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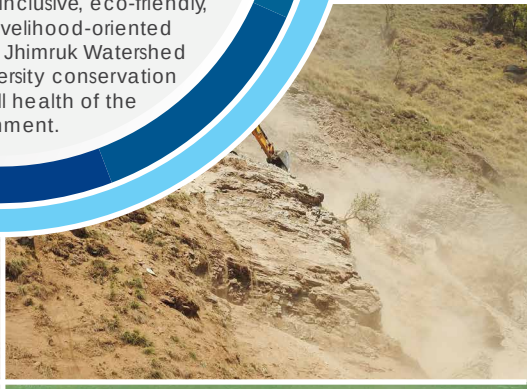
JHIMRUK KHOLA

WATERSHED BRIEFER

Community Vision:

Create a sustainable, inclusive, eco-friendly, multi-useful, and livelihood-oriented infrastructure in the Jhimruk Watershed to promote biodiversity conservation and the overall health of the environment.



THE JHIMRUK KHOLA WATERSHED

The Jhimruk Watershed forms a drainage system for the Rapti River basin. The river system supports a watershed rich in natural resources, provides water to approximately 60 irrigation systems, and drives one hydropower plant and several microhydro schemes for electricity.

The watershed contains active copper and limestone mines. The limestone is located near Lupling and extracted for cement manufacturing. The copper mine sits on the border of Khawang and Liwang VDCs and was traditionally used for making pots and other utensils. Today, the government regulates copper extraction there.
As forest covers 68% of the watershed, this resource is perhaps the most valuable. Use and management of the forests in Jhimruk is overseen by 243 community user forest groups (CFUG), who collaborate to promote sustainable harvesting of timber and other non-timber forests products (e.g., resin), which are the primary source of revenue in the watershed.

Agriculture is the dominant form of livelihood, as households produce a range of crops (e.g., wheat, maize, potato, millet, mustard, lentils) and livestock. Beyond agriculture, more people are migrating for work – within Nepal and outside the country. A small portion of the population relies on local enterprise for supporting their households. Many respondents said they rely on capture fishery when necessary to bolster their incomes. The Jhimruk hydropower plant employs 67 local residents for its operations.

To bolster livelihood security against climate change impacts, practiced several climate-smart technologies in use, including drip irrigation and plastic tunnels for growing offseason vegetables. In spite of these adaptations, many families still struggle with maintaining a stable reserve of cash to support their households.

