Bringing water challenges to target groups

The role played by French water utilities within the European legislative context

Céline Hervé-Bazin

Introduction

In November 2012, the European Environment Agency (EEA) announced that only 52% of water bodies were predicted to achieve good ecological status as set by the European Water Framework Directive (WFD) by 2015. This directive was adopted on 23 October 2000 with the aim of guaranteeing good water quality to European citizens worried about water pollution. The European Union (EU) pushed for the involvement of Member States (MS) and water users in the implementation of the directive:

> Member States shall encourage the active involvement of all interested parties in the implementation of this Directive, in particular in the production, review and updating of the river basin management plans. Member States shall ensure that, for each river basin district, they publish and make available for comments to the public, including users. (Directive 2000/60/EC, article 14.1)

Earlier in 2012, the European Commission published the new edition of the Eurobarometer "Attitudes of Europeans towards water" concluding that

> almost 75% of Europeans consider that the EU should propose additional measures to address water problems in Europe with the main focus of such measures on water pollution from industry and agriculture. As many as 68% of the population recognize that water-related problems are serious and worry equally about water quantity and quality. (p. 6 and p. 8)

Commenté [RM1]: Please include a page or paragraph number for this direct quotation.
= added

More importantly, the barometer revealed that "fewer than four out of ten respondents feel well or very well informed (37%) about problems facing groundwater, lakes, rivers and

coastal waters in their country" (European Commission, 2012b, p. 6).

In France, 89% of citizens consider water quality a serious problem for their country but only 60% agree with the idea of raising water prices if their use has a greater impact on water resources (the EU average is 62%). Europeans also believe more information can be a way of tackling water problems. The annual barometer from ~~the~~ ~~CIEAU,~~ the French information center on water (CIEAU), shows a great interest among French people toward the preservation of water resources but a lack of information on its management, the EU, French water policies, and citizens' involvement to protect water resources (CIEAU, 2014). It questions information and communication processes, campaigns, and materials on water resources in France.

The process of communicating about water issues is recognized as a primordial approach to water resources management at all levels. On their website, ~~According to~~ the International Water Association (IWA) Specialist Group on Public and Customer Communication states that ~~,~~ "information and communication is the key to successful water management." Communication about water is recognized as a crucial component to planning, implementation, and operational decisions to optimize water resources and water cycle management. This recognition is the result of multiple processes influencing the water cycle management (e.g., the incorporation of economics, politics, governance, and social sciences). As a realm of social sciences, information and communication sciences can be legitimately combined with water resources management. It also considers the specificities of each type of stakeholder—from international to the local level—and public perception, which can bring forward citizens' beliefs and ~~representations~~ perceptions of water representations (De Vanssay, 2003). The Awwa Research Foundation underlined the role played by water utilities to make the public understand the value of water and water services.

Customers are less likely to think about the value of water utility services because

Commenté [RM2]: Please spell out at first instance.
= ok

Commenté [RM3]: Please include citation for this direct quote.

Commenté [RM4]: Please review and revise to avoid repetition of "representations."

> they typically take for granted that safe water will be available whenever they open a tap. The value of water utility services becomes more apparent when delivery is compromised by a natural calamity (e.g., flooding of the water plant) or some other disruption in supplies. As a prerequisite to delivering messages about the value of water, utilities need to establish credibility within the community. Community members must trust the utility and its employees in order to trust its messages. (Awwa, 2008, p. xviii)

Water utilities have a strong potential for bringing key messages to water users, such as beneficiaries or non-state actors who will usually join to manage water resources more effectively or based on participation of end-users. Water utilities have the possibility of conveying local messages and organizing events that can generate changes. In this frame, they are important leaders for water communication. They usually lack a budget with which to conduct efficient campaigns on water resources. They also lack trained people and adequate resources to inform, educate, and disseminate messages. How can communication on water resources management be improved at the utilities level? What are the current practices and main campaigns? Which topics do they usually target, and toward which target groups do they usually design their communication campaigns?

My main research interests are: (a) to consider the constraints to the communication of utilities on water resources; (b) to provide a theoretical concept to the communication of water utilities; (c) to analyze actual practices and case studies in order to highlight its main characteristics; and (d) to further study messages and the integration of targets groups throughout communication processes related to water issues. The main purpose of this publication is to analyze the specificities of communication by water utilities in France on water management resources and how they interact with their different target groups. I want to compare the French examples with the communication campaigns and policies from the

Commenté [RM5]: Please add this to the reference list.
= added

Commenté [RM6]: Change OK? If not, please review and revise for clarity.
= ok

Commenté [RM7]: Should this be “join together”? Please review and revise for clarity.
= ok

European Commission and examples from European water utilities. I want to provide practical case studies from information and communication campaigns to characterize their main challenges to further understand their communication needs and barriers.

Theoretical background

Information and communication sciences cover a variety of subjects, methodologies, and techniques. They aim to analyze processes, interactions, and dialogues. They embrace activities from organizations and individuals. They look at messages, discourses, slogans, campaigns, codes, rituals, events, and uses of technologies. They comprehend repetitive messages and the importance of setting words that are producing a "propaganda" effect or delivering an impact on public perceptions (Tournier, 1985). They examine symbolic meanings and interpretations. They consider impacts from information and communication technologies, mass media, mass culture, and mass products. They examine strategies and effects on people's awareness, knowledge, attitudes, behaviors, perceptions, and beliefs. Information and communication sciences provide keys to define strategies to address public opinion and to form organizations' interactions. They have different impacts depending on media, strategies, tools, and interactions.

Communication on water resources can be designated as "water communication" covering all communication processes related to water as a natural resource (physical good) and a human resource (including services, uses, perceptions, and beliefs). Water communication recognizes that all processes communicating about water have set up specific languages, discourses, lexicography, media planning and campaigns, practices, knowledge transfer or education, and engagement. The construction of communication about water is influenced by different elements. At first, the specificity of water itself as a natural resource, its cycle, its qualities, its management, and its services have an impact on the content and topics of communication campaigns. Secondly, major components influence the following:

(a) discourses, codes, messages, and strategies, such as religious and personal beliefs toward the representations of water; (b) the many cultural references about water, including myths, uses, and history; and (c) social codes implying water shared behaviors, attitudes, and perceptions. I summarized such a process in Figure 1 showing also how water communication is at the center of many influences from various fields of communication, including environmental communication, health communication, public communication, risk communication, science communication, and responsible communication (Hervé-Bazin et al., 2014).

