

Scales of justice in water governance: hydropower controversies in Switzerland

F. Schneider^{a,c,*}, T. Buser^{a,d} and O. Graefe^b

^aCentre for Development and Environment/Institute of Geography, University of Bern, Hallerstrasse 10, CH-3012 Bern, Switzerland

^bGeography Unit, Department of Geosciences, University of Fribourg, Chemin du Musée 4, CH- 1700 Fribourg, Switzerland

^cDecision Center for a Desert City, Julie Ann Wrigley Global Institute of Sustainability, Arizona State University, Tempe, AZ, USA

^dSwiss Federal Institute for Forest, Snow and Landscape Research WSL, Zürcherstr. 111, CH- 8903 Birmensdorf, Switzerland

*Corresponding author. E-mail: flurina.schneider@cde.unibe.ch

Abstract

One significant challenge for the operationalization of water justice arises from the many dynamic scales involved. In this paper we explore the scalar dimension of justice in water governance through the insights derived from empirical research on hydropower production in the Swiss Alps and the application of the geographical concept of politics of scale. More specifically, we investigate how different actors frame the justice problem, the scales that they invoke and which actors consequently get included or excluded in their justice assessments. This study shows that there is no ideal scale for justice evaluations; whichever scale is used, some actors and justice claims are included whereas others are excluded. This is particularly true when using Fraser's trivalent concept of justice, taking into account issues of distribution, recognition and participation where each calls for its own set of scales. Moreover, focusing on the politics of scale framing, our study reveals that the justice claim itself can become a power element. Consequently, to achieve more just water governance, there is not only a need for debate and negotiations about the conceptions and meanings of justice in a specific context, there is also a need for debate about the relevance and implications of divergent scales involved in justice claims.

Keywords: Justice; Politics of scale; Scalar complexity; Water governance

1. Introduction

Justice has been widely recognized as a central aspect of water governance (e.g. [Wegerich, 2007](#); [Brooks & Linton, 2011](#); [Patrick, 2012](#)). In Switzerland, recent drought episodes have raised the

awareness of politicians and researchers about diverse water justice problems, especially regarding conflicts between water uses such as agriculture, drinking water, industry, ecological needs and hydropower production (BAFU, 2012; SNF, 2013). In the media, however, the most important justice debate has arisen around hydropower production. The debate has shifted from controversies surrounding ecological damage, as a result of the lack of residual flows, and flooding of protected or aesthetically appealing landscapes (Mauch & Reynard, 2004), to the question as to whom the diverse benefits of hydropower production belong. In this debate, actors such as electric companies, local authorities, cantonal and federal governments refer to legitimacy, fairness, equity and justice in order to prepare for or engage in negotiations for a better share of water-related benefits. While some demands for justice are rather rhetorical and driven by vested economic interests, other claims are often genuine and articulated through observed and stated injustices. Thus, the problem arises of how to evaluate different claims of justice and decide how these benefits could be distributed in an equitable manner. Therefore, the operationalization of the justice concept in order to develop concrete recommendations for water governance and hydropower production is an important issue. One significant challenge, however, is that there are many dynamic scales involved in the justice of water governance (Patrick, 2012).

Costs, risks and benefits related to water often emerge on different temporal and spatial scales (Bolin *et al.*, 2008; Pena, 2011; Patrick, 2012) due to the numerous meanings water has for human activities and nature (Reynard, 2000; Strang, 2004; Groenfeldt, 2006). On a local scale, various users compete for the 'physical' resource of water for different uses such as drinking water, agricultural irrigation, industrial use, and habitat and landscape maintenance. However, depending on the complex natural, social and economic processes involved in specific water uses, the related costs and benefits are also transmitted to regional, national and even international scales (Pena, 2011; Patrick, 2012). For example, energy produced through local hydropower companies is generally commercialized, traded, and distributed in the national and European electric market, thus contributing to electricity supply, jobs, incomes, and tax revenues on various scales from the local to the international.

In addition, water governance decisions take place on diverse, sometimes overlapping, scales. In many cases, governmental decision-making scales do not correspond with the actual scales listed above, that is, the scales at which a certain water justice problem might be experienced (Towers, 2000; Lebel *et al.*, 2005; Bolin *et al.*, 2008). For example, if concessions for hydropower production can be granted by the communes (the lowest administrative units), the cantons have limited capabilities to deal with resulting injustices between water-rich and water-poor communes. Finally, different concepts of justice such as distribution, participation and recognition refer to distinct sets of scales (Fraser, 2009). While a problem of unjust distribution might manifest itself at the communal scale, problems of misrecognition of certain claims might be expressed on the regional scale.

Thus, while multiple scalar disparities resulting from certain water governance arrangements can be identified, the evaluation of justice is less clear because of the complexity of these scales within time and space. What might be seen as just on one temporal or spatial scale might be unjust on another scale (Patrick, 2014). Despite the importance of scales and scaling for water justice questions, there is little scientific research on the issue. Valuable exceptions are Debbané & Keil (2004) and Patrick (2012, 2014).

The overarching aim of this paper is to contribute to an operationalization of the justice concept for water governance through the integration of insights derived from the debate over the politics of scale. We will discuss the scalar dimension of justice in water governance by drawing from empirical

research on water governance and hydropower production in the Swiss Alps. The paper starts with a discussion of existing concepts of justice, scale and water governance, followed by the presentation of the approach, the methods and the Swiss context. Different scale frames that are expressed in the controversy about hydropower production and the share of its benefits are compared and analysed. Finally, conclusions are drawn for the integration of a scalar conception in the evaluation of justice in water governance.

