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Groundwater as a Source of Conflict and Cooperation: Towards Creating Mutual Gains in a Finnish Water Supply Project

Vuokko Kurki

Tampere University of Technology, Tampere, Finland; vuokko.kurki@tut.fi

Tapio S. Katko

Tampere University of Technology, Tampere, Finland; tapio.katko@tut.fi

ABSTRACT: Community planners, decision-makers and authorities frequently encounter conflicts revolving around natural resource management as well as around urban planning. Since the 1970s, the dynamics of conflict resolution have evolved from conventional expert-based rational solutions towards collaborative ones. Against this background, our research investigates one contentious groundwater project in the Tampere Region in Finland. Conflict assessment clarified the divergent interests of the multiple parties. Drawing on negotiation theory, this study illustrates how polarised positions and competitive framing, as well as the influence of historical baggage, may form an insurmountable barrier to successful negotiation. While the acknowledgement of various interests should form the heart of the integrative negotiation process, excessive energy is used for argumentation to protect predefined goals with as minor concessions as possible. Addressing the collaborative approach, we suggest multiple ways towards creating mutual gains and cooperation in future water supply projects.

KEYWORDS: Conflict assessment, case-study, groundwater, integrative negotiation, mutual gains approach, Finland

INTRODUCTION

During the last few decades, Finnish community water supply has increasingly relied on groundwater as the source of water, thus replacing surface water in many communities (Katko et al., 2004). However, several inter-municipal groundwater projects have faced contentious issues in Finland (Myyrä, 2007; Kurki et al., submitted; Lauhava, 2013). Globally, management and governance of groundwater constitute a significant challenge, which has become an increasingly conflictive issue (Jarvis, 2014). The more and more complex environment cannot be controlled through conventional expert-based rational solutions. The decisions are often contested in the court, leading to a time-consuming and costly judicial dispute resolution, which does not encourage joint problem-solving or good relationships between parties (Susskind and Ozawa, 1984).

In the field of conflict research, especially in Australia and the USA, scholars and practitioners have increasingly emphasised negotiation-based, collaborative practices in conflict resolution. Some researchers present these approaches as a dominant paradigm inside the planning discipline and natural resources management (NRM) (Singleton, 2002; Margerum, 2002b, 2011; Margerum and Whitall, 2004). However, even though in Finland scholars and practitioners have strongly emphasised that though public participation in public policy (see Puustinen, 2008) and public participation are also an integral part of integrated water resources management (IWRM), mediation and negotiation theory have gained less attention. Some examples can be found from Edelman (2007), concerning integrative

negotiation in the field of urban planning, and from Peltonen et al. (2012), concerning investigating mediation of environmental disputes.

According to the definition by Susskind et al. (1999), consensus-building – which is a collaborative approach to problem solving – addresses stakeholder interests, enables wide participation, and consumes less time and money than more conventional approaches, which may lead to lengthy litigation processes. In addition, collaboration can build trust among parties, and is particularly useful for complex NRM processes (Innes and Booher, 1999). However, collaborative planning has evoked both critical reviews in terms of institutions, practices and procedures (Moote et al., 1997; Margerum, 2002a; Walker and Hurley, 2004; Margerum, 2007), and success stories among multiple case studies and in comparison with various planning styles (Innes and Booher, 1999; Innes and Gruber, 2005; McKinney and Field, 2008; Nolon et al., 2013; Moore, 2013; Clarke and Peterson, 2015).

Collaborative planning emerged in the USA from an interest in finding an effective alternative to traditional litigation in order to resolve disputes regarding development and use of natural resources (Susskind and Weinstein, 1980; McDonnel, 1988). In these complex disputes, a board or a judge may be incapable of finding common ground (Nolon et al., 2013). As one pioneer in alternative dispute resolution (ADR), Denver metropolitan water roundtable represents a successful collaborative process in the 1980s, after decades of dispute and litigation about regional water supply (Carpenter and Kennedy, 1988). Subsequently, studies on collaborative NRM have addressed several cases of watershed planning (Singleton, 2002; Margerum and Whitall, 2004; Bidwell and Ryan, 2006; Bonnel and Koontz, 2007) and water resources management (Lach et al., 2005; Baldwin and Ross, 2012; Taylor et al., 2012). However, few studies have concentrated directly on water services, which is community water supply and wastewater disposal. Furthermore, the research on water conflicts predominantly concentrates on surface water, even though most of the world's freshwater resources are underground (Jarvis, 2014).

Accordingly, this paper contributes to the growing literature of conflict research by analysing a contentious groundwater project in the context of Finnish community water supply. Water supply, as part of water services, is connected with the two major fields: NRM and urban planning, which are generally studied separately. Our analysis combines the elements of conflict assessment and conflict resolution. Accordingly, the aim is to analyse the central elements of the conflict as well as to find better practices for future large-scale water projects. Furthermore, by drawing on negotiation theory (Walton and McKersie, 1965; Fisher et al., 1991; Bartos, 1995) the paper analyses the interaction between the involved parties. This will be elaborated by using the principles of the Mutual Gains Approach (MGA) (Susskind and Field, 1996; Nolon et al., 2013).