[Insert figure 1 here]

Figure 1. This figure shows the influence of different sciences / domains on the ~~e~~-building of water communication. It highlights how transversal and the interdisciplinary the communication about water resources can be and how such communication processes are built based on several influences. (Hervé-Bazin et al., 2014)

a mis en forme : Surlignage

Commenté [RM8]: Please provide a more complete caption and reference as well as copyright information. See APA 5.23 for examples.

Water communication is influenced by the construction of communication into the public space and several social elements that are a part of communication processes (e.g., social codes and cultural references). Religious and personal beliefs are particularly relevant to individuals' relationships with water since water acts as a symbol and ritual worldwide and throughout civilizations.

Another important characteristic of water communication is the building of messages and campaigns by and from key contributions of many organizations acting at the local level. The water sector is known to be fragmented and wide. Many stakeholders are involved in water cycle management. Based on the classification of stakeholders established by Poirier (2012), I considered the following: (a) international policy actors (e.g., United Nations, World Bank); (b) inter-water actors (mostly networks such as the Global Water Partnership and the IWA); (c) research and company actors; (d) national, regional, local, and city actors;

(e) humanitarian actors (e.g., nonprofit associations); (f) water figures (e.g., Matt Damon, Paul Reiter, and Peter Wilderer); and (g) major events (e.g., World Water Forum, Stockholm World Water Week, Water Week in Singapore). Water users are their ultimate target groups; they play a key role in implementing water resource management and can be divided into four major groups: (a) farmers/agriculture; (b) industry/companies; (c) cities/utilities; and (d) individuals and citizens/general public.

These numerous communities need and seek mediation and interfacing. Each community holds their own priority of usages and agenda. These different groups need to adapt their language and methodologies to reach better water resources management and knowledge brokerage for the public good and protection of water. They interact depending on different geographical scales identified from: (a) local implementation (e.g., individuals, cities, utilities); (b) regional, national, inter-national (e.g., basin levels, cooperation between States on shared water); and (c) global scale (including institutional mechanisms such as the programs from the United Nations or the media). At the local scale, communication about water from utilities toward the public and in relation with other scales remains rarely studied and analyzed.

The concept of "scales" is based on a geographical approach of the territory. Tröger (2010) developed a land-based vision of water resources management in order to develop socio-economic analysis of water resources management. She argues that the actual location of water resources (i.e., stream, flow, mouth) has an impact on the administration of water resources management. She particularly underlines the role of the local scale for better water resources management (Tröger, 2010). These specificities are suggesting several "scales" to water resources management from the local to the global level. Such an organization creates the need for interfacing between the actors involved at the different scales. I established different scales and different water stakeholders acting at these scales (see Figure 2).

Commenté [RM9]: Please add this to the reference list.
= added

[Insert figure 2 here]

Figure 2. The water sector supposes, various scales for a shared water resources management. Considered a local good, the management of water resource actually includes considering various scales of influence from global to local organisation.
The concept of "scale" shows how the different profiles of stakeholders bring messages at different levels depending on the impacts of their messages—e.g., the UN acts at the global level framing water resources management at the international level and providing guidelines worldwide. At the local level, utilities have a direct impact on individuals and on the management of water resources at the stream or the mouth.

These actors are interfacing with one another and several researchers pointed out the need for interfacing between scales for greater integration and cohesion at the local level. Other researchers, such as Philippe Quevauviller, argue for a stronger mediation between target groups involved in water resources management. Quevauviller identified a gap between science, research, and policy makers when implementing the WFD. He observed the misunderstanding between policy managers at utilities' level with policy managers from European institutions, showing barriers between the local/regional level and the European scale. He also remarked on the absence of communication between the research community providing scientific recommendations and analysis to European institutions and local utilities and the gap between policy makers and the scientific community about water priority issues. This disparity had a major impact on implementing the WFD at the local level. Many policy makers will reject or reluctantly apply its principles. The European Commission developed its own initiative to facilitate a "science-policy interface" based on a concept initiated by Philippe (Quevauviller, (see his book, Quevauviller 2009). Quevauviller considered different types of transfer to better manage interactions between the different target groups, disseminate knowledge, and facilitate implementation of EU directives. Quevauviller suggests guaranteeing top–down and bottom–up communication to facilitate knowledge transfer and dissemination of information at all scales and toward all water stakeholders.

In this frameW, water utilities represent key interfaces between water users, such as farmers, industries, and citizens, and among cities and utilities. Water utilities are considered

Commenté [RM10]: Please refer to this figure in the text.
= ok

a mis en forme : Surlignage

a mis en forme : Surlignage

a mis en forme : Surlignage

a mis en forme : Interligne : simple

Commenté [RM11]: Please provide a more complete caption and reference as well as copyright information. See APA 5.23 for examples.

a mis en forme : Surlignage

a mis en forme : Surlignage

a mis en forme : Retrait : Première ligne : 0 cm, Droite : 0 cm, Interligne : simple

Commenté [RM12]: Change OK or should tihs be "at different levels and depend on the"?

a mis en forme : Surlignage

a mis en forme : Surlignage

Commenté [RM13]: Please provide a page number for this direct quote.
= It's not a page it's a concept that Quevauviller initiated and developed

as “the whole set of organizations processes activities, means and resources necessary for abstracting, treating, distributing or supplying drinking water and/or for collecting, treating and disposing of wastewater and for providing the associated services.” (EUREAU, 2008: 17) They hold some common key features:

> (a) To provide drinking water services or wastewater services or both, (b) its physical area of responsibility and the population within this area, (c) its responsible body, (d) its general organization with the function of operator being carried out by the responsible body, or by legally distinct operator(s), and (e) its type of physical systems used for providing the services, with various degrees of centralisation. (EUREAU, 2008: 17)

Water utilities present a particularly interesting position for the study of water communication. They interact with many target groups, including water users, EU Parliament and Commission, national governments, researchers and the scientific community, specialised networks, and associations (see Figure 3).

[Insert figure 3 here]

Figure 3. Research transfer, different levels and groups (Quevauviller, 2009) Quevauviller suggests guaranteeing top/down and bottom-up communication to facilitate knowledge transfer and dissemination of information at all scales and towards all water stakeholders.