2. Justice and scale concepts or how to scale justice

Justice in environmental governance research in general, and water governance research in particular, has frequently been evaluated by focusing on the distributional aspects of justice, such as outcomes of distribution and corresponding principles of ideal procedures. More recently, scholars such as [Young \(2011\)](#), [Fraser \(2009\)](#) and [Schlosberg \(2007\)](#) have stressed that approaches to justice should focus not only on distribution, but also on the causes of unjust distribution ([Walker, 2009](#)). They argue that examinations of justice have to start from real empirical injustices and should include evaluations of the social, economic and political structures, as well as practices, rules, norms, languages and symbols that mediate (un)just social relations ([Schlosberg, 2007](#); [Young, 2011](#)). While taking different perspectives, all these authors argue for a concept of justice that is extended to questions of recognition and participation. Starting from real-world justice claims, [Fraser \(2009\)](#) developed a trivalent concept of justice, which embraces distribution, recognition and participation. Each of these three elements represents a constitutive element of justice, and each element can positively or negatively influence the other dimensions.

Distribution refers to the sharing of ‘goods’ and ‘bads’ such as benefits, costs and risks among different social groups, classes or ethnicities. Traditionally, justice has been operationalized this way by classical environmental justice studies ([Walker, 2009](#)). In recent years, however, environmental justice scholars have started to extend their understanding of justice by taking into account the dimensions of recognition and participation. For this paper, we apply the definitions of [Walker \(2009\)](#), who defines justice as recognition ‘in terms of the processes of disrespect, insult and degradation that devalue some people and some place identities in comparison to others’ ([Walker, 2009](#): 615). As we will show later, this degradation can result in valuing certain place identities over others. [Walker \(2009\)](#) further defines justice as participation in terms of the process of inclusion and exclusion in environmental decision-making.

Thus, looking at the empirical processes of distribution of environmental ‘goods’ and ‘bads’, and the processes of inclusion and exclusion, including the disrespect and degradation of people and place identities, one has to recognize the plurality of justice conceptions, especially when used in the struggle for more justice ([Schlosberg, 2007](#); [Walker, 2009, 2010](#)). Environmental justice needs to be analysed within its context. [Harvey \(1996: 399\)](#) emphasizes that ‘it is therefore vital to move from a predisposition to regard [...] justice as a matter of eternal justice and morality, to regard it as something contingent upon the social processes operating in society as whole’.

The quest for universal and pristine principles of justice might explain why dominant theoretical approaches to justice do not explicitly address scale as a problem for the assessment of justice. The notable exception to this is the work of [Fraser \(2009\)](#) on scales of justice and her attempts to address the dilemma of a suitable scale of justice. She specifically argues that, in a globalized world, the Westphalian nation state

cannot be the only reference scale of justice, as it does not allow parity of participation regarding the most crucial of justice claims.

Empirically, many studies of environmental justice address the scale issue explicitly, such as the spatial distribution of environmental costs, risks and benefits as well as the related outcomes for people involved (Cutter *et al.*, 1996; Towers, 2000; Heynen, 2003; Kurtz, 2003; Bickerstaff & Agyeman, 2009). Other studies explore scalar externalities resulting from the fact that environmental resources are unevenly accessed at various spatial and temporal scales (Heynen, 2003). Walker (2009) argues for a better consideration of the diversity and plurality of spatialities, such as those of flows and identities, as well as the multiple spatial fractions and dislocations between consumption and production and between benefits and risks. Bickerstaff & Agyeman (2009) show in their study on the scalar politics of environmental movements how issues of environmental justice are transformed across different scales.

Injustice perceptions and justice demands of environmental movements are framed and articulated through relative, scale-sensitive political and discursive processes (Debbané & Keil, 2004). Debbané & Keil (2004) argue for the application of a contextual and contingent understanding of environmental justice instead of employing a universal conception to a local problem of injustice. Particularly interesting, in their comparison of two very different urban settings in South Africa and Canada, is the variety of scalar frames and justice claims in the water sector, with one focusing on distribution and the other on the recognition of public water management. Another study addressing the scalar problem of justice in the water sector is the work of Patrick (2014) on the use and management of Domestic and Stock Dams in Australia. In order to grasp the scalar dialectics of justice, as ‘what can appear as a just decision or allocation outcome at one level can create injustices that might appear at a level higher or lower in the system’ (Patrick, 2012: 120), Patrick uses the concept of a cyclical justice–injustice continuum. The emphasis on the justice–injustice cycle allows an understanding of justice as a highly dynamic process with no certainty about how just or unjust a decision is at a particular moment and on a specific scale. This dynamic concept of environmental justice originates essentially from a scalar perspective drawing upon the politics of framing developed by Kurtz (2003).

While many studies stress the importance of viewing scale as a dynamic spatio-temporal concept (see below), very few explicitly address the temporal dimension of it (Loo, 2007). Dore & Lebel (2010) and Loo (2007) highlight that actors favour different temporal scales due to distinct meanings they give to seasonal dynamics of flow regimes (e.g. for fish or hydropower production – Dore & Lebel, 2010) or the relevance of the past (e.g. history of colonialism – Loo, 2007).

