

## **Title: “riversnetwork.org”: Concept and Tools for sharing Knowledge and Awareness on the River Basins of the World**

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### **Abstract**

“[riversnetwork.org](http://riversnetwork.org)” is an open resource consisting of world coverage of “river blogs” and IT tools for networking the rivers stakeholders. General topics covered are related to Integrated Water Resources Management and Water Governance addressing issues such as flood, drought, water security, sustainable development, wetland protection, climate change, river restoration, urban rivers, etc... The key concept of “[riversnetwork.org](http://riversnetwork.org)” is nevertheless to focus on the specificities of river basins and watersheds rather than developing general approaches.

The core element is the website “[www.riversnetwork.org](http://www.riversnetwork.org)”. River blogs have been developed in which knowledge and awareness related to specific basins or watersheds may be shared, constituting, by consolidation, a sort of Library of “case studies”. One of the key features is the constant reference to the geographical context, which is clearly marked up through web maps and Google Earth scenes. Interactive maps showing watersheds limit, streams and water areas are displayed on the front of each river blog. Maps and blogs extend quasi worldwide, which is likely unique on the web. For the time being, more than 1000 river blogs have been built in. They include in total more than 2000 items: relevant links, videos, interactive maps, Google Earth scenes, river tweets and reference documents. Interactive web maps have been drawn for most of them.

Tags allow getting an overview of specific topics from the perspective of the rivers stakeholders. “Featured Tags” may refer to “label” or “projects”. For example, the “RAMSAR” featured tag allows getting spots related to progress and achievements on the posted RAMSAR sites.

Interactivity with the website and part of its feeding is supported through the LinkedIn group “[riversnetwork.org](http://riversnetwork.org)”. Members originate from different World Institutions, NGOs and the Private Sector from a wide range of countries. By mid-February 2013, 625 were registered, this number being regularly growing.

The Twitter Service “[@riversnetwork](https://twitter.com/riversnetwork)” allows following a wide range of Twitters Accounts and [@riversnetwork](https://twitter.com/riversnetwork) has an increasing number of “followers”. Twitter starts indeed to be a very interesting tool not only for Water Dialogue but also for kind of real time monitoring of the river conditions. Twitter is also more and more used for providing Early Warning for flood events.

The development of the concept started 2 years ago based on the observation that many websites, papers and references propose sound conceptual approaches, methodologies and guidelines on water resources management, many at region or country level, but not that many – or harder to find – related to specific river basins or watersheds.

Actually, the use of IT technologies for networking, monitoring, sharing knowledge and awareness on specific rivers, are expanding rapidly in some parts of the world and remain modest in other parts. Therefore, showing what can be achieved in some river basins or watersheds may constitute a new challenge for creative people somewhere else in terms of transparency, stakeholder’s involvement as well as monitoring and information tools.

Partners for supporting the future development of “[riversnetwork.org](http://riversnetwork.org)” are warmly welcome.

