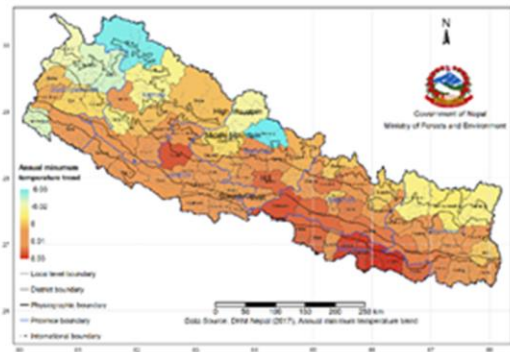


Developing climate resilient and low carbon health system in Nepal

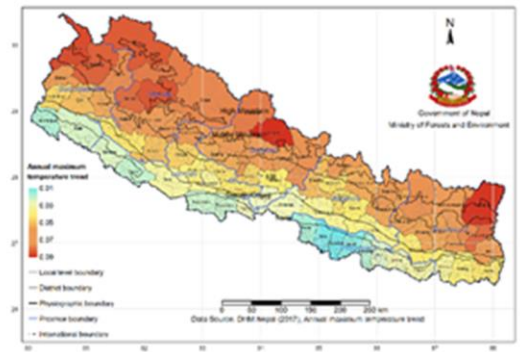


Raja Ram Pote Shrestha
National Professional Officer

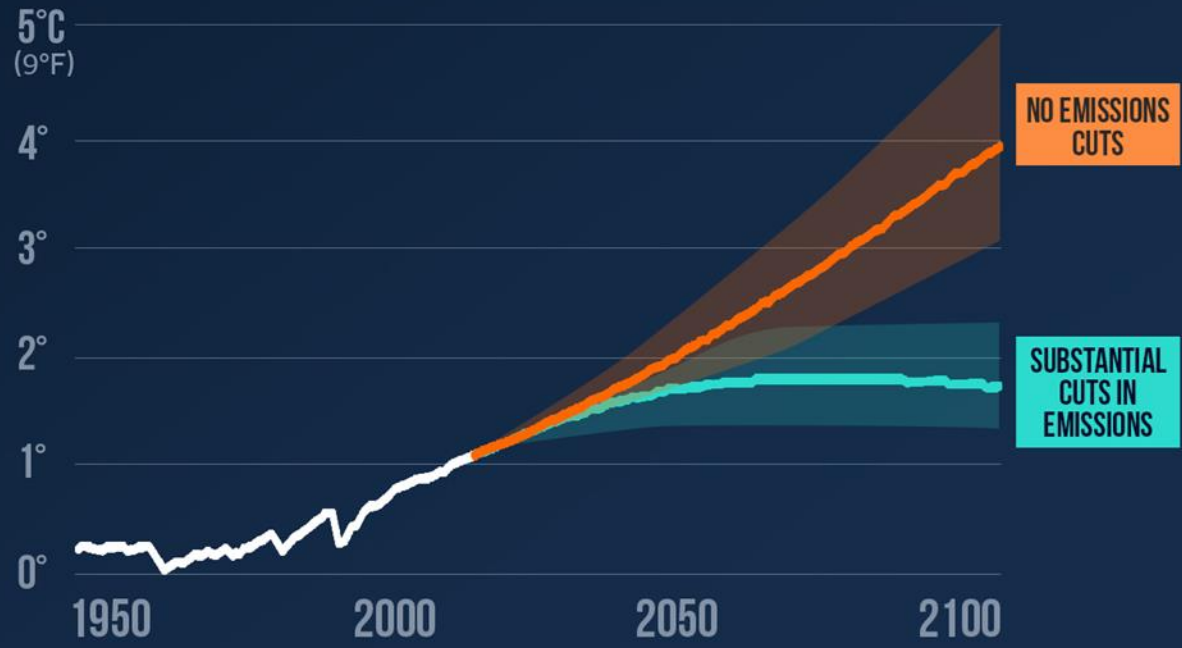
11 April 2024



Climate Scenario



FUTURE TEMPERATURES WARMING DEPENDS ON CHOICES TODAY



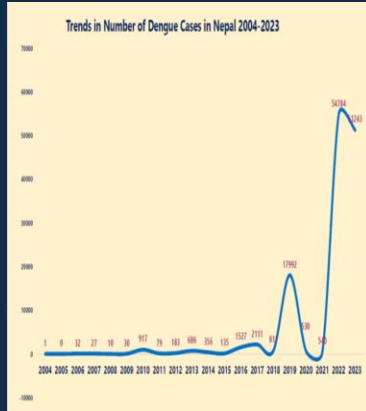
Global surface temperature (°C) anomaly relative to 1850-1900
 High warming scenario: SSP3-7, Low warming scenario from SSP1-2.6.
 Source: IPCC AR6 WG1