CONFLICT ASSESSMENT AND NEGOTIATION THEORY

The general aim of conflict assessment is to recognise the basic elements of a conflict: central issues, main parties involved and their interests, as well as possibilities for conflict resolution (Nolon et al., 2013). Parties' interests, which form one of the key concepts of negotiation theory, should be distinguished from their goals (Wehr, 1998). Susskind (1999: 6) clarifies the distinction: "[d]emands and positions are what people say they must have, but interests are the underlying reasons, needs, or values that explain why they take the positions they do". Interests often form around deep beliefs, but may also change when new information is obtained and the understanding of the problem becomes deeper.

Two main models of negotiation, distributive and integrative, were first formulated by Walton and McKersie (1965). These approaches may be seen as opposites: while distributive bargaining emphasises the parties' interest to maximise their share of the fixed amount of benefits in a *zero-sum* negotiation, the integrative style focuses on the *win-win* negotiation in order to increase the size of the mutual gain (Susskind, 1999). A broader scope of issues, potential benefits or resources subject to negotiation may

provide more opportunities for increasing the mutual gain. A negotiation situation may, however, include elements from both bargaining styles (Walton and McKersie, 1965).

The distributive negotiation model includes an aspect of positional thinking. This means that parties have already defined their goals, and the main purpose of the negotiation is to defend them with as minor concessions as possible, thus devoting less attention to defining the interests of other parties (Fisher et al., 1991). Contending positions prevent the creative search for new solutions (Poirier Elliot, 1999), and participants are locked to their positions which they consider the only acceptable solution that would satisfy their underlying interests. This leads to exclusion of the information outside the box, as well as other possible solutions which might also satisfy their interests (Fisher et al., 1991). Consequently, the distributive approach ignores an important aspect of the negotiation process: "the fact that stalemates can be broken by making new and imaginative proposals" (Bartos, 1995: 51).

The integrative negotiation model, on the other hand, searches for alternative solutions and benefits for all parties in a joint process (Walton and McKersie, 1965). Value creation or enlarging the fixed amount of benefits requires a shift from positions to interests (Islam and Susskind, 2013). This is emphasised in a mutual gains approach, whose principles (Susskind and Field, 1996; Nolon et al., 2013) are applied in this study:

- acknowledge the interests of the other side
- build on interests, not positions
- encourage joint fact-finding
- compensate for losses
- build mutual trust

These principles will be explored more carefully through our case study. Finally, according to Jarvis (2014), in a collaborative process, it is important to blur the fixed boundaries between parties by emphasising that we are all in this together.

RESEARCH DESIGN

This in-depth case study analyses a conflict around an inter-municipal groundwater project in Finland, while drawing on conflict assessment and negotiation theory. The conflict assessment process included altogether 28 semi-structured interviews including all the primary parties except the Council of Tampere Region; their representatives related to this case were already retired and did not respond to interview requests. The interviewees included politicians, officials, local inhabitants, landowners, and representatives of a local NGO. Some interviewees represent two different primary parties; however, only one party is mentioned in the quotes in order to protect identities. The interviews were recorded and transcribed, with the exception of two phone-interviews, where only notes were taken. The material was analysed by using different categories of conflict assessment: history, parties, interests, context, and process dynamics (Peltonen and Kangasoja, 2009). Additional material of the analysis included official documents, newspaper articles, appeals in court, and court decisions.

After the interviews, the conflict assessment included three steps. First, the researchers outlined a *conflict map* based on the analysed material, including a timeline of the project, describing the main events and the main issues of the conflict. In this case, the term conflict map is symbolic, and refers to a written summary including the components mentioned above. Second, a draft conflict map was sent to ten representatives, from which eight were interviewees, and two were actively involved in the project but were not interviewed. They were encouraged to give feedback and four representatives provided comments. The aim was to include a representative from each primary party; however, the representatives from ELY Centre (defined later in this article) could not participate.

The third step of the conflict assessment was to present the conflict map in a workshop organised in March 2014. All ten representatives and four researchers participated in the workshop and it was facilitated by two external facilitators. The workshop was initiated by the researchers and it was part of the research project. Finally, a written summary of the workshop was sent to all participants, along with a request for feedback; three comments were received.

Even though the workshop did not aim for the mediation of the conflict, the parties had a unique opportunity to hear each other in a positive and cooperative atmosphere. This confidential conversation was included in the overall research analysis; the interaction between the parties was analysed on the basis of negotiation theory.

CASE HISTORY AND STAKEHOLDERS

The case analysed in this study is the inter-municipal groundwater project of seven[1] municipalities situated in the Tampere Region, south-western Finland. Since the 1980s, the municipalities have practised inter-municipal cooperation in water services, such as bilateral contracts in water sales and wastewater treatment (Kurki, 2010). The population of the region, currently some 300,000 inhabitants, has continuously grown during four decades, and the growth is estimated to continue in the future. The region is characterised by its several lakes, thus having abundant surface water resources. However, in the 1990s, the national recommendation was to increase the amount of natural and artificially recharged groundwater in domestic water supply in order to improve raw water quality and water-crisis management.

