creates impetus for change in England

In 2007 England experienced the wettest summer since records began. Some 55,000 properties were flooded, around 7,000 people had to be rescued from the flood waters and 13 people died. Almost half a million people went without piped water supply and electricity. The pay out by the insurance industry was estimated to reach £3 billion (US\$ 5 billion). Directly after the floods, the government ordered a comprehensive independent review of the lessons to be learned. A year later in 2008, the “Pitt Review” was published, calling for “urgent and fundamental changes in the way the country is adapting to the likelihood of more frequent and intense periods of heavy rainfall”.

One of the main recommendations of the Pitt Review was for local councils to strengthen their technical capability in order to take the lead on local flood risk management. Existing legislative and regulatory frameworks governing storm-water management and flood prevention were unclear, as no one agency had the power or financial resources to implement integrated urban drainage plans. Traditionally, water authorities, city councils, highway agencies and environmental agencies all have a say in surface water drainage. All these agencies have differing incentives, accountabilities and investment planning horizons. There are also clear tensions between the need for promoting urban growth point initiatives and the realisation of capital receipts against the need to achieve effective sustainable drainage and the minimisation of surface flooding risk.

For local councils to take responsibility for future surface water drainage management, their resources and capabilities would need to be ensured as stated in the Pitt Review. This would

require a secure revenue stream through the introduction of a specific charge for surface water runoff; removing that element from the “bundle” of charges under the existing sewer charge, and including one for highway drainage.

The main lesson to be learned here is that effective stakeholder consultation requires a clear legislative framework and that sometimes an extreme event is needed to spark legislative reform.

References:

Ellis, B. ... [et al.]. (2009). Decision making processes and institutional mapping for stormwater management in the city of Birmingham, UK. Paper presented at the 4th SWITCH Scientific Meeting, Delft, Netherlands, 4th – 7th October 2009. <http://bit.ly/eV3q25> [accessed 21 April 2011]

Pitt, M. 2008. Learning lessons from the 2007 floods : final report. London, UK, The Cabinet Office. <http://bit.ly/efNnUQ> [accessed 21 April 2011]

3.5 Management and communication problems in Northern Ireland

In December 2010-January 2011 around 450,000 consumers in 215,000 properties across Northern Ireland had their water supplies interrupted for up to 11 days during adverse weather conditions. Some hospitals had to rely temporarily on the fire service for water, the Red Cross delivered bottled water to pensioners' homes, and hotels had to rely on seawater to flush their toilets. The head of Northern Ireland Water (NIW) was forced to resign over the mishandling of the water crisis.

Poor communication

An investigation by Northern Ireland's Utility Regulator established that a surge in water demand, which NIW was unable to deal with, was largely caused by leakages from domestic and business water pipes during a freeze/thaw transition. Communications by NIW's outsourced customer call centre were very ineffective. In a survey conducted by the Utility Regulator, 13% of respondents were unaware of NI Water's winter campaign advising people to protect their pipework and 78% of respondents, whose supply was interrupted, said there was no information to tell them why their water supply had failed. NIW had rotated water supplies without first informing affected consumers.

The investigators concluded that NIW's executive team had failed to draw lessons from a similar freeze/thaw event a year earlier. Together with a failure to focus on consumer communications, this resulted in a major incident becoming a crisis.

Lack of investment

The Northern Ireland secretary, Owen Paterson, hinted that the water crisis resulted from a lack of investment because water services were not privatised like in the rest of the UK. Domestic consumers in Northern Ireland still do not have to pay for their water. Plans to introduce domestic water bills have been postponed because politicians feared they would lose votes. Three-quarters of NIW's income comes from government grants with most of the rest from charging non-domestic customers.

The Utility Regulator dispelled a popular belief that NIW's water distribution system was obsolete, saying there was no need for an immediate change in mains infrastructure investment levels. However, it did identify a need to invest in improved flexibility of mains operation, better monitoring and in climate adaptation measures.

References

McDonald, H. (2010), Northern Ireland water crisis to run into next week. Guardian, 30 Dec 2010. <http://bit.ly/hJ2lzt> [accessed 21 Apr 2011]

McDonald, H. (2011). Northern Ireland Water chief resigns over crisis. Guardian, 6 Jan 2011. <http://bit.ly/hamS2G> [accessed 21 Apr 2011]

Utility Regulator (2011). Utility Regulator's report of the investigation into the Freeze/Thaw incident 2010/11. Belfast, Northern Ireland, UK, Utility Regulator. <http://bit.ly/gFbPUB> [accessed 21 Apr 2011]

4 Communication and decision making for conflict reduction

Effective communication and transparent decision making are essential to avoid conflicts and build effective partnerships. The chapter will provide guidance on communication and decision making approaches that may help to reduce the risk that problems will arise.

4.1 Effective communication

Communication is crucial for the efficient and effective functioning of multi-stakeholder platforms (MSP) such as learning alliances. This concerns internal communication among the actors involved in the platform as well as external communication using different information media and tools. An example of different communication activities in a LA is shown in Box 9. It is important to differentiate between internal and external communication. External communication will help to:

- Raise the profile of the platform or alliance, build recognition for the work and help influence decision making.
- Provide access to the knowledge base of and facilitate interaction among platform members on IUWM, thus stimulating collaborative action
- Encourage broader understanding of the importance of IUWM learning both from good and bad practices with sustainable IUWM interventions.
- Enhance accountability and build public trust.

Internal communication AL&TC (2009) will:

- Ensure the availability of accurate information.
- Facilitate the planning, coordination and implementation of action plans.
- Influence the attitudes and behaviour of the members and other stakeholders.
- Encourage and facilitate feedback and response mechanisms.

Hovland (2005) suggest that communication is important: to inspire and inform; and to learn. Sharing evidence, information and knowledge is usually communicated in order to inspire and inform development policy and practice. Communication, when it is done well, does not only benefit the ‘recipient’ but also the ‘sender’.

Communication needs to be properly organized and agreed upon with the members of the platform. Three main issues need to be considered at an early stage:

- How will information and ideas be shared and communicated amongst its members?
- Who will communicate with influential stakeholders and how will this be done?
- How will processes and results be documented and made available for sharing within and outside the platform to ensure optimal adoption of lessons learned?
- What are the roles and expectations of members, and their communication requirements?
- What systems for regular communications with members and other stakeholders will be used (includes an assessment of the possibility to use advanced communication tools – such as websites, and Google groups)?

- How and who will document discussions and decisions and how will these be communicated with the members and others?
- What process will be adopted in case of disagreement or conflict within the MSP?
- Who will provide the necessary resources in terms of staff and communication cost?

Effective and efficient communication strategies are critical for multi-stakeholder processes. This should include a variety of elements to appeal to different stakeholders, including newsletters, working papers, policy briefs, posters, calendars, drama, newspaper articles, presentations, websites and exposure visits. It is very important to ensure that the communication is properly tuned to the specific target groups involved in the MSP and IUWM. Often communication needs attention in the early stage of a platform as it can greatly contribute to its potential success.

Informal communication is common practice in most MSPs as some members may already have long standing working relationships. This is important, but needs also caution as some stakeholders criticise informal communication because they think it lacks transparency (Demekech et al., 2010). For larger platforms the ability to rely on verbal contact is more limited making formal communication and documentation even more important. This process needs to take into account that with a diverse stakeholder group there is always a risk of misunderstandings, and people being left out of the information loop making it necessary to check whether the communication reaches the intended users.

Box 9. Communication in the SWITCH learning alliance on urban water management in Łódź, Poland

A SWITCH learning alliance was set up in March 2006, engaging initially the stakeholders perceived to have the most critical roles in water management. Over time, additional important actors have been identified and involved. During the first two years, the learning alliance developed and trained a facilitation team, developed a website and communication mechanisms and hosted at least three major workshops on different urban water management research areas.

Experience in Łódź shows that establishing and sustaining a learning alliance requires the strengthening of existing networks and contacts, strong facilitation, trust building, frequent communication and the involvement of people at all levels. Initially, communication was through formal letters. The core SWITCH team now uses various means to communicate with learning alliance members. Official correspondence is through fax and telephone, while all reports and proceedings are sent by email and posted on the weblog which is also used for announcements. Some contacts and appointments are made through Facebook. A database of addresses has been circulated to all members.

During the first year, awareness raising activities included presentations and distribution of informative brochures to potential learning alliance members and city officials. After the first year, local media were actively brought into the process and became members of the learning alliance. During the course of the project, many newspaper articles, press releases and interviews for TV and radio were produced. Efforts continue to disseminate the work of the alliance on embedding integrated urban water management concepts into bodies outside the learning alliance that are responsible for planning and operations.

Source: Wagner et al. (2010)

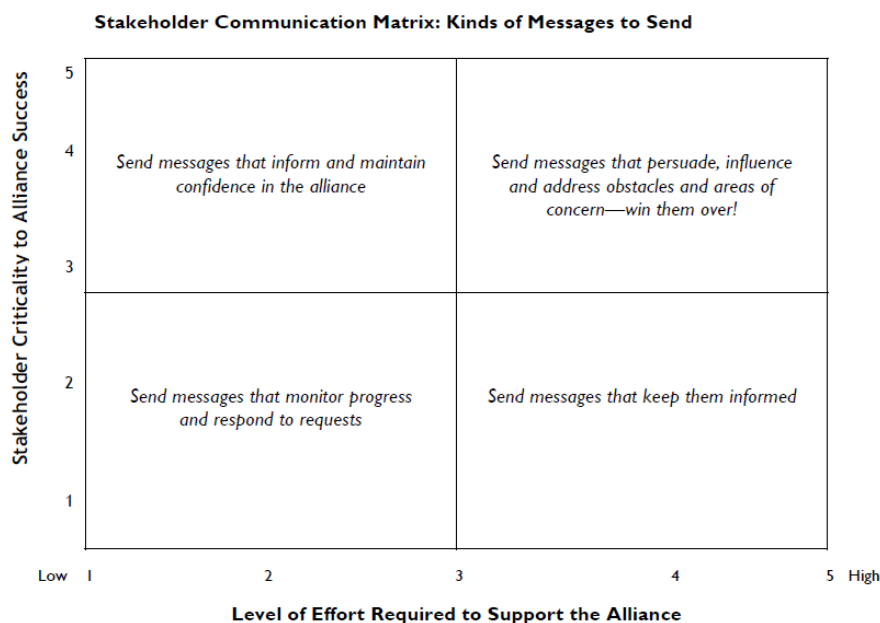
Moriarty et al. (2005) stress that effective communication requires process facilitation to ensure that it reaches stakeholders, but also caution because some of the information may be quite sensitive particularly when it addresses tense conflicts which involve considerable stakes. Box 10 describes the five steps that are needed to develop an effective communication strategy.

Box 10. Five steps to strategic communication and dissemination

1. Set clearly defined **Objectives** that are based on what you hope to achieve with the communication effort and what you want to change as a result of it
2. Identify, prioritise and get to know your **Audiences** which may be quite diverse and the information needs of different members may differ and you may also need to target different stakeholder groups with messages from the MSP
3. Create strong, clear **Messages** to convince them and/or stimulate them to take action and maintain public trust (see Box ..).
4. Use effective, high-impact existing or new **Vehicles** (that take your messages to your audiences). This may include meetings, newspapers, email, and other electronic platforms, but it is necessary to check if your audience is familiar with the method and is reached
5. Plan and allocate appropriate levels of **Resources** and **Timescales** to be able to deliver what you promise
6. Design and implement **Evaluation** mechanisms to ensure that your communication works and is reaching the intended audiences with the intended effect and adjust if results do not meet expectations.

Source: www.bandwidthonline.org/pdf/CommunicationsStrategyWorksheet.pdf

Gormley and Guyer-Miller (2007) indicate that it is necessary to assess the importance of different target audiences for the MSP in order to focus the communication efforts. They use a framework with on the one axe the level of importance of a specific target group for the work and impact of the MSP and on the other the level of effort required to reach out to each group. This approach may help to prioritise activities to maximise impact with available resources. Box 11 shows some tips related to communication efforts.



Source: Gormley and Guyer-Miller (2007)

Box 11. Important tips related to communication efforts

- People respond not to the world as you see it, but to the world as they see it. They frame your issue in their mental pictures of the situation.
- Effective communication starts with listening and understanding rather than talking. The more we know about someone, the more effective we can communicate with him/her.
- Until and unless your "message" is heard and understood by the persons you are trying to reach, it is just noise.
- There are no magic bullets. There is no single message that is going to connect with everyone.
- Simple, clear, and sparse information can stick; when presented with too many details, people lose the essence of the message being conveyed
- It is important to ensure that the information that is provided is reliable and evidence-based to avoid misinformation and loss of trust in the MSP.

4.2 Transparent decision making

Decision making is a complex set of behavioral and cognitive processes to make choices from a number of alternatives directed towards a specific goal. Decisions may be conscious or unconscious and may have both intended and unintended consequences (Simon 1976). It is important to distinguish between personal and organizational decisions as the goal of individuals and organizations not necessarily coincide. Personal decisions primarily may be focused on the individual interest although they may also take into account the effect on others. A larger part of personal decisions may be unconscious. Organizational decisions are assumed to be in the interest of the organization which may even go against the personal interest of the decision makers. They are supposed to be practical and to entail allocation of the means to ensure their implementation. Their correctness needs to be measured in terms of adequacy and efficiency in achieving desired objectives and results.

Simon (ibid) indicates that **rational decision making** seeks to select the alternative with the more preferred set of possible consequences. This process entails three required steps to which we add a fourth:

1. Identification of all alternatives;
2. Determination of all consequences for each alternative;
3. Comparison of the alternatives; and
4. Selection of the preferred option based on conscious or unconscious selection criteria

In many cases organizations create their own boundaries which allow them to reduce the complexity of decision making and the number of alternatives that need to be considered. This however also reduces the analysis of possible consequences as not all aspects are being explored. This may reduce the rationality of the decisions as factors may be overlooked. In this process, decision makers use facts that can be verified and values that are embedded in the culture of the organization. Simon argues however that human rationality in decision making is limited because:

- information is incomplete, imperfect or even misleading;
- problems are complex;
- the human capacity to process information is limited;
- time and resources that can be spent on decision making is limited;
- decision makers often have conflicting preferences for certain organisational goals.

In later work he poses more question marks around rational decision making (Simon 1983). He suggests that when issues become highly controversial and uncertain than it may be difficult to find experts to guide the decision making process and they not necessary will agree with each other: some may be affirmative whereas others may be negative. These differences in of opinions among experts not only may arise from their knowledge, but also because they are not “value free”. They have created their own set of believes that influences their judgment (Ludwig 2001). He argues that scientists have to take a different approach to complicated and wicked problems and accept that there are no ‘true’ expert opinions on many issues. Instead we have to acknowledge the uncertainty and imperfection of our models and approaches and establish a dialogue among the various interested parties to come to a common definition of objectives and goals and an agreed – often negotiated - approach to achieve these goals.

Rainey (2003) further elaborates on the ideas of Simon and indicates that the model of rational decision making is not uncontested and may only apply under simple conditions or when a lot of information exists. Often however problems are not simple or just little information is available so decision makers may have to rely on their judgement and intuition and eventually will enter into bargaining and political manoeuvring in their decision making process which is referred to as the *contingency perspectives decision making approach*. Rainey (ibid) also refers to another main approach in public decision making building on Lindblom (1959). This approach is called *incremental decision making* and stems from the requirement for political consensus and compromise. This makes decision makers to adopt goals that are muddled and propose only limited change to avoid controversial decisions. Finally he (ibid) mentions *the garbage can decision making approach* which are decisions a decision maker keeps up his or her sleeve even before a problem arises and proposes when an opportunity arises. The latter is quite the opposite of rational decision making.