The politics of environmental justice is thus the politics of scale, as actors, institutions and activists alike invoke, mobilize and instrumentalize geographic scales in order to justify claims for justice and negotiate the ‘meaning and extent of environmental injustice’ (Kurtz, 2003: 888). In line with the approaches of political economy presented (Delaney & Leitner, 1997; Cox, 1998a, b; Swyngedouw, 2000; Brenner, 2001), spatio-temporal scales are produced by processes and relationships of power, domination and subordination and their contestation. ‘Scale has to be understood as something that is produced historically; a process that is always deeply heterogeneous and contested. [...] The continuous reshuffling and reorganisations of spatial scales are an integral part of social strategies and struggles for control and empowerment’ (Swyngedouw, 2000: 70). This perspective of scale as a process of social and political struggle makes it impossible to favour one scale of analysis over another, rather it is necessary to impose a multi-scalar approach

in order to grasp the relationships of contradictions and dependencies involved in questions of environmental (in)justice across different scales (Kurtz, 2003; Debbané & Keil, 2004; Bickerstaff & Agyeman, 2009).

3. Approach and method

In order to explore empirical concepts of justice and scale in water governance, we assessed the different ways in which scale and scaling are used to frame justice problems. In doing so, we draw on the concept of ‘scale frames’ and ‘counter-scale frames’ as introduced by Kurtz (2003). Scale frames are defined as ‘strategic discursive representations of a social grievance that do the work of naming, blaming, and claiming, with meaningful reference to particular geographic scales’ (Kurtz, 2003: 887). According to Kurtz (2003), scale can be expressed within these frames as an analytical spatial category, as scales of regulation, as territorial framework(s) for cultural legitimacy, and as a means of inclusion, exclusion and legitimation. Scale frames construct meaningful relations between ‘the scale at which a social problem is experienced and the scale(s) at which it could be politically addressed or resolved’ (Kurtz, 2003: 894). In contrast, counter-scale frames comprise ‘alternative representations of a controversial issue that recast and thereby undermine one or more scale idioms in a given scale frame’ (Kurtz, 2003: 912).

In a first step, we analysed the institutional framework of Swiss water governance regarding hydro-power production. Second, we explored justice debates taking place in this context. For this purpose, we drew on articles from regional and national newspapers between 2007 and 2012 (e.g. NZZ, le Nouvelliste, Le Temps, Rote Anneliese, Infosperber, Walliser Bote), print and online publications of involved actor groups (e.g. political parties, policy documents and political consultations), and radio broadcasts (RSR, SRF). Data collection and analysis started with newspaper articles. From this information, we explored new sources in order to gather the counter-framings represented by other actor groups. Searches of new sources were continued until ‘saturation’ or ‘confirmed lack’ (Flick, 2005). Analysis of this data followed content analysis methodology and involved coding, categorization and interpretation (Strauss & Corbin, 1996). As a result of this abstraction process, one scale frame and three counter-scale frames were identified, accounting for different framings and scalings of the justice issue in question.

As the justice debate is most distinct in the canton of Valais, we have chosen this region as a focus area. This mountain canton is situated in southern Switzerland (population: 317,000; land area: 5,224 km² – BFS, 2013). It is composed of the Rhone River valley and numerous side valleys, all draining to the Rhone River (apart from some karstic systems). To the north, east and south it is surrounded by high and steep mountain ranges with no passes under 2,000 metres above sea level, with the only topographically easy, year-round road connection to the rest of Switzerland at its western border, near Lake Geneva. Consequently, for a long time, the Valais developed in relative isolation from the rest of Switzerland. Railway tunnels have provided year-round connections to the north and to the south (Italy) since 1906, and to the neighbouring mountain canton of Uri since 1982. Despite these connections a strong sense of ‘inside’ (Valais) and ‘outside’ (rest of Switzerland and Europe) is still maintained today, especially in the upper Valais. This is also reflected in the word ‘*Üsserschwizer*’ referring to Swiss people outside the Valais. People living in the lower Valais speak French and those in the upper Valais speak a German dialect that differs considerably in grammar, words and pronunciation from all other Swiss dialects.

4. Hydropower production and its political economy in the canton of Valais

4.1. Hydropower production and its benefits

Switzerland has ideal conditions for hydropower production due to its topography and high levels of annual rainfall. In 2012, 58% of Swiss electricity production originated from 556 hydropower plants (with installed power capacity of at least 300 kW). These plants produced 39.9×10^9 kWh per year, 45% of it produced in run-of-river hydroelectric power plants and 55% in storage hydroelectric power plants. Two-thirds of the hydroelectricity produced in Switzerland is generated in the mountain cantons of Uri, Grisons, Ticino and Valais (BFE, 2013). The canton of Valais is the most important hydropower producer with a share of more than 25% of Swiss hydropower production (BFE, 2013).

However, 80% of Valais' hydropower production belongs to companies located outside the canton, primarily in the Swiss Midlands (where the majority of the Swiss population live). These companies (Alpiq, Axpo, and BKW, to name the major ones) sell electricity to Swiss households and industry and are important players in the European electric market. Trading electricity in the European electric market is an important competence as most of the electricity produced in Valais is exported to the Swiss and European markets.

Added value generated by the commercialization and trade of the hydropower, as well as other corporate activities, consequently benefits the companies, people and cantons of the Swiss Midlands. This is due to the fact that the electric companies are taxed in the canton where their headquarters are located. While the canton of Valais and its communes generally obtain revenues of approximately 140 million Swiss francs from hydropower production (water interest rates and taxes), in top years such as 2008 when prices in the European electricity market were very high, the companies, communes and cantons located in the Swiss Midlands received revenues of up to 560 million Swiss francs (Arbeitsgruppe Wasserkraft, 2011).