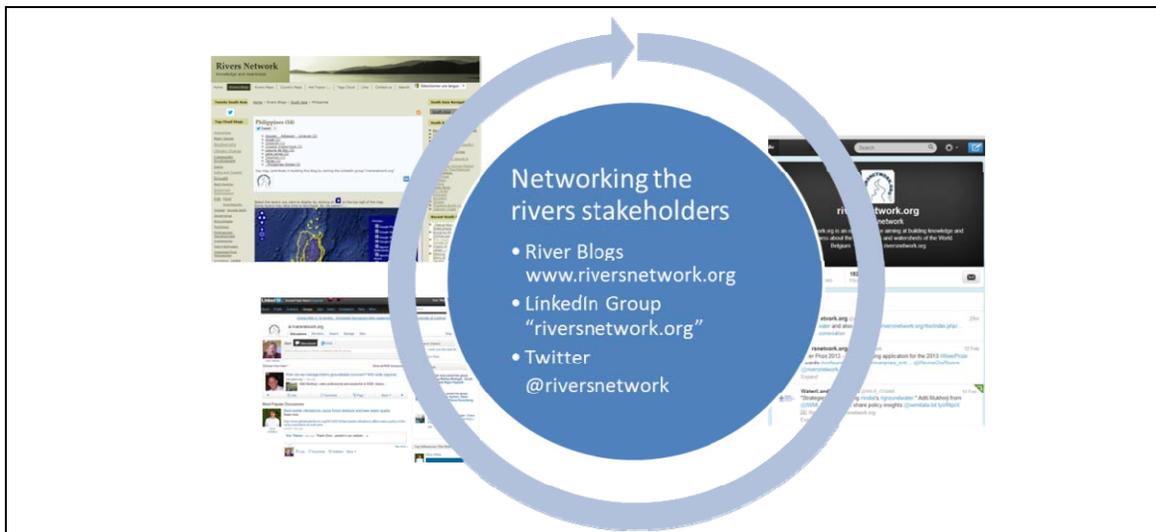
### **Keywords**

River Basin, River Watershed, Website, Twitter, LinkedIn, Web Mapping, River Blogs, Networking

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## Introduction

The concept of “riversnetwork.org” is to develop and explore Internet tools aiming at networking river basins and watershed stakeholders. Lessons learned, success stories, cases of concern, approaches and methodologies, decision tools and new technologies related to river basins and watersheds management and water governance may then be shared. The core feature of “riversnetwork.org” is to be “river specific”. Topics are presented in terms of “case studies” instead of being treated globally in conceptual papers.



*The 3 tools for Networking the Rivers*

For the time being, “riversnetwork.org” consists of 3 tools:

- The Website [www.riversnetwork.org](http://www.riversnetwork.org) is an open resource for knowledge sharing about the river basins and watersheds of the world. The core of the website is constituted of a world-wide coverage of “river blogs”, in which relevant links, videos, Google Earth scenes, twitters and key documents are embedded. Each blog includes systematically a reference to the geographical context of each river.
- The LinkedIn group [“riversnetwork.org”](https://www.linkedin.com/groups/riversnetwork-org) is an interactive platform where lessons learned and experience can be shared. It ensures as well the interactivity with the website and, partially, it supports its feeding when appropriate.
- The Twitter Service: [@riversnetwork](https://twitter.com/riversnetwork) is used as a “short message” service for broadcasting information concerning water- and river- management, mostly focused on information related to specific rivers, either from “riversnetwork.org” or re-tweeted from other Twitter Accounts.

## Key Issues and Challenges

The sustainable management of river basins and watersheds is a very complex issue. There are many sound documents and guidelines that explain comprehensively the step-wise approaches in terms of multi-sector planning process and in terms of tools to be developed for getting good Water Governance. When confronted to the reality, the Officers, the Advisors and the Decision-Makers have to find their way into a great number of constraints such as political context, legal framework, land and water use traditions, nexus “water, food and energy”, human resources and basin issues which generate a lot of specificities that require also specific methodologies and guidelines. That’s actually the challenge!...

In terms of general concepts for basin and watershed management, it is also hard to find common vision and common elements for building road-maps. In some parts of the world, a strong legal framework and law enforcement is the key tool for supporting river basin management. For example, the Environmental Directives of the European Union have widely contributed to improve river management and simplify trans-boundary issues. In other parts of the world, India and Nepal for example, the legal framework and law enforcement is weaker, but the Civil Society is increasingly committed in addressing the issues. Still in other countries, like United States, Canada and Australia for example, “River Keepers” contribute to a close monitoring of the river conditions, using social platforms like Twitter as a tool for sharing knowledge, awareness and warnings.

Recent technologies are now already contributing to improve Water Governance (water dialogue, data & information sharing and decision tools) in many countries. Internet and the associated social networks are likely an outstanding opportunity for boosting stakeholder’s participation, including awareness and capacity building. Internet creates new opportunities for social platforms that may contribute in sharing transparent information and data. Internet is now accessible in most rural areas of the world, widening so opportunities of getting the local stakeholders committed in the process, especially the younger generation.