In the complex field of decision making about the wicked problems in IUWM, it is likely that all these approaches may be used to a lesser or larger extent. This is even more likely because water resources management is according to Daniell et al. (2008) often characterised by overlapping legislative requirements, multiple decision makers, competing interests, unequal distribution of resources and growing uncertainties in a rapidly changing world. Therefore it is not surprising that decision making processes within a Learning Alliance setting on shared objectives and actions are slow and difficult. Learning Alliances bring different actors together often with different ‘organizational’ goals, but the drive of the alliance is to encourage rational decision making whilst building scenarios to deal with uncertainties (as discussed in section 4.2.4).

Decision making authority

An important component of decision making is the authority of the actors involved. In simple terms we can define authority in an organization as the ability and right of an individual of higher rank to determine the actions of an individual of lower rank. Nevertheless reality is less straightforward as even within organizations the relationships between actors may vary widely in form, style, and content. Whereas decision making depends on the formal structure of the organization, it also important to realize that it may be influenced by informal power relationships. Staff can either facilitate or obstruct correct decision making for the organization. Individuals may evaluate alternatives in terms of personal benefits and may be reluctant to support decisions particularly when they are uncertain about the outcome.

In the case of learning alliances and multi-level governance models, the authority of decision making is even more complex as often the rules of engagement are not fully established. In fact there may not be a single decision making authority or no formal authority at all. Some models may strive for consensus in decision making whereas others may adopt majority voting but in both cases decisions may meet with resistance among some of the actors involved. A common problem seems to be that there are no mechanisms to enforce the implementation of decisions that have been made.

Treffny and Fritsch (2009) indicate the EU environmental politics have gradually adjusted their top-down mechanisms to more flexible policy tools particularly aiming at involving non-state actors in decision making and policy implementation. This process seems partly informed by disillusionment with the effectiveness of regulatory efforts that were implemented. The more flexible tools are built on the hope that more participatory processes may lead to better acceptance and implementation of policy change. Increased stakeholder involvement however might meet with significant challenges from a legitimacy perspective. They (ibid) suggest that voluntary participation of non-state actors can only be motivated if actors perceive the process as fair and transparent. On the other hand, policy acceptance and implementation can only be improved if the decision-making process is considered to be fair, triggering a procedural-justice effect, and includes major viewpoints held in society, which in turn may increase compliance. Decision making processes across multiple levels involving different actors have the tendency not to be transparent for outsiders both in terms of process and participation rules. Baldersheim and Stahlberg (2002) indicate that in some cases the situation is even more complex because informally new approaches start to operate in parallel with traditional styles and methods which may create clear problems in accountability.

Decision making processes in IUWM tend to be very complex as mentioned in chapter 1. In many cities both formal and informal decision making and power structures exist in parallel, with the latter pre-empting or controlling part of the formal decisions through (illegal) acts such as the initiation of unplanned urban settlements. This tends to marginalize the role of democratically elected institutions and the formal structures.

With so many actors and stakes involved it is crucial to understand both the formal and informal processes. This understanding will create the basis for a good communication process with the relevant actors to ensure that they have adequate information to participate in informed decision making.

Decision making styles

Different styles of decision making can be identified (Lewin et al 1939, Connor and Becker 2003). The four main styles are:

- **Autocratic** in which a leader takes the decisions and the responsibility based on his or her own knowledge and perception without consultation
- **Collective participative** in which the leader involves the members of an organization (sharing information, ideas and perceptions) with the leader taking the decision. Decisions are better informed, but the process is slower
- **Democratic** in which the leader transfers the decision making to the group and majority vote will lead the decision

- **Consensus** in which every member of the group has to buy into the decision and takes responsibility for it and the consequences

Which style can be adopted will depend on the situation. In group processes a majority voting process is useful for bringing large numbers of people in on a single decision with minimal cost, but it is important that participants are equally informed and understand each other's positions. Consensus however is important if decisions have long term and important effects. With large groups you strive for consensus on main issues, whereas for small groups consensus on a larger number of issues can be established and is an advantage to obtain buy in. When everyone in an organization participates in the decision-making process, organizational communication is much more effective and everyone produces more efficient results (Walker, 2007). On the other hand this type of decision making may require a lot of resources and therefore may not be feasible but for more strategic decisions. Autocratic approaches are much quicker and may be particularly relevant in business environments. In the context of MSPs and learning alliances a more collective approach seems more appropriate, but decision making can be prepared by smaller groups to make the process more efficient, provided they combine this with good communication strategies.

It is important to realize that non-state actors involved in platforms concerning common goods such as water management, usually participate in a voluntary capacity. To keep them involved they will need to feel part of the process, be well informed, perceive a clear benefit from participation, and be able to influence and accept the decisions that are made. Another crucial aspect is representation. Are participants truly speaking and representing a larger constituency or do they primarily represent their own interests.

Concerted action through social learning

Social learning provides us with a framework to look at decision making in a different way. Mostert et al. (2007:1) suggest that social learning is based on three key principles:

- All stakeholders should be involved in natural resource management and IUWM. Typically, no single stakeholder has all the necessary information, legal competencies, funds, and other resources to manage a natural resource; therefore stakeholders need to collaborate.
- Second, natural resource management requires a form of organization. Stakeholders need to enter into a long-term working relationship which can be done through users' organizations, multi-stakeholder platforms or informal policy networks.
- Natural resource management is a learning process which requires new knowledge, attitudes, skills, and behaviours to deal with differences constructively, adapt to change, and cope with uncertainty.

Social learning has attracted interest as another way of conducting public business in complex natural resource dilemmas, alongside regulation, compensation, stimulation, and the operations of the market (Röling and Wagemakers 1998, Leeuwis and Pyburn 2002). In the EU supported SLIM (Social Learning for the Integrated Management and sustainable use of water) project social learning was defined as achieving concerted action in complex and uncertain situations. This project engaged in case study research in different European countries around water resources management. They based their research logic on Ison et al. (2007) adopting the basic assumptions that (1) designated stakeholders engage in (2)

desirable practices that require (3) learning based on (4) facilitation made possible by (5) institutional support embedded in a (6) conducive policy context.

Some important points emerge from different reports from the SLIM project (Gibon et al. 2004; Ison and Watson, 2007) for the issue of conflict prevention and management in IUWM:

- A review of the institutional history (including an analysis of power relations) is another crucial variable that shapes inter-institutional collaboration, learning and decision making. This is a necessary component of the process of social learning and stakeholder involvement. This matches for example with the historical analysis that was adopted in the case study of the problems with the tanneries in Colombia (...)
- It is essential to involve all stakeholders in the situation or in the resource under consideration. Stakeholder engagement and participations express the idea that individuals actively construct, promote, and defend their stake. Their involvement may change their understanding, and thus their stake, may change, giving rise to new practices. The participatory and respectful approach in stakeholder meetings created the necessary trust among stakeholders and researchers. Separate meetings of specific stakeholder groups may be necessary particularly in the beginning of the process. This approach for example was used in the case of the conflict with tanneries in Colombia (..)
- Facilitation proved crucial and comprised different elements including the organization and facilitation of stakeholder meetings, creating a social environment in which effective relationships could be built but also to enhance access to additional information. An interesting example was given of Scotland where three NGOs jointly took care of most of the facilitation process. The case studies presented in this manual confirm the need for skilful and respectful facilitation.
- A conducive legislative framework for IUWM and conflict management is an important asset for conflict management. This is confirmed by most of the cases presented in this document. Particularly in the case of actors with illicit behaviour it is equally important that rules and regulations are firmly applied, but viewing them in a historic perspective. Some actors may have invested for example in constructing houses or businesses too close to rivers as presented in the case in Annex 1, which conflicts with current legislation. In such cases compensation may be needed for investments for example if new environmental legislation conflicts with customary law.

Information and decision aiding methodologies

Information is core to decision making about complex issues. It is important that stakeholders are on the same page in terms of information, use the same language, have a shared understanding of the key issues, and share a vision about the future of the resource that requires management.

Many authors stress the need for good decision support mechanisms to help the decision making process. Daniell et al, (2008) include the establishment of an interaction space among core stakeholders (Figure 4.1).

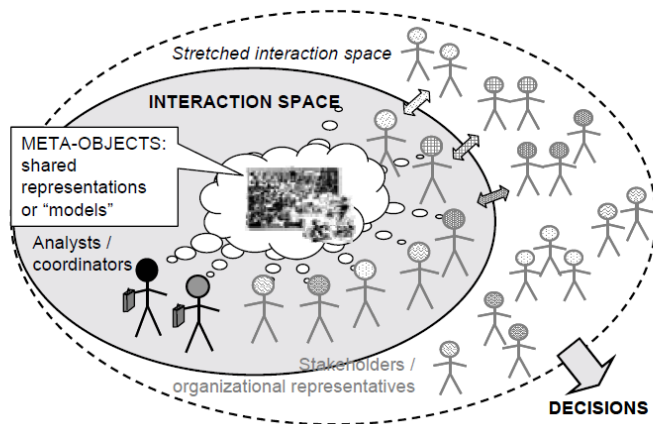


Figure 4.1. Decision aiding for a group of different actors (Daniell et al 2008) The illustration shows that it is often also needed to take into account the wider actor network participants may represent or inter-act with (the stretched interaction space)

Different mechanisms exist that may help decision making often trying to visualize change including time-series GIS photos to show ground cover and housing density changes over time, and base-flow simulations depending on changes in run-off patterns due to increased urbanization and reduced water infiltration. Also more analytical approaches can be useful such as life cycle assessment to determine the impact of an intervention such as building a waste water treatment plant on the environment.

The SWITCH project has used visioning and scenario building as important tools in the learning alliances. By jointly creating a shared vision the actors create a long term horizon for the actions that are needed. This for many is already an important deviation from the short term planning horizon that many organizations use. The scenario building was equally important to create a discussion. It focused on jointly identifying the most uncertain factors with the largest potential on the water resources situation in the given context. This proved an eye opener for many participants who started to realize how these factors might shape their world and how they could possibly respond to unwanted developments. This type of eye opener may be also very important in the case of conflict management as lack of understanding of the situation and taking a short term perspective can contribute considerably to creating conflict as will be discussed in the next chapter

5. Conflict resolution approaches.

Conflicts are a normal fact of life. They can be devastating but also a challenge and an opportunity for improvement. This section presents a summary of different approaches to conflict resolution and highlights main steps that can be followed to explore urban water problems with key actors linking it to some concrete problem cases.

5.1 Introduction

To get the best out of conflicts parties involved will be required to make an effort to see it as a challenge and an opportunity. Conflicts may range from a state of open fighting to a situation where two or more parties (people, groups of people, nations or states) wish to carry out acts which are mutually inconsistent. Two different groups may for example both want to use the same water resource in a way that is mutually incompatible. This can turn into a major conflict which may even lead to casualties unless the conflict is resolved through some mutually compatible set of actions (Nicolson, 1992). If sugar cane industry competes for example with the drinking water company over scarce groundwater resources, the solution may be to change part of the sugar cane industry into less water demanding crops such as fruit trees. Some however argue that this type of solutions do not apply to deeply 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 organization of society and often are based on the unequal distribution of resources that may date back from centuries. Without political will of the government it may for example be very difficult to establish opportunities for landless labourers when these are in conflict with powerful landowners.

He (2006) also indicates that many conflicts consist of a mix of different types of problems involving social as well as political aspects and that the ‘logic’ of the action depends on the different world views of the actors involved. Actors act on the basis of their own perceptions that may be based on a subjective collective memory and not on objective facts. They try to solve problems as they see them, often without taking into account the interests of other actors.

In the context of this manual conflict is defined as ‘a social situation where one or more parties try to benefit from a given situation or try to solve its own water and sanitation problems in such a way that it negatively affects other parties’ (adapted from Wallenstein, 2002). Such conflicts can be open when parties realize the problem and may be fighting over it or seeking support to find solutions for the conflict. Exploring the use of a small local river such as Pance River in Cali, Colombia that is used for recreation as a potential source for drinking water supply is an example of a situation that can turn into an important conflict. Whether such a conflict of interest can be resolved will depend on the willingness of actors involved and the boundaries within which the problem is explored. Staying within the boundaries of the local river for example will not allow exploring alternative sources for the water supply thus limiting the ‘solution’ to abandoning recreation. Conflicts can also be hidden when one or more of the parties involved may not realize that they are negatively affected or are negatively infecting others. Such conflicts then go unnoticed and no efforts are

made to redress them. For example you may take it as a fact of life that the pressure in your water tap is often low or accuse the water provider of not giving a good service, but in fact the cause may be that some of your neighbours have illegal connections, stealing the water you pay for. Such types of problems are increasing for example as result of the water industry not keeping pace with urban population growth. The growing water needs of urban systems may also lead to important problems in relation with the surrounding rural areas where often the water sources for the urban areas are located and climate change may only increase these problems. Poor management of catchment areas may also result in important problems for the urban environment as in many places we see a growing problem of flooding.

Water is essential for life, for drinking water, for food production etc. We are not just dealing with an economic but also a social good which often involves many stakeholders including people, organizations as well as nature. This often also brings an important ethical dimension to water conflicts. Finding proper solutions to urban water problems often implies involving different actors from in and outside the city. How to organize the dialogue between these actors is a crucial part of the process even in cases where not all problems can be solved among the direct actors. A municipal government for example may have to decide on a location for a sanitary landfill against the wish of people living in the area, but it may be the only option. Yet with a proper dialogue and fair compensation even such a problem of conflicting interest does not have to turn into a heated conflict.

5.2. Conflict perception and response

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. Yet according to Beutler (cited in Forester (2007) “conflict is better than apathy; ‘Whenever there is conflict in the room, it means there’s energy to work on something’”

Our general attitude to and understanding of conflict has a critical bearing on our response. This attitude may range on the one end to considering conflict to be inherently destructive, which tends to trigger a response towards suppressing or eliminating it. Ultimately this may however increase the level of tension and aggravate the situation. On the other end conflict may be seen as normal and inescapable and even welcomed as an opportunity to improve the situation as conflicts can have positive outcomes (Box 1). Then the challenge lies in dealing with it constructively instead of trying to eliminate it (UNDESA and CRC, 2001).

Box 1 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.

5.3 Approaches to conflict management

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 will not be the best approach to quickly evacuate an area where flooding is eminent.