CLIMATE CENTRAL

Government of Nepal
 Ministry of Health and Population

Vulnerability and Adaptation Assessment of Climate Sensitive Diseases and Health Risks in Nepal

2022



Climate Sensitivity & Health

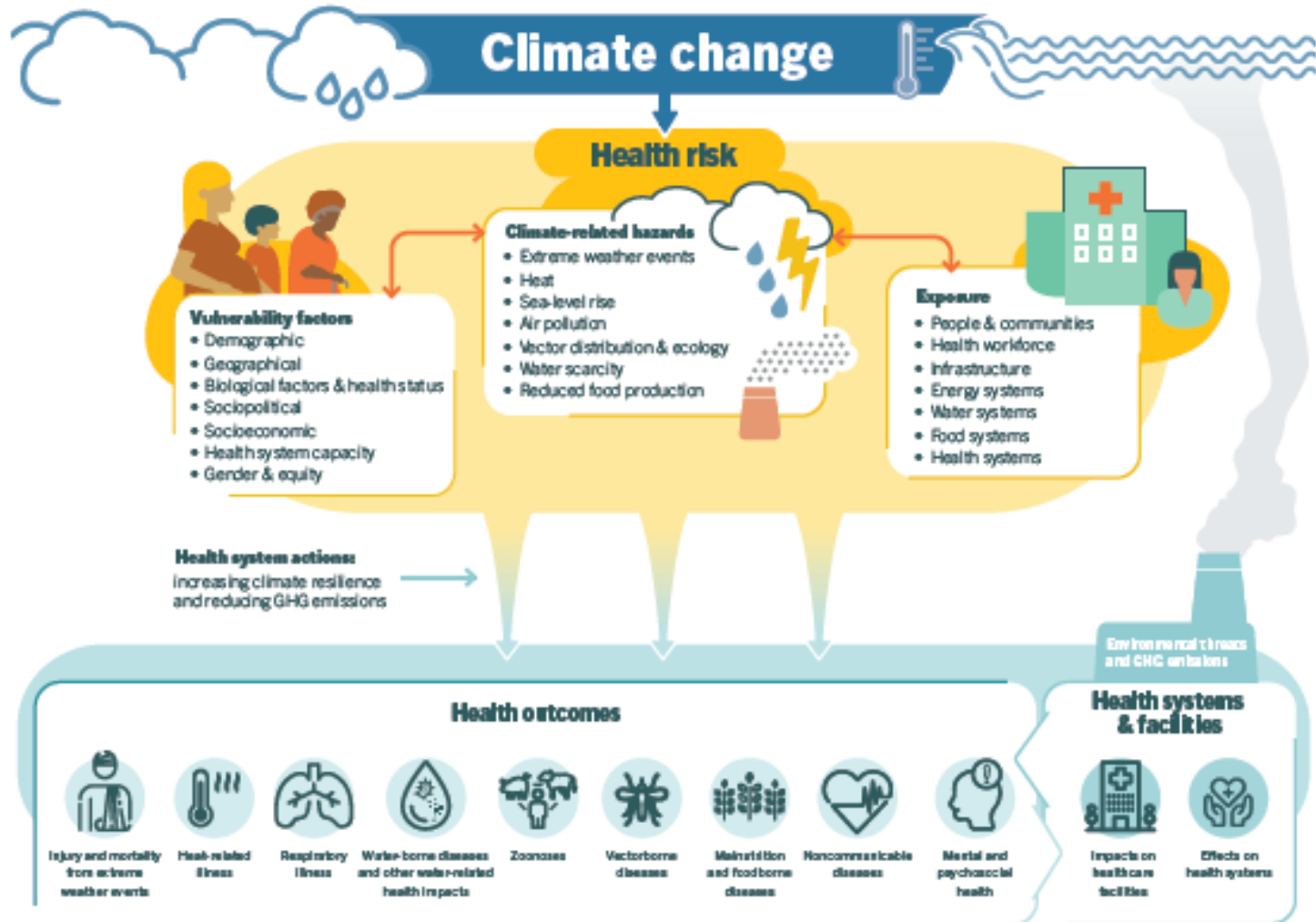


Fig. 2.1. Climate change risks to health and health systems, and outcomes

Source: Operational framework for building climate resilient and low carbon health systems. Geneva: WHO, 2023

THE LANCET

November, 2023

The 2023 Report of the *Lancet* Countdown on Health and Climate Change: The imperative for a health-centred response in a world facing irreversible harms



"With climate change claiming millions of lives annually, its threats rapidly growing, seizing the opportunity to secure a healthier future has never been more vital."



