

Concept Paper on

# **Nepal River Summit 2014**

**For**

# **Drafting of National River Policy of Nepal**

**2014**

**Kathmandu, Nepal**

Concept/Organised by  
Nepal River Conservation Trust (NRCT)  
Biosphere Association

## Nepal River Summit 2014

In August 2014 there will be a Nepal River Summit to bring together the best minds from Nepal, the region and globally to prepare a base for legislation to govern rivers. There will be a balanced representation from all sectors including local community, government, industry, environment and conservation, heritage, and agriculture and forestry. Data and documentation from expeditions along the Great Rivers of Nepal during 2014 will be presented at the Summit and provide both a baseline for further study and identification of key areas of vulnerability and challenges. The Summit will increase communication between stakeholders to ensure water security for the future on a local, national and international level.

The new constitution allows an opportunity to put in place new legislation in Nepal. Many changes have taken place since the last constitution. The increase in population, urbanisation and industrialisation has created the necessity for more careful planning and protection laws to ensure resources are managed effectively for the present without compromising future needs.

Water is vital for the human survival and Nepal though rich in water resources must take seriously the potential threats to these resources. A Nepal River Policy is essential to ensure best management and conservation of rivers and surrounding ecosystems. The Nepal River Summit in August 2014 will bring together stakeholders and expertise to lay foundations for a National River Policy in Nepal.

### NEPAL RIVERS

There are over 6000 small and big rivers that drain the Nepal Himalayas in Nepal into the Ganges. Almost 50% of the total annual flow of the Ganges and 70% in dry season flows from the Nepal river systems. Around 220 billion cubic meters of water flow annually (Pokharel 2001). Figure 1 shows these rivers and labels the main river basins.

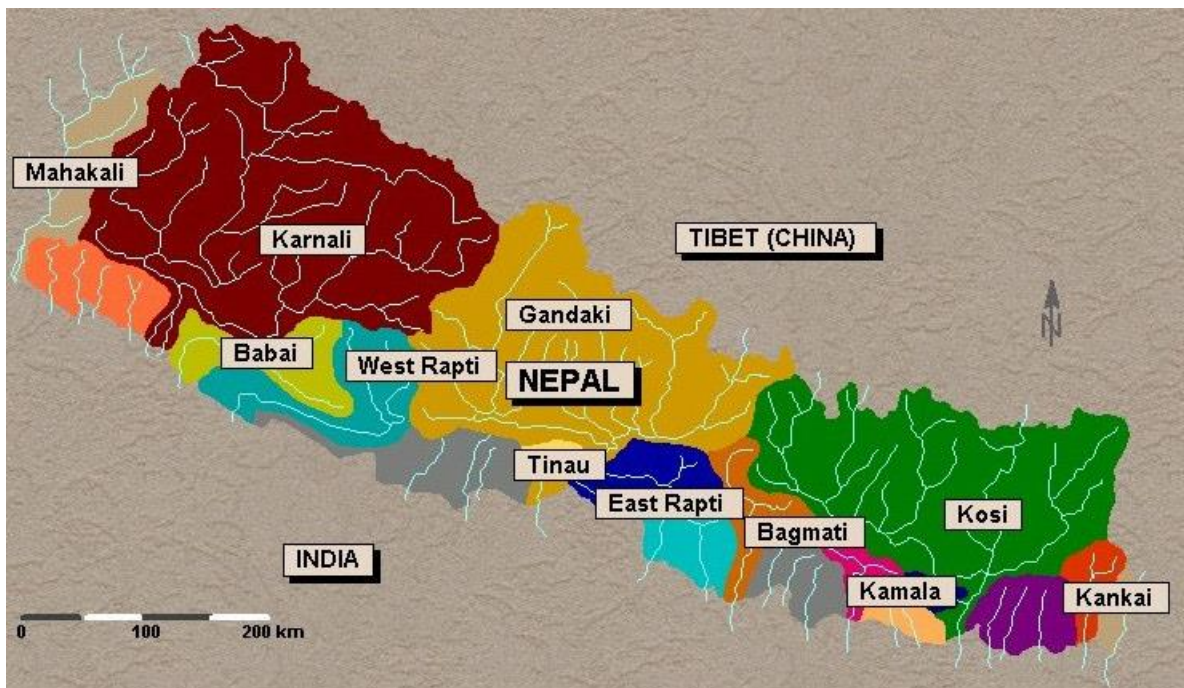


Figure 1. River Basins of Nepal (Sangroula 2009)

These rivers are the source of livelihood and well-being of the people of Nepal. They are a source of drinking water, washing water, hydropower, irrigation, fishing, industrial water, biodiversity and environment services, and tourism attraction.

The rivers interact with the ecosystems and communities through which they run. Changes in one area can cause huge shifts both up and down stream at great distances. The water from the Himalayas flows all the way to the Bay of Bengal and into the ocean currents that transport it around the globe. The actions in Nepal not only affect local populations but all life along the water flow. There are many challenges and opportunities with the rivers that must be balanced by stakeholders to ensure the sustainable future of the water to meet demands.