One reason for such high profits is related to the fact that storage power plants allow for the production of electricity when consumption is high ('peak load energy') and thus prices are high as well (Arbeitsgruppe Wasserkraft, 2011). However, the benefits of these high prices in the European electric market go mainly to the corporations and the cantons where these storage power plants are located. Because the corporations buy the electricity from the local power plants at production cost and then sell it at peak hours, at very volatile but usually considerably higher prices, tax revenues of the communes and cantons of the corporate headquarters are much higher than those of the local power plants.

Previously, the local power plants would charge the so-called 'normal dividend', the first tax the profits generated in the European electric market (minus the normal dividend) (NZZ, 2013). But recently, the canton of Valais has negotiated a new tax model with the electric companies, although not with the authorities of the Midland cantons where the headquarters are located, doubling the Valais tax income from hydropower production (Walliser Bote, 2011b). This has resulted in the reduction of tax incomes for the Midland cantons, since companies cannot be taxed by more than one canton for the same benefit. The resulting controversy between the Valais and the Midland cantons is ongoing and may end in federal court (Radio SRF, Regionaljournal Bern Freiburg Wallis, 2011; NZZ, 2013; Walliser Bote, 2013b).

However, when assessing the distribution of the tax benefits, the public financial resources that the canton of Valais receives have to be considered as well. In 2008, 445 million Swiss francs (524 million Swiss francs in 2012 and 2013) flowed to the canton of Valais from the Swiss system of inter-cantonal financial equalization. In this system, money is redistributed from financially strong to financially weak cantons. Only one Swiss canton receives a higher amount than the canton of Valais (EFV, 2013). The basis for calculating these

amounts is the economic capabilities of each Swiss canton. However, incomes that are generated through water interest rates are not taken into consideration, despite their importance for the tax income of cantons such as the Valais. Moreover, there is also a considerable amount of investment and knowledge brought to the canton by the national and international electric companies, which is difficult to quantify.

4.2. Responsibilities, concessions, and their reversions

Various administrative scales, including the federal government, the cantons, and communes, as well as a range of private companies, are involved in the regulation and decision-making. The federal government establishes general principles for the use and protection of water, and the cantons are left to make their own decisions based on these principles. These decisions can be delegated to the communes, as has been done in the canton of Valais. Thus, in the Valais the communes have the right to grant concessions to hydropower companies concerning the water available on their territory (except for the Rhone River). The canton can refuse to ratify the underlying contracts only if public interest is not reflected in an appropriate way (Kanton Wallis, 1990). However, it is poorly defined what ‘appropriate’ means.

Concessions for hydropower production are temporarily limited water-use rights, which allow the companies to exploit specific stretches of rivers and their catchments (Wyer, 2008). In exchange for the water-use rights, the concession-holding companies pay water interest rates to the concession-granting communes and canton: 60% to the canton, 40% to the communes. This contributes 16% of the cantonal tax income, and up to 50% of the budget of some water-rich communes (e.g. Gondo – Tagesanzeiger, 2011). The maximum amount of the interest rate itself is defined by the federal government. In 2001 it was raised from 80 Swiss francs to 100 Swiss francs per year for each power station’s installed power capacity (to be raised to 110 Swiss francs in 2015 – BFE, 2010).

Concessions have been granted with the construction of the hydroelectric power stations and dams since the late 19th century for a usual period of 80 years (Wyer, 2008). Since many hydropower projects started in the middle of the last century, many concessions will have to be renegotiated in the coming years. At the end of the concession period, the water-use rights revert to the concession-granting authority (in most cases the communes) and have to be renegotiated. Additionally, these authorities can take over the so-called ‘wet’ parts (dams, pipes, turbines, etc.) of the facilities without compensation and buy the dry parts such as alternate current generators, power transformers and power lines from the companies. The result is that some communes receive large profits from the reversions. In three small water-rich communes of the Valais, the amount exceeds one million Swiss francs per inhabitant, while half of the other communes – the ones that cannot grant concessions due to the lack of suitable watercourses – receive nothing. In other words, 30% of the people living in the Valais will benefit from 90% of the reversion profits (Arbeitsgruppe Wasserkraft, 2011). To find better solutions for the future, the canton of Valais set a 5-year moratorium in 2012; during this time, the cantonal authorities will not be able to sign any new concession contracts (Kanton Wallis, 2012).

5. Justice controversies

The major justice issue under debate, identified through analysis of newspaper articles and water-related policy documents, is the question of how the diverse benefits related to hydropower production – especially the ‘water dollars’ (Le Temps, 2012a) – should be shared between the various actors involved: the cantonal,

national and international electric companies, the Swiss consumers, and the communes and cantons that either own the water, the hydropower production facilities, or that house the company headquarters that are responsible for trading and commercialization. The debate revolves around three main topics: distribution of benefits related to the reversion of the hydropower concessions; the water interest rates; and the distribution of the added value through the tax system. While perceived misdistribution represents the dominant aspect of the justice controversies, it cannot be fully understood without considering the related claims for recognition and participation.

In the following discussion, we present one scale frame and three counter-scale frames, which were identified from the current justice debate. The characterization of the (counter-) scale frames is guided by the following three questions:

- What justice claims are expressed?
- What are the scalar expressions of these justice claims (claimed scales of distribution, participation and recognition)?
- Who is included and excluded?

See Figure 1 for an overview of the dominant scalar expressions of the explored justice claims. Refer to online colour version for full interpretation, available at: www.iwaponline.com/wp.toc/htm.