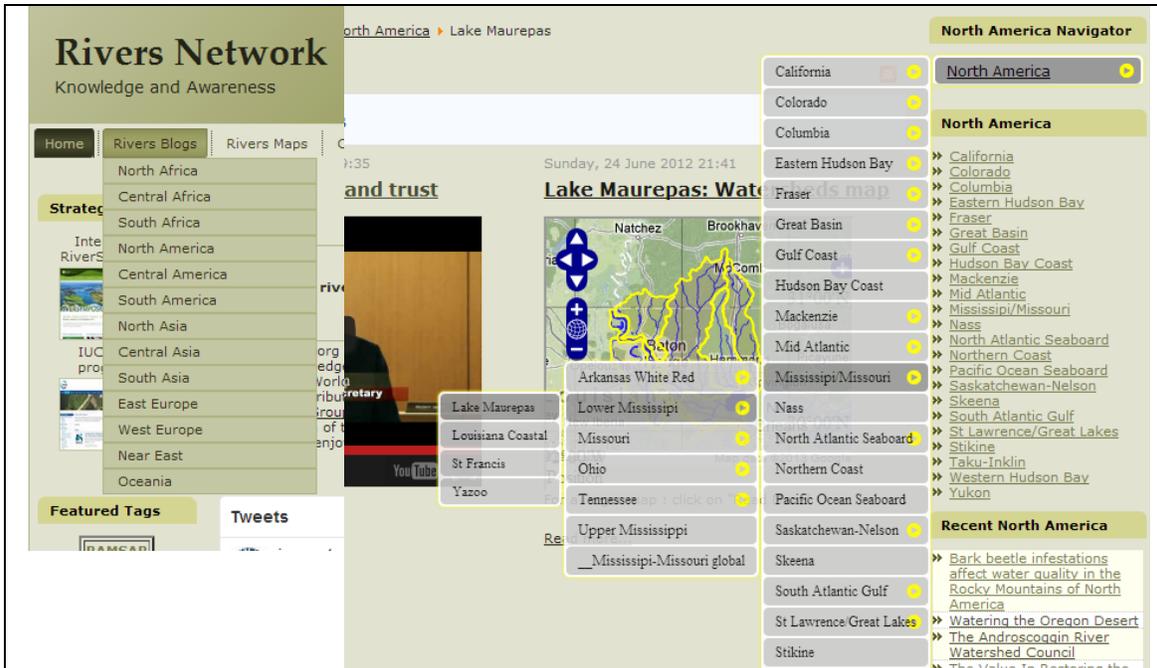
Sharing knowledge and lessons learned from the various experiences and case-studies around the world may contribute to develop new ideas and elements of comparative analysis of strengths and weaknesses for the various stakeholders involved in basin management and water governance.

## **Opportunities**

As presented in the Introduction, the “riversnetwork.org” concept consists, for the time being, of 3 tools: The Website [www.riversnetwork.org](http://www.riversnetwork.org); the LinkedIn group “[riversnetwork.org](https://www.linkedin.com/company/riversnetwork.org)” and the Twitter Service “[@riversnetwork](https://twitter.com/riversnetwork)”.

