

**Joint UNEP/OCHA Environment Unit
Environmental Risk Identification
Floods and Landslides- Nepal- August 2007
FF-2007-000117-NPL**

Disclaimer

This profile is not a conclusive list. Other risks may be possible from sources that are not readily identifiable. The information sources used are public websites. All efforts are made to screen the websites for accuracy.

Objective:

The objective of the Environmental Risk Identification (ERI) is to alert the UN Country Team after the natural disaster to potential secondary risks posed by large infrastructure and industrial facilities containing hazardous materials located in the affected area. This information can be shared with competent local and national authorities as appropriate. Any actual secondary risk should be addressed at the earliest possible stage.

Event: Incessant monsoon rains continue to cause floods and landslides throughout Nepal, mainly in the Terai in the far-west, west and east region

Summary of findings:

The following large infrastructure and industrial facilities may pose a risk:

Facility	Location	Hazardous material	Hazard
Large infrastructure			
Large hydro dams			
Trishuli Hydropower Station	Nuwakot	-	Dam stability may be affected Risks from electrical transmission Dammed water
Sunkoshi Hydropower Station	Sindhupalchowk		
Gandak Hydropower Station	Nawalparasi		
Kulekhani – I Hydropower Station	Makwanpur		
Devighat Hydropower Station	Nuwakot		
Kulekhani – II Hydropower Station	Makwanpur		
Marsyangdi Hydropower Station	Tanahu		
Puwa Khola Hydropower Station	Ilam		
Modi Khola Hydropower Station	Parbat		
Kali Gandaki "A" Hydroelectric Department	Syangja		
Chatara Hydropower Station			
Panauti Hydropower Station			
Seti Hydropower Station	Kaski		
Andhikhola Hydropower Station	Syangja		
Jhimruk Hydropower Station	Pyuthan		

Khimti Khola I Hydropower Station	Dolakha		
Upper Bhotekoshi Hydropower Station,	Sindhupalchowk		
Syange Khola Small Hydropower Station	Lamjung		
Chilime Hydropower Station	Rasuwa		
Indrawati III Hydropower Station	Sindhupalchowk		
Piluwa Khola Hydropower Station	Sankhuwasabha Arun Valley		
Chaku Khola Hydropower Station	Sindhupalchowk		
Sun Koshi Small Hydropower Station,	Sindhupalchowk		
Rairang Hydropower Station	Dhading		
Agro/Food Industry			
Sugar Industry	<i>These facilities are expected to be present in the affected area, but an exact location could not be specified</i>	Sulphur dioxide	Toxic gas
Chemical Industry			
Textile Industry	<i>These facilities are expected to be present in the affected area, but an exact location could not be specified</i>	Benzene, naphtalene, acids, alkalis, chlorine, bromine, sodium nitrate, ammonia, sodium sulphide, metals, lye, dyes, solvents, formic acid	Flammable, Toxic, Corrosive, Oxidizing
Pesticides		Ammonia, solvents, carbon tetrachloride, hydrogen cyanide, mercury, acids, phosgene.	Highly toxic, Corrosive
Specific Basic Industry			
Cement plants	<i>These facilities are expected to be present in the affected area, but an exact location could not be specified</i>	Incineration of hazardous waste Uses fuels like coal, oil, petroleum coke and natural gas	Flammable, corrosive, toxic
Tanneries	Kathmandu, Hetauda, Bhairahawa, Birgunj and Biratnager	Trivalent chromium sulphate, sodium slats, arsenic, cyanide, ammonium sulphate, sulphuric acid, lime and aniline	Toxic, corrosive

The Joint UNEP/OCHA Environment Unit :

The Joint UNEP/OCHA Environment Unit is the United Nations mechanism to mobilize and coordinate the international response to environmental emergencies caused by natural disaster, technological accidents and complex emergencies.

Information sources:	
Infrastructure Risks	Source of information
Nuclear Facilities	<ul style="list-style-type: none"> • http://www.iaea.org/programmes/a2/index.html • http://www-pub.iaea.org/MTCD/publications/PDF/cnpp2003/CNPP_Webpage/pages/countryprofiles.htm • http://www.iaea.org/worldatom/rrdb/ • http://www.grid.unep.ch/data/download/gnv181.gif • http://www.worldenergy.org/wec-geis/publications/reports/ser/nuclear/nuclear.asp
Large hydrodams.	<ul style="list-style-type: none"> • http://www.worldenergy.org/wec-geis/publications/reports/ser/hydro/hydro.asp • http://www.erg.com.np/hydropower_national.php • A year in Review FY 2004/05, Nepal electricity Authority
Large Chemical/Industrial Industries	<ul style="list-style-type: none"> • http://www.pops.int/documents/implementation/nips/submissions/default.htm • http://www.chem.unep.ch/pops/pcdd_activities/inventories/default.htm
Gas/Oil: Refineries, Pipelines, explorations sites	<ul style="list-style-type: none"> • http://www.eia.doe.gov/emeu/cabs/index.html • http://www.worldenergy.org/wec-geis/publications/reports/ser/gas/gas.asp • http://www.lib.utexas.edu/maps/map_sites/oil_and_gas_sites.html
Mining activities	<ul style="list-style-type: none"> • http://www.worldenergy.org/wec-geis/publications/reports/ser/coal/coal.asp • http://www.worldenergy.org/wec-geis/publications/reports/ser/uranium/uranium.asp • http://minerals.usgs.gov/minerals/pubs/country/2005/mzmyb05.pdf • http://www.camec-plc.com/Investors_Media/RNS/2004/rns_025.php
Hazardous waste storage sites	<ul style="list-style-type: none"> • http://www.basel.int/natreporting/compilations.html
<ul style="list-style-type: none"> • Conseil pour la réduction des accidents industriels majeurs (CRAIM). <i>Risk Management Guide for Major Industrial Accidents intended for municipalities and industry</i>. 2002 Edition. • International Atomic Energy Agency (IAEA). <i>Manual for the classification and prioritization of risks due to major accidents in process and related industries. Inter-agency Programme on the Assessment and Management for Health and Environmental Risks from Energy and other Complex Industrial Systems</i>. 1996. • UNEP Industry and Environment (IE). <i>Hazard Identification and evaluation in a local community. Technical report n°12</i>. 1998. • UNDAC <i>Field Handbook</i> • <i>Emergency Response guidebook 2004. A guidebook for first responders during the initial phase of a dangerous goods/hazardous materials incident</i>. • UNEP. <i>APELL for Mining. Guidance for the Mining industry in raising awareness and preparedness for emergencies at local level. Technical report N°41</i>. 2001 	

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