In this frame, I want to analyze how communication campaigns led by water utilities are setting strategies and tools to address their target groups. The aim of this publication is to examine who their main target groups are and how French water utilities are addressing information and communication constraints related to water resources management in the larger scope of the European context. Today, the European legislation plays a key role in managing national and local water resources; however, citizens tend to lack information and awareness of the role played by the European Union on their local and national resources,

Commenté [RM14]: Please include a page or paragraph number for this direct quote.
ok

Commenté [RM15]: Please refer to this figure in the text.

Commenté [RM16]: Please provide a more complete caption and reference as well as copyright information. See APA 5.23 for examples.

a mis en forme : Police :11 pt, Surlignage

a mis en forme : Police :Times New Roman, 11 pt, Surlignage

a mis en forme : Police :11 pt, Surlignage

a mis en forme : Police :Times New Roman, 11 pt, Surlignage

a mis en forme : Police :11 pt, Surlignage

a mis en forme : Police :(Par défaut) Times New Roman, 11 pt, Surlignage

a mis en forme : Police :(Par défaut) Times New Roman

Commenté [RM17]: Change correct ? If not, please review and revise for clarity.
=ok

France is a good example of such a gap.

Methodology

This paper examines communication strategies and campaigns by French water utilities considering the concept of "scale." To answer my research question, I needed to base my work on the analysis of: (a) communication campaigns by water utilities considering their diverse profiles (water authorities, water agencies, basin authorities, water services within municipalities, association of water utilities, water unions); (b) the wide range of topics (prices, drinking water quality, water bathing, preservation of water ecosystems and pollution, infrastructures, water management, EU legislation); and (c) the different communication materials used (TV, radio, Internet, social media, etc.).

I surveyed a total of 25 French water utilities that produced several communication campaigns at the local and regional scales from 2000 to 2013 and completed the study with campaigns from the five continents. For each campaign, I studied TV spots, radio broadcastings, brochures, flyers, reports, and websites produced. I conducted several interviews with communication managers of water utilities. This paper is part of a larger research on communication and water management published in *Water Communication: Analysis of Strategies and Campaigns from the Water Sector*, which includes the analysis of 165 communication campaigns from various organizations worldwide but mainly based in France, Europe, and North America.

I selected my reference materials based on the profiles listed earlier but also by applying the following criteria: (a) the number and the variety of communication campaigns to be able to gain a sufficient number of materials; (b) the representativeness of target groups to analyze campaigns that addressed different publics (policy makers, mayors, citizens); and (c) the impacts of their campaigns. I considered campaigns with strong impacts based on the number of materials disseminated, the presence in media (local journals, social media,

websites, national TV, etc.), and the knowledge within the water community of the campaigns. To establish this information, I conducted a survey of 70 water professionals with communication activities from 22 countries (Herve-Bazin, 2014~~2~~: 191). I complemented my selection based on campaigns or organizations mentioned in books, magazines, and on the Internet. I also considered the size of the utility, the covered area, and number of inhabitants.

I selected the following French organizations: (a) public water utilities (Eau de Paris for the city of Paris, the cities of Besancon and Mulhouse); (b) water utilities in contract with private companies (cities of Dijon, Bordeaux, Lyon, and Lille managed by SUEZ Environnement or/and Veolia Environnement); (c) water unions (~~the~~ SEDIF~~,~~ the French union for water in the Parisian area - the SEDIF, the ~~SICASIL, the~~ union for drinking water in Cannes area - the SICASIL); (d) regional councils engaged in water awareness (the regional council in Seine and Marne, Parisian area; the regional council in Morbihan, West France; the regional council in Picardie, center North of France); (e) water basins ("Les Agences de l'eau" e.g., water agencies, the entity gathering the six French water basins the Rhône Mediterranean basin covering West-Southern France; the Seine-Normandy Basin covering Paris area and Normandy, the Rhine-Meuse basin covering Eastern France); (f) association of water utilities and mayors (~~the~~ FP2E~~,~~ the French organization of private companies (FP2E) providing water services to 45 million French inhabitants, ~~the~~ AMF~~,~~ the association of French Mayors - the AMF, that has a thematic group about water and sanitation); (g) water authorities (~~the~~ ONEMA~~,~~ the authority for aquatic ecosystems and natural environment - the ONEMA, ~~the CNE,~~ the national committee for water - the CNE); and (h) association of water users (Eau & Rivières association for the preservation of rivers; ~~the~~ ARF~~,~~ the association of rivers' inhabitants - the ARF; the federation ~~FENARIVE~~ in charge of resolving issues related to industrial water, the FENARIVE -~~:~~ the Agricultural Chamber with its subgroup about water resources management~~; the~~ AFEPTB; and the

Commenté [RM18]: Please specify this reference.
= ok

Commenté [RM19]: Please spell out at first instance.
= it's their name! it's not an accronym

Commenté [RM20]: Please spell out at first instance.

Commenté [RM21]: Please spell out at first instance.

Commenté [RM22]: Please spell out at first instance.

Commenté [RM23]: Please spell out at first instance.

Commenté [RM24]: Please spell out at first instance.

Commenté [RM25]: Please spell out at first instance.

Commenté [RM26]: Please spell out at first instance.

Commenté [RM27]: Please spell out at first instance.

Commenté [RM28]: Please spell out at first instance.

Commenté [RM29]: Please spell out at first instance.

national association of public territorial infrastructures - the AFEPTB). We extended our study to the CIEAU and the French water organisation - the OIEAU, two networks dedicated to water and playing a role in communication efforts regarding water resources in France at both local and national levels. The benchmark of campaigns from other European countries included the city of London, the regions of Scotland and Yorkshire (UK), Amsterdam (the Netherlands), Stockholm (Sweden), Barcelona (Spain), and Geneva (Switzerland). I followed several steps for the analysis of the collected materials.

Commenté [RM30]: Please spell out at first instance.

Commenté [RM31]: Please spell out at first instance.