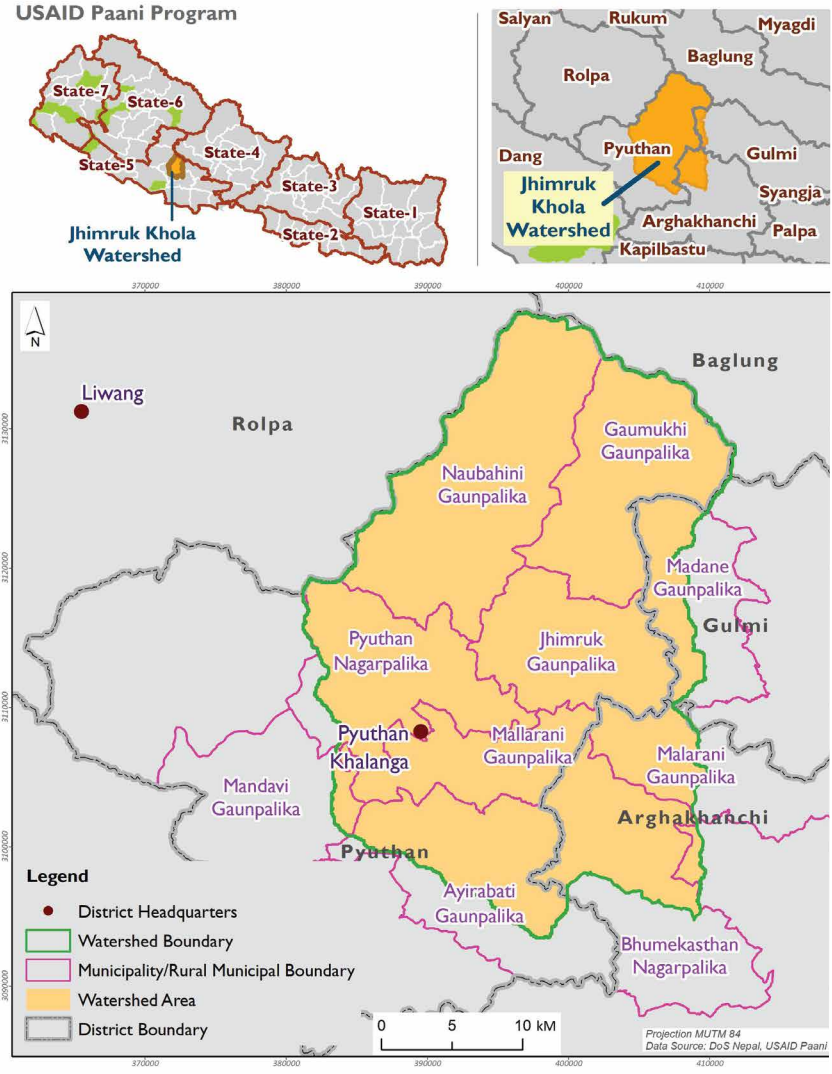
JHIMRUK BY NUMBERS

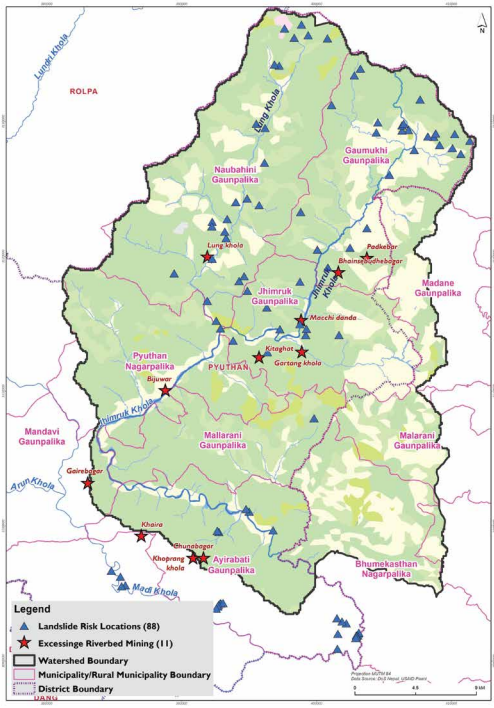
WATERSHED	Jhimruk
PROVINCE	Number 5
TOTAL DRAINAGE AREA	916 km2
NUMBER OF STREAMS	169
MAJOR RIVERS	Jhimruk, Lung, Gartang, Chhape, Jumri, Jhakrithan, Chundari Khola
LAKES AND WETLANDS	Jamune Daha, Barah Lake, Bijuwar wetland (Bhauka but now disappeared)
LAND USE	Forest - 68%; shrub-forest mix - 23%: agricultural land -15%; grazing land -12%
MUNICIPALITIES	Airawati, Gaumukhi, Jhimruk, Mallarani, Naubahini, Pyuthan and part of Mandabi and Saruma Rani
POPULATION	191,150 (44% male; 56% female)
ETHNIC GROUPS	Brahmin/Chhetri/Thakuri (65%), Janajati (17%), Dalit (17%), Others (1%)

Location Map

Watershed Name: Jhimruk Khola

River Basin: West Rapti **Watershed Code: 373**



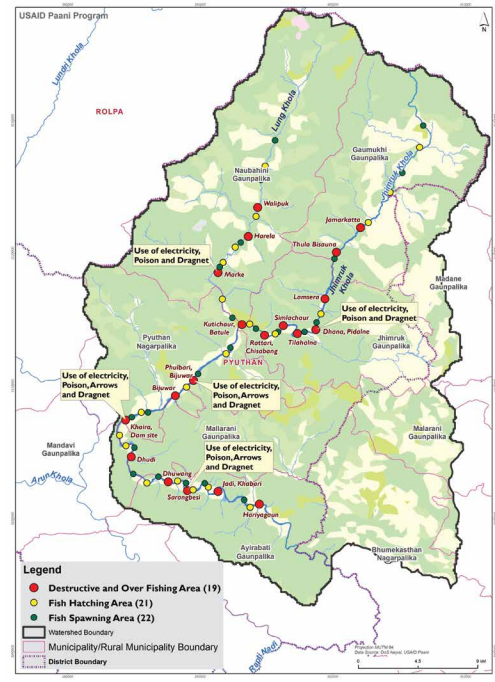


ENVIRONMENTAL ISSUES IN THE JHIMRUK KHOLA WATERSHED

The environmental issues identified in this map were provided by watershed stakeholders who participated in Paani-sponsored entry and exit workshops. By identifying these issue "hotspots," it is hoped local governments and constituencies will be able to draw on this information to make short- and long-term plans to insure clean water, robust biodiversity, and sustainable use of natural resources.