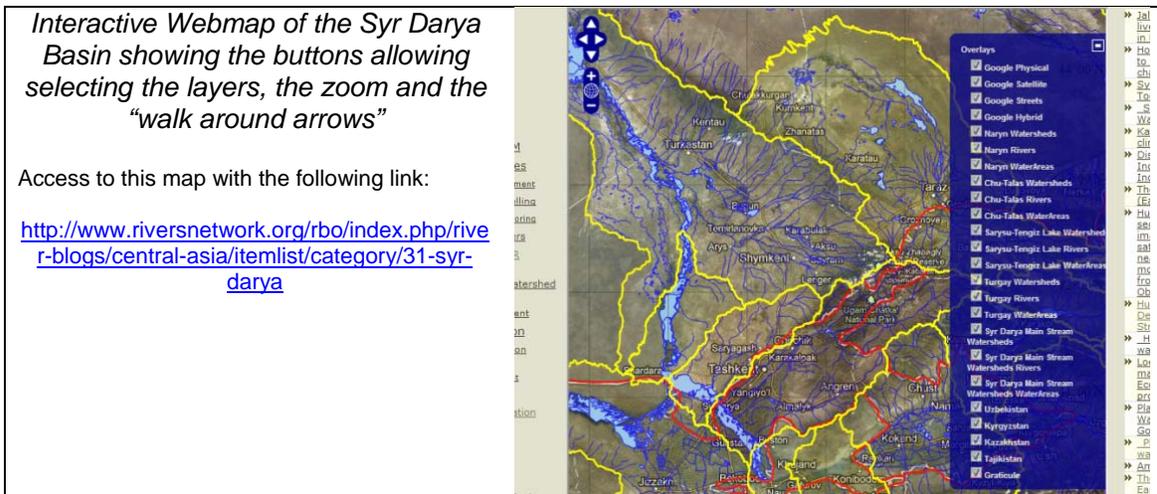
### *Presentation of the Website [www.riversnetwork.org](http://www.riversnetwork.org)*

The core element of [www.riversnetwork.org](http://www.riversnetwork.org) is the “**River Blog**”. The River Basins of the World are classified according to 12 regions. Each region (Level 1) is subdivided into 10 to 20 “Major Basins or Areas” (Level 2). These Major Basins are then divided into “Sub-Basins (Level 3) and in some cases, a Level 4 can be built in when substantial material may be presented. The next figure shows an example of such arborescence for the Mississippi-Missouri River which leads up to the “Lake Maurepas” blog.



*The 13 Regions and an example of arborescence for the Mississippi-Missouri river*

A key feature of “River Blogs” is the constant reference to the geographical context. Interactive Web Maps show the limit of the basins and watersheds, the water streams and water areas. For trans-boundary basins, the country boundaries are shown as well. The background of the maps is based on Google Services. A recent version of the Browser (Internet Explorer, Firefox, Chrome, Opera) needs to be installed on the computer for visualising the maps.

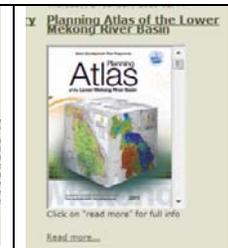
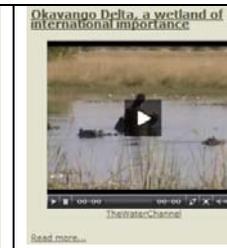
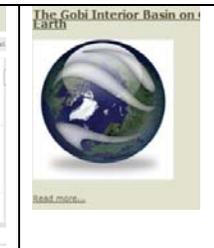


*Interactive Webmap of the Syr Darya Basin showing the buttons allowing selecting the layers, the zoom and the “walk around arrows”*

Access to this map with the following link:

<http://www.riversnetwork.org/rbo/index.php/river-blogs/central-asia/itemlist/category/31-syr-darya>

So far, the proposed content of river blogs may be a: (i) relevant link to a website (river basin organisation, “river keepers”, NGO’s, specific blogs or items); (ii) link to a key document; (iii) video; (iv) Tweet from a Twitter account covering the river; (v) Google Earth scene. An example of each of such pages can be displayed by clicking the link shown in the footnotes.

				
Links <sup>1</sup>	Documents <sup>2</sup>	Videos <sup>3</sup>	Tweets <sup>4</sup>	Google Earth <sup>5</sup>

*The different possibilities of “River Blog” items that have been developed up to now (for displaying examples see the corresponding footnotes)*

Each item published in the website is associated to one or several tags. When navigating on a specific tag, one has access to various related “case-studies”. For example, a tag [“RAMSAR”](#) will show overview of practical experiences and outputs of the Ramsar sites which have been introduced in the website.