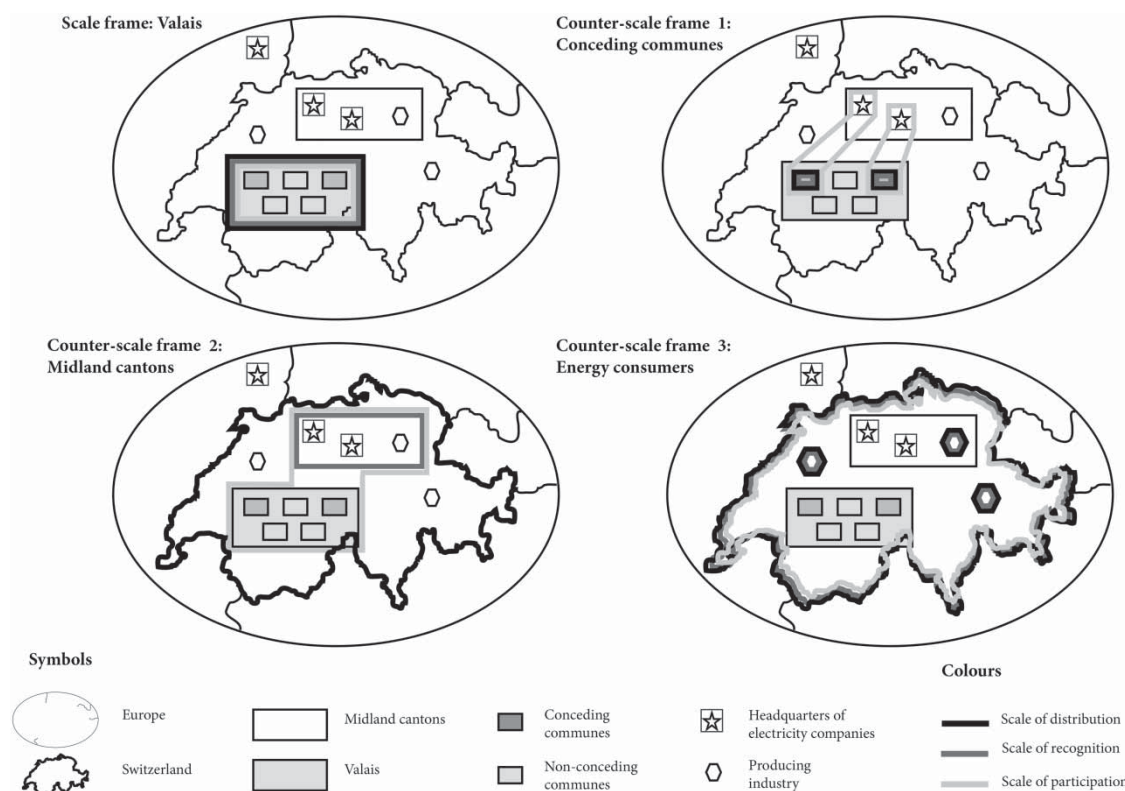


Fig. 1. Scales of distribution, recognition and participation in the justice scale frame and the three counter-scale frames.

5.1. Scale frame: Valais

In 2011 the canton of Valais published a strategy paper aimed at developing a policy for a reorientation of the current situation of hydropower production (Arbeitsgruppe Wasserkraft, 2011). In this strategy paper two main injustices are denounced: the misdistribution of hydropower-related benefits and decision-making power (1) between the people of the mountain canton of Valais and the Midland cantons and (2) among people living in different communes of the canton of Valais.

- (1) Regarding the first injustice, the canton of Valais argues that benefits generated from using the water and power plants of the Valais (the so-called ‘resource rent’) wrongly flow to actors outside the canton, namely, people living in the Swiss Midlands, and national and foreign electric companies (see Section 4). Consequently, they are demanding new water governance arrangements at the cantonal and national scales, including higher water interest rates, water taxes based on market prices instead of production costs, and higher intra-cantonal shares of hydropower plants so that they can keep a bigger share from the resource rent.
- (2) Concerning the second-named injustice, the canton of Valais states that the benefits of hydropower production, namely, water interest rates and revenues from the reversions, are unequally distributed among the communes (see Section 4). Propositions to mitigate this perceived injustice include the integration of revenues from hydropower production into the intra-cantonal fiscal equalization fund and the possibility of granting non-concessionary communes the right to buy shares of hydropower plants at special discounted rates based on regional solidarity.

In other words, the canton of Valais and also the left movement (Rote Anneliese, 2008, 2009a, b, 2010) are criticizing the current scaling of benefit assignment to either individual communes or external actors. In their view, the scale of the canton of Valais should be the primary scale of recognition, participation and distribution. They stress that this scale deserves more recognition as it unites all the people of the Valais, and that important decisions have to be made at this scale (Le Nouvelliste, 2010; Rote Anneliese, 2010; Walliser Bote, 2011c).

‘There is no consensus about how the Valais wants to manage the reversions in the future as there is a lot of money at stake. Nevertheless, there is an agreement to one thing according to Cina [cantonal minister]: Valais should have the say again.’ (Walliser Bote, 2011c; translated from German by the authors)

Many newspaper articles (e.g. Le Temps, 2007; Le Nouvelliste, 2010; Walliser Bote, 2012b) report on a widespread fear that people from outside the canton will interfere in internal affairs (e.g. that the federal state will enact regulations concerning the reversions – Le Temps, 2012b). Even the claim for a more just distribution of benefits within the canton is often tempered with the argument that extreme cases could be instrumentalized by Swiss politicians to claim the Valaisian water power for the Swiss Nation (Arbeitsgruppe Wasserkraft, 2011; Walliser Bote, 2012a).