First, I identified the subject based on a classification of main topics: (a) drinking water quality; (b) pollution of ecosystems; (c) information about the water cycle, (d) legislation requirements and its challenges; (e) prices and costs; and (f) practical advice for water users. I then conducted an analysis of discourse in several targeted campaigns based on a list of recurring terms that I interpreted depending on the profile of organizations producing the discursive content and its interactions with other entities. The construction of discourse is based on a pluridisciplinary approach and depends on the analysis of discourses that organizations are disseminating rather than the interpretation of their discourses by the public (Krieg-Planque, 2007). I established which target groups the water utility was aiming at based on this analysis. I further studied what types of messages and relationships the organization was trying to convey with its target. I identified three major target groups—policy makers, water users focusing on industries and farmers, and citizens—that I considered separately. I analyzed the use of visuals and colors used by campaigns materials and their relationships with words, slogans, and longer texts to see if campaigns touched upon shared cultural background, social beliefs, perceptions, or stereotypes. I further considered how campaigns were linked with the framing of water wars by the media. Finally, I compared campaigns based on the three main target groups and considered the way each water utility was bringing awareness, information, mediation, and encouragement to the

implementation of new water resources management methods, behaviors, or legal requirements, such as the WFD.

This discourse analysis aimed at highlighting the context of the production of communication campaigns and its discursive and visual content from the "senders" (e.g., water utilities) in order to point out the production of symbols, texts, and strategies that are impacting the public sphere and public perceptions of water challenges.

Results and analysis

From the examination of different campaigns, I characterized the types of campaigns in comparison with the typology of involved stakeholders and target groups. I identified three main characteristics to French water utilities' campaigns:

1. *Interfacing*: water utilities play a key role in providing tools, frameworks, or events that facilitate dialogues between water users, stakeholders, and utilities.
2. *Proving*: water utilities are important actors in managing local to global information to different target groups, in particular those beyond the media's controversies developing simpler scientific-based reports and materials.
3. *Changing*: water utilities play a larger responsibility in bringing general awareness about water to policy makers, the media, or citizens.

Interfacing: Providing opportunities for dialogues

Water utilities play a role in providing water and/or wastewater services and, as a responsible body, they are in charge of implementing legal requirements over water quality, provision of services, etc. In Europe, they are particularly responsible for the implementation of the WFD within their area. If Quevauviller observed a research policy gap (Quevauviller, 2009), he wanted to highlight the need for better information, communication, and mediation at the European level between water stakeholders. The creation of the science-policy interface by the EU actually revealed the need for better understanding between various water

stakeholders and brings clearer governance, discussions, and participation. At the utilities level, various tools and campaigns have been developed to ensure such interfaces between users, institutions, authorities, or enterprises.

In France, the ONEMA released a video in 2012 explaining the organization of the water sector. It comprised the description of main water basins, the four main water laws, and participatory methods to involve water stakeholders. This video is an interesting case of haute vulgarisation using graphic design, symbols, visual animations, and key numbers to concretely explain the French water policy to a wide variety of stakeholders. This video is a direct answer to fill the gap between policy makers, implementers, researchers, and water users. The materials developed by the ONEMA integrate the notion of scales (Tröger, 2010) and relate to the various water organizations, groups of users, and the EU legislation. The ONEMA intends to interface users and bring information and communication on the WFD based on scientific information, environmental communication, and the legislation.

Similarly, the six French Water Basin Agencies (Agences de l'Eau) conducted three public consultations on the perceptions of rivers and ecosystems since 2005. Each campaign served to gain information from water users, farmers, industries, and individuals in particular. The first consultation mainly consisted of a mail campaign, the second of organizing local events, and the last one was managed through the Internet and social media. These public consultations serve for not only collecting perceptions but also initiating dialogues and debates on the regulation.

In 2005, results were limited due to its format, which was a paper survey sent by mail. In 2008 and 2013, the initiative received more feedback. In 2008, events organized by the different basin agencies allowed for direct debates. According to Philippe Clappé, manager of foreign relationships at the agency for the region of the Rhone, the Mediterranean Sea, and Corsica (Agence Rhône Méditerranée Corse), "the public consultations were a concrete way

to make very different groups talk to each other. I observed that many end-users, in particular farmers, had false perceptions of legal requirements."[1] He considered such public events to be more productive and interesting than the use of social media that "didn't really allow direct dialogues between users."[2] Physical debates facilitate understanding of each other's perceptions and start negotiation about water usages. It illustrates how mediation can concretely help to improve water resources management. In 2013, however, social media allowed for more participation from the public. Thanks to publications on blogs, Facebook pages, and online surveyanswers, individuals with no particular links with the water sector reacted or asked questions confirming the need for organizing public consultations and ways to improve citizens' engagement. In the contextframe of water communication, such campaigns clearly used references to the scientific nature of water (H2O, molecule, chemistry), to water as a natural resource (rivers, waterfalls, lakes), or to water quality both for health and the environment. Water is seen a local ecosystem (local scale) impacted by global changes (global scale).

The private company SUEZ Environnement, based in France, created its own department to follow up on the participation by the public, partners, and institutions. This department aims at conducting "societal engineering," meaning to accompany actions and projects to ensure the dialogue with all stakeholders at the local scale, such as in the city of Dijon or Bordeaux. They monitor their actions through a table and map of their projects at the local scale and compare them at a global scale. They particularly use the concept of scale, managing different levels of information and different local contexts with global issues. The team regularly updated their monitoring tools, classifying the way participation is conducted and identifying risks in the dialogue (legal, technical, public perceptions, etc.). This methodology answers several problems, the first being the acceptance by the public. Over time, the public realized its interest in, and the efficiency of, building strong relationships

Commenté [RM32]: Please include an in-text citation for this quote.

Commenté [RM33]: Citation needed.

Commenté [RM34]: Should this be "surveys"?
ok

Commenté [RM35]: Please review and revise for clarity.

Commenté [RM36]: Should this be "framework"?

with the cities and among partners. It smoothed their daily relationships with local authorities, in particular when implementing new European legal requirements. This approach is based on regular contacts with partners that can be considered institutional relationships rather than communication strategies. They considered their work as part of a communication and mediation process. The team works on water as a social good; they integrate the various states of water as being related to not only the environment, health, and science but also cultural and symbolic beliefs. They clearly articulate the various scales of water management resources using interfacing of users to reduce gaps and misunderstandings between the different stakeholders within the water sector (Quevauviller, 2009).