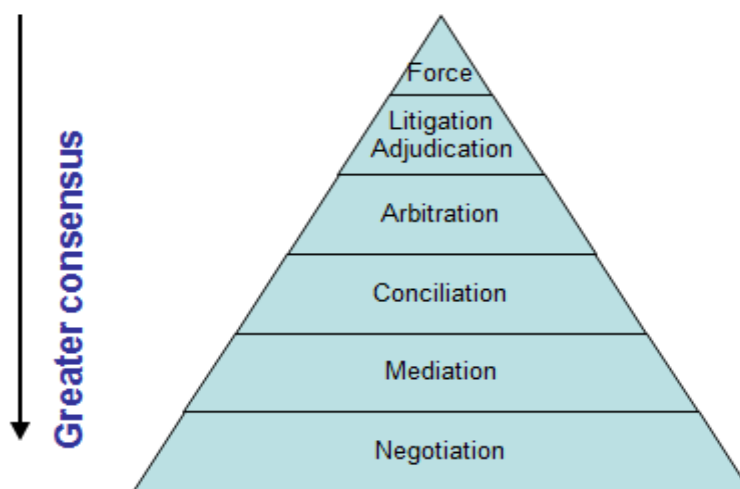


Figure 5.1. Conflict resolution pyramid (adapted from Viñuales and Celaya, 2006)

The approaches indicated in Figure 5.1 can be summarized as follows:

1. **Force**, using power or even violence to “resolve” the conflict, often ignoring or suppressing the interests of weaker parties. A battle erupted for example between two tribes in Somalia over a water hole that resulted in the death of 250 people over a period of two years who were killed by ‘warlords of water’ who took control over the well ([Wax, 2006](#)). So here there was no effort in place to mitigate the conflict. Just one of the parties pushed their way.
2. **Litigation, adjudication**, taking recourse to the legal system by involving a judge or a magistrate imposing a decision after hearing legal argument of parties involved in the conflict. In this case usually one of the parties files a case against the other party or parties. An interesting example is the [Water Tribunal](#) in South Africa that was established in 1998 to hear cases over appeals against directives and decisions made by responsible authorities, catchment management agencies or water management agencies about matters covered by the National Water Act. The cases are published on their web site. In litigation the

decisions are made by the judge, who is an independent third party, after hearing the parties involved. The process does however not aim at creating dialogue between parties which might lead to alternative solutions and even win-win situations. An important problem may also be that water resources legislation may not be clear and may even conflict with customary law. As a result it may be difficult to rule which of the parties is in its right. Another problem is that some parties may not be able to go to court because they have no legal stake as basis for their complaints. A group of citizens can protest against the transformation of a water catchment area into cattle land but cannot go to court as the land is not theirs. Hence such a case would require a different approach to try and solve the conflict. Also litigation may be very expensive and may even further disrupt relationships between parties. This means that this kind of conflict management is for example less accessible to the poor.

3. **Arbitration**, is a situation where the parties in a conflict agree that they want to solve the problem by involving an external party (accepted by parties involved) who will take a binding 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 billions of gallons of water. The Water Authority tried in vain for a couple of years to reach a settlement and then took their changes and moved to arbitration about the compensation for the water including the social harm involved in farmers going out of business. The case was taken to a panel of judges who were supposed to give a ruling on whether an economic study made in 2004 was a valid basis to establish the compensation. The ruling was supposed to be binding, but the latest turn of event is that in January 2010 a [Sacramento County Superior Court](#) judge struck down a series of agreements central to sharing the Colorado River which undermined the basis for the arbitration. This ruling interrupted the arbitration process stretching the conflict solution process but is not final as it was appealed by the Water Authority. In this case it is obvious that the underlying principle of arbitration that parties beforehand agree to accept the outcome was not properly and legally established.
4. **Conciliation**, involving a neutral party acting as a go-between parties involved. 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 signing a binding agreement between parties. This process has the advantage that it can generate solutions that build on the desires and interest of parties involved. It can work even if parties are hostile as they do not have to meet. It has the disadvantage that it does not bring parties together to use their energy to jointly find creative solutions and create greater ownership of the solutions. Under Vietnamese law for example, disputes between parties to Joint Venture Enterprises and Business Co-operation Contracts must first be resolved through negotiation and conciliation between parties. Where conciliation fails, parties in dispute may agree on one of the following forums to resolve the dispute: 1) The People's Court of Vietnam; 2) an existing arbitration body (Vietnamese, foreign or international; or 3) an arbitration body which the parties agree to set up themselves ([Baker and McKenzie, 2005](#)).

Mediation, involving a neutral party providing procedural assistance. It is a voluntary process which is based on vesting 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 which ideally create win-win situations. The process also aims at helping to ensure that the relationship between actors is improved or at least not further damaged. Actors are helped to move away from bargaining over positions (where actors tend to lock themselves in) to a process called principled negotiation or negotiation on merits ([Fisher and Ury, 1991](#)). If one party for example sees that cattle grazing in a catchment area may have a negative effect on the quality of the water they use they may take the position that cattle grazing should be banned (position 1). Local farmers however generate (part of their) income from the grazing cattle and therefore take the position that grazing cannot be banned (position 2). Parties then may try to meet each other half way by for example accepting grazing in part of the area. When jointly exploring the underlying interest they may however generate different solutions. An even better water quality (interest 1) might become available if the catchment area would be well protected and managed. This is likely to reduce the cost of water treatment and might also have a positive on control of floods, thus freeing up some financial resources that could be used to hire the farmers to manage the catchment area thus creating an income (interest 2).

5. **Four basic** points in principled negotiation define a straight forward 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; the aim is to meet legitimate interests of actors, which they may hide in conflict situations out of fear that they 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.

6. **Negotiation**, being the process [in which](#) parties resolve their conflict without help from outside. It refers to either 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 strength and weakness in order to gain a favourable outcome. Interest-based negotiation is different and 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 such as [Snyder \(2003\)](#) the term negotiation is also used for facilitated processes which then is not much different from mediation.

Which approach to conflict resolution is most relevant in a given situation depends on different factors, including the seriousness of the conflict itself, the time frame but also the culture. In America for example the goal of mediation is to satisfy parties' interests and reach a win-win agreement, 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](#)). Many cultures have traditional approaches to conflict resolution that are rooted in society and can be quite effective. Berbers of the High Atlas Mountains have

conflict resolution experience that is rooted in a long tradition. An a'alam or naib is chosen to manage the irrigation schedule and to resolve internal disputes. If two villages are in a dispute, initial attempts at resolution are between the a'alam from each village. If necessary, family heads will also gather to help. If this group is unsuccessful at resolving the dispute, appeal can be made to the regional hak'm, a traditional judge who adjudicates using a combination of Islamic law and Berber tradition. If either party is unhappy with the resolution worked out with the hak'm, an appeal can be made to the regional court system and the modern Moroccan legal structure ([Wolf, 2000](#)).

5. 4 Approaches involving multiple actors

Often the conflict resolution approaches mentioned in section 5.3 are between two parties. The difficulty with urban water conflicts is that they often involve a larger number of actors which makes them more complicated to resolve. It may be feasible to gather a number of actors around the table, but this may be very complex and some actors with a strong influence may not be willing to be there. In most cases interests and positions (public or hidden) may vary a lot and some actors may have strong ties including landlords, politicians, urban developers etc. that may not be in the open. This poses additional challenges in terms of leadership, organization and communication. In many cases there may be a clear political dimension which may complicate matters even further as politicians may have given promises to their constituency that may make it more difficult to be open for alternative solutions. For urban conflicts it may therefore be necessary to apply different conflict resolution methods at the same time and some of the agreed results may have to be embedded in legislation and formal contracts to avoid that for example political changes revive the conflict.

Experience shows that urban water management conflicts are often hard to negotiate. Often they are what [Churchman \(1986\)](#) referred to as wicked or complex problems. These are problems that are ill formulated, where the information is confusing, which involves many actors with conflicting values and interests. Such problems require negotiated solutions that in turn may cause conflicts and by no means are static as water resource management is affected by changing circumstances. At the outset actors may not even agree on the exact nature of the problems and conflicts and may be talking 'different languages'. Hence conflict management may therefore often require a (longer term) process involving different steps. These steps are presented below based on [Snyder \(2003\)](#) enriched with experience coming from working with Learning Alliances to bring key actors together and jointly define a vision and strategies for water resource management.

A phased approach seems most convenient in which different components may need to be repeated over time. This process needs to be led by a trusted actor that can initiate the process. This can be a **government agency** but perhaps better a **neutral organization** such as a university provided it is well respected by the main actors. The advantage of a 'neutral organization' is that other parties do not compromise their ability to actively participate in the process. The facilitating organization has to lead a participatory process that involves the following components:

1. **Problem identification and description.** This may not be straight forward and requires a good organization as outlined in point 3. Not only problems may be complex but different actors may have very different views that need to be identified and socialised as was the case in all learning alliances of SWITCH. Staff from the facilitating organization will need to identify, document the problems while respecting the partner and their views, but do not have to personally agree with them. Problem identification may be an iterative process involving the different actors. Different stakeholders may be prepared to enter into a constructive, solution-oriented dialogue when they see a shared problem and recognise their interdependence in the persistence of the problem and in facilitating the solution (Röling 1994). The first step therefore is to explore the problem together with all important actors or their representatives for example in a workshop. Joint fact finding may be needed to avoid that different sides try to prove the other side wrong.
2. **Identification of actors, positions and interests.** It is essential to establish the main actors, their 'positions' and the interests at stake. In the urban environment different actor groups exist and even within these groups positions and interests may differ (Table 5.1). It is very important (see section 3) to establish the difference between positions and interest. In many conflicts actors are locked in positions which make it impossible to find solutions without losers and winners. Moving to interests may change the situation completely. For example the debate between people in favour or against privatization may change when starting to explore the underlying interest of both sides being getting affordable water supply.
3. People have their own perceptions about the situation based on their world view, their values and their emotions. Conflict does not 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. In the case of a heated conflict it may be necessary to untangle the situation by hearing parties separately, applying the skill of active listening to really try to understand the views and ideas. The advantage to include separate hearings is that problems and emotions can be better separated making it possible to present the problem situation in a 'neutral' way.
4. **Organizing the process** may be a complicated task. With a large number of actors involved the dilemma may arise whom to invite to the negotiation table, only key actors or (representatives of) all actors potentially impacted by the conflict. This will differ from case to case but for many urban water supply problems it may be worthwhile to explore the establishment of a [learning alliance](#) involving key actors as a platform for discussion and action. This may be done by starting with representatives of all different stakeholders, or by starting with those that are enthusiastic and gradually try to bring in others. Particularly when working with representatives good and coherent communication with the different constituencies is crucial. Essential is also to guarantee that resources are available for the process.
5. An important problem may be that some stakeholders may not want to come to the table. This may include actors involved in illicit activities or actors that are afraid to lose their benefits. In such cases it is essential to establish the overall picture of the situation with those actors that are at the table including a fair representation of the roles of those that are absent. Together with the actors around the table clear activities need to be identified to

involve the actors that are not present. This may also include actions to stop illicit behaviour possibly also involving the media. This may for example include industry discharging harmful waste during evening hours. A combination of publicity about the effects and support with the adoption for example of cleaner production methods could be a good mix to bring such actors to the table.

Table 5.1 Example of some actors, positions and interests

Actor group	Positions	Potential interests
Domestic users	<ul style="list-style-type: none"> • Against privatization • Water needs to be subsidized • In favour of privatization 	<ul style="list-style-type: none"> • Minimum quantity of quality water • Reasonable quantity for household use, hygiene, gardening and livestock at a reasonable price • Luxurious quantity of water (swimming pool)
Industry (small and large)	<ul style="list-style-type: none"> • Tight discharge norms and water charges will cost jobs • Environmental agency is unfair and against industry 	<ul style="list-style-type: none"> • Water for production process and workers • Income and (reasonable) profit (for stakeholders) • Low cost for waste water discharge • Sustained access to market with good products

6. **Finding solutions** often will require involving the actors as they are part of the problem and therefore also have to be part of the solution. With the problems and interests being clarified parties can start to identify options for mutual gain. Usually three categories of interests may exist, shared, neutral and opposite interests. The essence is to start the process with trying to find solutions to problems related to the shared and neutral interests, and only deal with the opposite interests last, when already potential gains have emerged in the process. It is also important to break the problems down in such a way that they are manageable for the actors. Great results can be obtained if a problem can be turned into an opportunity allowing benefits to be enlarged and better shared. For example tighter waste water discharge regulation may encourage industry perhaps together with universities to introduce cleaner production which may waste less material and hence the end result may imply a reduction of cost. Establishing solutions is a creative process that requires a clear decision making process and a realistic but firm deadline. It is important to realize that it is often impossible to satisfy all interests particularly in densely populated areas. To obtain maximum cooperation from actors it is therefore necessary to clearly assess if some groups are negatively affected by the proposed solutions and whether some kind of compensation may be in order.
7. A major challenge is to ensure before-hand that the actors that are present can take decisions and not just negotiate a deal and after consultation with their constituency come back to the table to try to get more out of it. Negotiations may also fail unless each party, in addition to advancing its own interests also looks at opportunities to advance the interests of its opponents. This may require a change in mind-set in which actors look at the roots of the conflict, clarifying their interests and power relations and to jointly look for feasible solutions ([Visscher, 2008](#)). Getting there may be quite complex and may require that actors are exposed to experiences from others that have been involved in similar (but maybe simpler) processes. This can also be done in the form of role plays where participants take on the roles of different actors. Equally important may be the involvement of “neutral” experts who can judge potential solutions on their merits and implications.

8. An interesting approach could be to use the concept of the thinking hats developed by the [School of Thinking](#) in 1983 also known as the Bono Thinking hats. This method encourages groups of participants to look at projects, activities and solutions from different but collective angles (wearing the same hat). This implies reviewing a potential solution for example in different rounds with all participants wearing the same hat. This approach stimulates dialogue and blocks debate as all participants have to adopt the same angle for example being all very positive in the first round. In a next round everybody then changes its attitude to for example negative. This implies doing away with the famous phrase “yes but” which is a root cause for unproductive debate. Whereas the approach defines five hats you may just want to use three of them: 1) Yellow hat round: We all are in favour and show all the good points (so nobody can say yes, but ...); 2) Black hat round: We are negative about the option and show where it may fail (so all are very critical) and the red hat round: where everybody expresses its emotion. I love the proposal to change the catchment area into a nature reserve as it will have additional benefits and we can take our children there etc.
9. **Agreeing and signing of on solutions.** When at the end of the process the preferred solutions emerge, parties are still not bound to this result. Each party will have to assess if the solution that was found is better than their Best Alternative to a Negotiated Agreement (BATNA). When their review is 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 realize 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.
10. It will be very important to ensure that where feasible agreements are formalized (included in contracts between actors) and widely shared to ensure that relevant actors are aware of them.
11. **Other options.** As already indicated bringing most actors around the table to explore problems and conflicts may not be feasible and not practical. Then a different approach can be taken where a few organizations jointly explore the problems or part of the problems. When this analysis is completed a communication process needs to be devised to involve others as appropriate or to create a critical mass willing to support certain changes. This may also include shuttle diplomacy to bring certain actors on board but also improvements in legislation (including fines and rewards). In this kind of approaches it is very important to identify the actors that are losing out and identify whether their loss can and needs to be compensated. For example illegal water vendors in informal settlements can be taken to court but can perhaps also be legalized and integrated in the water supply but under clear conditions.

6 Learning about facilitating IUWM processes and conflicts

The preceding chapters clearly show that IUWM is a very complex issue and may entail a range of more or less serious conflicts. The common situation is that of wicked problems where stakeholders have different interests that may be difficult to bring together. In many situations facilitation by external actors may be needed and this brings us to the purpose of this last chapter in which we outline a short training strategy.

After having reviewed the information in the preceding chapters or having shared this with your trainees you can use the case studies in the Annexes as learning assignments. The two case studies in Annex 1 describe the problem situation, give an indication of the actors involved and provide some insight in the approach to problems solving. An interesting assignment initially for individual participants would be to pose the question to list the actors (which are already there in a table, and on the basis of the information in the case study and their own intuition try to establish for each actor the position (or to check this if already stated as the case in A.1.2) and then to establish the potential underlying interests for each actor. An important reason for this assignment is to understand the difference between a position and the real interest of that specific actor. It will also help in future cases to think more about interests and try to identify these with the different actors (in separate sessions to create a more open and trusted situation for the actors). The results than can be best discussed in a group to share the thinking and learning with other participants. The result does not have to be a correct set of interests that reflect the real situation. The exercise is primarily meant to see the difference between positions and interests and to discuss this with other trainees.