Consequently, in 1993, the Tampere Region established a Water Supply Plan for Tampere and Valkeakoski Region, with an aim to increase the use of groundwater in the region. Since natural groundwater resources were insufficient, the plans proceeded towards artificial groundwater recharge (AGR),[2] which means intentional surface water recharge through the soil to the underlying aquifer in order to augment the amount of natural groundwater. The planned AGR plant would serve as a water supply for six municipalities, excluding Pälkäne, which is self-sufficient with its natural groundwater resources. However, the plant would be constructed on top of an esker, on the municipal border between Pälkäne and Kangasala as shown in Figure 1.

In Finland, the main groundwater areas are situated in eskers and other glaciofluvial formations with thick sand and gravel deposits, which have mainly formed during the ice age by subglacial streams. In this case, the planned infiltration area would cover approximately two percent of the 700 ha of the esker, which is mainly composed of forest and other vegetation, serving local inhabitants as a recreational area. The area includes a conservation area restricted by the EU-wide network called Natura Programme (Council Directive 92/43/EEC). In addition, there are some settlements, farms, a shooting range, a nursery, and some gravel mining. Furthermore, an old industrial area of Pälkäne is situated next to the esker.

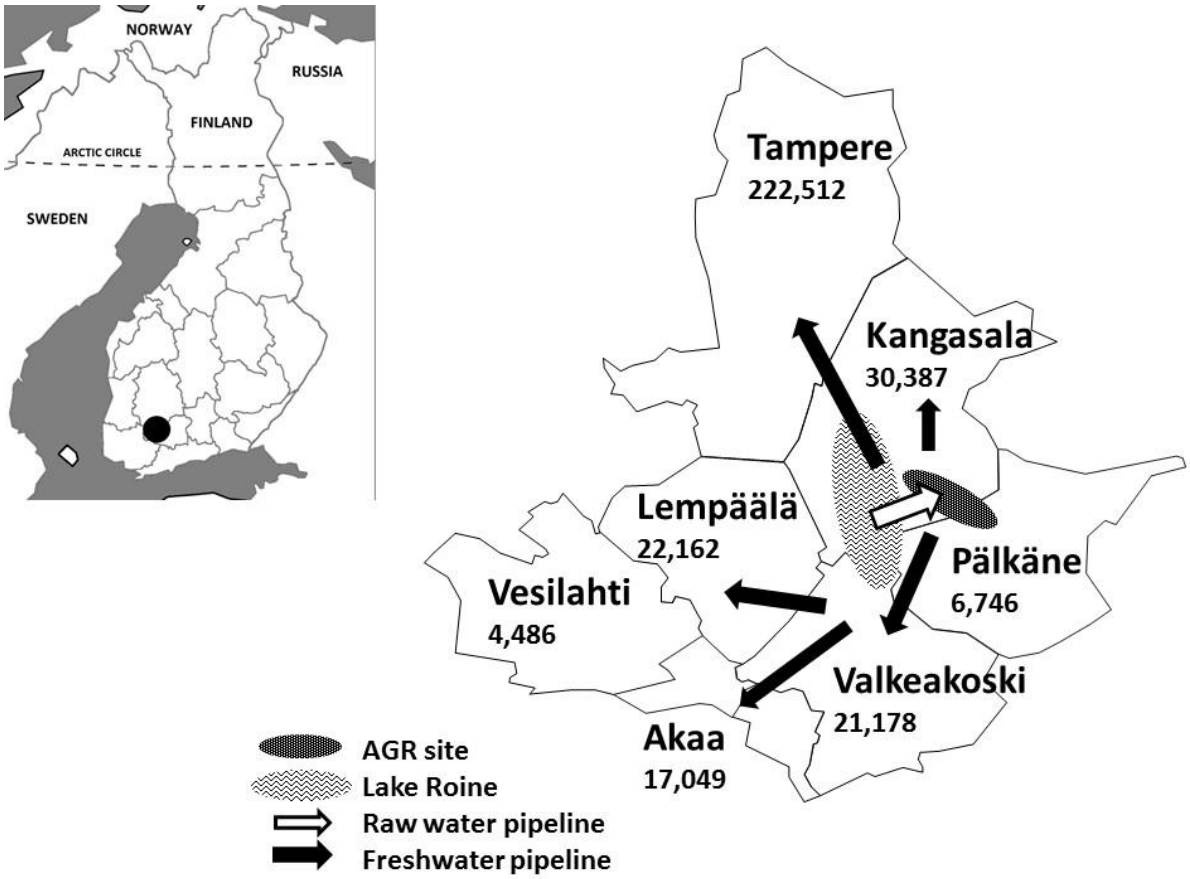
Originally, the groundwater project was initiated by the municipality of Valkeakoski in the beginning of the 1990s. Their old water utility relies on surface water and requires renovation, and they had observed positive experiences of AGR from other parts of Finland (Interview, Official, City of Valkeakoski). Other stakeholders having a crucial role in initiating the project are the other municipalities, Council of Tampere Region, and the ELY Centre (Centre for Economic Development,

[1] In the beginning, the project involved nine municipalities; however, after the consolidation of municipalities the number has decreased to seven.