‘If it’s not possible to find compensation between communes with hydropower and the ‘have-nots’, the canton risks that the confederation will change the rules and seize the authority over hydro-power.’ (Walliser Bote, 2012a; translated from German by the authors)

The articles also express a widespread fear that the cultural and socio-economic needs of the canton as a 'remote mountain community' are not being respected. They regularly stress their vulnerability, and that water is one of their few resources, with the profit generated from hydroelectricity production being one of their most important sources of income (Rote Anneliese, 2009b; Infosperber, 2012).

Moreover, the canton of Valais and the left movement argue in favour of the canton of Valais as the primary scale of distribution, that is, the scale of the canton should be the only relevant scale when judging the distribution of hydropower rent. Broader scales such as Switzerland as a whole are mentioned only in a marginal way when they concede that they contribute to a reliable national energy supply by preferring Swiss electric companies to foreign ones (Arbeitsgruppe Wasserkraft, 2011). In addition, the needs of the people from outside the canton are rarely taken into account, nor are strategies outlined of how interests of different scales could be balanced. They rather draw a picture of 'us and the others', where the 'others' remain rather unspecified in their needs, input, knowledge and other contributions. For example, the present scale frame excludes input coming from outside the canton, be it contributions from the inter-cantonal fiscal equalization, or knowledge and investments from electric companies. In their view, the situation will be more just if the Valais receives a larger share (Le Temps, 2007) and distribution within the Valais is more equitable (Rote Anneliese, 2010; Arbeitsgruppe Wasserkraft, 2011).

To legitimize the scale of the canton of Valais as an overall scale of reference, the Valais and the left movement have constructed a scale frame that puts the scale of the water resource at the centre with concerns about just distribution of the resource rate and a re-appropriation of their water (Le Nouvelliste, 2010; Arbeitsgruppe Wasserkraft, 2011; Le Temps, 2012a). It is due only to their water and storage lakes that profit can be obtained on the international energy markets, especially through peak load energy production (e.g. Le Temps, 2007; Rote Anneliese, 2009b; Le Temps, 2012a), therefore they argue that the benefits of hydropower production consequently belong primarily to the people of the Valais (Le Nouvelliste, 2010).

'We are only asking to have our piece of the pie as well, in particular because we are the ones providing the resource.' (Le Temps, 2007; translated from French by the authors)

In their argument, the canton of Valais and the left movement scale facts and processes up and down to fit the Valais scale; in particular, profits resulting from international hydroelectricity markets are downscaled to the Valais. To further this argument, they scale it not only down to the scale of the canton, but even further down to their economically weak and periphery communes, as the following statement shows.

'The storage power plants of the Valais entirely produce for export. As a result, the electricity barons of the Midlands collected profits of about 700 million Swiss francs which are not subject to income taxes in the Valais [but in the Midland cantons]. [...] The church of Saas-Almagell has a damaged roof. The water flows along the walls behind the altar. Renovation costs are 600,000 Swiss francs. The commune is in a critical phase of recapitalization and cannot support the parish which is as poor as a church mouse. [...] If the profits of 67 million Swiss francs, generated with the 'Mattmark-water' in the last year, would be taxed at the right place, the communes of the Saastal could count on tax on profits of about 6 million Swiss francs; [...] This should be sufficient to stop the rainwater!' (Rote Anneliese, 2009b; translated from German by the authors)

On the other hand, by arguing for a more just distribution within the canton of Valais, they upscale the benefits generated in hydropower plants, located in certain communes, to the canton as a whole.

5.2. Counter-scale frame 1: conceding communes

Responding to the increasing claims for redistributing hydropower-related benefits within the canton of Valais, representatives of the conceding communes published a joint statement (Le Nouvelliste, 2012; Radio Rhône FM, 2012), basically arguing that the benefits of hydropower production, as well as the respective decision-making power, belong predominantly to the individual concession-granting communes.

‘The concession rights remain under control of the concessionary communes. They should be allowed to rule themselves over the granting of new concessions.’ (Le Nouvelliste, 2012; translated from French by the authors)

They stress that, due to their role as legal owners, they are the only legitimate body to decide on new concessions and should negotiate directly with the hydropower companies whenever they want. Failure to respect their decision-making power means that their water rights are being stolen, which corresponds to ‘an expropriation of the communes, which are today the owners of water rights’ (Le Nouvelliste, 2011). Moreover, they emphasize the importance of the electric companies’ external investments and knowledge (Walliser Bote, 2013a) for the sector. This is why, after the reversions, they intend to sell a considerable amount of their shares to these external electric companies (Infosperber, 2012). Thus, the representatives of the conceding communes argue for a scale of participation that encompasses the individual conceding communes and the operating electric companies (Infosperber, 2012).

As they are supported by the existing law, the conceding communes act from a powerful position, allowing them to present a rather self-centric scale frame without reference to other scales. The conceding communes are presented as the only legitimate scale of recognition and distribution. While the communes decide on the use of their profits within the commune in a democratic way – although not without incident¹ – they see no need to respond to the claim for a more equal distribution of hydropower-related profits between the different communes of the canton of Valais. They explicitly reject the inclusion of hydropower production yields in the intra-cantonal fiscal equalization fund and are even demanding that their share of the water interest taxes be raised from 40% to 50%. The only concession that they have made is to accept that other communes and the canton may acquire shares, up to 30%, of the hydropower companies after reversion (Oberwalliser Gemeinden, 2012; Walliser Bote, 2013a). To justify their stance, they refer to the scale of the water resource and the water owners.