## **IMPACTS ON AND FROM RIVERS/DRIVERS FOR POLICY**

Today there are numerous and increasing pressures on Nepal's rivers to meet the ever increasing and various demands of a growing population of the country. The expectations and aspirations of Nepalese who are being exposed to global lifestyles and the ability to inflict irreversible damage through advancements of technology add to the urgency to take responsibility for our actions and their consequences on the river ecosystems.

### **Population and water demand**

Increasing population needs increasing water, power, land, the demands on the rivers multiply. According to UN data the population is increasing at a rate of 1.7% annually (<http://data.un.org/CountryProfile.aspx?crName=Nepal>).

### **Pollution**

Pollution comes in many forms and from many sources. Regular water quality tests can identify pollution sources and tackle them at source as well as treating the effected water. Unchecked pollution leads to increased cost to treat water before use instead of the polluter paying and taking responsibility for their actions at source. It is cheaper and more effective to eliminate pollution at source than to treat it later.

### **Hydropower**

Nepal has a huge capacity for hydropower and there is great demand. The hydropower systems however impact severely on river systems affecting flow, water quality and aquatic life. Similarly changes to the river from other sources can impact the efficiency of the hydropower systems, Sangroula (2009) describes how sedimentation is reducing the output of hydropower stations. It is therefore in the interest of any hydropower scheme to have policy in place to manage rivers.

### **Irrigation**

There is a high demand for irrigation to grow crops for both personal consumption and profit. Unplanned irrigation or badly executed systems often waste water. In the regions where the streams are smaller, this can result in one community taking water away from others and in densely populated areas there is high competition for the water. In order to grow food irrigation is often essential and regulation of volumes and techniques is required.

## **Dams**

Whether installed for hydropower, reservoirs, or irrigation; dams change the flow in rivers. They cause flooding above the dam and if they burst can cause disastrous flash floods downstream. Behind a dam the water is still and sediment falls and nutrients accumulate which can lead to eutrophication, lack of nutrients reaching areas downstream and death or disruption to aquatic life.

## **Industry**

Unregulated taking of water by industry can deplete available water. Often waste water is returned untreated or at a different temperature which pollutes the river. Regulations are needed for who can withdraw and who can input water from and to a river and in what state it is permissible.

## **Mining**

Stone and sand mining from rivers is in common in Nepal. Removing this substrate changes the movement of water into the ground and the flow rate and path of the river which then causes increased erosion, flooding, and nutrient and sediment deposition. Aesthetic value is also lost though difficult to quantify but the scenic beauty and the beaches are both good for local communities and as tourist attractions.

## **Sedimentation**

Rivers are arteries carrying nutrients, pollutants etc. around the lands. They pick up and deposit anything they can carry dependant on rate of flow. So changing the flow rate by straightening rivers, damming rivers, bridging rivers or mining rivers causes knock on effects in what is carried and what is deposited. Nutrients replenish lands after flooding, feed algae that form the basis of the aquatic food web. Mining and construction increases certain sediments changing the pH and turbidity of the water changing which plants can grow. Reservoirs can lose capacity from too much silt and hydropower stations become less effective.

## **Tourism**

In Nepal tourism is an important industry, “The total contribution of travel and tourism to the GDP was Rs 147.2 billion (9.4 percent of the GDP) in 2012.” (ekantipur 2013). Rivers directly contribute with rafting, wildlife watching, and fishing as tourist attractions as well as enhancing the scenery for the world famous hikes in Nepal.

## **Flooding**

Flooding is a natural process in monsoonal areas and leads to deposition of important nutrients to fertilize land. However there are also floods that are becoming more extreme from deforestation, dams, climate change, etc. and the changes in rivers are changing flood patterns which in turn change agricultural practices and livelihoods and locations of houses and communities.

Earthquake risk is high in Nepal and adequate measures must be taken for any river damming project for the potential of a burst which will cause devastating flash floods. The glacial lakes too can produce flash floods or a river “tsunami” if they burst their natural dams which becomes more likely with changing environmental conditions.

### **Biodiversity**

Fish in Nepal rivers have become threatened by overfishing and pollution (Shrestha 2003). Overfishing on the rivers in Nepal to feed the increasing population and tourists has not only impacted fish populations but has reduced available food for larger animals such as dolphins and crocodiles. The World Wildlife Fund report (2006) describes how construction, the Kailashpuri barrage, irrigation, and agricultural practices have had a negative impact on the dolphin populations.

### **Climate change**

Climate change adds an extra uncertainty to the many factors impacting rivers. Weather patterns are changing which gives extra incentive to protect the resources if we cannot rely on regular monsoonal rains and snow melts. Sharma (2006) describes flooding becoming more frequent and longer in duration but with less volume as water volume is decreasing annually and urges assessment of the impacts of climate change for planning any major river activities. The predicted decreases in water resources will effect irrigation, hydropower, and industrial sectors as much as domestic supply.