[2] The term *managed aquifer recharge* is also widely used as a substitute. However, in this article, we will utilise the concept *artificial groundwater recharge*, because it corresponds better with the Finnish translation *tekopohjavesi.*

Transport and the Environment[3]) of the Tampere Region. These stakeholders were responsible for the Water Supply Plan and they formed a planning committee, which started to enhance the project. In this case, the initial stakeholders can also be seen as primary parties of the groundwater project, having a direct stake in the outcome of the conflict (Wehr, 1998).

Figure 1. Planned AGR plant and the municipalities involved, including the numbers of inhabitants of the municipalities.



Although all seven municipalities are considered as primary parties, this study concentrates on the four most active ones: Tampere, Valkeakoski, Kangasala and Pälkäne. Each municipality has internal groupings, such as decision-makers, authority, water utilities and individuals. Thus, a municipality cannot be seen as a unitary group, but rather the degree of internal cohesion may vary and also be quite low, with internal disagreements and divergent interests.

The municipality of Pälkäne represents the main opponent. It filed appeals against the AGR investigations on the esker, and went through all the court instances. At the early stage, however, Pälkäne participated in the meetings of the planning committee and the opposition was not totally uniform. In 2002, the other municipalities made a final agreement about the implementation of the

[3] ELY Centre, including 15 regional centres, operate under the central government, being responsible for regional implementation and development–related tasks, e.g. to industry, transport, infrastructure, environment and natural resources. The centre name has been changed several times during the project. However, it is referred to as ELY Centre throughout this article.

AGR plans and founded a municipality owned company called *Tavase Ltd*. Subsequently, Pälkäne municipal council decided almost unanimously to abandon the project. Furthermore, the opposition gradually spread to Kangasala and Valkeakoski as well. Inside those municipalities, the argumentation between opponents and supporters gradually evolved, and finally resulted in internal agreements, though not unanimous, to resign from the company in 2011 and 2012.

The municipality of Pälkäne and the opponents from Kangasala and Valkeakoski formed a coalition, called *opposing coalition* later in this article. The interviews revealed their relatively consistent perspectives on the project. Consequently, the conflict culminated between the opposing coalition and Tavase Ltd.

While opponents have challenged the decisions through appeals, Tavase Ltd. has gradually enhanced the groundwater project. After the EIA process, in 2003, Tavase Ltd. submitted a licence application to the Regional State Administrative Agency (AVI, *Aluehallintovirasto*). In 2012, an updated application was submitted after intensive investigations on the esker. In the course of writing this article, the final decision on whether the project will have a licence is still open and, if so, there is still the matter of it being approved by the municipalities.

INTERESTS AND ISSUES

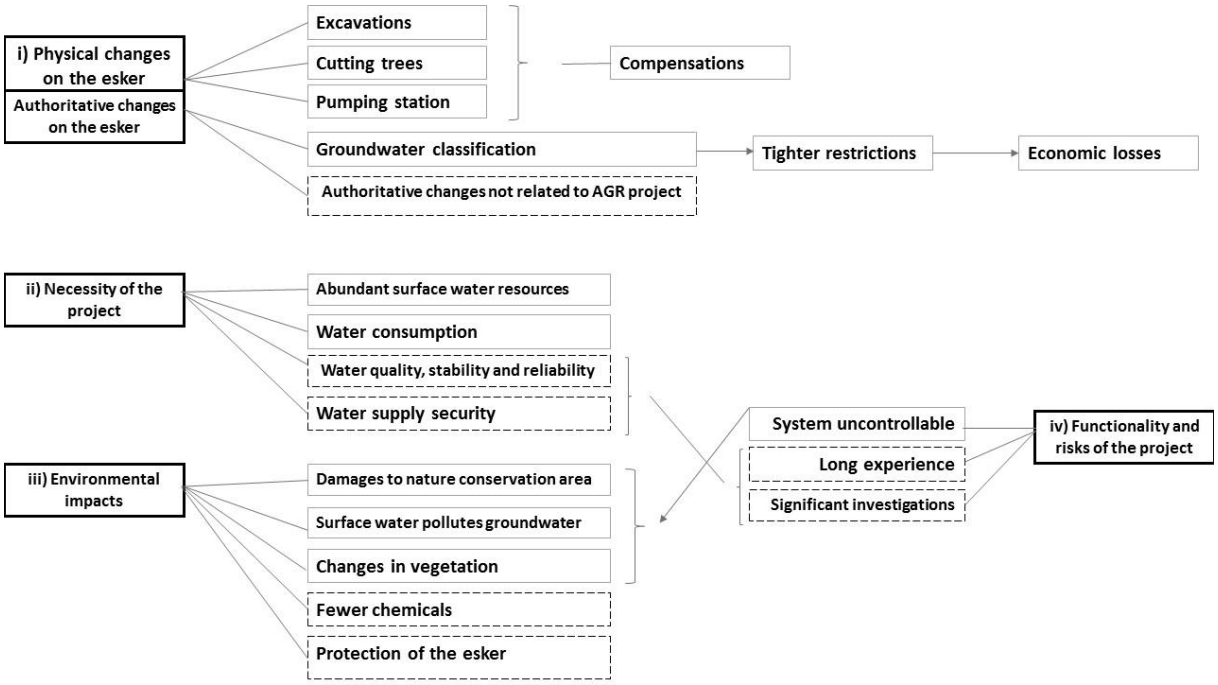
While the interviews revealed various issues around the conflict, this article focuses on the four major issues appearing most frequently in the argumentation and, in the course, revealing the most profound information about the interests of the parties. Distinction between the issues is inevitably rather vague, since they are closely linked to each other. However, to enhance the readability of the paper, we formed the following categorisation of the issues: (i) physical and authoritative changes on the esker, (ii) necessity of the project, (iii) environmental impacts, and (iv) functionality and risks of the project. Figure 2 illustrates the content and relations of these issues.