Commenté [RM37]: Change correct? If not, please review and revise for clarity.
= ok

The dialogues between various water professionals appear to be essential at the local level in order to facilitate the implementation of European legal requirements, the development of new networks, or the construction of water plants. It is, however, usually based on simple communication tools that are either not brought up to the public or done so only in limited circumstances. If such strategies are efficient at the local level, they might repeat methodologies learned by other water entities elsewhere in the world (and conduct to duplication) or in reverse, tend to be isolated for others (absence of knowledge transfer). They also reduce their impact toward the public who need to be better informed on such relevant initiatives, in particular those regarding water uses. The French materials are interesting cases, but similar approaches can be found in other European countries. For instance, the UK Department for Environment, Food and Rural Affairs (DEFRA) expanded campaigns toward the public based on the understanding of their awareness, expectations, and needs and led multimedia campaigns on specific and targeted uses of water. In particular, they developed the approach of mediation and bringing information to water users through the publication of guides such as *Good Practice for Communicating about Drinking Water*

Quality (DEFRA, 2009; Risk solutions, 2009), which focuses on communication processes and ten suggested key stages to target, users, customers, and water agencies.

In short, communication strategies toward scientists, experts, policy makers, and citizens involved in water resources management are usually characterized by the *mediation* between positions and concerns in order to achieve better water resources management. It is also the illustration of a transversal communication between global, European, national, regional, and local scales. The French water players tend to facilitate the dissemination of information providing key knowledge about water resources, but dissemination to wider audiences is key.

Proving: Disseminating key information beyond controversies

Many controversies characterized the water sector and were generally known as "water wars," e.g., conflicts over shared water resources (Gleick, 1993). The challenge of organizing the repartition of shared water questions water resources management, which relates to the overexploitation of water resources, water pollution, or prices. The media brought discourses over "water wars" through documentaries, headlines, web documentaries, and TV shows. They usually focus on world water consumption, food, goods, and energy production. These water wars articulate global figures with local challenges. Worldwide, the main water user is "agriculture" and creates many controversies over water quantity, including France.

At the national scale, agriculture usually represents from 65 to 70% of the total national water resources consumption. Looking at the history of communication about water and agriculture, a strong pressure was put on farmers to make them reduce their use of water resources. Later, the concept of virtual water brought information about the links between farming and food production and lowered negative perceptions of farmers. It brought more and more consideration for the development of new technologies and methods, such as the drop-by-drop irrigation system or the use of reclaimed water. The other main user also

condemned for its use of water resources was the industry. Industries were perceived as a major water polluter, and main discourses drew the public attention on the preservation of water resources and, therefore, its quality.

Today, the impact of industries is still negatively perceived and many companies are trying to communicate about their reduced environmental impact. For both target groups, communication campaigns, strategies, and materials from utilities are usually focused or closely interlinked with a campaign targeting citizens. With a strong territorial presence, water utilities tend to minimize water wars and controversies by giving information, figures, simplified materials, and reports to prove the importance of implementing a better water resources management and to answer to the media's framing. In France, many utilities and national organizations have been active in promoting better information about water uses by farmers and in raising awareness from farmers to improve water resources management. The dissemination of global, national, and local data has been a long-term process characterized by long debates and the combination of efforts from various stakeholders within the French agricultural sector.

The French agricultural chamber produced videos and organized events and local action programs to promote the implementation of water plans in agricultural practices since 2011. This engagement by the agricultural chamber encouraged regional chambers to develop information and communication materials synthesizing scientific data to accompany decision-making. For instance, the agricultural chamber of Provence (the French ~~PACA~~ region on the Mediterranean Sea) released an integrated database about irrigation in early 2012, and the agricultural chamber of Tarn (south of France close to Pyrenean mountains) designed a pedagogic video about irrigation aiming to explain administrative and technical steps to water resources management. The agricultural chamber provided evidence to highlight the engagement by farmers to lower the water consumption or water pollution

Commenté [RM38]: Please spell out at first instance.
= changed

Commenté [RM39]: Change OK? If not, please review and revise for clarity.
= ok

through key priority topics, such as nitrates, buffer zones, and water efficiency. The aim of all these materials is not only to support the sector in answering water challenges but also to be organized when water challenges raise such criticisms about agricultural practices (for instance, an informational brochure about the engagement for water quality in December 2013) or inconsistency to the implementation of the WFD (press release about nitrate published in September 2014). The communication by the agricultural chamber shows how information campaigns can address specific target groups and be linked to larger targets and challenges. They articulate local priorities (from farmers) with European legislation, e.g., European scale or national scale. This case study clearly shows the importance of mediation and interfacing scales to avoid frustration from water users.

The French Agency for the region of the Rhone, the Mediterranean Sea, and Corsica launched a phone application to give information on the status of the different rivers of the basin. The tool was designed to accompany the implementation of the WFD, the different EU regulations, and water policies. It targeted farmers, industries, and local policy makers in order to bring them information and awareness to the status of the area. The setting of this tool implied the collaboration from cities to collect data and to develop an integrated vision of the basin. This territorial mapping concretely embodies the relevance of communication tools to provide science-based data to water users and help them to better manage water resources. The water agency contributed to the implementation of the EU policy and the integration of the local specificities without putting all the emphasis on farmers. What is interesting in the French Agency's example is the combination of information provided. Farmers are primary target groups, but the initiative is depicted as a local/national effort.

Another example of coping with controversies is related to water quality. In France, water wars are very much focused on the quality of tap water; they have been mediatised over the last 20 years, blaming tap water services for risks to the public (Hervé-Bazin,

2014a). Water utilities have been particularly active and creative in responding to such criticisms. For instance, the city of Rouen created an online-map providing daily reports on water quality that anyone can consult (other cities launched their own bottled water; another example analyzed later in this article). In 2013, the Foundation France Libertés published a consumers report on the quality of mineral waters to counter the media and cultural perceptions of drinking waters. Such initiatives show that the interaction between scales and the building of discourses on water resources depend on the main issues addressed: health, water uses, or cultural beliefs. The combination of campaigns at different scales increases confusion and conflicts of messages (Hervé-Bazin, 2014b: 42).

Commenté [RM40]: Please include a paragraph or page number.
= added

In short, communication strategies by utilities combine tools to facilitate the *dissemination* of key information toward different water organizations and individuals, such as national policy makers and citizens. They focus on information and technological specificities with the objective of promoting water education, the implementation of water laws and national policy, the understanding of water prices, and the water cycle. These initiatives provide precise data accompanying a large meaningful campaign designed to raise general awareness.