### **Transboundary issues**

Sharma (2006) warns that changing water resources will increase the need for clear sharing agreements to reduce conflicts at national borders such as the Nepal – India boundary because the demands for limited resources will increase. It is essential for Nepal to prepare and have in place strategies to deal with the impending transboundary issues.

## **PRESENT LEGISLATION**

At present there is no legislation in Nepal specifically for the management of rivers. The Water Resources Act (2049), the National Wetlands Policy (2059), The Irrigation Policy (2060), the Hydropower Development Policy (2058), the Environment Protection Act (2053), and the Drinking Water Regulation (2055) all refer somewhat to rivers. However, there is requirement for a form and strategy to address disputes over ownership, and usability of the rivers. Transboundary issues, biodiversity and habitat conservation are all underrepresented in present legislation. The summit will allow stakeholders to identify other weaknesses in present legislation.

## **PRE-SUMMIT EXPEDITIONS**

In 2014 expeditions will document the situation along three of the great rivers in Nepal, the Karnali, the Bagmati, and the Tamur. These expeditions will be led by professional guides and include expertise from geologists, naturalists, hydrologists, sociologists and environmental scientists. The groups will be a mix of international and Nepali members who will document the trip to provide reports and presentations at the Summit. See Appendix 1.

## **THE SUMMIT**

In order to provide the basis for legislation to ensure the conservation and management of rivers in Nepal, The Nepal River Summit 2014 is proposed. The idea behind the summit is to create a conversation that leads to a legal basis for bringing all the various interests on rivers together so that we can conserve and manage them for both short term as well as long term benefits. The Summit will be three days to present the present situation, discuss the needed, and plan for the future.

## **OBJECTIVES**

The following are the five objectives for the Nepal River Summit 2014.

1. To bring together stakeholders and both local and global expertise to share knowledge, information, opportunities and threats to Nepal's rivers.
2. To prepare a base for a legislation to govern rivers in Nepal.
3. To form a core group to take the legislative process forward to a National River Policy.
4. To identify key gaps in the documentation, knowledge and understanding of Nepal's rivers and plan a strategy to fill those gaps.
5. To create a form that can be repeated each year to ensure continued communication between stakeholders and raise public awareness of river management and conservation.

## **SCHEDULE**

### **Day 1: About the Rivers**

The first day is set aside to challenge the assumptions, be introduced to the other stakeholders, to get to know rivers better, as well as to share how others are conserving and managing rivers. Presentations from the river expeditions will be given.

### **Day 2: Defining the Goal Posts**

Through intense discussions and facilitated workshops, the second day is dedicated to defining the principles, strategies, knowledge gaps, skills needed etc.

### **Day 3: Launching the Next Steps**

This day will take the previous discussions through to action strategies.

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## APPENDIX 1.

# Great Rivers of Nepal Expeditions 2014

Join a scientific expedition along one of the great rivers of Nepal.

### **Karnali – from Kailash to India.**

The Karnali rises in the vicinity of Tibet's holy Mount Kailash, and carves the Himalayan landscape into a series of magnificent gorges and canyons as it descends slowly into the forests of western Nepal eventually joining the Gaghara.

This expedition will cover the full length of the river in four sections from the 14<sup>th</sup> to the 23<sup>rd</sup> of April 2014.

Two teams will fly to Simikot, one heading north to the source of the river, and the second downstream to the rafting point. A third team will raft down the river and meet the fourth team walking up from India.



### **Bagmati - Sacred River.**

The sacred Bagmati flows from the Shivapuri hills towards the Ganga in India through the Katmandu valley. The dense population of the city has had a large impact on the river in both water quantity and quality. The expedition will depart the 22<sup>nd</sup> March 2014 from Chovar downstream from Kathmandu, and finish 29<sup>th</sup> March at the border.

### **Tamur – Eastern Wilderness.**

The Tamur drains the snow of the mighty Kanchanjunga massif, the third highest peak in the world, and flows through a truly beautiful and unspoiled gorge. The sandy beaches, few villages and limited agriculture along the river provide Tamur with a pristine wilderness environment. The expedition on the Tamur will run from the 6<sup>th</sup> to the 18<sup>th</sup> of May 2014.



Hydrological, geographical, biological, social, and ecological situations will be documented. This will work toward creating a National River Policy for Nepal, and collect baseline information for further study.

### **Nepal River Conservation Trust and Biosphere Association**

Invite scientists, rafters, and nature lovers to contact us about their interest to participate one of the expeditions. Please include relevant experience and skills.

Experienced guides will accompany each group managed by Ultimate Descents Nepal. Ultimate Descents (UD) Nepal has over 20 years' experience running Himalayan river trips.

Contact: [nepalrivers@gmail.com](mailto:nepalrivers@gmail.com) or [info@biosphereassociation.org](mailto:info@biosphereassociation.org)