The first issue is about the physical and authoritative changes on the esker. The physical changes, like excavation for pipelines and cutting trees, would likely happen during the construction of the AGR plant. In addition, a pumping station would be constructed on the waterfront of Lake Roine in the Vehoniemi Village. The local landowners state that the promised compensations are not enough, whereas some think that money cannot compensate for future damages.

> The landscape of Vehoniemi, cultural values, history, natural values (…) and the identity of local inhabitants are attached to those, and money cannot compensate for them (Landowner, Municipality of Kangasala).

Furthermore, the authoritative changes refer to the classification of groundwater area, planned and supervised by the ELY Centre. In Finland, all groundwater areas are classified according to their usability and the need of protection as follows: class one refers to an important groundwater area for water supply, areas in class two are suitable but for the present have not been used for water supply, and class three refers to those groundwater areas of which the potential for water supply requires more investigations. Consequently, change from class two to class one would cause tighter restrictions in the use of fertilisers and pesticides on the fields and in the nursery area in horticultural operations. In addition, the restrictions would affect the 40-year-old industrial area, in which millions of euros have been invested, in terms of environmental restoration efforts. The municipality of Pälkäne claims that the change in the classification would cause huge economic losses to the municipality. Entrepreneurs are already unwilling to make investments because of the threat of future restrictions (Interview, Official, Municipality of Pälkäne). However, there is no consensus among the parties about the relation between authoritative changes and the AGR project.

Figure 2. Four major issues, their content and relations.



Note: The boxes with dashed lines refer to defenders' argumentation, and other boxes refer to the opponents' argumentation.

The second issue is the necessity of the groundwater project. The need is questioned because of the abundant surface water resources in the Tampere Region. Moreover, total water consumption will not increase according to population growth, because of the decrease in per capita water consumption as well as improved water-saving technologies. In addition, the surface water quality as well as water treatment technologies have improved during the last few decades. The opponents claim that the current situation is totally different from that of the initial stage.

According to Tavase Ltd.; the groundwater project is necessary because it improves domestic water quality, stability and reliability. With the growing population it is important to have different water sources and AGR would be one among others. This would increase the security of water supply. In addition, water crisis management will be improved at least from three aspects: groundwater is relatively safe from air pollution (although this is presently less of a concern than some decades ago), water is stored inside the esker in case of water shortage, and the AGR plant will include three independent production areas.

The third issue concerns possible environmental impacts. AGR is partly a natural and partly an engineered system. Furthermore, the plant is planned to operate for a 100 years, thus the local changes cannot be predicted precisely. This causes guesswork and fears among the local inhabitants: the black alder woodland situated in the conservation area will be in danger due to changes in water flows and water levels, infiltrated surface water can mix with the natural groundwater thus polluting it, and the infiltration through sprinkling[4] will change the vegetation of the esker. An environmental NGO group from Kangasala states:

[4] Sprinkling refers to a recharge system where water spurts out from a perforated pipeline network and percolates through the soil.

> The AGR plant can be constructed in the commercial forest, but not on the esker which has cultural, environmental, and economic values (Local NGO, Municipality of Kangasala).

The main interest of the group is to protect the vulnerable environment, especially the conservation area and the quality of natural groundwater. This can be considered an important interest of the local inhabitants of Pälkäne as well.

Interestingly enough, environmental argumentation is also used by the project proponents. Tavase Ltd. states that AGR is a natural and environmental-friendly way to produce domestic water since it requires fewer chemicals than conventional water purification methods. Furthermore, the company sees the environmental argumentation of the opponents as unsustainable because of local gravel mining and industrial area beside the esker. The AGR plant could even protect the esker from these damages.

The fourth issue is closely related to the third one. Central questions are: will the planned AGR plant function properly or not, and what are the risks of the project? The local inhabitants are afraid that the system cannot be totally controlled; that water will flood their basements and that the project will cause significant environmental effects on the esker area. They claim that there is not enough reliable knowledge to guarantee the functioning of the AGR plant. The interests of local inhabitants of Pälkäne and Kangasala could be summarised as follows: protection of people, their property, environment, and cultural heritage.

However, the representatives of Tavase Ltd. emphasise long AGR experience in Finland and other countries: the first Finnish AGR plants were completed already by the beginning of the 20th century and in many other European countries in the 19th century. Furthermore, Tavase Ltd. claimed that they strongly trust the research concerning this case, conducted by internationally acknowledged consultants.

In summary, the four identified issues also revealed the parties' interests. The main conflicting interests can be summarised as follows: first, protection of natural values and cultural heritage of the esker against the construction of the AGR plant; second, the economic competitive strength of the City of Tampere against that of the surrounding municipalities. This division will gain further support from the analyses presented in the following section.