The two case studies in Annex 2 and 3 are more comprehensive and do not include a table with a list of actors. So in this case a longer exercise can be carried out by having participants in a training course (or in a self-learning session) read the case study carefully and then to provide answers to the following questions:

1. Provide a list with the main stakeholders involved in the case study and give a brief description
2. Describe the main position of each of the main stakeholders and also indicate their underlying interest. The latter will require some further reflection as these interests may not be fully clear from the information in the cases, which is not much different from real life as stakeholders may not be very clear on their interest and/or may not want to disclose it
3. What was the role and position of the facilitator or facilitators
4. What is the solution of the problem and give a few lessons that were learned

To facilitate the latter assignment a case response sheet was prepared for each of the two case studies with a reflection on each of these four points (see annex 4)

References

Allen, A., Dávila, J., and Hofmann, P. (2004) "Governance and access to water and sanitation in the metropolitan fringe: an overview of five case studies". Paper presented at N-Aerus Annual Conference: Urban Governance, diversity and social action in cities of the South, 15 – 16 September 2004, Barcelona, Spain. [www.naerus.net/sat/workshops/2004/papers.htm]

AL&TC (2009), Resources for project teams: Communication strategies, Surry Hills, Australia: Australian Learning & Teaching Council.
http://www.altc.edu.au/system/files/documents/grants_projectmanagement_communication_resource_mar09.pdf

Baken, R. J. (2000) Plotting, squatting, public purpose and politics. Land market development, low-income housing and public intervention in Vijayawada and Visakhapatnam, India (1900-1993). VU Amsterdam.

Baldersheim, H. & Stahlberg, K. (2002) From guided democracy to multi-level governance: trends in central-local relations in the Nordic countries, *Local Government Studies*, 28(3).

Butterworth, J., Ducrot, R., Faysee, N., and Janakarajan, eds. (2007). Working title - Peri-urban water conflicts: experiences in supporting dialogues and negotiations, Delft: IRC International Water and Sanitation Centre

Butterworth, J.A., Sutherland, A., Manning, N., Darteh, B., Dziegielewska-Geitz, M., Eckart, J. Batchelor, C., Moriarty, J., Schouten, T., Da Silva, C., Verhagen, J. and Bury, P.J. (2008) Building more effective partnerships for innovation in urban water management, Paper presented at International Conference on Water and Urban Development Paradigms: Towards an integration of engineering, design and management approaches, 15 - 19 September 2008, Katholieke Universiteit Leuven, Belgium. Available at:
http://switchurbanwater.lboro.ac.uk/outputs/pdfs/WP6-2_PAP_Effective_partnerships_in_UWM_abridged.pdf

Carley, M., Jenkins, P., and Smith, H., (ed) (2001) *Urban development and civil society : the role of communities in sustainable cities*, London : Earthscan Publications

CERES, (2005). *La Guerra del Agua, la Guerra de la información en UNIR*, (2005). *Las piezas del conflicto*. La Paz Bolivia, Fundación UNIR

Coser, L.A., (1956). *The function of Social Conflict*. New York: The Free Press.

Daniell, K.A., Mazri, C., and Tsoukias, A. (2008). *Real World decision-aiding. A case of participatory water management*.

Demekech, G., Fisseha, M., Getnet, Z., Kindie, T. and Melkamu, A. (2010) *Multi-stakeholder Linkages in Rural Innovation – Processes in Amhara Region, Ethiopia*, Working Document Series 137

Ertel, D. (2004) *Getting Past Yes: Negotiating as if Implementation Mattered*. Harvard Business Review
http://harvardbusinessonline.hbsp.harvard.edu/hbsp/hbr/index.jsp?ml_issueid=BR0411

Evans, B., van der Voorden, C. & Caplan, K. (2008) WASH coalition building guidelines: An introductory guide for National Coordinators and coalition members, Water Supply & Sanitation Collaborative Council (WSSCC), Geneva, Switzerland. Available at www.wsscc.org

Faysse, N. (2006) Troubles on the Way: An Analysis of the Challenges Faced by Multi-stakeholder Platforms. Natural resources forum, 30 (3): 219-229

Fisher, R. and Ury, W., (1991). Getting to Yes. Negotiating an agreement without giving in. London: Random House Business Books. A summary can be found at <http://www.colorado.edu/conflict/peace/example/fish7513.htm>

Forester, J. (2007). Public Participation as Mediated Negotiation: Entangled Promises and Practises. In International Journal of Public Participation: Denver Colorado: IAP2 <http://www.iap2.org/displaycommon.cfm?an=1&subarticlenbr=195>

Gaschütz et al (2007). Evaluación conjunta del sector de agua y saneamiento, La Paz

Gormley, W. & Guyer-Miller, L. (2007) Partnership Building: Practical Tools to Help You Create, Strengthen, Assess and Manage Your Partnership or Alliance More Productively, Training Resources Group, Inc. (TRG), Published by the Capacity Project and USAID. Available at www.capacityproject.org

GTZ (2007) Multi-stakeholder management: Tools for Stakeholder Analysis: 10 building blocks for designing participatory systems of cooperation, Mainstreaming Participation Sector Project. Bonn; GTZ. www.gtz.de/de/dokumente/en-SVMP-Instrumente-Akteursanalyse.pdf

Harriss, J. (2005). Political participation, representation and the urban poor: Findings from research in Delhi. Economic and Political Weekly, 40(11), 1041–1054.

Hovland, I. (2005) Successful Communication - A Toolkit for Researchers and Civil Society Organisations, Research and Policy in Development Programme, London

Ison, R., and Watson, D. (2007) Illuminating the Possibilities for Social Learning in the Management of Scotland's Water Ecology and Society **12**(1): 21.

Janakarajan, S., Butterworth, J. Moriart, P and Batchelor, C., (2007). Strengthened city, marginalized peri-urban villages : stakeholder dialogues for inclusive urbanisation in Chennai, India. In: Butterworth, J. et al (eds) (2007). Peri-urban water conflicts : supporting dialogue and negotiation. Delft, the Netherlands, IRC (TP; no 50). P. 51-75. <http://www.irc.nl/page/38645>.

Kariuki, M. and J. Schwartz (2005) Small-Scale Private Service Providers of Water Supply and Electricity – A Review of Incidence, Structure, Pricing and Operating Characteristics, World Bank Policy Research Working Paper 3727

Kent J. and Touwen, A., (2001). Workshop on conflict resolution, facilitator's guide and participant workbook. Geneva: International Federation of University Women. Download facilitators guide from <http://www.ifuw.org/training/pdf/conflict-facilitator-2001.pdf> and participant workbook from <http://www.ifuw.org/training/pdf/conflict-participant-2001.pdf>

- Lazarte, J. (2006). Apuntes para el análisis de los conflictos. Lazos no 1. La Paz: Fundación UNIR. http://www.unirbolivia.org/images/stories/pdfs/revistalazos/lazos_1.pdf
- LGE (2010). Five Degrees of Partnerships. London UK; Employers' Organisation for Local Government. <http://www.lgpartnerships.com/resources/lead-fivedegrees.asp>
- Le Monde (2010). Dakar ville en pleine transformation. http://www.lemonde.fr/idees/chronique/2010/02/17/dakar-ville-en-pleine-transformation_1307065_3232.html
- Leeuwis, C., & Pyburn, R. (eds.) (2002). Wheelbarrows full of frogs: Social learning in rural resource management. Assen, Netherlands: Koninklijke Van Gorcum.
- Lewin, K., Lippitt, R. and White, R.K. (1939). Patterns of aggressive behavior in experimentally created social climates. *Journal of Social Psychology*, 10, 271-301
- Lindblom, C., (1959). The science of muddling through. *Public Administration Review* 19(1), 79-88
- Ludwig, D. (2001) The Era of Management Is over Author(s): *Ecosystems*, Vol. 4, No. 8: Springer
- Lundy, M., and Gottret, M.V., (2006). Learning Alliances; An approach for building multi stakeholder innovation systems. In Smits, S.J., Moriarty, P.B. and Sijbesma, C. (2007). *Learning Alliances, Scaling up innovations in water, sanitation and hygiene sector*, Delft: IRC <http://www.irc.nl/page/35887>
- Merry, Sally Engle. "Cultural Aspects of Disputing." PCR Occasional Papers Series: 1987-2. Program on Conflict Resolution. Manoa: University of Hawaii, 1987. Pp. 1-20. <http://www.colorado.edu/conflict/peace/example/merr5972.htm>
- Moriarty, P., Fonseca, C., Smits, S. and Schouten, T. (2005), *Learning Alliances for scaling up innovative approaches in the Water and Sanitation sector*, IRC International Water and Sanitation Centre
- Moriarty, P., Batchelor, C., Abd-Alhadi, F.T., Laban P. & Fahmy H. (2007) *The EMPOWERS Approach to Water Governance: Guidelines, Methods and Tools*. Amman: Inter-Islamic Network on Water Resources Development and Management. www.empowers.info
- Morris, M. (2006) *Learning Alliance Briefing Note 1: An introduction to learning alliances*. SWITCH Policy Briefing Note 1. Delft: UNESCO-IHE www.switchurbanwater.eu/la_guidance.php
- Mostert, E., C. Pahl-Wostl, Y. Rees, B. Searle, D. Tàbara, and J. Tippet. 2007. Social learning in European river-basin management: barriers and fostering mechanisms from 10 river basins. *Ecology and Society* 12(1): 19.
- Mumford, L., (1961). *The City in History: Its Origins, Its Transformations, and Its Prospects*. San Diego, Harcourt Inc

Nicholson, M., 1992. Rationality and the Analysis of International Conflict. Cambridge U.P.

Niranjana Ramesh, (2010). Chennai tries to fix its water woes, Livemint.com, <http://www.livemint.com/2010/09/15194356/Chennai-tries-to-fix-its-water.html?atype=tp> [retrieved 05 Jan 2011]

PROAGRO/GTZ (2007). Los conflictos en la gestión del agua, Componente Riego. Cochabamba: PROAGRO/GTZ Trabajo realizado en el marco de la Plataforma CGIAB. Publicación auspiciada por INTERCOOPERACION - Programa CONCERTAR

Ramachandran, S.K. (2009). Delhi Jal Board to strengthen tanker distribution system in the Capital, The Hindu, <http://hindu.com/2009/04/28/stories/2009042853990400.htm> [accessed 24 Jan 2011]

Rainey, H., (2003) Understanding and managing Public Organizations. San Francisco Jossey-Bass

Ridder, D., Mostert, E. and Wolters, H.A. (2005) Learning Together to Manage Together – Improving Participating in Water Management, output from the project ‘Harmonising Collaborative Planning’ (HarmoniCop) funded by the European Commission. <http://www.harmonicop.uos.de/HarmoniCOPHandbook.pdf>

Rittel, H., and Webber, M.M., (1973) "Dilemmas in a General Theory of Planning," Policy Sciences 4, Elsevier Scientific Publishing, Amsterdam.

Röling, N.G. & Wagemakers, M.A.E. (Eds) (1998). Facilitating sustainable agriculture. Participatory learning and adaptive management in times of environmental uncertainty. Cambridge: Cambridge University Press.

Shapiro, J. (2003) Action Planning Toolkit: CIVICUS World Alliance for Citizen Participation Communication toolkits. www.civicus.org/toolkits/civicus-planning-toolkits

Simon, Herbert (1976), Administrative Behavior (3rd ed.), New York: The Free Press

Simon, H., (1983). Reason is human affairs. Stanford (CA); Stanford University press

Snyder, S.E., 2003. Negotiating high stakes water conflicts: lessons learned from experienced practitioners. Colorado: University of Colorado School of Law http://www.colorado.edu/Law/centers/nrlc/publications/RR29_Negotiating-Water-Conflicts.pdf

Statistics Canada, (2001). <http://www12.statcan.ca/english/census01/Products/Reference/dict/geo049.htm>

Steins, N.A. & Edwards, V.M. (1998) Platforms for Collective Action in Multiple-Use CPRs, Paper Presented at "Crossing Boundaries", the seventh annual conference of the International Association for the Study of Common Property, Vancouver, British Columbia, Canada, June 10-14, 1998.

SWH, (2004). Water and Local Conflict: a brief review of the academic literature and other sources. Stockholm, Sweden: Swedish Water House.
http://www.swedishwaterhouse.se/swh/resources/20050425162906Water_and_Local_Conflict.pdf

Treffny, R., and Fritsch, O. (2009) Participatory Multi-Level Governance and Legitimacy: Never the Twain Shall Meet? Paper presented at the 8th International Conference of the European Society for Ecological Economics: Transformation, Innovation, and Adaptation for Sustainability - Integrating Natural and Social Sciences University of Ljubljana, Slovenia.

Tucci, C., Goldenfum, J.A., Parkinson J.N. (2009). "Integrated Urban Water Management: Humid Tropics" quoted on http://en.wikipedia.org/wiki/Integrated_urban_water_management

UNDESA and CRC, (2001). Skills Development for Conflict Transformation. New York, United Nations Department for Economic and Social Affairs and Centre for Conflict Resolution. <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan001363.pdf>

UNESCO, (2006) Urban water conflicts An analysis of the origins and nature of water-related unrest and conflicts in the urban context. Paris, UNESCO
<http://unesdoc.unesco.org/images/0014/001490/149032e.pdf>

UNFPA, (2007). State of the World Population, unleashing the potential of urban growth; New York: United Nations Population Fund;
<http://www.unfpa.org/swp/2007/english/introduction.html>

UNHABITAT, (2006)
<http://www.unhabitat.org/content.asp?typeid=19&catid=548&cid=4962>

Van der Steen, P. (2007). Report providing an inventory of conventional and of innovative approaches for Urban water Management. UNESCO-IHE.
http://www.switchurbanwater.eu/outputs/pdfs/W1-1_GEN_RPT_D1.1.1_Inventory_of_conventional_and_innovative_approaches_for_UWM.pdf

Varma, S., Evans, A., da Silva Wells, C. & Jinapala, K. (2009) Attitudes and actions of participants in multi-stakeholder processes and platforms, Knowledge Management for Development Journal, Vol. 5, No. 3, December 2009, 201–214

Verhagen, J., and Bhatt, M., (2006). Multiple Use of Water in Urban Areas, A Case Study in Bhuj, Gujarat, India . <http://www.musgroup.net/page/692> accessed on March 30, 2010

Verhagen, J. (2007) SWITCH Learning Alliance Briefing Note 2: Stakeholder Analysis.
www.switchurbanwater.eu/outputs/pdfs/WP6-2_BRN_2_Stakeholder_analysis.pdf

Verhagen, J., Butterworth, J., and Norris, M. (2008). Learning alliances for integrated and sustainable innovations in urban water management, Waterlines Vol. 27 No. 2 April 2008

Viñuales, V. and Celaya, N., (2006). La iniciativa social de mediación para los conflictos del agua en Aragón. Fundación Ecología y Desarrollo
http://www.ecodes.org/pages/articulos/documentos/iniciativa_social.pdf

Visscher, J.T., (2008). Conflict mediation in the water and sanitation sector: And how to reach solutions. Thematic Overview Paper 20. The Hague: IRC International Water and Sanitation Centre.