	
Displaying the Case Studies related to “Ramsar” sites	Displaying the case studies “Trans-boundary Dialogue”

Another interesting example is the tag [“Urban Rivers”](#)<sup>6</sup>. It shows on global level, 51 (mid-February 2013) “case studies” related to management of Urban Rivers.

<sup>1</sup> Example: [The Danube Box: Invitation to explore the Danube](http://www.riversnetwork.org/rbo/index.php/river-blogs/east-europe/item/1882-the-danube-box-invitation-to-explore-the-danube) :

<sup>2</sup> Example : [Mekong Basin Planning: The Story Behind the Basin Development Plan](http://www.riversnetwork.org/rbo/index.php/river-blogs/south-asia/item/2401-mekong-basin-planning-the-story-behind-the-basin-development-plan) :

<sup>3</sup> Example : [Melting glaciers: The Slow Disaster in the Andes](http://www.riversnetwork.org/rbo/index.php/river-blogs/south-america/item/2297-melting-glaciers-the-slow-disaster-in-the-andes) :

<sup>4</sup> Example : [Tweets from Fraser Riverkeeper @FraserRivKeeper](http://www.riversnetwork.org/rbo/index.php/river-blogs/north-america/item/2488-tweets-from-fraser-riverkeeper-fraserriverkeeper) :

<sup>5</sup> Example : [The Lake Chad on Google Earth](http://www.riversnetwork.org/rbo/index.php/component/k2/item/2040-the-lake-chad-on-google-earth) :

<sup>6</sup> <http://www.riversnetwork.org/rbo/index.php/component/k2/itemlist/tag/Urban%20Rivers>

By mid-February, the website counted more than 2500 pages. It is now becoming significantly popular with the number of “guests on line” being nearly always over 500 and regularly exceeding 1000 to 1500.

The LinkedIn group “[riversnetwork.org](http://riversnetwork.org)”

The LinkedIn Group is one of the tools for networking rivers stakeholders. Members can share interesting materials that can be then embedded into the relevant river blog of the website. Members originate from different World Institutions, NGO’s and Private Sector from a wide range of countries. This group includes over 625 members by mid-February 2013 and is regularly increasing.

Links have therefore been created with numerous “River Advocates” which is an asset. Although successful in terms of audience, the next step would be to explore the possibilities of building working groups more focused on specific regions or basins. To get there, the group needs to be structured with an appropriate methodology..

The Twitter Service “[@riversnetwork](https://twitter.com/riversnetwork)”

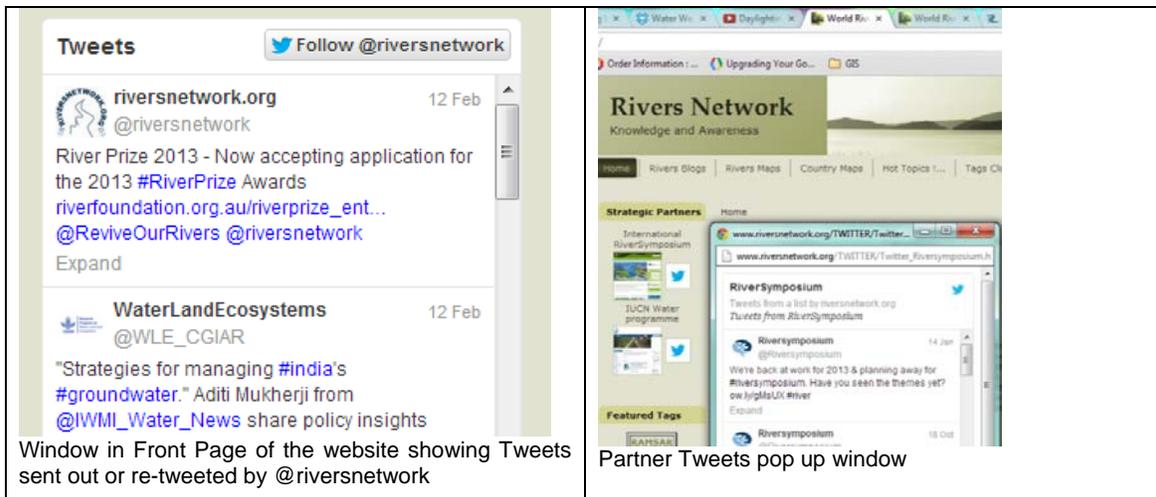
The Twitter Service [@riversnetwork](https://twitter.com/riversnetwork) allows following a wide range of Twitter Accounts and is followed as well by an increasing number of “followers” (185 by mid-February 2013). Twitter starts indeed to be a very interesting tool not only for Water Dialogue but also for close monitoring of the river conditions. Twitter is also more and more used for providing Early Warning for flood events. An increasing number of Twitter Accounts are therefore dedicated to specific rivers. For example, the events occurring on the Willamette River, a tributary of the Columbia river in the United States, are followed amongst others by the WillametteInitiative @W\_R\_I and the WillametteRiverKeep @WilRiverkeeper.