Changing: Raising general awareness and responsibilities

Over the last 10 years, water utilities investigated discourses and campaigns mainly to raise awareness of water resources preservation with two main topics: (a) water quantity and (b) tap water consumption. They engaged various target groups regarding their way of perceiving water services and consumptions in order to engage their responsibility and create a public dialogue over water resources management.

Water quantity: Lowering water consumption

Looking at water quantity, major events such as droughts, heat waves, tempests, and flooding created an increasing awareness by the public regarding the issues of water quantity in

Europe. It represented a shift considering that water pollution (e.g., water quality) was usually discussed more during the 80s and 90s. This was mainly due to environmentalists and major reports issues by Non Governmental Organisations (NGOs).

The General Authority of Seine and Marne (Conseil Général de Seine et Marne) also launched a campaign to raise awareness of water consumption during the summer. They used a visual (street campaign) reproducing a bottle of perfume with a catchy headline: “Water is not a luxury?” The campaign was successful and shared through social media and several articles by journalists debating the concept around key issues such as water prices, water services, and the use of water by individuals. The nonprofit foundation France Libertés, famous for its engagement against privatisation, used this campaign that water should not be a luxury and should be obtained at a very low price.

Several other companies are using the argument of pricing to justify their competences and added value. For instance, the SICASIL conducted a complementary campaign about water prices and water quality. The materials include brochures and visuals printed and published online and in the area covered by the SICASIL. Along with information or visual materials, water utilities tend to promote to their citizens the diminution or the low level of water prices to illustrate the engagement by the city for the comfort and economic welfare of its citizens. Ultimately, pricing has been a long public debate over water gratuity reverse water waste. Today, utilities promote a reasonable water tariff justified by the service provided, in particular, the quality of drinking tap water. They use the building of water communication combining science, health, and the environment—three key pillars of communication—to address people’s main concerns about water quantity (Hervé-Bazin et al. 2014). Other examples from the European context show how European water utilities also play with the citizens’ concerns about future water availability.

Commenté [RM41]: Although this is a common abbreviation in your field, consider spelling it out at the first instance.
=ok

Commenté [RM42]: Is this question mark part of the campaign headline?
YES!

Starting in the 2000s, climate changes impacted Europe in several major hydroclimatic episodes. In 2012, the campaign by Thames Water "We are in drought" remains a symbolic and successful campaign. How could people living in London ever know water scarcity? London and England are known for regular rain and are the subject of regular jokes and stereotypes. In 2012, the UK experienced two years of dry weather in the southeast heading toward water shortage during the summer. There was a real threat of water resources management if the public did not lower its water usage. Thames Water launched the campaign. They wanted to use simple words "nothing fancy or clever", something that would address consumers in a direct way. They designed the campaign on a simple phrase: "We are in drought." The campaign was widely disseminated thanks to outdoors posters, digital escalator panels, underground projections, radio spots, ads in the local press, etc. A survey by Beyond Communications Agency (2012) showed that almost half of Thames Water customers began using less water after seeing the ads.[3] The company pursued its efforts by setting a dedicated website targeting customers. The website "Waterwisely" is designed as a video game and visitors can meet characters from the community who are using water wisely.[4] This type of campaigns interacts with the people's other main concern about water quality.

Tap water: Marketing drinking water

Over the last 10 years, tap water consumption has become a strong marketing battle. In France, many utilities are famous for their engagement in the promotion of tap water starting in 2004. The SEDIF, the French union for water in the Paris area, initiated a key campaign using labels to advocate for tap water (see Figure 4).

[Insert figure 4 here]

Figure 4. "We sell water. Not marketing. The water from SEDIF, the best of water at your home" (Credits: Syndicat des Eaux d'Ile-de-France / agence BBDO).

Commenté [RM43]: Please refer to this figure in the text. OK

This campaign created a public debate over the price of water, the quality of tap water, and waste related to water bottles. In 2005, with a similar approach to promote tap water, the city of Paris was the first to distribute water carafes in France. The event was well covered by the media thanks to two key elements: (a) an in situ event organized in front of City Hall; and (b) the design of the bottle. The bottle was created by a designer and presented as a new, trendy way of drinking tap water. It included blue inscriptions on the bottle and, later, Eau de Paris developed further printed messages on the bottle to sell newly branded bottles. Today, each district has its own branded bottle and Parisians can buy them online. Such a public relation operation started the debate in France about drinking tap water over bottled water. Such initiatives became nationwide.

In 2006, Besancon was the first city to produce and sell its own bottled water with the support of a distribution company and supermarkets. This public utility decided to put tap water into a glass bottle and sell it in at a very cheap price in supermarkets. They named the bottle "the Bisontine." When questioning the manager of this operation, he explains that the city of Besancon wanted to promote its tap water since it was very good quality water. They also wanted to reduce plastic waste, bring cheaper bottled water, and bring awareness from citizens about producing tap water. The operation was not profitable itself but was considered an innovative way to promote a stronger sense of citizenship and pride from inhabitants. The Bisontine was a local product that helped people feel like a part of their city and have their own symbol.

In 2010, the city of Mulhouse also used tap water to promote the image of the city toward both foreigners and local inhabitants. The town distributed a water bottle designed by a local artist representing one of the most famous building~~flats~~ of the city. The objective was to promote both art and tap water in the region. Today, many French cities—such as, Dijon,

Commenté [RM44]: Please review and revise. It does not seem likely that this is the intended word.
= changed

Lille, and Marseille—have their own water carafes and promote tap water. It became a general trend that can be observed in many other major European cities and worldwide.

Such initiatives are part of a general global movement that actually started in Europe. In 2003, Vandejong, an Amsterdam-based advertising bureau initiated Neau, a water bottle, as a joke: “Neau makes you pay again for water that you already paid for?” They created a bottle to use tap water in the office. In 2005, the advertising bureau organized a major campaign in Amsterdam to promote the consumption of tap water and to raise awareness among citizens of the alternative of drinking tap water rather than bottled water. They initiated partnership with several companies, including IKEA, and distributed 5,000 bottles to their employees. They also sold thousands of bottles to several festivals. This initiative is considered to be one of the first initiatives to promote tap water against bottled water (Gleick, 2010).

In Switzerland, the city of Geneva intensively promotes its public water. The city has created its bottle, developed partnership with UNICEF, and held street events, including the operation “Water is a present” with giant fountains in crafted paper. They organized media campaigns with famous actors to continue promoting tap water.