Wagner, I., da Silva Wells, C., Butterworth, J. and Dziegielewska-Geitz, M. (2010), Reflection on the achievements and lessons from the SWITCH urban water management initiative in Łódź, Poland

Walker, G.B. (2007). Public participation as participatory communication in environmental policy decision-making: From concepts to structured conversations. *Environmental Communication*, 1, 99-110.

Warner, J.F. (2005) Multi-Stakeholder Platforms: Integrating Society in Water Resource Management? *Ambiente & sociedade*, Vol. VIII, No. 2, July/ December 2005

Wikipedia 1. http://en.wikipedia.org/wiki/Urban_area#Japan [retrieved February 2011]

Wikipedia 2. <http://en.wikipedia.org/wiki/Chennai> [retrieved 05 Jan 2010]

Wilkinson T.L. (2010). Ten priciest places to live; *Financial News*, London.
<http://www.efinancialnews.com/story/2010-07-26/ten-priciest-places-to-live>

Wolf, A.T., (2000). Indigenous approaches to water conflict negotiations and implications for international waters Published in *International Negotiation: A Journal of Theory and Practice*. Volume 5:2, December 2000.
<http://www.transboundarywaters.orst.edu/publications/indigenous/>

World Bank (2011), *Integrated Water Management In Metropolitan Sao Paulo : P006553 - Implementation Status Results Report*

A1. Two descriptive case studies and intervention strategies

A.1.1: Challenging the use of prepaid meters in South Africa

A conflict between the residents of black township and city authorities on the introduction of prepaid meters became an international test case on the right to water. This case illustrates an attempt to use the legal route in conflict resolution. It draws largely on a legal analysis of the case by Prof. Peter Danchin (Danchin, 2010).

Introduction

For many years the residents of Phiri township in Soweto, Johannesburg, received an unmetered and unlimited supply of water without paying for it. In 2003 Johannesburg Water initiated “Operation Gcin’amanzi”, a scheme to improve both the leaking water network and the rate of payment. Central to the City’s plan was the abandonment of the flat rate policy of deemed consumption charges and the installation of prepaid meters which would provide each household with 6 kilolitres of free water per month (or 25 litres per person per day as stipulated by South Africa’s “free basic water policy”) with the requirement that any more than that be paid in advance.

In 2005 two Phiri residents died while attempts were made to put out a shack fire and their prepaid water meter’s supply automatically disconnected. At the same time Phiri residents felt the prepaid meters were discriminatory because businesses and government institutions received water on credit through conventional meters. These incidences spurred the Coalition Against Water Privatization (CAWP) to start a protest campaign on behalf of the Phiri residents.

Strategic litigation in conflict resolution

The protests eventually led to a series of court cases brought against the City of Johannesburg, Johannesburg Water and the Minister for Water Affairs and Forestry by five Phiri residents who were supported by the Centre for Applied Legal Studies (CALS) and an international NGO, the Swiss-based Centre on Housing Rights and Evictions (COHRE). The applicants contended that provision of a “minimum quantity of free water” was unconstitutional and that the installation of prepaid water meters was unlawful, unfair and discriminatory.

Court cases

In December 2007 the Johannesburg High Court held that (1) the free basic water policy was unconstitutional and the basic minimum should be increased to 50 litres per person per day; and (2) the pre-paid meters had no basis in law and had been implemented in a procedurally unfair manner.

The City appealed to the Supreme Court of Appeal which on 25 March 2009 upheld the decision of the High Court in substance, but lowered the minimum amount of water to 42 litres per person per day; and (2) gave the City two years to bring its water policy in line with the reasonableness requirement of the Constitution.

The applicants then appealed, without success, to the Constitutional Court seeking to reinstate the order of the High Court. The Constitutional Court’s ruling found (1) the City’s free basic water policy of 25 litres per person per day to be reasonable, and (2) the introduction of pre-paid water meters to be lawful, procedurally fair, and not unfairly discriminatory.

Table 1. **Overview of actors**

Applicants and supporters		Respondents	Courts
Name	Role		
5 poor residents Phiri township	Applicants	City of Johannesburg	High Court
Coalition Against Water Privatization (CAWP)	Campaign support		↓
Centre for Applied Legal Studies (CALS), Univ. Of Witwatersrand	Legal counsel for applicants		Supreme Court of Appeal
Centre on Housing Rights and Evictions (COHRE) (Switzerland)	International “Amicus curiae”	Minister for Water Affairs and Forestry	↓
			Constitutional Court

Outcome

Even though the final outcome of the court case disappointed rights advocates, the City reacted to the ongoing public interest litigation by continual review and adjustment of its water policies. It installed fire hydrants throughout Soweto and introduced a household annual emergency allocation which households could apply for under the City’s indigent registration policy.

The case inspired protests in other parts of South Africa. For example, during May 2008, the South African Municipal Workers’ Union (SAMWU) used the High Court judgment to mobilise against the City of Cape Town’s attempts to install a different kind of water-limiting meter. [Dugard, 2010].

The case illustrates how government itself and specific aspects of public policy can be held accountable via a constitutional culture of justification and participatory democracy. It shows as well how both international and local human rights NGOs such as COHRE and CALS were able to partner with a social movement such as CAWP to use strategic litigation in conflict resolution.

The outcome was less positive for small firms involved in “Operation Gcin’amanzi” to rehabilitate Soweto’s water network and install prepaid meters. Events leading up to the court case forced Johannesburg Water to suspend work and it put contracts on hold. Under the banner of the Soweto SMME Contractors Forum, 200 firms are considering legal action against Johannesburg Water and intermediary firms, which, they say, have failed to compensate them for cancelled contracts worth 100 million Rand (US\$ 14.2 million) in total. [Munshi, 2011]

References

- Danchin, P. (2010). A human right to water? The South African Constitutional Court’s decision in the Mazibuko Case. EJIL: Talk!, 13 Jan 2010. <http://bit.ly/hk63Ud> [accessed 18 Mar 2011]
- Dugard, J. (2010). Civic action and the legal mobilisation : the Phiri water meters case. In: Handmaker, J. and Berkhout, R. (eds). Mobilising social justice in South Africa : perspectives from researchers and practitioners. The Hague, The Netherlands, ISS and Hivos. P. 71-99. <http://abahlali.org/node/7808> [accessed 18 Mar 2011]
- Munshi, R. (2011). Troubled waters, Financial Mail, 03 Mar 2011. <http://www.fm.co.za/Article.aspx?id=136141> [accessed 18 Mar 2011]

A1.2 Water conflict in metropolitan Cebu, the Philippines

Introduction

Rapid urbanisation in Metro Cebu (pop. 2.3 million, 2007), located on the island of Cebu in the Philippines, has increased pressure on available land and water resources. The local water utility, the Metro Cebu Water District (MCWD), provides some 130,000 m³ of water per day serving only 40% of the population through house connections and public faucets. Other users rely on mostly private shallow or some 17,000 (mostly unregistered) deep wells or on water vendors who own deep wells. Several of these wells are facing intrusion of seawater as already in 2002 it was estimated that water abstraction by MCWD and the private wells was outstripping water recharge.

Water shortages in the 1990s led to calls to protect the three inland watersheds – the Mananga, Kotkot and Lusaran – that are important for ground water recharge and could provide future surface water sources for Metro Cebu which at present only has one the surface source the Buhisan dam reservoir.

Local experts believed that the 1992 National Integrated Protected Area System (NIPAS) Act which supports centralised watershed protection measures provided a basis to maximise the quality and quantity of water for future dams. However, local government, landowners, farmers and business interests opposed the emphasis on watershed protection and its effects on livelihoods and property claims, and based their objections on the 1991 Local Government Code that supports decentralised decision making. Conflicting administrative boundaries, property claims and access rights further complicated 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), which applied a community-based natural resource conflict management strategy, combining coalition building with land use planning. They worked with different actors with different positions.

Table 1 Overview of some key actors and their positions in 1994

Actor	Position
Cebu Uniting for Sustainable Water Foundation (CUSW)	Facilitating public participation and lobbying for integrated resources planning as a mechanism for mediating conflicts to help secure adequate water supply for Metro Cebu
Local government (Barangay) officials city politicians, landowners, farmers, business	Oppose centralised watershed protection as their interest is primarily in real estate development, promoting commerce and agriculture
Metro Cebu Water District (MCWD)	Need to expand water supply coverage and oppose transfer of assets and responsibilities to a watershed authority
Department of Environment and Natural Resources (DENR)	Centralised watershed protection Implementation as stipulated in the NIPAS Act
Activist NGOs, grassroots groups	Radical structural reforms such as land reform ; watershed management policies must increase resource security and ensure that basic needs of population are met
Rural residents in the catchment areas (upland stakeholders)	Mistrust urban dwellers, government agencies and other “outsiders”; language barriers and high opportunity costs prevent participation in stakeholder forums

Approach to conflict resolution

CUSW played a dual role of facilitating public participation through a multi-stakeholder forum and lobbying for integrated resources planning and greater public participation in official policy making. They 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 which was partly hindered by the fact that the coalition consisted primarily of urban-based professionals, civic leaders, NGOs and government agencies. Also their promotion of watershed protection made them seen as impartial by those opposing such type of interventions.

Results

Though politically influential, CUSW was unable to resolve the major water-related resource conflicts in Metro Cebu. The CUSW approach to CBNRCM remained challenged by traditional and emerging social divisions defined by class, wealth, language and economic alliances.

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 participated as stakeholder in a five year project to establish a board for environmental management in Metro Cebu.

The CUSW is still active in 2010, though its activities seem limited to advocacy after its major funding partner, the Ford Foundation, withdrew support around 2005/2006.

Sources:

Hafner, J., Schlarb, M. and Pinili, L. (2003). Community-based natural resource conflict management: the case of watershed planning in Metro Cebu, the Philippines.

In: Castro, A.H.P. and Nielsen, E. (ed.). Natural resource conflict management case studies: an analysis of power, participation and protected areas. Rome, Italy, FAO. P. 19-38.

<ftp://ftp.fao.org/docrep/fao/005/y4503e/y4503e01.pdf> [accessed 29 June 2010]

Cebu Uniting for Sustainable Water (CUSW) website - <http://cusw.org/> [accessed 29 June 2010]

Moz, M.M. (2010). Metro Cebu opens water generation business to private sector. Manila Bulletin, 15 Apr 2010. <http://mb.com.ph/node/252829/me> [accessed 29 June 2010]

Annex 2. The tanneries of Villapinzon, Colombia

By **Monica Saenz**¹

Summary

This case study deals with the conflict of small tanneries and the regional and national authorities in the upper basin of the Bogotá River. These small tanneries have been discharging their industrial waste into the river without treatment for decades. The owners of the tanneries are indigenous people with limited access to training, credits and legal advice. They were facing closure and heavy fines. A six step conflict resolution process started with separate meetings with the different actors before holding joint meetings. A large number of actors were involved including the tanners and official agencies such as the environmental agency. The result show that the six year process was successful in empowering the tanners, creating understanding among all actors involved, developing insight among staff of the institutions, and building consensus leading to solutions particularly adopting cleaner production approaches that better protect the environment.

A1.1 Introduction

I learned about the serious conflict between the tanneries in Villapinzon and the Regional Environmental Authority (CAR) from the newspapers and then took an interest in the case as the topic for my PhD research. Villapinzon is a rural indigenous community with some 8000 inhabitants living on a subsistence economy. It is located some 6 km from the source of the Bogotá River, which is used for the water supply of Bogotá and other settlements as well as for irrigation. The community has 150 small scale tanneries and one medium sized tannery all located over a length of 7 km along the river to the south of the village. This industry provides 700 jobs and is the main economic activity if Villapinzon. The tanneries exist already for decades and 51 of them are within 30m of the river bank, an area that since 1977 by national decree (Decreto 1449 Ministry of Agriculture, 1977) was established as a zone “for preservation and protection use only”, making these specific tanneries illegal. Most of the tanneries discharge their waste into the river without treatment and are an important source of pollution (box 1).

The impact of tanning in Villapinzon

The tanning process in the tanneries entail two basic processes that impact upon the environment: classical de-hairing with sodium sulfate and the tanning process itself using chromium sulfate. According to Regional Authority (CAR) Ruling 043 of 2006, these values exceed water quality parameter limits of the Bogotá River, for the year 2020, *i.e.* 7 mg/L for BOD and 10 mg/L for TSS. Discharge of chromium sulfate is between five and nine times higher than allowed by law (Decrete 1594).

The case was already in the news for a long time and different public claims were filed against the pollution. In 2002 these were brought together under one comprehensive court

¹ Instituto de Estudios Ambientales (IDEA), Universidad Nacional de Colombia, Bogota

order concerning the Bogota River. In 2003, all stakeholders were asked by the judge to present their case and defend themselves against the accusation of pollution of the river. I took interest in this process concerning the environmental conflicts and in the first months observed two important points.

- The medium sized tanner was always represented by renowned lawyers, whereas the small tanners only had only occasional legal support. When small tanners spoke up in court this often turned out into aggressive claims against the CAR and the government leading to clashes with the judge. This particularly was the case with the smallest tanneries located within the 30 meters preservation zone of the river.
- The discussion focused on potential solutions that had been developed in the past and that had not been adopted by the small tanners, according to them because of lack of resources. These suggestions all focused on end-of-pipe treatment and did not explore pollution prevention through cleaner production (CP).

The situation was very critical with the regional authorities putting all the blame on the micro-tanners. Particularly the ones close to the river were facing force closure and major fines. They were considered illegal businesses that lost their opportunities to solve their problems for not collaborating with the authorities in the past.

I then learned talking to the tanners that they learned the job from their fathers and still remembered that after scraping the hairs of the hide they soaked them in a mixture of water and smoked animal brains. In 1984 this form of natural tanning was replaced by synthetic tanning when tanners got a training from the CAR (which at that time was only a Regional Authority but not yet concerned with the environment) who taught them the use of synthetic tanning agents (chemicals) and then left them to themselves for more than 10 years (CAR, 1994). They even got a diploma from the training. But now the tanners are in trouble and are very concerned about the turn of events which already started in the late 1990's when they were blamed for the use of those chemicals. In 2000, on request of the CAR many tanners presented Environmental Management Plans (PMA) but never got an answer regarding their approval until 2004 when the CAR said the plans were of poor quality. But these plans were developed by technicians who knocked on the doors of the tanners after they got the request from CAR just as the salesmen of chemicals that visit them to sell their product. The tanners assumed these technicians knew what to do as they said they had a lot of experience with making plans for the CAR, and so they trusted them.

But it seems that they did not really know as the CAR started to sue the tanners for not meeting the environmental requirements and all of these were fined and many were closed down. The CAR also indicated that the area is not recognized as an industrial area and branded the tanners as invaders without property rights, even though they claimed to have bought their lands a long time ago. This accusation banned the tanners from credits and they were not able to pay the fines either. So the situation became desperate with many tanners joining the growing group of Colombian residents living below the poverty line (El Tiempo, 2004a).

They then needed to pay expensive lawyers who did not even show effective results. Recently the tanners found out that their lawyer is not even accredited as a lawyer and in fact cheated and manipulated them as the legal term to fight the closure has expired. The tanners feel that they have done everything the CAR has asked them to do even though it was complicated as they feel that each time when a new director comes along, new directives are issued that usually contradict the former ones. They have requested to get reliable information from CAR

and asked to be heard. They claimed that they certainly want to clean their river but also want to keep their identity as small and micro industries. They do not want to become simple employees of the only medium-size tannery in the area.