A Review by *The Lancet*

THE LANCET

Volume 403 Number 10196 Pages 1028-1768 May 10-15, 2023 www.thelancet.com

"Climate change is the biggest global health threat of the 21st century."

See *The Lancet Countdown* page 1028

Comment	Correspondence	Articles	Articles	The Lancet Countdown
Compensation for loss of life from developing countries See page 1028	Answers from general panel See page 1033	WHO's Recommendation for Resurgence of Antibiotic Use in Low-income countries See page 1035	WHO's sequential development of adjustment interventions for early forest fires See page 1037	Management of health effects of climate change See page 1040

UK Registered as a newspaper ISSN 0140-6736
Founded 1811 Published weekly

... reaches 2°C
... century:

... related deaths are
... to **increase by 370%**

... related labour loss is
... to **increase by 50%**

... **million additional people**
... ected to experience
... te-to-severe food insecurity

... transmission potential for
... is projected to **increase**
... **to 37%**



... transmission of many
... more challenging and costly.



Dengue by *Ae albopictus*
+27.7%

WHETHER YOU LIVE IN A...



Rural village



Small island or coastal town



Big city

CLIMATE CHANGE THREATENS YOUR HEALTH

Drought, floods and heat waves will increase.



Vector-borne diseases, like malaria and dengue virus will increase with more humidity and heat.

Basic necessities will be disrupted...



FOOD

Hunger and famine will increase as food production is destabilised by drought.



AIR

Pollution and pollen seasons will increase leading to more allergies and asthma.



WATER

Warmer waters and flooding will increase exposures to diseases in drinking and recreational waters.

Between **2030** and **2050** climate change is expected to cause

250 000 ADDITIONAL DEATHS PER YEAR

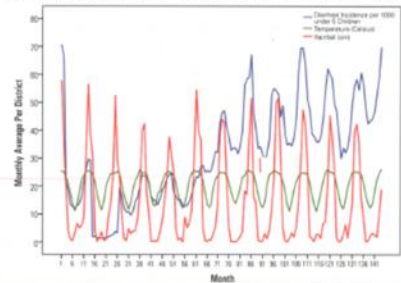
due to malaria, malnutrition, diarrhoea and heat stress.



World Health Organization

Assessment of Effects of Climatic Factors on Diarrheal Diseases at National and Sub-national Levels in Nepal

Monthly Average Diarrhea Incidence, Temperature and Rainfall Per District in Nepal (2002-2014)



जलज्वार



प्याकुलेको भगइ छ।
चिकित्सकका अनुसार
टोकेको दुईदिन ६ महिनासम्म
मात्र हुन
गर्द। बिसारी कलेजो, फि



Wash

खानेपान

(http://washkhabar.org.np)

Assessing Trends of Heat Waves and Perception of People about Health Risks of Heat Wave in Nepal



हिमालको काखमा लामखुटेको

जलवायु पारवतनका असर: हिमालमा पनि लामखुटे !

नागरिक

Tuesday, 23 April 2013, काठमाण्डौ, १० वैशाख ००६०

हिमाली क्षेत्रमा पनि औलोका बिरामा

काठमाडौं- अहिले धेरैले औलोकालाई तराईको रोग भन्ने ठान्छन् । साथै कम बुझिने तराईमा बढी भेटिने औलोका बिरामी पहाडी र हिमाली क्षेत्रमा



ipcc
INTERGOVERNMENTAL PANEL ON climate change

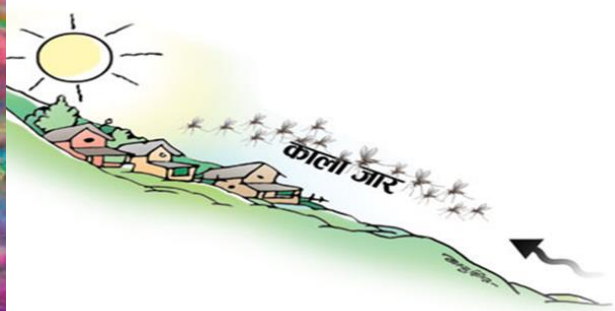
Climate Change 2022 Impacts, Adaptation and Vulnerability