In the UK, "Give me tap" successfully developed a tap water bottle for Londoners in 2011. Edwin Broni-Mensah, a PhD student launched this initiative after missing tap water on his university campus, working with cafes and restaurants. The initiative is widely disseminated through the emblematic figure of the founder. The initiative also dedicates 70% of its revenues to humanitarian causes pleading for the general interest. The slogan “Making our world a fountain” is simple and conveys the values of sharing around the symbolic representation of a fountain. Fountains are public infrastructures. They used to be important meeting point in medieval times (Caulier, 1990). It gives a sense of citizenship and sharing.

Commenté [RM45]: Should this be initial caps? =it's the name of the initiative so yes! I added " "

Commenté [RM46]: Please add this to the reference list.

All those initiatives are playing with the codes of bottled water, health communication and relation to risk. They, however, add codes from Environmental Communication, sustainability and responsibility (Libaert, 1992). They started a war between bottled and tap water. In March 2010, "The Story of Bottled Water" summarized the conceptual approach to drinking tap water as opposed to bottled water. It also clearly advocated for new consumption habits and relations to natural resources. ~~(www.storyofstuff.org).~~ Later in July 2010, the initiative Bottled Water Matters ~~(www.bottledwatermatters.org)~~ released a similar type of TV spot to contradict the arguments of "The Story of Bottled Water." Both spots summarized the war over tap versus bottled water[5].

Several utilities (e.g., Paris, Besancon, Geneva) wanted to show their added value as a service provider and entered the public sphere using marketing strategies. The engagement to promote tap water is usually combined to a political vision and way of considering water services. The latest European Citizen Initiative about the right to water is one of the examples of using water resources as an ideological discourse. Many utilities in France, Germany, Greece, and Italy advocated for tap water as a public water service promoting the value of citizenship and environmental responsibility rather than buying water, the symbol of capitalism. It is clear that the impact of the EU legislation facilitated the emergence of so many initiatives promoting water quality.

If the WFD emphasized the importance of promoting quality natural water resources, the EU legislation is particularly strict regarding drinking tap water or mineral water. The historical construction of drinking water shows the impacts of European norms starting in the 19th century (Marty, 2013). The process of changing people's perceptions on drinking water is slow and needs repetition, multiplication, and large dissemination of successful examples and values depicting tap water as a safe and responsible way of both drinking and preserving water resources (Hervé-Bazin, 2014a).

Commenté [RM47]: Please review and revise for clarity.

a mis en forme : Police :Non Italique

Commenté [RM48]: Please make this a footnote.
ok

Commenté [RM49]: Please make this a footnote.
ok

Commenté [RM50]: This appears within quotes and in italics. Please choose one format for article consistency.
= changed

In short, communication toward the public will usually try to engage individuals and bring them to their responsibility as human beings regarding water resources. The issues of quality or quantity are building discourses related to a way of consuming water, values, and behaviors. All the examples provided have been developed and promoted by water utilities at the local scale. However, what is interesting is their national outreach and impacts. Each campaign contributed to the general debate on water quality, water drinking water, and preservation of water resources. They are characterized by using environmental communication codes: the guarantee of preserving water resources, embodying global threats, engaging the individual's responsibility and value. However, at the local and national scale, campaigns have difficulty effecting people's behaviors and their engagement to protect the environment. They cumulate a discourse that complies with the EU obligations and framework but have difficulty in bringing actual changes or need more time to ensure such a change. In this framework, they correspond to the impossible promise of discoursing and framing environmental cause as identified by Libaert (2010).

Conclusion

Today, many consider that water utilities have direct access to their customers and to citizens. They can have a strong local impact when looking at changing people's behavior. The most efficient and adapted communication for the water cause is at the local scale. It attempts to involve communities and integrate multiple criteria, in particular cultural, socio-economic, and political background and specificities. There is a strong need for utilities and water managers to further communicate to their public about water resources management and water services.

In terms of local and regional interfaces, these results show the importance of implementing communication approaches to better manage water resources but also to bring further public awareness and behavioral changes. The latter need time, interaction, and

mediation, the implication of different stakeholders for multi-targeted types of campaigns. It underlines the importance of integrating communication and social sciences into the cycle of water resource management as part of its management. Utilities, basin agencies, and regional states can develop this competence thanks to their own department of communication and the support of regional and national funding. In terms of management, it also suggests building specific competences and skills based on the expertise of communicating about environmental resources and, more specifically, water resources.

The emergence of "water communication" (Hervé-Bazin et al., 2014) can facilitate the work of both local authorities and regional organizations. It participates in engaging citizens at the local scale; individuals tend to be more aware of environmental issues by their cities; and it creates dialogues and interaction between stakeholders and at different scales. This research shows the importance of water utilities to better create cohesion and sense of responsibility toward both natural resources and territory.

Céline Hervé-Bazin is both invited teacher and consultant specializing in communication about water. Céline worked at several companies operating in the water sector as communication manager for ~~eight~~ seven years before working as consultant. She holds a PhD in Information and Communication from the Sorbonne University and Top School of communication (CELSA) where she is a regular invited professor and associated researcher. She wrote several scientific papers for conferences and peer-reviewed journals. She published three books related to water resource management and public perceptions. Her last book, *Water Communication*, is dedicated to communication campaigns in the water sector (IWA Publishing). She teaches environmental communication and gender issues at the CELSA and communication methodology in various universities (CNAM, ISEPP, EST Littoral).

References

AWWA Research Foundation and EPA (2008). *Communicating the Value of Water: An Introductory Guide for Water Utilities.* Denver: AWWA.

Caulier, B. (1990). *L'eau et le sacré, Les Cultes Thérapeutiques autour des fontaines en France du Moyen-Âge à nos jours*. Paris: Editions Beauchesne.

CIEAU. (2014). Les Français et l'eau, Baromètre Annuel. Paris: , IPSOS / CIEAU~~, Paris, France~~.

De Vanssay, B. (2003). Les citadins et l'eau dans le monde. Représentations et comportements à Jakarta, Ouagadougou, Brasilia, Madrid, Munich et Osaka [Citizens and water in the world. Representations and behaviors in Jakarta, Ouagadougou, Brasilia, Madrid, Munich and Osaka]. *VertigO La revue en sciences de l'environnement, 4*(3), 1–6.