From their side the CAR also felt that it has tried to solve the environmental problems of the community of Villapinzón without effective results for more than 20 years. They showed that they had spent considerable resources designing 67 technical options that are still on the shelves of their organization. When I checked these proposed solutions it turned out that all but one focused on end-of-pipe solutions and only one explore CP as an approach to preventing pollution. The CAR felt that only the large tannery in the area deserved to be supported and trusted and that the owners of the small tanneries were impossible to deal with.

Several meetings were held with the leader of the small tanneries, the large tannery, the mayor of Villapinzón and the CAR but these always ended up with fights and disputes. So in 2005 realizing that environmental management plans were not being implemented the CAR permanently closed 51 tanneries on the river bank and another 7 that could be reopened after implementing proper control measures (El Tiempo, 2004b; 2005). Before the closure the CAR consulted with the ministry and the political and control authorities at the national and local levels. These stakeholders all agreed and considered that the tanners had squandered all the opportunities that had been offered to them.

The next step would be to also close the others but before doing so the CAR opened the door to a last meeting to which also a senator and the Public Prosecutor (Procurador) were invited. The new CAR director said that she needed to show that she was efficient and effective with respect to the recovery of the Bogotá River. When she took her post, she found out that the CAR had a formal directive (Acción de Cumplimiento) from the PP which needed that the problem of the tanneries of Villapinzón needed to be settled soonest. She also had been told that the tanners were aggressive, not cooperative and not to be trusted and that CAR officials going to the region were physically harmed by them.

The Prosecutor was tired of being considered inefficient because of the environmental agencies' lack of commitment and law enforcing. She agreed with the new CAR director that the time had come to change the image of public authorities. Taking action on the tannery issue would meet with approval from the Office of the Presidency. The first step that was envisaged was to capture public opinion by dismantling the tanneries (the so-called invaders) at the river bank. The other tanners would have to build their end-of-pipe solution as soon as possible to avoid closure.

The mayor of Villapinzón was fed up with the negative image of Villapinzón in the newspapers for which he blamed the small tanners. But he also recognized the importance of the employment tanneries offered. He therefore wanted to create an industrial area for tanning and to invite large and medium tanneries that were requested to leave the city of Bogotá. The small tanneries were considered illegal and did not pay taxes. They were seen as a barrier to development. This view was shared by the large tanner in the area (who supported the mayor in his election campaign). This large tanner felt that the small tanners meant unfair competition because they were not paying taxes and had tried to convince them to join him in the effort of establishing the envisioned industrial park. But the small tanners did not agree and therefore were blamed to block economic growth in the area.

The senator even though agreeing with the position of the CAR was not feeling happy about her support to the decision at the Presidency of closing the tanneries. She felt that the

environment needed protection but was worried about the social and economic consequences of definitive closures.

A1.2 Approach

I started to explore the situation in more detail and met with the judge in charge of the court order who took an interest in my ideas and in CP. Thereafter in December 2003, I organized a video conference between UNESCO-IHE in Delft, and the main actors involved on the recovery of the Bogotá River.

In parallel I visited Villapinzón where the small tanners asked me to help them resolve their conflict. The fact that I interviewed about their interests had caught their attention. I accepted this request as it was clear to me that it was needed to dig deeper into the causes and consequences of their problems and to empower this underprivileged group. Helping the tanners on the river bank to present their property documents to the Public Prosecutor (who considered them invaders), helped to build their trust in me. Together we identified a number of issues of relevance to the situation, where the tanners started to realize that if united they would have a better chance to overcome the problems at hand.

I adopted a six step process inspired by negotiation theory (Table 1) and started to work closely with the tanners. I also obtained the support from the Cleaner Production Centre CRPML in Cali who started to provide support to finding CP solutions for the tanneries.

Table 1 A six step process to negotiation

	STEP	AIMING AT
1	Preparation	Initial definition of the problem based on (situation analysis, identification of interest and actors (possible allies), nature of relationships) whilst also exploring the Best Alternatives for a Negotiated Agreement (BATNAs)
2	Building relationship	Sharing information and building trust
3	Redefinition of the problem	Internal Visioning - Initial consensus building strategy
4	Establishing common grounds first internally and then among all actors	Empowering communities for better win-win situations – Identifying realistic and accurate options for improvement
5	Agreements	Establishing commitment
6	Implementation and Follow-up	Implementing solutions - Monitoring the process and providing feedback (dynamic process)

In August 2004, the court ruled that the small tanneries needed to include CP as strategy for pollution prevention and that the CAR needed to provide support. The magistrate designated me, to my surprise, to supervise the court order once it was enforced (Court Order, 2004).

A1.3 Solution

The first three steps took a period of some three months in which I worked with different actors separately and particularly with the tanners. This was a gradual process to better understand the problem. Initially the CAR very clearly considered that the tanners had rejected any solution offered to them to be the cause of the problem. The tanners' leader at that time considered that the problem was that the tanners did not have the money to

implement the end-of-pipe solution and that the authorities never listened to them. By the end of step 3 some consensus was beginning to emerge about a number of issues including the fact that past solutions never took the interest of small tanners into account. Also the CAR started to realize that their relationship with the tanners was interdependent and long term and the property rights of the tanners from the river bank were respected. These three steps allowed establishing a clear problem definition (e.g. past solutions never looked at the interest of small tanners) and the strategy to be followed. This strategy aimed at strengthening the tanners' association, legalizing the tanners and helping them to sort out the legal barriers, solving the inter-related land issues, implementing the appropriate CP options, and implementing a business plan for competitiveness.

In the first 3 steps the work was done in small groups and already led to change. A new leader was chosen for the small tanner and their association becomes stronger. They agree on CP as being the technical option to follow which was in line with the ruling on the court order for the Bogotá River. Several tanners were eager to participate in a CP pilot program.

The next steps meant working in larger groups in which stakeholders were brought together. Here I introduced different methods for working in larger groups. This included Open Space Technology (OST) where participants were assisted to create and manage their own agenda of parallel working sessions to discuss different topics of importance and identify how to proceed and work together. I also used Appreciative Inquiries (AIs) an approach that by asking questions and envisioning the future fosters positive relationships and enhances a system's capacity for collaboration and change

As a result of the first OST, the senator that had participated decided to support the conflict resolution process and opened channels with the Office of the Presidency, the President itself and the Chamber of Commerce to support a legalizing process demanded by CAR. But it took more than one meeting to reach solutions as initially CAR stated that it needed to get proof of the tanners' will to change before supporting a CP project for the small tanners. The CAR for example only gradually accepted CP as technical option because initially they thought that CP was designed for clean industries becoming cleaner and not for dirty industries, and that they have no legal control over CP processes.

As a consequence of the negotiation process also changes arose in the power relationships with for example the initial leader of the small tanners but also the large tanner and the mayor by losing supporters which reduced their power. In fact the tanners supported another candidate for mayor in 2007 who then won the elections.

Reaching a final agreement (step 5) took 2.5 years in which five large meetings were held, while the first three steps were made in three months. At the stage of implementation (step 6), the SWITCH-UNAL project helped to initiate a pilot project for CP in six small tanneries, and CAR joined in co-financing another six. These 12 improved their operation, reduced their negative impact on the environment and served as a learning experience with improved dehairing and better control. They also serve as an example to the others.

In the course of the process a number of important achievements were made including:

- The approach that was followed increased the understanding of the actors and created important allies among powerful stakeholders including the Office of the Presidency, the magistrate, the senator, the Governor, Academia and the Ministry of Environment.

- The small tanners organized themselves and took an active role in changing the situation. Some 66 tanners co-financed their environmental legalization process developing their by presenting environmental management plans (PMAs) based on CP, asked for discharge permits and organized themselves in 7 collective water associations for water use control by CAR. The tanners also invested in CP and innovation. In 2010 the tanners from the overall tanner association with 100 members bought land for solid waste treatment. In the process between 2004 and 2009 30 legalized tanners have saved 70% on water consumption and reduced their discharge into the river. Reduction includes 83% on Chromium, 81% on Sulphur, 11% on BOD5, and 95% on TSS.
- The area where the tanners are located has been officially recognised as industrial area and 50 tanners are now starting their own CP implementation with clear spatial planning rules.
- The CAR accepted the reopening of the tanneries that were not located within 30 metres of the river provided they started to recycle sodium sulphate and chromium sulphate. Those closer to the river are getting an opportunity to sell their land to the regional government.
- The CAR established a CP section and is working with Academia on a policy proposal for industrial discharges based on loads and not just on concentrations.
- For the first time in Colombian history, the judicial system is considering compensation on environmental issues instead of putting fines to tanners that cannot pay.

This is an interesting example of participatory policy-making involving all main actors. This process continues as the small tanners' association is participating actively in the monthly meeting of the national tannery committee that discusses policies and strategies of this industrial sector at the Ministry of the Environment.

A1.4 Lessons learned and next steps

This negotiation case was resolved after six years of multi-issue, multi-level and multi-stakeholder negotiations. Through this process, a sustainable solution was worked out for the environment and the tanners. Multi-issue and multi-stakeholder negotiations are complex and solutions need to be embedded in the overall situation. Negotiations on short term partial solutions are not effective because of the complexity of the problems. An innovative multi-stakeholder bargaining process was followed exploring win-win approaches that took its time but proved successful and resulted in strong alliance building between important actors.

The change agent -researcher- (Schein, 1996) did not have a formal position of power and therefore needed to work on building trust with the small tanners as well as with the other actors from the very beginning. The researcher's power to lead the process of change came from the fact that the tanners chose her as their facilitator and helper. The tanners developed a sense of belonging and commitment to their own process of change.

In order to handle the conflict, the researcher needed to know when to be a helper, a facilitator or a mediator. The researcher's role was a demanding and complex task that needed long term commitment to the process. It required, (a) building strong leadership, (b) identifying committed and strategic people -champions- within the different allies, (c) being independent, and (d) not being afraid of working in the political arena, which is unusual among academics. This was not without difficulties since it demanded in many occasions to fight against prejudices towards underprivileged groups.

What can be concluded from this case is that:

- Although the process took six year which is a considerable period of time it is important to put this in a historic perspective. In 2008 for example the CAR indicated that the legal actions taken as a sole strategy towards solving the pollution problems caused by the tanneries has proven to be ineffective for the past 20 years (CAR, 2008).
- The definition and involvement of parties implies more steps than just a stakeholders' analysis. It includes (a) building relationship between the negotiator and the stakeholders, (b) defining the best alternatives to a non-negotiated agreement (BATNAS), (c) determining the initial(s) definition(s) of the problem, (d) determining the nature of short and long term relationships, and (e) defining possible allies.
- The integration of a community that has been breaking the rules for decades is a shared responsibility with the concerned institutions rather than just the responsibility of the community itself. The responsibility of the CAR in the tanners' conflict was in fact neglected for years.
- Through the systematic 6 steps approach, the owners of the small tanneries showed to be knowledgeable regarding their own problems and to be willing to change. They became strong supporters of the conflict resolution process.
- Even though the CAR decided to support the CP action research project (SWITCH), they have not yet mainstreamed participatory approaches in their work. Perhaps this may change once the policy on integrated water management is enforced by the Ministry. This then may be an important basis for the introduction of conflict resolution mechanisms in water pollution problems that include marginalized groups.
- It was important to be reflective in the process as over time it needed to be adjusted to changing conditions and circumstances. The complexity of the process was an important aspect as it involved both land ownership and environmental issues but also other complicating factors of which gaining access to credits for the small tanneries turned out as one of the most difficult issues.
- The focus on CP was very useful as it fitted the needs and interests of the small tanners and allowed them to make changes that suited their budgets and did not threaten their identity as a small sized industry. Initially it was not recognized by the CAR which focused on end-of-pipe solutions but gradually a mixture between CP and end-of-pipe solutions was accepted by them

References

- CAR, 1994 Tannery courses, 1984-1994.
- CAR, 1998 Revisión documentos curtiembres 1982-1996 Centro de documentación CAR.
- CAR, 2006 Decree 043
- CAR, 2008 Report on the CP training for the tanneries of Villapinzon
- Court order, 2004. Sentencia sobre el Río Bogotá. Tribunal Contencioso administrativo de Cundinamarca. Magistrada Nelly Yolanda de Villamizar.
- EL TIEMPO, 2004a. Los grandes costos de la pobreza. August 8, 2004.
- EL TIEMPO, 2004b. Curtiembres, a cumplir la norma. March 12, 2004.
- EL TIEMPO, 2004c. Hora cero para curtiembres y mataderos. May 15, 2004
- EL TIEMPO, 2005. Cierran 59 " fábricas" de cuero. January 28 2005.
- Guio D., 2004. Water resources Management in Colombia: An institutional Analysis MSc. Thesis UNESCO-IHE, September.158p.
- INDERENA, Decreto 1449, 1977
- Schein E., 1996. Kurt Lewin's Change Theory in the Field and in the Classroom: Notes Toward a Model of Managed Learning', Systems Practice, 34p.

<http://dspace.mit.edu/bitstream/handle/1721.1/2576/SWP-3821-32871445.pdf;jsessionid=D07E0CEC9DC3410DE33D13015EE56077?sequence=1>

Annex 2 Stakeholder conflicts in Kullön Sweden

By Mats Johansson² and Elisabeth Kvarnström^{3,4}

Summary

This case study presents a ‘silent conflict’ between local residents, housing companies and the municipality of Kullön on the one side and researchers and the Stockholm water company on the other. Residents of the island Kullön received urine diversion toilets as part of a housing development scheme. The urine was collected separately, but unfortunately was then diverted back to the sewer system instead of being used as fertilizer, thus defeating the purpose of the installation of the toilets and wasting precious nutrients. Several attempts were made to change the situation. This has been a lengthy process sometimes pushed by external actors that where in favour of urine diversion whereas local actors where not interested. Later on in the process this changed and some local actors became interested. The case shows that part of the problems could have been prevented by better planning.

A2.1. Introduction

Kullön is a beautiful island in the Municipality of Vaxholm, some 50 km north of Stockholm. The residents of Kullön have had, since 2001, a unique sanitation system, where urine-diversion technology is combined with centralized tertiary wastewater treatment. However, in spite of all the hardware being in place, the urine diversion collection after the toilets was not taken into operation until years down the line (Box 1).

Box 1: Urine diversion technology used in Kullön

The innovative sanitation technology described in this case study is urine diversion toilets. Urine is diverted through specially designed flush toilets that separate the urine from the solid parts of the toilet waste. The urine is flushed with a small amount of water and lead in pipes to a collection tank from where it can be collected for reuse in agriculture.



Picture 1. Urine diverting dual flush toilet installed at Kullön (left) and Schematic picture of urine diverting toilet, pipes and collecting tank installed into a house (right).

² Ecoloop, Stockholm, Sweden (mats.johansson@ecoloop.se)

³ Stockholm Environment Institute, Sweden (elisabeth.kvarnstrom@sei.se)

⁴ Authors have been involved in the process described in this case study and have collaborated with the different actors. The views presented here however are their sole responsibility.

In 2001, the main stakeholders at Kullön: the residents, the housing companies and the municipality, did not see this as a major problem, whereas other stakeholders in the sector: researchers, consultants and Stockholm Water Company, all involved on an national level in the development of urine diverting systems were very concerned. Thus, a kind of “silent conflict” had emerged. This case study describes the road travelled in order to have the full sanitation system, from collection to reuse, taken into operation.