Summary for Policymakers

Working Group II contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change

WMO UNB

http://washkhabar.org.np
Nepal's Climate Information System
Migrants
a group of Nepalese

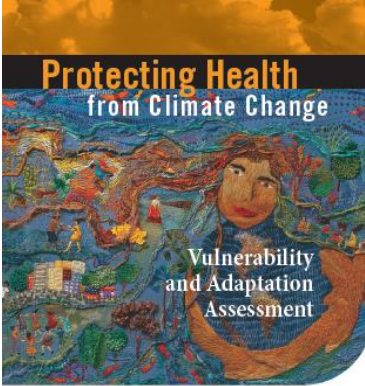


कालाजार

कालाजार (Kala Jara) is a form of malaria that is prevalent in the mountainous regions of Nepal. It is caused by the Plasmodium falciparum parasite, which is transmitted by the Anopheles mosquito. The disease is characterized by high fever, chills, and a darkening of the urine. It is a major health concern in the Himalayas, particularly in the western and central regions.

कालाजारको रोगजनक प्याकुले नामको मासु खाएर फैलिरहेको छ। यो रोगको लक्षणहरूमा उच्च बुझिने, चिसो, र अचानक उच्च बुझिने समावेश छन्। यो रोगको कारण प्याकुले नामको मासु खाएर फैलिरहेको छ। यो रोगको लक्षणहरूमा उच्च बुझिने, चिसो, र अचानक उच्च बुझिने समावेश छन्। यो रोगको कारण प्याकुले नामको मासु खाएर फैलिरहेको छ।

Vulnerability and Adaptation Assessment (VAA) in Nepal



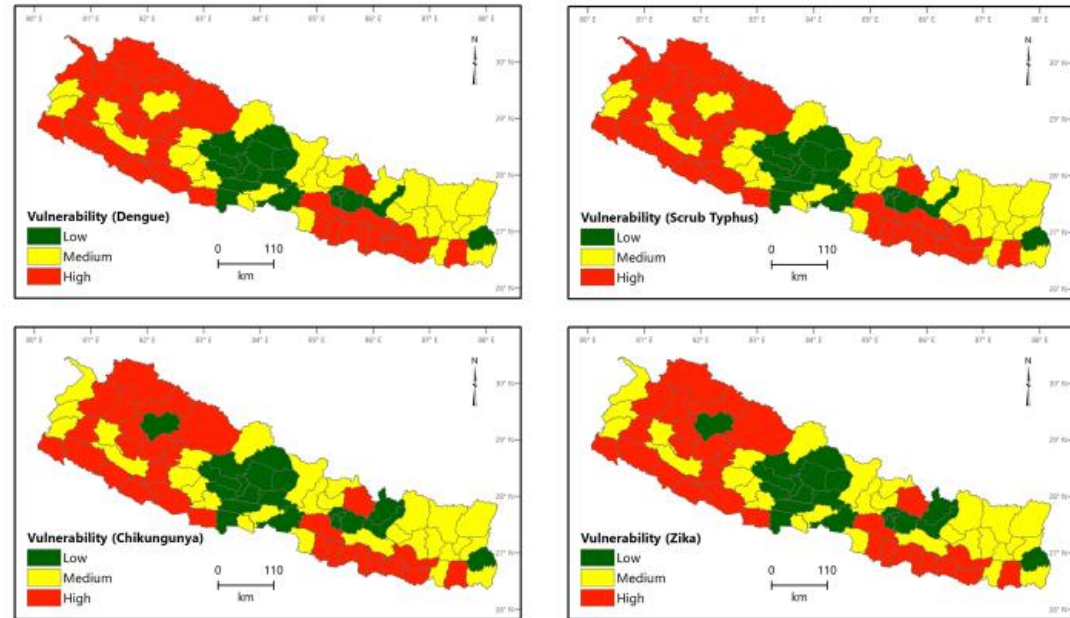
Vulnerability and Adaptation Assessment of Climate Sensitive Diseases and Health Risks in Nepal