Despite the disagreements and differences in observations and conflicting interests, the negotiation table became clearer during the workshop organised in March 2014, and the divergent interests of parties were clarified. Among conflicting interests, we did recognise common interests as well, such as, groundwater protection, economic and reliable water supply, and the need for independent and reliable knowledge, which were interests that all parties emphasised.

TAKING POSITIONS OR CREATING MUTUAL GAINS?

This section analyses the interaction of parties within negotiation theory and by using an integrative negotiation-related Mutual Gains Approach (MGA). The MGA emphasises the importance of understanding the concerns of the other sides (Susskind and Field, 1996). As Nolon et al. (2013: 14) argue: "parties have the best chance of success if they understand from the start what their counterparts care about and why". Thus, the negotiation should be built on interests, not on positions.

However, in our case, instead of acknowledging the interests of other sides, the parties aimed towards their own goals with a competitive mindset illustrated by the environmental impact assessment (EIA) process, which became an arena of discursive and political struggle. A public hearing related to the EIA, held in 2002, serves as an example of the formation of strong positions and the use of a distributive bargaining style. An official described the atmosphere as hostile and that "violence hung in the air" (Interview, Representative of Tavase Ltd.). On the other side of the fence, local inhabitants described the attitude of project planners as very arrogant. Furthermore, they assumed

that the gathering was organised only because of the EIA obligation. Several interviewees remembered the expression of an official:

> [He said that] Water Act is such a powerful law that you can do nothing to stop us (Local inhabitant, Municipality of Pälkäne).

The EIA was reviewed by the ELY Centre of Central Finland, it being an external reviewer of the project. It addressed several environmental impacts; however, it was the functionality of the project that drew the major attention of the public. A hydrogeologist from the ELY Centre reported, for example, that the planned water purification will not be realised according to the plans, since calculated retention times were incorrect (Mäkelä, 2002). Instead of taking the critical evaluation as a source for improvements, a public debate between the parties emerged: the project planners launched an active counter-argumentation, and the local inhabitants of Pälkäne started to promote the opposition of the project even more actively.

Another critical event was the establishment of the company, Tavase Ltd. The responsibility of the project was given to the company and its aim was clear: implementation of the groundwater project on the esker situated in Pälkäne and Kangasala. This created a significant position against the municipality of Pälkäne, which did not acknowledge any benefits from the project. The company representatives are legitimated but also obliged by the partnership agreement, and they are working only towards the goal set by the company. Moreover, the opponents of the project argue that the representatives hide behind that position and real interaction is blocked.

> (…) a managing director cannot do anything else than execute the goals of the company, set by its shareholders (Representative of Tavase Ltd.).

> (…) no information was given, they always hid behind the Companies Act (Politician, City of Valkeakoski).

Another MGA principle encourages joint fact-finding, which emphasises that gathering data, analysing them, and drawing conclusions should be done in consensus with all parties (Susskind and Field, 1996; Nolon et al., 2013). Instead of using different experts to support each side's point of view, the parties should jointly define the issues of concern and choose the expert to be used (see Ehrmann and Stinson, 1999). Thus, information becomes part of a shared knowledge base and is legitimate and credible to each party.

Legitimate and shared information was not reached in our case. Instead, the consulting companies hired by Tavase Ltd. conducted most of the investigations on the esker, concerning mainly hydrogeological conditions, technical design and the suitability of the area to the groundwater recharge. However, the opponents claimed that the results were unreliable and only supported the views of the payer. In addition, opponents used the arguments of external experts to support their views such as those concerning the negative environmental impacts. According to Jarvis (2014), a duelling experts' syndrome is typical in groundwater-related conflicts since the water practitioners lack consensus regarding some of the fundamentals of groundwater hydrology and sustainability of groundwater use. Thus, Ehrmann and Stinson's (1999: 376-377) assumption that "there are always experts available to provide the answers that support each side's point of view" is more than likely to pertain in cases related to groundwater. Also, inevitably, in the case of groundwater conditions and flow – since the understanding is typically based on limited, commonly indirect information – there is frequently room for multi-interpretations. However, Ehrmann and Stinson continue that this does not make technical expertise less valuable, rather it emphasises the relevance of *how* the information is gathered.

Positional thinking and dispute orientation are likely to result in poor communication which can be considered as one of the constraints of successful negotiations. The parties are not talking to each other, and they are probably trying to convince the possible third party with rhetoric argumentation

and blacken the other side (Fisher et al., 1991). A representative from Tavase Ltd. argues that they attempted to acknowledge, for example, the fears of local inhabitants of Pälkäne:

> I realised that they, older people, really were scared that water erodes the gravel [beneath the houses] and their house collapses, and who will pay then. [We promised that] if the court states that it is caused by Tavase Ltd. and if the company is not solvent, the owner municipalities will compensate (Representative of Tavase Ltd.).

The above demonstrates that groundwater dynamics was not well understood among laymen. However, the representatives of Tavase Ltd. followed the MGA principle, which suggests to "offer contingent commitments to minimise impacts if they do occur; and promise to compensate unintended but knowable effects" (Susskind and Field, 1996). Nevertheless, the promise of Tavase Ltd. did not convince local inhabitants of Pälkäne; instead, it caused a public commotion:

> The opponents started to claim that Tavase Ltd. had already spent all the money and for wrong purposes (Representative of Tavase Ltd.).