THREATS TO AQUATIC BIODIVERSITY IN THE JHIMRUK KHOLA WATERSHED

This aquatic biodiversity map was constructed with the assistance of various stakeholders who helped to locate places where they noted challenges specifically related to aquatic habitats and biodiversity. Combining GIS and ground-truthed data to create reference maps such as this one will be helpful in developing effective strategies to protect aquatic health in the watershed.



ENVIRONMENTAL REPORT CARD FOR THE JHIMRUK KHOLA WATERSHED

This health report card illustrates watershed health conditions measured against a set of pre-defined indicators chosen through a multi-stakeholder consultation process. These indicators show the current health status of Jhimruk and using a color code for the threats, opportunities, and challenges facing the watershed.

WATERSHED HEALTH CONDITIONS

GOOD | FAIR | POOR

GOVERNANCE AND EQUITY

- Households engaged in local level planning
- Community active in NRM groups
- Conflicts over NRM
- Women and marginalized groups in leadership positions
- Equitable access and benefit sharing with natural resourcces
- People comply with environmental laws and regulations
- Government enforces laws and regulations
- Coordination between local and provincial government

SUSTAINABLE INFRASTRUCTURE

- Hydropower
- Roads
- Gravel mining
- Irrigation

CLIMATE RESILIENCE AND DISASTER RISK REDUCTION

- Areas vulnerable to landslides, floods and landslides
- Use of climate resilience adaptation practices
- Households with access to early warning systems

BIODIVERSITY AND HABITAT

- Household sanitation
- Quantity of fish
- Fishing Practices
- Land use and land cover
- Solid waste disposal
- Invasive species
- Species diversity

WATER

- Water availability
- Water acccessibility
- Water quality

SUSTAINABLE AGRICULTURE

- Agricultural productivity
- Climate and physiography
- Soil management

WAYS FORWARD IN THE JHIMRUK WATERSHED

Numerous stakeholders from the watershed formulated these recommendations that represent a variety of viewpoints, from government officials to local business owners and residents. In that way, these actions and commitments seek to address environmental issues in Jhimruk that provide remediation or improvements for all groups in the watershed.

ISSUE	ACTION/RECOMMENDATIONS
IMPROPER ROAD CONSTRUCTION	• Conduct training for government staff and laborers on green road construction; • Advocate for stronger enforcement of environment friendly rural road construction guidelines; • Employ bio-engineering technology in road construction where possible; • Prioritize the needs for rural roads prior to construction; and • Upgrade poorly built roads to meet higher environmental standards.
FLOODS, LANDSLIDES, AND FOREST FIRES	• Establish an early warning system for the watershed; • Re-plant species in soil-eroded areas; • Improve regulation of rural road construction; and • Educate forest users about the needs and methods for improved forest conservation.
DECREASING FISH POPULATIONS	• Improve monitoring of gravel mining operations; • Increase public awareness about the threats to fish populations; • Increase the knowledge base on native fish and their habitats; • Build infrastructure friendly to aquatic species; and • Promote diversified livelihood options for traditional fishing communities.
DECREASING WATER SOURCES AND WATER USE CONFLICTS	• Plant trees and shrubs on barren land to retain water; • Create water recharge ponds in communities; • Improve soil erosion control; • Promote rainwater harvesting; • Facilitate workshops to discuss water conflicts and conflict management; and • Conduct awareness programs on water use policies.
WATER POLLUTION	• Improve waste management at local levels; • Promote awareness about dangers of waste dumping in rivers; • Construct drinking water tanks equipped with water purification technology; • Train government representatives in health and sanitation standards; and • Increase water quality monitoring of the Jhimruk River and tributaries.