2022



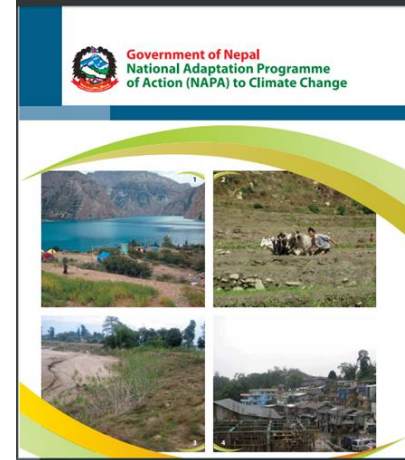
Disease specific vulnerabilities (Dengue, Scrub Typhus, Chikungunya, Zika)



Source: MoHP. VAA, 2023

- **12 climate-sensitive diseases** (7 vector-borne, 2 food and water-borne, 1 respiratory, 2 other illnesses) **were considered.**
- **18 districts** (13 in Tarai, 3 in hill, and 2 in mountain) **are highly vulnerable** based on sensitivity, exposure, and adaptive capacity for responding to or coping with climate variability and extremes for climate-sensitive disease. **Saptari** in Tarai; **Western Rukum** in Hill; and **Humla** in the Mountain region had the highest vulnerability.
- Climate change and extreme weather have exacerbated climate-related hazards in Nepal and will continue to do so in future with a much bigger impact on the burden of climate-sensitive diseases, disruption of the health system, and increasing health risks.

Response towards climate resilient health system

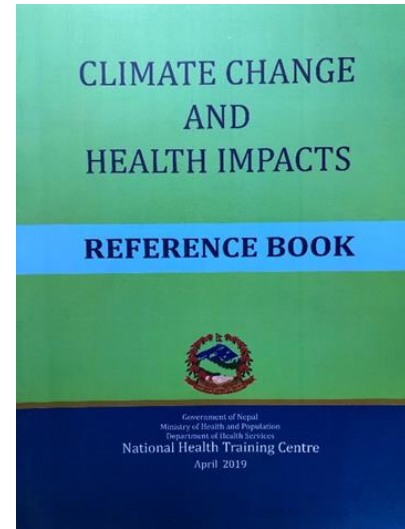


- **Policy Documents**

- National Climate Change Policy 2019
- National Health Policy 2019
- Second Nationally Determined Contributions (NDC), 2020
- National Adaptation Plan, 2021
- Nepal Health Sector – Strategic Plan (2023 – 2030)
- Health National Adaptation Plan (H-NAP)

- **Key Interventions**

- Advocacy and capacity building
- Vulnerability and Adaptation Assessment (VAA)
- Strengthening of climate sensitive diseases surveillance system
- Entomological survey
- Research
- Climate resilience and environmental sustainability of HCFs
- Baseline assessment of GHG emissions from health sector
- Climate resilient WASH



Karnali Academy of Health Sciences, Jumla



Dhualagiri Hospital, Baglung



Gaur Hospital, Rautahat

Health National Adaptation Plan (H-NAP)
Climate Change Health Adaptation
Strategies and Action Plans of Nepal
(2017-2021)



Government of Nepal
Ministry of Health and Population
Kathmandu, Nepal



Government of Nepal
Ministry of Health and Population

Vulnerability and Adaptation Assessment of Climate
Sensitive Diseases and Health Risks in Nepal