Obviously, mutual trust, which is a prerequisite to cooperation, was already lost between the stakeholders. Indeed, another MGA principle emphasises the importance of trustworthiness in carrying out every phase of the project (Susskind and Field, 1996). However, the early phases of planning are the most crucial ones. Prior to establishment of Tavase Ltd.; Pälkäne joined in the meetings of the planning committee. According to the interviewees, they had to participate in order to gain information; however, they did not feel like being an equal party of the planning process (Interview, Official, Municipality of Pälkäne). After taking an unambiguous opposing stand they left the planning committee.

Subsequently, the active opposition by the local inhabitants of Pälkäne spread to neighbouring municipalities as well: while the unifying stand of Pälkäne strengthened, the internal cohesion of the Kangasala and Valkeakoski started to weaken. This led to the disintegration of Tavase Ltd, and resulted in decisions made by two owner municipalities to resign from the company. This policy was strongly criticised by some of the representatives of Tavase Ltd.

> [N]ow that we have municipal elections (…) the new council members feel that the old decisions do not bind them. (…) I think that citizens should be able to trust the decisions that are made (Representative of Tavase Ltd.).

In local communities, as a consequence of new elections, the power balance is always shifting. Thus, in systems based on power and rights, the probability of durable outcomes becomes lower since decisions can be overturned when the power balance changes (Nolon et al., 2013).

In a larger context, inter-municipal cooperation – in particular between a central city and its surrounding municipalities – has faced difficulties in Finland in terms of economic competition, political conflicts, and distrust between the municipalities (Hytönen et al., 2013). On the other hand, a tighter economic situation can create incentives for inter-municipal cooperation, and reduced funding to municipalities from the State has driven municipal mergers, in recent years. According to Jarvis (2014), the urban-rural divide is probably most noteworthy in cases of large-scale water transfer projects. In our case, the tension between rural and urban areas can be seen in the attitude of the opposing coalition:

> The city of Tampere wants to seize the surrounding municipalities. They fear that the surrounding municipalities become more attractive. (…)This is probably related to the municipal reform.[5] (…) the units

[5] During the past years, consolidations of municipalities have caused a national public debate.

> become larger and larger all the time, and the profits go to the urban centre (Local inhabitant, Municipality of Kangasala).

Thus, the contentious groundwater project can be seen as an arena for tension between the municipalities. This illustrates the complex nature of water management problems: they involve unknowable, unpredictable and uncontrollable interaction of natural, societal and political processes (Islam and Susskind, 2013).

The distributive bargaining methods may leave gains on the negotiation table: while negotiating parties are locked into their predefined goals they do not use the potential for creating alternative solutions. Accordingly, our case contains unrealised potential for mutual gains. The workshop held in March 2014 concluded that collaboration in future would require an analysis covering the current situation of the costs, different options, and possible compensation to Pälkäne. The proposed analysis made by an external expert should be approved by each party as the MGA principle of joint fact finding suggests (Nolon et al., 2013). Interests, common and conflicting ones, are now on the negotiating table and they form a common ground to the continuation of the project.

Indeed, a critical component of the consensus-building approach is the role of a neutral third party (Susskind et al., 1999). Since the workshop initiated by this research represents the only third party intervention in our case, it is difficult to profoundly analyse the influence of it. Thus, we can conclude that only first steps have been taken, and the tight overhand knots are still waiting for ways to be opened. Thus it remains to be seen whether groundwater will be a source of conflict or collaboration for the Tampere region in the future.

DISCUSSION

This case-study analyses the conflict around a groundwater project in Finland. The article presents neither a success story, nor failure of a collaborative process; rather, it critically reviews an ongoing contentious project and the potential for collaborative planning. It combines the elements from two branches of conflict research; i.e. conflict assessment and conflict resolution (see Lewicki et al., 1992), in order to understand the concurrent process of conflict dynamics and the attempts for resolution. The main conflicting issues and related interests of each party were defined via conflict assessment, whereas negotiation theory was applied to investigate the interaction between the parties. Both approaches draw from interest-based, collaborative planning, thus bringing the collaborative rationality in the centre of the analysis.

The conflict assessment process clarified the central issues related to the case. Among those issues the parties' interests were identified. Two conflicting interests are of particular relevance: first, protection of natural values and cultural heritage of the esker against the construction of the AGR plant; second, the economic competitive strength of the City of Tampere against that of the surrounding municipalities. These questions reach beyond pure expert knowledge, thus emphasising the tension between technical and political arenas, which is particularly high when concerning the hidden resource of groundwater (Jarvis, 2014). In addition, especially the second pair of conflicting interests indicates that there are other sources of tension between municipalities, thus revealing the context of regional policy dispute in this case. Though Nolon et al. (2013) suggest that long-term decisions should be based on interest-based processes, beyond the current elected officials, we cannot avoid politics influencing the process. Thus, this analysis supports the view of Walker and Hurley (2004) that while examining collaborative efforts, the political context should be analysed at least as carefully as the procedures and institutional requirements for collaboration.