In the “riversnetwork.org” concept, Twitter provides with the following outputs:

- Sending tweets out by @riversnetwork in order to highlight outstanding items that have just been introduced in the website. Such tweets result in a quickly growing number of hits for this item.
- Re-tweeting of tweets from third parties which are considered as relevant in the context of water resources management with priority for those tweets that refer to specific rivers (concept of “case studies”)
- Sending tweets that may help promote partner activities. For example, riversnetwork is now supporting the International River Foundation in organising the RiverPrize 2013 by sending out specific tweets related to this event.

In order to offer an open access to their content, these tweet packages are embedded in the website [www.riversnetwork.org](http://www.riversnetwork.org) using four different ways:

- The tweets sent out by @riversnetwork appear in a specific window of the front page of the website.
- “Regional” tweets sent out by a selection of Twitter Accounts covering that region, appear in a pop-up window in the corresponding section of the website.
- Specific Twitter accounts covering specific rivers are embedded in the corresponding river blog
- Partner tweets appear in a pop up window on the front page.



## Recommendations

The development of the concept started 2 years ago based on the observation that many websites, papers and references propose sound conceptual approaches, methodologies and guidelines on water resources management, many at regional or national level, but not that many – or harder to find – related to specific river basins or watersheds.

Actually, the use of IT technologies for networking, monitoring, sharing knowledge and awareness on specific rivers, expands rapidly in some regions (for example North America, and Australia) and remains limited in other regions (for example Asia and Europe to a certain extent). Therefore, showing what can be achieved in some river basins or watersheds may be a new challenge for creative people in other places in terms of transparency, stakeholder's involvement and monitoring and information tools.

This initiative must be considered to a certain extent as Research Work. In the future, many applications could be derived and developed on the basis of this concept. For example:

- Improved website layout and ergonomics (development of a rivers data base with a direct link to the blogs)
- Countries' interactive maps developed showing the river basins to be managed at country level and river basins that are "trans-boundary" basins. With a lower zoom, such maps could be developed at Provinces level. An example has been developed for Afghanistan<sup>7</sup> in the website.
- Introductions to case-studies related to specific topics such as "Ramsar" or "River Restoration" or "Urban River", etc... developed more systematically. An example of such a development is presently on-going in collaboration with IUCN, ADB and NARBO (introduction in the website of the Water Wealth basins: a review of case studies on Asian river basins).
- Potential of LinkedIn improved in order to create and manage working groups for specific regions and river basins.
- Improved management of different languages for getting easier access to material not available in the 3 languages managed up to now (English, French and Spanish)

<sup>7</sup> <http://www.riversnetwork.org/rbo/index.php/country-maps/asia/item/2126-afghanistan-watersheds-and-rivers>

“riversnetwork.org” started from an individual initiative. The concept seems to be well received by numerous institutions and “River Advocates”. It is probably the right time for interested potential Partners to get involved in supporting its future developments and initiatives.

*Partners are needed to bring support for technical development (IT technologies), advises and for suggesting new approaches for improving the concept. Sponsorships would be also highly appreciated for funding the extension and operation of the network.*