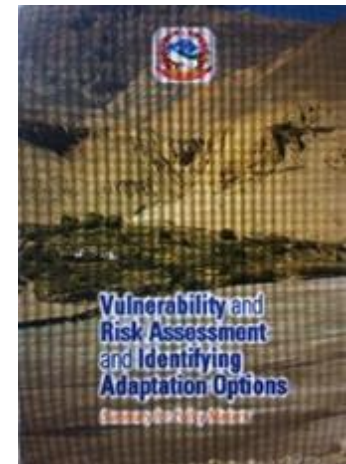
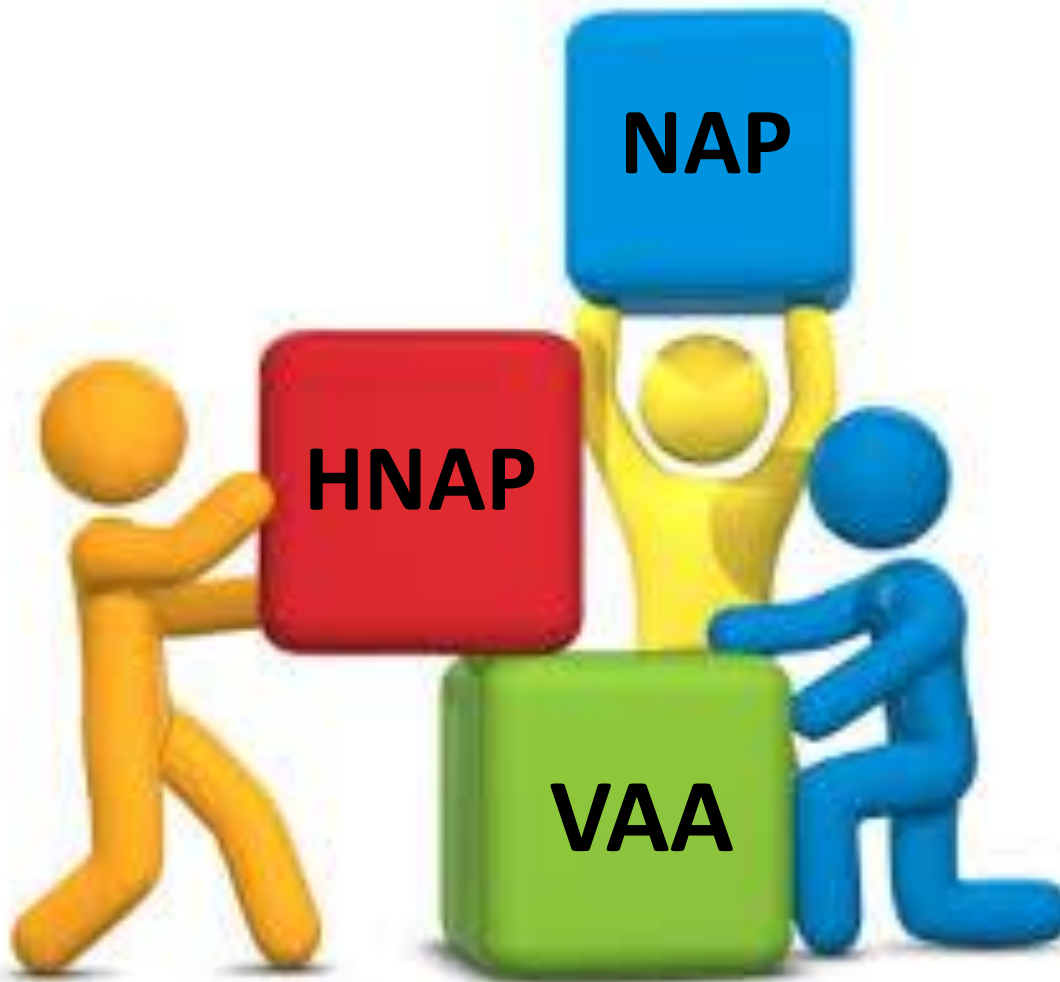


2022



GOVERNMENT OF NEPAL

NATIONAL ADAPTATION PLAN (NAP)
2021-2050
SUMMARY FOR POLICYMAKERS



Vulnerability and
Risk Assessment
and Identifying
Adaptation Options

Ministry of Health and Population



World Health
Organization

Nepal

National Adaptation Plan (NAP)

6.7 Health, Drinking Water and Sanitation

- Capacity building of health and hygiene service providers (Institution and personnel) on climate resilient health and hygiene service planning and implementation (2025/30)
- Strengthening of climate sensitive disease surveillance system with emergency preparedness and response (2030)
- Health promoting cities: Health, Environment and Life (HEAL) (2030/50)
- Policy reform, strategy, development and national level awareness raising on climate resilient health and WASH programme, planning, operationalization and sustainability (2030)
- Research, innovation and development of climate resilient measures/technologies for water supply, sanitation and health systems (2030)



Health National Adaptation Plan (2024-30)

1. Raise awareness, advocacy and build capacity on climate change.

राष्ट्रीय स्वास्थ्य अनुकूलन योजना
जलवायु परिवर्तन स्वास्थ्य अनुकूलन
रणनीति तथा कार्य योजना
(वि.सं. २०८० - २०८७)

2. Manage the identification, prevention, control and treatment system of climate sensitive health risks including development of disease surveillance, preparedness and response system.