Directive 2000/60/EC. (2000). Establishing a framework for community action in the field of water policy. *Official Journal of the European Communities*, 22.12.2000, L. 327/I.

EUREAU (2008). *Statistics Overview on Water and Wastewater in Europe*, Brussels, Belgium.

European Commission. (2012a). Environment: Europeans call for stronger EU action on Water. Brussels: IP/12/289, ~~22/03/2012~~.

European Commission. (2012b). Eurobarometer 344. Attitudes of Europeans towards water—related issues. Brussels: TNS Political & Social~~, Brussels~~.

Gleick, P. (1993). Water and conflict: Fresh water resources and international security. *International Security*, 18(1), 79–112.

Gleick, P. (2010). *Bottled and sold: The story behind our obsession with bottled water*. Washington, D.C.: Island Press.

Commenté [RM51]: Please review and conform references to APA style. I have done so as much as I could, but I was unsure as to whether certain sources were books, journal articles, or something else.

a mis en forme : Police :(Par défaut) Times New Roman, 12 pt

a mis en forme : Police :12 pt, Italique

a mis en forme : Police :(Par défaut) Times New Roman, 12 pt, Italique

a mis en forme : Note de bas de page, Justifié, Retrait : Gauche : 0 cm, Taquets de tabulation : Pas à 1,5 cm

a mis en forme : Police :(Par défaut) Times New Roman, 12 pt

a mis en forme : Police :(Par défaut) Times New Roman, 12 pt

a mis en forme : Police :(Par défaut) Times New Roman, 12 pt, Italique

a mis en forme : Interligne : Double

a mis en forme : Police :(Par défaut) Times New Roman, 12 pt

a mis en forme : Police :(Par défaut) Times New Roman, 12 pt

a mis en forme : Police :Italique

Hervé-Bazin, C. <AU: Please give the last name and initials for all authors up to and including seven authors. If the work has more than seven authors, list the first six authors and then use ellipses after the sixth author's name. After the ellipses, list the last author's name of the work.> (2014). *Water communication: Analysis of strategies and campaigns from the water sector*. London: IWA Publication.

Hervé-Bazin, C. (2014a). Boire en eaux troubles: la construction de la confiance et défiance des perceptions de l'eau du robinet et de l'eau minérale, dans d'Almeida, N. et Gardere, E. « Risques mineurs, changements majeurs », *Communication & Organisation*, n°45, Bordeaux, France, p. 127–138. <AU: Please conform to APA style.>

Hervé-Bazin, C. (2014b). The water communicator's challenge of conflicting messages. *Water 21*, 10, London, UK, p. 42–43. <AU: Please conform to APA style.>

Krieg-Planque, A. (2007). « Les discours dans la pluridisciplinarité. Exemples d'une « manière de faire » en analyse du discours, » dans Bonnafous, S., M., Temmar, *Analyse du discours et sciences humaines et sociales*, Ophrys, Paris: Ophrys., pp. 57–71. <AU: Please conform to APA style.>

Libaert, T. (1992). *La communication verte*. Paris: Editions Liaisons.

Libaert, T. (2010). *Communication et environnement, le pacte impossible*, Paris: PUF, Paris, France. <AU: Please conform to APA style.>

Marty, N. (2013). *L'invention de l'eau embouteillée, Qualités, normes et marchés de l'eau en bouteille en Europe, XIXe-XXe siècles*, Peter Lang, Bruxelles, Bern, Berlin, Frankfurt am Main, New York, Oxford, Wien: Peter Lang., 2013. 397 p. (Collection : L'Europe alimentaire / European Food Issues / Europa alimentaria / L'Europa alimentare – volume 5). <AU: Please conform to APA style.>

a mis en forme : Police :Italique

a mis en forme : Police :Italique

a mis en forme : Police :Italique

Poirier, J.-P. (2012). *L'eau, objectif du millénaire ou l'incurie des Etats*. Paris: Autre Temps Editions.

Quevauviller, P. (2009). *Water system science and policy interfacing*. London: Royal Society of Chemistry.

Risk solutions. (2009). *Good practice for communicating about drinking water quality: a report for the drinking water inspectorate*. , London: DEFRA, ~~London, UK. Retrieved from: http://dwi.defra.gov.uk/research/completed-research/reports/dwi70-2-221.pdf (accessed 15-10-2013). <AU: Please conform to APA style.>~~

Tournier, M. (1985). Texte « propagandiste » et cooccurrences. Hypothèses et méthodes pour l'étude de la sloganisation, ~~dans~~ *Mots*, ~~n°~~11, ~~p.~~ 155-187. ~~<AU: Please conform to APA style.>~~

Tröger, K. (2010), *Clés méthodologiques de la socio-anthropologie de l'environnement. Comment aborder la dimension sociale de l'eau*, France : Agence de l'eau.

[1] Phone interview, June 2014.

[2] Phone interview, June 2014.

[3] The cost of the campaign: £120,000 / 150,000 €. For the full case study, www.effectivedesign.org.uk

[4] www.thameswater.co.uk/waterwisely (accessed 10 October 2013)

[5] See their websites: www.storyofstuff.org and www.bottledwatermatters.org (accessed 15 September 2013)

a mis en forme : Police :Italique
a mis en forme : Police :Times New Roman, 12 pt
a mis en forme : Police :Times New Roman, 12 pt
a mis en forme : Police :Times New Roman, 12 pt, Italique
a mis en forme : Interligne : 1,5 ligne
a mis en forme : Police :Italique
a mis en forme : Police :Times New Roman, 12 pt
a mis en forme : Police :Times New Roman, 12 pt
a mis en forme : Français (France)
a mis en forme : Interligne : Double
a mis en forme : Police :Times New Roman, 12 pt
a mis en forme : Police :Times New Roman, 12 pt
a mis en forme : Police :Times New Roman, 12 pt, Français (France)
a mis en forme : Police :Times New Roman, 12 pt
a mis en forme : Police :Times New Roman, 12 pt
a mis en forme : Police :Times New Roman, 12 pt
a mis en forme : Police :Times New Roman, 12 pt
a mis en forme : Police :Times New Roman, 12 pt
a mis en forme : Police :12 pt
a mis en forme : Police :Times New Roman, 12 pt
a mis en forme : Police :12 pt
a mis en forme : Interligne : Double
a mis en forme : Français (France)