Box 2 History of ‘modern’ urine diversion in Sweden

Diversion of urine through specially designed flush toilets as applied in several locations in Sweden is an important approach to substantially reduce the emissions of nutrients by more than 50% of the Phosphorous and 80% of the Nitrogen from the wastewater without active wastewater treatment and reuse the nutrients for agricultural purposes. The wastewater sector in Sweden is, however, not used to and mostly uninterested in handling this wastewater fraction. In Sweden as in most countries neither the utilities, the legal framework nor the municipalities are recognizing the potential value of urine as a fertilizer and the benefits of removing urine from the wastewater flow to decrease the necessity of N-removal in wastewater treatment plants. Since the 1990s a number of pilot projects on urine diversion and re-use of urine in agriculture have been implemented in Sweden and gradually interest is increasing among a number of actors but with its ups and downs as shown in this case study. Initially a number of innovative groups and some interested farmers took the initiative as part of the promotion of non-conventional sanitation solutions. In the late nineties some researchers and politicians became involved but this interest faded away and housing organization were left by themselves to take it forward. As of 2005 the situation changed again with new guidelines being established for on-site sanitation and municipalities and farmers becoming interested.

Source (Johansson et al (2009))

A2.2. The story of the conflict – resolving the deadlock

Years 1996 – 1998: Phase 1 – Ecovillages

Looking back the conflict finds its roots in the planning phase. A local environmental group in Vaxholm wanted to develop a small scale eco-village at Kullön, keeping a high environmental profile of the housing area while preserving the local environment. The environmental group never managed to get acceptance for these plans by the municipality. However, the discussion as such had great influence on the planning and decisions-making in the process of developing the Kullön area.

The initial municipal agenda for Kullön (Figure 1) was to maximize development and thus the construction of as many houses as possible in the area. The local environmental group and the regional county board, who have the legal mandate to stop environmentally harmful projects and plans, opposed to this and a negotiation began. The Municipal Head of the Environmental Authority⁵, who was deeply committed to the ideas of closing the loop between sanitation and agriculture, was facilitating the negotiation process between the local environmental group and the regional county board and the solution, as stated in the local plan for development, was to build 250 houses with a high environmental profile and a closed loop sanitation system.

Neither the head of the municipality (Box 3) or the local water and waste water company (Roslagsvatten) were fully committed to the outcome of the negotiation. They didn’t approve of the very high environmental profile and the piloting of new wastewater technology. Roslagsvatten also didn’t like the fact that they were responsible for the local wastewater

⁵ This person moved to work in the municipality of Tanum which later became known as the “closed-loop municipality” of Sweden, among others the winner of the national Swedish wastewater and recycling prize in 2006.

treatment plant that was to be built to treat the wastewater emanating from the grey water and the faeces.

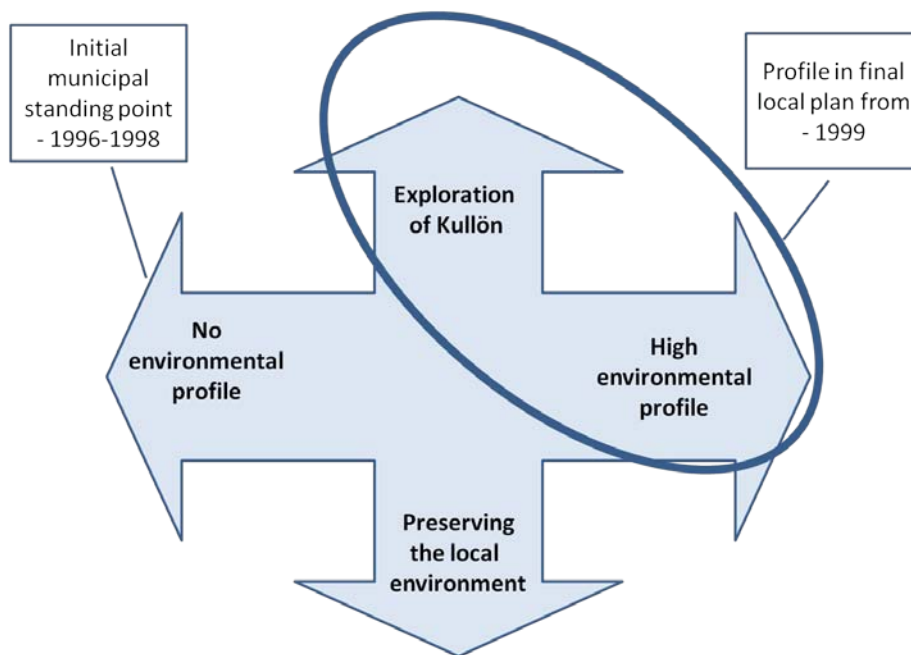
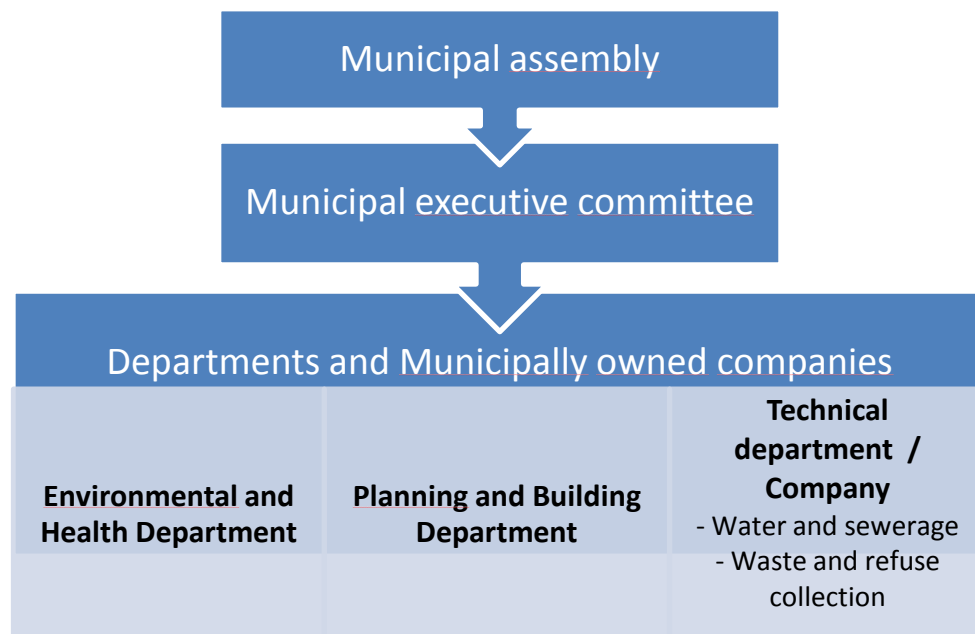


Figure 1. Initial conflicts of interest in the planning phase for Kullön.

Box 3. Organization of a Swedish municipality

There are three hierarchical levels in the Swedish municipalities: The Municipal assembly, the Municipal Executive Committee and the departments and municipally owned companies. All departments and companies have their own politically elected board with its own legal authority and responsibility.



Years 1998 – 2001: Phase 2 – From Planning to Implementation

During the planning phase it became clear that the municipality was not willing to accept the responsibility for the infrastructure in Kullön. One reason for this was the politically idea that people and communities will benefit if they would solve operation and maintenance in a more efficient way themselves without interaction from authorities and municipal. Another underlying and not outspoken reason was the aim to minimize the municipal resources and competences needed for municipal infrastructure and technical services. The municipality tried to shift these responsibilities to the future house owners, which actually was in violation with the intentions of the Swedish law when it comes to both wastewater and waste collection.

At this stage of the process a heating company named Närvärme, which was owned by the National Farming Federation (LRF), entered the process as they saw an opportunity to sell district heating to all the houses at Kullön. A contract was signed between Kullön HB and Närvärme, including the unusual deal that Närvärme would take care of the urine from Kullön and would ensure the reuse of the urine in agriculture. However, after less than a year the contract on district heating was cancelled between the involved parties. However, surprisingly, the agreement regarding the urine stayed intact even though nobody believed that Närvärme would actually take care of the urine.

It was surprising, from a public point of view, that the municipality agreed to this obviously unrobust set-up and division of responsibilities. Having the exploiter, Kullön HB, to promise to solve the reuse of urine for the future inhabitants was a rather unusual solution. The housing companies just wanted to start the construction and did not realize or were not concerned with the future negative implications of this decision. Neither seemed the municipality concerned with this though this was clearly their responsibility. Kullön HB chose a “quick fix” to get going with the development, instead of trying to identify a robust solution on the urine collection and reuse for the house owners and their future situation.

However, given the position from the municipal Environmental Health Department (EHD) that was not interest in the re-use of urine, the technical department of the municipality did not feel a pressure to ensure a well-functioning reuse system. Obviously the different parts of the municipality and its water company were not involved, felt no responsibility and had no internal dialogue.

Finally, it is important to point out that no external actors or future house owners were involved in the process towards the diversion and re-use of urine and decisions on roles and responsibilities for the urine reuse system. The eco-village-group had no role in the process and had ceased to exist. The consultants had at several parts of the planning and building phase become involved as technical support to the housing companies. The consultants tried to point out the difficulties ahead and tried to communicate this to both the housing companies and the municipality, but they never got the chance to influence the decisions regarding organization, operation and maintenance and future responsibilities. In 2000, the consultants tried to involve the Swedish Farmer Federation (LRF) and regional actors to launch an R&D-project regarding technical, institutional and economical aspects. It is likely that the involvement of the future house-owners and external consultants in the decision-making process could have avoided the conflict.

The lack of commitment to the diversion and re-use of urine from the main stakeholders resulted in a situation where urine diversion toilets were installed in all houses but the

diverted urines was subsequently led back into main wastewater streams and treated in the local wastewater treatment plant run by Roslagsvatten.

Years 2001 – 2005: Phase 3 – Backlash

When moving in to the houses at Kullön the house owners got an environmental education, including an introduction to the specificities of the urine diverting toilets, and the positive effects of reusing nutrients from urine. The house owners also started composting organic household waste. However, only few people that moved to Kullön did so because of the high environmental profile. When the knowledge spread that there was no reuse system in place, the motivation fell and some households started complaining about the new toilets. Some wanted to take them out, and at this stage Kullön HB invested quite a lot of resources to get the technical system at Kullön to function as it was intended. Once again the consultants from VERNA were involved in the communication between actors and helping to solve problems like blockages in the piping systems and malfunctioning toilet units. But the activities did not include efforts to organize a system for reuse.

In 2003 there was a shift in attitudes within the municipality. The Environment and Health Department (EHD) started arguing that the urine diverting system should be taken into operation and that the wastewater treatment plant should have stricter effluent demands. This shift was caused by the new national Environmental Code and its principle of application of Best Available Technology (BAT) within “reasonable costs”. To apply UD when the system was already in place was within reasonable costs according to the EHD. The question was towards whom to direct this BAT requirement? It was unclear who was actually responsible for making sure that the UD system was taken into operation; the households, the municipality being responsible for household waste or Roslagsvatten, the water company?

This was the starting point for an internal discussion on roles and responsibilities within the Vaxholm municipality. At the same time, the Swedish Environmental Protection Agency (EPA) concluded that legally separated urine was a solid waste fraction. Consequently Kullön HB shifted its position and started to argue that the collection and re-use of urine was a municipal responsibility.

In this new situation, when the silent conflict had become outspoken, the consultants, got involved once again and in order to unlock the situation we proposed to start a research oriented project at the regional level using Kullön as a case. A number of other external actors were invited to these discussions. To take the full system into operation, a project owned by the municipality led by the consultants and involving regionally available expertise started (see Box 4). The house owners and Kullön HB got defined roles in the project. They were members of the steering group and they started a query among the households at Kullön on their willingness to pay for and to take the responsibility for a reuse system. They also had a bridging role between Kullön HB and the municipality.

The project was financed by a regional fund for environmental projects, the Federation of Swedish Farmers, Stockholm Water Company and the municipality of Vaxholm. The results from the project clearly showed that the municipality was responsible for organizing reuse and the project proposed several different alternatives on how the municipality could organize and finance this. The project had a regional/national seminar that was very well attended by researchers, municipalities and national authorities. In spite of the clear messages communicated by the project, the Vaxholm municipality had problems deciding which way to go and how to handle this question and as a consequence the responsible persons did not participate in the seminar even though they were the most central actors. The consultants

together with Kullön HB and the persons representing the households became instrumental into ensuring the municipality would take up its legal responsibility. During this part of the process this “sub-group” of the project had shared goals, a constructive dialogue and a strategy to get the municipality back into the game. The project also provided resources to let the consultants do much of the needed “foot-work”. Informal meetings were held with politicians and other key actors in the municipal organisation. Another example of pro-active work were the technical tours during the international World Water Week in Stockholm where big groups of international water and sanitation experts came to visit Kullön and came in to the households and also came to meet the politicians in Vaxholm.

Box 4: “Recycling of wastewater fractions to agriculture – the Kullön case study”

This project started in 2003 and ended by mid-2005. The main purposes of the project were to (i) pinpoint critical issues in order to start operations of the largest double-flush urine diversion system in Sweden (and possibly the world at that time) and (ii) to suggest an action plan for local agricultural reuse of urine, once the system was up and operating. The project also contained regional activities like demo urine spreading and a national seminar.

The project owner was the **Environmental Health Department** at Vaxholm Municipality. Participants in the project were also **Department of Physical Planning** at the municipality, **Kullön HB** (the real estate developer consortium), **Stockholm Water Company** (SVAB), and **The Swedish Federation of Farmers** (LRF). SVAB and LRF participated in order to ensure that the regional competence in the subject matter was well reflected in the project. The project process was lead by VERNA Inc., a consultant. The project documented, by the end of 2004, that (i) the responsibility of organizing the reuse system falls, legally, on the municipality, (ii) technologies for collection, transport, storage and spreading of human urine are available, (iii) there were farmers in the vicinity interested in receiving urine for agricultural reuse, and (iv) well described suggestions for different technical and institutional set-ups for the reuse system.

Years 2005 -2010: Phase 4 – On-site sanitation and municipal organization

In spite of the clear recommendations from the research project, the municipality did not take its responsibility for organizing the urine reuse system. This in turn lead to Kullön HB, stepping in once more and organizing a tender for the agricultural urine reuse, in spite of their point of view that it should be taken care of by the municipality. Their idea at this point was to organize a system that the municipality could take over later on. Once more the consultants were engaged to provide the necessary information and bring the tendering process forward. It was not very difficult to find interested farmers and entrepreneurs, the key question turned out to be who should pay for the emptying and reuse? Different feasible systems and their associated costs were presented to the house owners in spring 2005. At that time, the house owners refused to take the responsibility to organize an agreement with the urine reuse entrepreneurs, with the argument, quite understandably, that they did not want to pay more for their wastewater services than the municipal tariff they already paid. Hence, the process of getting the reuse system up and running once more was in a deadlock.

Eventually the municipality changed its opinion and in December 2005 the municipal executive committee took the decision to organize a municipally-owned system for collection and reuse of urine from Kullön. Roles and responsibilities were defined; the municipality said that Roslagsvatten, the water and wastewater company was to “be responsible for organizing reuse”. This was in many ways not according to the usual institutional setup as Roslagsvatten was, at the time, not in charge of managing household waste within the municipality. However, they had the competence to organize such a system that other departments of the municipality did not have.