4. Mainstream climate change adaptation in health policies, strategies, and plans at federal, provincial, and local levels.

स्वास्थ्य तथा जनसंख्या मन्त्रालय
रामशाहपथ, काठमाडौं

3. Develop and promote environment friendly and climate-resilient physical infrastructure and technologies.

२०८०

5. Raise awareness, advocacy and Collaborate and coordinate with multi-stakeholders to minimize health risks through study, research and knowledge promotion on climate change and health.

Key initiatives towards building climate resilient health system



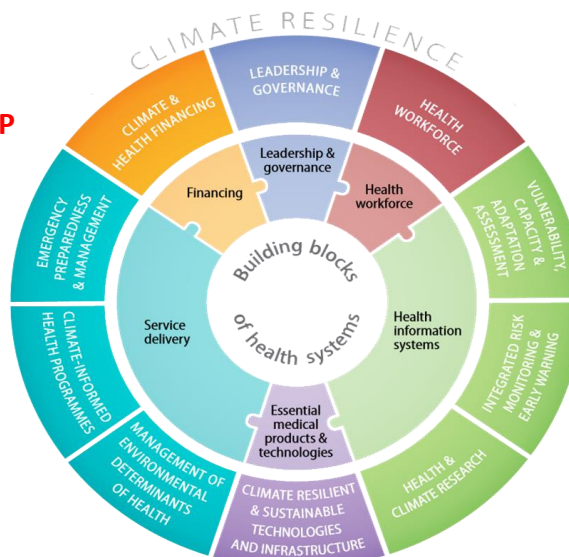
Integration of health in overall NAP



Training of health professionals



Access to GEF funding



VAA of health sector



Piloting of CSDS at sentinel sites



Climate resilience & env sustainability at facility level



REGIONAL OFFICE FOR

World Health
Organization

South-East Asia



Malé Declaration

Building health systems resilience to climate change

We, the Health Ministers of Member States of the WHO South-East Asia Region, participating in the Seventieth session of the WHO Regional Committee for South-East Asia in Malé, Maldives,

Recognizing the increasing body of evidence on the direct and indirect adverse impacts of climate change on human health and health systems, which pose a serious burden to sustainable socioeconomic development,

Concerned that extreme weather events, which are increasing in frequency and intensity in the Region, can overwhelm the already overstretched health sector's capacity to respond and pose health threats to the vulnerable populations in the Region,



United Nations Framework Convention on Climate Change



**COP28
UAE**

COP 28 (2023), Abu Dhabi

COP 26 (2021), Glasgow



COP 21 (2015), Paris



COP 16 (2010), Cancun



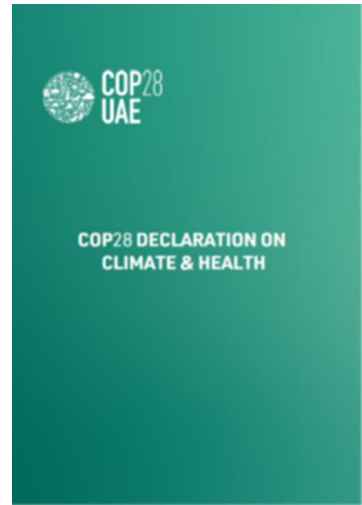
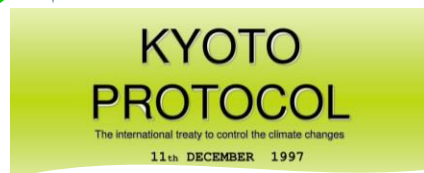
COP 15 (2009), Copenhagen