The analysis of the parties' interaction illustrates how a mindset filled with positional thinking and competitive framing and the influence of historical load can together form an insurmountable barrier to successful negotiation. The stakeholder groups adopted a mental model of distributive negotiation,

which refers to a tendency to approach negotiations with a zero-sum mindset (Islam and Susskind, 2013). The goals were defined and positions taken at the early phase of the project. Thus, the interests of the other parties were not genuinely acknowledged or even recognised. Instead of searching for common ground, the parties concentrated on arguing about the facts, while the interests, including the common ones, were hidden under the contentious positions as profoundly as is the groundwater hidden under the surface.

However, the hidden interests were slightly revealed from behind the visible goals, and they were communicated together with the party representatives in the workshop organised in March 2014. In addition, common interests began to unveil: groundwater protection, economic and reliable water supply, and the need for independent and reliable knowledge were highlighted by all parties. Accordingly, an integrative solution could be found by following the principles of the MGA: build on interests (not on positions), encourage joint fact finding, and build mutual trust between the parties. This requires a perspective shift from negative opposition to positive and collaborative problem solving (McDonnel, 1988), and in particular, the willingness and commitment of each party to continue (Islam and Susskind, 2013).

The context of this study is tremendously complex. The hidden resource is tackled inside the framework of water services which operate in two practical fields: natural resources management and urban planning. In addition, water services projects often involve transboundary elements, which may evoke political challenges. Water policy issues typically involve several agencies or jurisdictions; they concern multiple stakeholders with divergent interests, power and resources; and they are characterised by uncertainty and controversial interpretation of technical issues (Carpenter and Kennedy, 1988; Jarvis, 2014). Furthermore, allocation of burdens in a mutually acceptable manner is challenging (Freeman, 2010). Therefore, the use of MGA for negotiation is particularly appropriate in a large-scale regional water project. This article supports the view of Baldwin and Ross (2012): applying consensus-based techniques into the water planning processes can facilitate exploration of hidden interests and values, prepare parties for negotiation and identify common ground, as well as decrease the likelihood of escalated conflicts. Yet, forums for collaborative planning do not work as a panacea for resolution of deeply escalated conflicts (Moote et al., 1997).

Lach et al. (2005) state that management approaches in the water sector have turned towards social interaction-intensive strategies instead of just managing the uncertainty of physical structures and organised routines. However, even though the rational planning paradigm has taken steps towards collaborative planning for more than four decades, distributive bargaining has remained a conventional practice in public-sector disputes (remark by Edelman, 2013; see also Innes and Booher, 2010), as our case study also illustrates.

Accordingly, practical as well as institutional changes are needed to achieve a more consensus-oriented water-planning culture, drawing from an integrative negotiation approach (see also Margerum, 2007; Baldwin and Ross, 2012). Nevertheless, distributive and integrative negotiation approaches are not mutually exclusive (Bartos, 1995), and methods related to rational planning remain part of the collaborative process (Shmueli et al., 2008). Thus, we suggest that rational expertise should be emphasised in order to answer the question of *what* we are processing. Instead, in terms of interaction, we should find better practices as well as institutional arrangements from collaborative approaches to answer the question of *how* we should proceed.

CONCLUSIONS

Analysing the ways in which the inter-municipal water supply cooperation developed to an escalated conflict provides lessons for the application of negotiation theory in conflict assessment and resolution. In addition, the paper contributes to the fields of urban planning and NRM, which are generally studied separately. Based on this case study we outline four conclusions.

First, the emphasis on interests is essential in conflict assessment as well as in resolution processes. Disputes over facts or blind orientation towards predefined goals may hide common interests of both parties, as was evident in our case. Even if common interests could not be found, clarifying the negotiation table in terms of interests may facilitate to build mutual trust and to find joint solutions to the problems. Although joint solutions were not yet found in our case, the case illustrates how even a single third-party intervention can help in revealing the potential for consensus building.

However, our second conclusion is that in an already escalated conflict, a historical load may hinder the search for mutual trust and joint gains. As illustrated in our case, most of the opponents strongly emphasised the statements provided by the project planners several years, even two decades, ago. Together with positional thinking and competitive framing a historical load may form an insurmountable barrier to successful negotiation. Thus, the third conclusion is that an analysis of the larger, both historical and political, context of the conflict is essential to conflict assessment as well as for conflict resolution. In our case, the contextual framework was analysed throughout the project, and this helped us in conducting interviews, organising the workshop and in communicating with each party during the workshop.

Our fourth conclusion is that complex environments, such as the water sector, call for anticipatory work, comprising analyses of interests of each party, with intention to avoid conflict. Referring to our second conclusion, it is evident that the more prolonged a conflict becomes the more difficult it is to solve. Thus, the emphasis should be removed from conflict resolution to an anticipatory work. Accordingly, one recommendation to future conflict research would be to concentrate on those mechanisms that facilitate in recognising emergent contradictions before actual conflict will occur.

This article calls for applying negotiation theory and lessons from practice to enhance conflict assessment and resolution. It proposes that lessons from integrative negotiation should be applied at all institutional levels in order to enhance the interaction between individuals as well as between organisations; however, it should not be forgotten that rational features are a vital part of the ensemble.

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