Nevertheless, some of these representatives seem to feel obliged to argue in a more cohesive manner. In doing so, they strategically use the cantonal scale argument, stating that everything should be done to ensure that profits and decision-making power stay in the canton of Valais (Le Temps, 2012b). For example, they object to their profits going to intra-cantonal equalization funds by arguing that this could lead to national politicians requesting that cantonal profits should also flow to respective

¹ For example, the Valais commune Finhaut with 367 inhabitants will receive 112 million Swiss francs in 2017. A dispute over the utilization of this sum is – according to the newspapers NZZ am Sonntag (2011), Le Temps (2012a) and Walliser Bote (2011a) – endangering the local peace and social tranquillity.

inter-cantonal equalization funds (Tagesanzeiger, 2011). In other words, while they see themselves absolutely as part of the Valais, their own scale is deemed the most relevant.

5.3. Counter-scale frame 2: Midland cantons

The justice scale frame of the canton of Valais is countered not only by communes within the canton but also by the cantons of the Swiss Midlands. However, very few respective statements could be found in the media. Cantons where the hydropower company headquarters are located (Bern, Zurich, Aargau, and Solothurn) generally argue that the distribution of benefits of hydropower production should not be based on the concept of the resource rent, which accentuates the scale of the resource. In their view, trading activities contribute as much to benefit generation as does the physical production of electricity, including the existence of storage dams. Consequently, the cantons where the headquarters are located should be recognized as a relevant scale and deserve a share of the profit through adequate fiscal systems (Radio SRF, Regionaljournal Bern Freiburg Wallis, 2011).

'We will discuss the issue with the mountain cantons and search for a more just model. The water cantons already have the water interest rates. Now one should take care that profit rests as well in the cantons where trade is conducted. Without being able to sell it, electricity production and perfect storage lakes are useless. [...] in order that we do not lose everything and have to send it to the Valais.' (Radio SRF, Regionaljournal Bern Freiburg Wallis, 2011; translated from German by the authors)

The scale frame of the Midland cantons uses more than one scale. While they argue that the Midland cantons need to be recognized as a relevant scale to value their performance, they accept Switzerland as the overall scale within which a fair distribution model between the Alpine and Midland cantons has to be negotiated. For the Midland cantons, the water interest rates, a fiscal system based on tax earnings remunerating the cantons where trading activities take place, outweigh those of the Alpine cantons such as the Valais. Thus, Switzerland, including both the Alpine and Midland cantons, is considered as the relevant scale of distribution and participation.

To legitimize their stance, the Midland cantons have shaped a scale frame that highlights the international energy market and the connected European electrical network as the most important scale of reference. This is the scale where profits are generated (e.g. through trading peak load energy) from the storage lakes of the mountain cantons. From this scale, they downscale to their own area by emphasizing the knowledge and skills of their companies to access the international energy market and to generate profit from trading electricity since it is only due to this knowledge that the energy produced through storage lakes can be transformed into highly profitable peak load energy (Radio SRF, Regionaljournal Bern Freiburg Wallis, 2011).

5.4. Counter-scale frame 3: Swiss energy consumers

The overall scale of Switzerland is also invoked by the third counter-scale frame, which revolves around parliamentary discussions about an increase in water interest rates in 2009 (BFE, 2009). In this case, however, the national scale is only partly accepted as a scale of distribution, and is rather used to legitimize certain claims. Energy-intensive industries, such as the steel and paper industries and their related labour unions, contest the canton of Valais' intention to increase the water interest

rates. Both groups argue that high water interest rates will potentially increase energy prices and consequently jeopardize prosperous economic growth in all parts of Switzerland. They stress that a reliable and inexpensive energy supply is the most important benefit of hydropower production and that this benefit is in the interests of all domestic and industrial consumers of Switzerland, meaning all Swiss cantons including the Alpine regions such as the Valais (BFE, 2009).

‘Increasing the water interest rates leads to increased overall production costs of domestic electricity. The even shifting of these costs to all users consequently leads to higher electricity prices for goods-producing industries as they have to bear the increase of prices primarily. Due to concerns about employment, it is of major importance to Switzerland that its industry and commerce can face the challenges of the future with moderate electricity prices.’ (BFE, 2009; translated from German by the authors)

The scale of Swiss energy consumers as a whole is also invoked by other parliamentarians who seek a balance between a reliable and inexpensive energy supply on the national scale and the needs and entitlements of the cantons that produce the hydropower. They accept that the hydropower-producing Alpine cantons should be compensated for their water and that these yields are important sources of income (BFE, 2009). Moreover, they express an emotional attachment to Alpine cantons and see it as an act of Swiss solidarity towards the economically weak fringe regions.

‘They appeal to the emotions of us people from the lowlands. We have a certain love of mountain areas and feel guilty when one takes something away from them.’ (Die Zeit, 2009; translated from German by the authors)

However, considerable voices can also be heard that accuse the Alpine cantons of operating like the ‘Opec of the Alps’, defending their sinecures in an inadequate way, considering only their own interests and neglecting the interests of Switzerland. An often-cited example to demonstrate this argument is that the incomes from water interest rates are excluded from the inter-cantonal revenue equalization (Le Temps, 2007; Die Zeit, 2009; NZZ, 2012).

This particular scale frame has different shapes. Overall, it is the scale of Switzerland that is the centre of consideration and within which the different claims of mountain cantons, the producing industry and employees are seen to be fairly recognized and balanced. The producing industry, however, invokes the national scale to legitimize their claim for cheap energy. Thus, they upscale their economic well-being to the benefit of all Switzerland.