What made the municipality change its mind? The coalition of households, housing companies and consultants and experts kept pushing the municipality to take up its

responsibility. The 'no' from the house owners to take the responsibility had resulted in an intensive dialogue initiated by Kullön HB including sending letters to local politicians and demanding answers on the legal responsibility of the municipality regarding the wastewater fractions. The coalition step by step built trust and convinced the municipal officers that they had no real alternatives to taking the responsibility. An important turning point was when the households, Kullön HB and the consultants in late 2005 had a meeting with all the municipal officers and politicians which ended by eating a so called Swedish Christmas smorgasbord. This can be seen as a formalization that the involved actors started sharing a common view of the problem at hand and had consensus on the direction and steps to take out of the conflict.

The role of the agent of change

Over a period of 10 years we saw a number of remarkable changes: the construction company moved away from its focus on the highest profit margin towards taking responsibility for getting the technical systems managed in a sustainable way; the municipality finally started to comply with legislation; and, the local water utility assumed responsibility for the management and reuse of the wastewater fractions.

During the process we often found ourselves in the middle of all the discussions. In case of the construction company, we were initially kept at arm's length. We feel it had to do with prestige. However, when a new project leader came on board things changed. The new project leader recognized that technical support was very much needed and we got more engaged in a whole range of technical advisory tasks. Gradually, this led to a greater trust between us, the consultants, and the construction company. This trust helped us to pro-actively initiate an internal dialogue about the role of the municipality and the weaknesses in the existing agreement for reuse that the building company was relying on. Moreover, the construction company started to realize that they needed to resolve the re-use issue before they could start to think about a next phase at Kullö.

We feel that the municipality came around when we – the consultants, the construction company and the households at Kullön– went to them with a project idea rather than with the intention to dump the responsibility in their lap. We suggested a constructive, participatory and development-oriented way forward rather than being defensive, referring to what the legislation stated and just trying to hand the problem over to the municipality. The strong relationship between the local community, the construction company, and ourselves ensured that we all talked in one voice. Finally, it definitely helped that we started to talk with the head of the municipality rather than the technical director as it was becoming more and more clear that he was not doing much in pushing the process or would be likely to change his opinion.

In hindsight, it is clear that only small adjustments and quite simple solutions were needed to solve the problems at Kullön. It all boiled down to changing the mindset and outlook of involved individuals. It took someone that had the needed technical expertise and the ability to connect and engage people. We got involved through a mostly technical assignment but started to work on the institutional arrangements in parallel.

Despite this high level municipal decision nothing much happened during the start of 2006: primarily due to the unwillingness of Roslagsvatten to take on this new role and activity. The housing company, the households and the consultants, felt that there was a risk that the question and the momentum on the political level that had been reached would be lost. As a consequence of more letters and proposals from Kullön HB and the households having personal contacts with politicians during spring 2006 the head of the municipality made it clear once again that the reuse organization responsibility fell on Roslagsvatten.

After this clarification it took more than a year (until spring 2007) before Roslagsvatten started the process with a new tender and a dialogue with farmers. This was once again carried out by the consultants. In one way this meant repeating the same work that had been done two years earlier. The urine reuse system was fitted into the institutional setup for septic tank desludging within Roslagsvatten. Once again an interested farmer was found and a technical system for storage and spreading of human urine was established.

The technical and institutional setup of the reuse system was ready by spring 2008. The farmer lives in a neighbouring municipality. The farmer stores the urine in existing tanks on his farm and then spreads it to crops aimed for seeds and fodder. Roslagsvatten now received national funding (application written by the consultants) from the Swedish EPA to construct

the “on-farm” storage. The first emptying and transport of urine from Kullön to the contracted farmer took place during 2008. The farmer receives 10 euro/m³ for covering the costs of storage and emptying. The system has been running since then without involvement of consultants or external actors.

A2.3 Experiences from resolving the conflict

Innovative projects like the wastewater system at Kullön are often initiated by people that believe in the need to conserve the environment and want to realize a specific technical solution. These enthusiasts sometime forget to build a broader coalition with local authorities and organizing robust systems with a local ownership.

The strong coalition between the construction company, the house owners, and the consultants made it possible to push the process and finally convincing the unwilling municipality to take its responsibility.

The presence of external actors, mainly the consultants, involving themselves in the process were key to resolving the conflict. In this case, they followed the process (with different liaisons and roles) from the beginning to the resolution.

Much of the conflict could easily have been avoided in the planning phase of the project. The final solution was both cheap and uncomplicated. Too much trust was allotted to a obviously unsecure solution and there was no or little capacity and political support available within the municipality when problems arose.

The lack of economic incentives and the complex organizational and unclear responsibilities made the conflict hard to address and resolve.

References

Johansson, M., Kvarnström, E., Richert Stintzing, A. (2009). *Going to Scale with Urine Diversion in Sweden – From Individual Households to Municipal Systems in 15 Years*. Paper presented at the 1st IWA Development congress, Mexico 15-19 november 2009.

http://www.huussi.net/tapahtumat/DT2009/pdf/Mats_Johansson.pdf

Johansson, M., Jönsson, H., Höglund, C., Richert Stintzing, A. & Rodhe, L. 2001. *Urine separation — closing the nutrient cycle*. Stockholm Water Company. Stockholm., Sweden.

Annex 3 Case response sheets

A3.1 Case response sheet Villapinzon

This is the sheet that provides answers to some of the key questions for the trainees that will be reviewing the case.

The actors

A summary of the main actors and actor groups is provided in table 1

	Actors	Brief description
1	Small tanners not within 30 meters of the river	Tanners with indigenous background, barely making a living, subsistence economy, primary level of education, individualistic, mistrust the environmental agency (CAR).
2	Small tanners within 30 meters of the river	Tanners with indigenous background, barely making a living, subsistence economy, primary level of education, individualistic. Mistrust CAR and because of a change in the law their business has become illegal
3	Large tanner	The tanner with a good income, access to politicians (which he financially supports) and to local and regional decision makers. Has for a long time been considered the representative of the tannery community in Villapinzón
4	Environmental Agency CAR	One of the oldest regional authorities, powerful in the region, but bureaucratic, top down not participative and not a good reputation at a national and ministerial level. They focus on end-of-pipe solutions oriented. The new director is ambitious
5	Mayor	Since his campaign was co-financed by the large tanner, he represents his interests. Not liked by the small tanners.
6	Senator	Socially sensitive and interested to water issues and sustainability
7	Public Prosecutor	Ambitious person. Law abiding and socially concerned

Positions and underlying interests

Actor	Position	Interest
Small tanners outside the river bank	<ul style="list-style-type: none"> Done enough in relation to the CAR who never listens to them No negotiation with the large tanner 	<ul style="list-style-type: none"> To obtain a decent living from their tannery To live in a clean environment
Small tanners on the river bank	<ul style="list-style-type: none"> They own their tannery and have done enough in relation to the CAR who never listens to them No negotiation with the large tanner 	<ul style="list-style-type: none"> To obtain a decent living from their tannery To live in a clean environment Not to lose the investments in their property
Large tanner	<ul style="list-style-type: none"> To close down (or take over) the other tanners (illegal competition as they don't pay tax) To develop an industrial tannery park in the area 	<ul style="list-style-type: none"> To sustain and expand its business To get a rate of return on the possible development of an industrial tannery park in the area
Environmental Agency CAR	<ul style="list-style-type: none"> To close down the illegal tanneries as they have not been cooperative and have not taken the chances that were offered 	<ul style="list-style-type: none"> To reduce environmental pollution and improve the water quality in the river To portray an efficient image and have short term results
Mayor	<ul style="list-style-type: none"> Dirty tanneries need to be closed To support an industrial tannery park 	<ul style="list-style-type: none"> To have short term results in order to get jobs in the area and to clean the river
Senator	<ul style="list-style-type: none"> Dirty tanners need to be closed as we need to recover the river Social measures may be needed to mitigate negative effect 	<ul style="list-style-type: none"> To support the development of sustainable solutions to improve the quality of Bogota River without creating a negative impact on the livelihood of the local community
Public Prosecutor	<ul style="list-style-type: none"> Dirty and illegal tanneries need to be closed and those within 30 meters of the river need to be dismantled 	<ul style="list-style-type: none"> To find short term solutions to improve the river quality within the legal context and show efficiency and effectiveness

The role of the facilitator

The facilitator was the researcher that handled the conflict resolution process. She did not have a formal position of power and therefore it was essential to gradually build trust with the community and the other actors from the very beginning. The researcher's power to lead the process of change particularly stems from the fact that the tanners after she had done some interviews in the area invited her to become their facilitator and helper. It also helped that she came from the university with a multidisciplinary background (Science and Business Administration) and had international contacts which made her also trustworthy for the different institutions involved. Another important fact was her link with organizations that promoted Cleaner Production (CP) and her ability to raise financial support for the implementation of pilot projects.

The solution and possible learning points

The role of facilitator is quite complex and needs long term commitment to be able to create change in environmental conflicts. The researcher facilitator in this case needed besides knowing when to be a helper, a facilitator or a mediator, (a) to build strong leadership, (b) to identify committed and strategic people -champions- within the different allies, (c) to be independent, and (d) not being afraid of working in the political arena, which is unusual among academicians.

Multi-issue and multi-stakeholder negotiations are considered complex negotiations. The process, in such situations, is as important as the solutions and may take considerable time. This case was resolved after six years of multi-issue, multilevel and multi-stakeholder negotiations. Without having worked on the relationships with and between actors it would have not been possible to have reached the win-win solution that was worked out for the environment and the tanners. In this actors needed to acknowledge that their relationships were of long-term nature. It is very important that the facilitator is not seen as siding with one of the parties, as the moment that this happens the other actors will no longer trust the facilitator. In this specific case the facilitator helped the vulnerable actors and this initially was not appreciated by the others. Yet once the facilitator clarified the situation it was well understood and accepted that training and additional support was provided to the weaker actors. Yet it is good to realize that often it is easier (less risky) to seek independent external support for providing support to one of the actors to allow the facilitator to remain independent. Application of more participatory techniques in the negotiation process such as Open Space Technology may also help to create more equity among actors in the process.

Solutions need to be embedded in the overall situation. Negotiating partial solutions on an issue by issue basis may be counterproductive and not end-up in a feasible overall solution. Identifying win-win situations has the greatest potential of success.

A3.2 Case response sheet Stakeholder conflicts in Kullön Sweden

This is the sheet that provides answers to some of the key questions for the trainees that will be reviewing the case.

The actors

A summary of the main actors and actor groups is provided in table 1.

	Actors	Brief description
1	Residents of Kullön,	Some 250 households moving in to newly built, quite expensive houses at the island of Kullön. Some with an interest in environmental issues and seeking a living in between the archipelago and the city. They have no or little knowledge or motivation in water and wastewater issues. They will take over the operation and maintenance of many of the systems on Kullön (but not the wastewater treatment).
2	Kullön HB, the housing company	Represents the building companies SMÅA and HSB (which both are part privately and part publicly owned). They are responsible for all choices and decisions regarding the technical systems and have the responsibility for all technical systems until the residents move into their houses. Had little or no initial knowledge experiences regarding urine diverting systems.
3	Roslagsvatten	The Water Company, the water and wastewater utility, owned by the municipality of Vaxholm. They are the most competent actor regarding water and wastewater services in Vaxholm. Roslagsvatten are responsible for the wastewater treatment and eventually also the organisation of a system for reuse- of urine in agriculture.
4	The municipality of Vaxholm	Consists of three different parts:(i) the Environmental Health Office and (ii) the Physical Planning Office, (iii) the politicians.
5	A consulting company	VERNA Ecology Inc with experts on source diverting systems and decentralized sanitation. These persons had been involved in organizing a R&D-project the so called" The Bornsjön Project", Sweden's first large-scale system for reuse of human urine on farmland (Johansson et al. 2001). One of the consultants had also in an early stage been involved in giving advice to Kullön HB.
6	The Swedish Farmer Federation, LRF	An active external part when initiating the regional project as well as an important part when having dialogue with farmers interested in using the urine from Kullön. They added both time and financial support to the process.
7	Stockholm Water Company	An active external part when initiating the regional project the actor that had been driving the Bornsjön Project in the Stockholm region. They have experience with reuse systems for agricultural use of human urine and saw resolving the Kullön deadlock as an important step for the development of urine diverting systems nationally.
8	Swedish University of Agricultural Sciences	Experts and researchers of the university had been involved in the Bornsjön Project and came in to the Kullön-process as experts and neutral parties

Positions and underlying interests

Actor	Position	Interest
Residents of Kullön	Do not want to pay more for an environmental friendly technology especially not because other actors are not taking their responsibility. Stayed out of the most discussions.	Low cost sanitation solution that does with as little environmental impact as possible in order not to deteriorate the lake environment.
Kullön HB, the housing company	To complete the project quickly and solve technical problems of the technology to avoid problems with the house owners. Not interested in the innovative technology and fine with the solution to pass the urine to the sewer	Build and sell the houses as soon as possible whilst satisfying their customers (the house-owners) and maintaining good relationships with the municipality in view of future construction projects
Roslagsvatten, the municipal water and wastewater company	They showed limited willingness to engage in the development of new solutions or organising systems for reuse. When the Vaxholm municipality decided that they were to take responsibility for the reuse system they formally accepted that responsibility but in reality they did nothing on the ground.	Avoid environmental contamination by complying with their legal responsibility for the water services and waste water treatment and later on also with their responsibility for the collection and reuse system for the diverted urine. Be seen as a competent company.
The municipality of Vaxholm	Initially they demonstrated interest to develop a high environmental profile. However, after phase 1 was built (2001) they did little to make the system work. They responded to increased political pressure and active decisions and instructions to Roslagsvatten to solve the problem	Their main interest was the completion of the housing project without political turbulence. The interest of being a municipality making a positive environmental effort with a well preserved lake was not equally felt by the members of the council and the different staff of the municipality
A consulting company	To provide technical advice to the project to and support and promote the urine diversion project that was implemented by the construction company and the municipality trying to bridge the interests of different stakeholders and to document research findings.	To make the urine diversion project a success and show its positive environmental impact and position themselves as a competent firm for future large-scale pilot projects..
The Swedish Farmer Federation, LRF	The provided ample support to the project; amongst others, to change the impression that farmers would not be interested in re-use.	Interested to get access to a good source of nutrients close to their members at lowest possible cost whilst contributing to a positive environmental image for farmers
Stockholm Water Company	Support the development of the system bringing in their expertise as they wanted to make urine diversion a success. They provided legitimacy to the process of resolving the conflict.	Interested to make sure that urine diversion re-use systems becomes successful and serve as vehicle for further promotion of this technology.

The role of the facilitator and lessons learnt

The facilitator was the consulting company that brought in the technical expertise in the field of urine separation and re-use. They never had a formal mandate to facilitate the process especially not when it comes solving the silent conflict that emerged. However, their technical expertise and commitment to get this re-use system to work gave them a central role in this conflict.

They did not follow a clear method or approach to solve the conflict though gradually they managed to develop good relationships with most of the actors, in particular the construction company. They gradually brought stakeholders together around a shared interest: making sure that the urine separation and urine re-use system would work.

Lessons learned

The main lessons learnt:

- The introduction of a new innovative technology needs ample time especially during the planning phase. The implemented innovative technology was never fully supported by the municipality and the construction company (they only started to support this technology later). As a result, the needed institutional support was not in place and it took a long time and a lot of effort to come to a working institutional arrangement.
- A major turn-around happened when the consultants and the construction company followed a more constructive approach by developing alternative solutions to the municipality rather than telling them to take their responsibility. This change of mind set has been more important as compared to the technological solution that was proposed.
- Changing the players – or talking to different people – helps to unlock a situation where progress is totally absent.