6. Discussion and conclusions

In order to contribute to an operationalization of the justice concept for water governance, we have integrated insights from the debate over conceptions of scale into the evaluation. For this purpose, we have analysed how different actors discursively construct scale frames and counter-scale frames to legitimize their justice claims, in order to discover how the actors frame the justice problem, what scales they invoke and who is consequently included and excluded. Based on this analysis, we have derived conclusions for the integration of a dynamic scalar concept in the evaluation of justice in water governance.

6.1. What is the justice debate and what justice claims are raised?

The major justice controversies identified are related to the question of how the diverse water benefits related to hydropower production should be shared between actors involved, from the communal to the (inter)national scale. The various actors all seek to claim a fair share of the overall benefit, however, they do not agree on the underlying assumptions of the other actors' justice assessments, namely, the assignment of the benefits to certain scales (scale of the resource, scale of the energy market, scale of the energy consumer).

Although misdistribution of benefits is the dominant aspect of these justice controversies, they cannot be fully understood without considering the interwoven claims for recognition and participation. Indeed, the claims for deeper recognition of certain scales such as that of the canton of Valais can be seen as a direct expression of these elements. Furthermore, we argue that in the case of the canton of Valais, a general feeling of misrecognition of their sociocultural origins and corresponding needs, as well as a continual fear of losing their autonomy and self-determination, might be the driving force behind the justice controversy.

6.2. How do actors use scale frames in the justice debate?

Elaborating on the scale frames of the actors, we have seen that every justice claim is also a claim for a specific scale of distribution (within which just distribution will be guaranteed), recognition (for more or different acceptance), and participation (as to who shall be included in the decision-making regarding a certain scale). Moreover, the scale frames assign benefits resulting from hydropower production to different scales (scale of the resource, scale of the energy market, scale of the energy consumer). Depending on the specific configuration of these dimensions in the different scale frames, the various actors upscale and downscale from one scale to another in order to establish meaningful links that support their claim. In doing so, they strategically use, produce and reproduce geographic disparities such as centre/periphery, lowland/highland, and welfare of all/individual interests. By analysing the scale frames underlying the justice claims, we can see that the scale is not only an important aspect for better understanding and framing justice controversies, but that the scale is also strategically invoked by the various actors to legitimize and enforce their individual interests. Moreover, the justice argument itself is sometimes strategically used to enforce the actors' own interests. We cannot look at scaling processes in justice controversies without considering power imbalances. However, power imbalances are not only important as reasons for unjust situations (e.g. [Swyngedouw, 2000](#); [Brenner, 2001](#); [Islar, 2012](#)); an actor can also use the justice argument to support their claims and increase their own power. This might be particularly true in a context where justice is a broadly accepted social value.

6.3. How to grasp the scales involved in water governance

The scales involved in water governance are complex and difficult to grasp, as they are multiple, dynamic, overlapping and contradictory. Often there is a mismatch between the scale of decision and the consequences of these decisions. While the democratically legitimized part of water governance is hierarchical and rather static, diverse processes of negotiation and scale framing are dynamic and cross-scalar, for example, individual communes negotiating water concessions with hydropower companies located in other cantons, and water-owning communes and cantons building strong alliances.

Moreover, while decisions on certain scales have impacts on many other scales, such as a new hydropower policy in the canton of Valais, the claim for more autonomy may be a crucial part of the justice claim. Better understanding of scaling in justice controversies is a first step in identifying the locale for legitimate, if not democratic, water governance.

6.4. Aspects for more just water governance from a scalar perspective

Based on our analysis, it is clear that there is no ideal scale for justice evaluations. In particular, the issues of water justice need to be conceived beyond the classical and dominant catchment (Graefe, 2013), or the upstream and downstream scaling approach. The costs and benefits, ‘bads’ and ‘goods’ of water resources reach far beyond these scales (Patrick, 2012). This is exemplified in the case of hydropower production, due to the strong interrelationship between the water and energy cycles (McDonnell, in press), but it is also true for other water uses such as agriculture where water is also locally used, but costs and benefits related to the production of food can translate to many other scales.

Although the dominance of the communal scale appears not to be appropriate for decision-making regarding hydropower with its regional and national relevance, even the national scale, suggested as the best scale by other authors (Cooper & McKenna, 2008), does not include the interests of foreign consumers and companies, nor does it speak to regional ecological interests or justice claims for more local recognition. Whichever scale is used, some actors and justice claims are included while others are excluded. What is seen as an ideal scale for decisions in one situation might be regarded as problematic in another (Patrick, 2014).

Consequently, to achieve more just water governance, there is not only a need for debate and negotiations about the concept and meaning of justice in a specific context, there is also a need for debate about the relevance and implications of divergent scales involved in justice claims. In these debates, both geographical and temporal scales should be considered (e.g. the concession-granting process of today has implications for future generations), as well as issues of power linked to certain justice scale frames. Power and repressive relationships should be considered as the foundation of injustice. However, it should also be considered that justice claims can be used as an argument over power interests, which is difficult to counter. The canton of Valais, for example, presents itself as being financially and politically weak and disadvantaged in the debate, in order to claim justice and thus a bigger share of the resource rent.

Even comprehensive democratic procedures and processes, such as those implemented in Switzerland, reach their limits at times when disputes over scales are highly conflicting. Therefore, it is critical to choose cross-scalar processes of participation to determine which stakeholders are included in these negotiations and decision-making processes. Integration of the currently silent actors, who do not articulate their interests or concerns and do not participate in the negotiations, is of particular importance in order to ensure more justice in the water governance of hydropower production.

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