COP 3 (1997), Kyoto



**NATIONAL ADAPTATION PLAN (NAP)
2021-2050
SUMMARY FOR POLICYMAKERS**

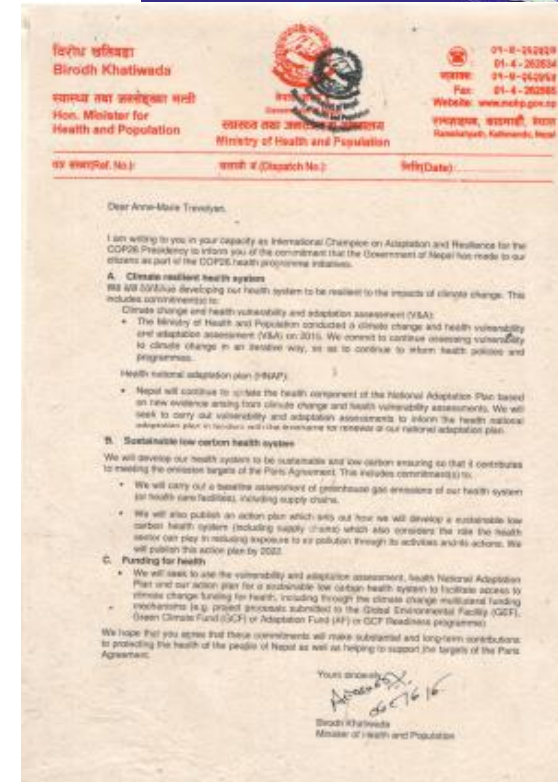
**COP 1 (1995),
Berlin**



Nepal's Health Sector commitments



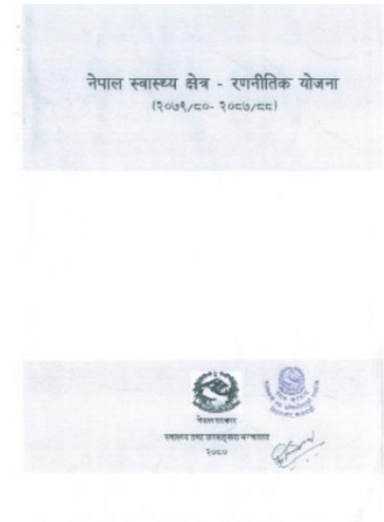
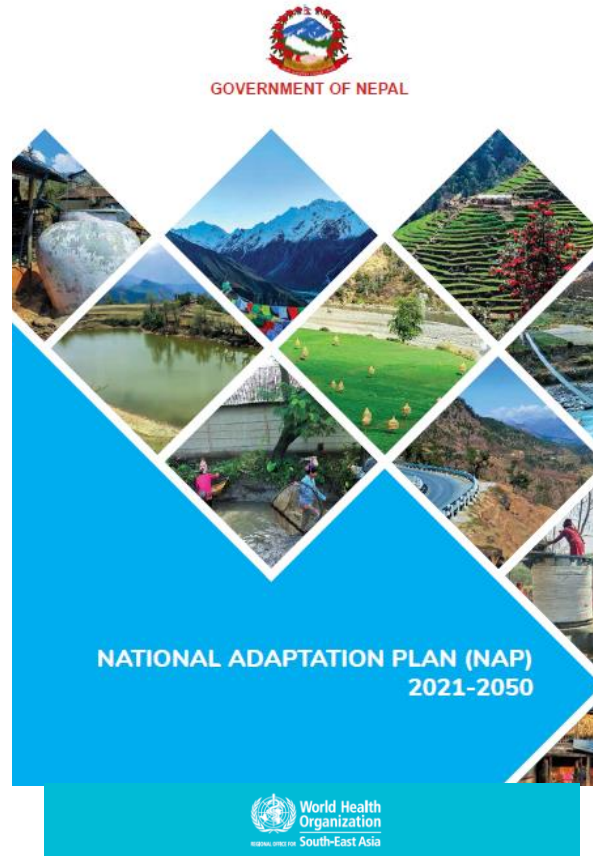
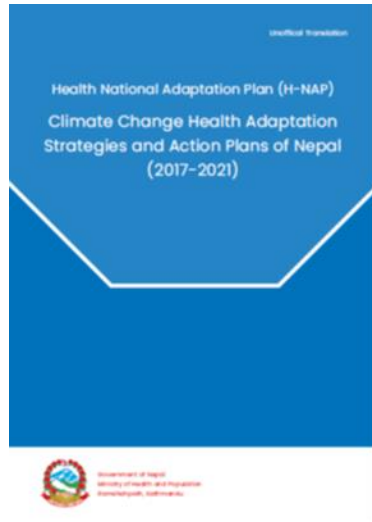
- **Climate resilient health system**
 - Climate change and health vulnerability and adaptation assessment (V&A): **Completed**
 - Health national adaptation plan (HNAP): **Approved**
- **Sustainable low carbon health system**
 - Carry out a baseline assessment of greenhouse gas emissions of our health system (or HCFs), including supply chains: **Completed**
 - Publish an action plan by 2022: **Under development**
- **Funding for health**



COP28
UAE



More focus on Health Adaptation



Malé Declaration

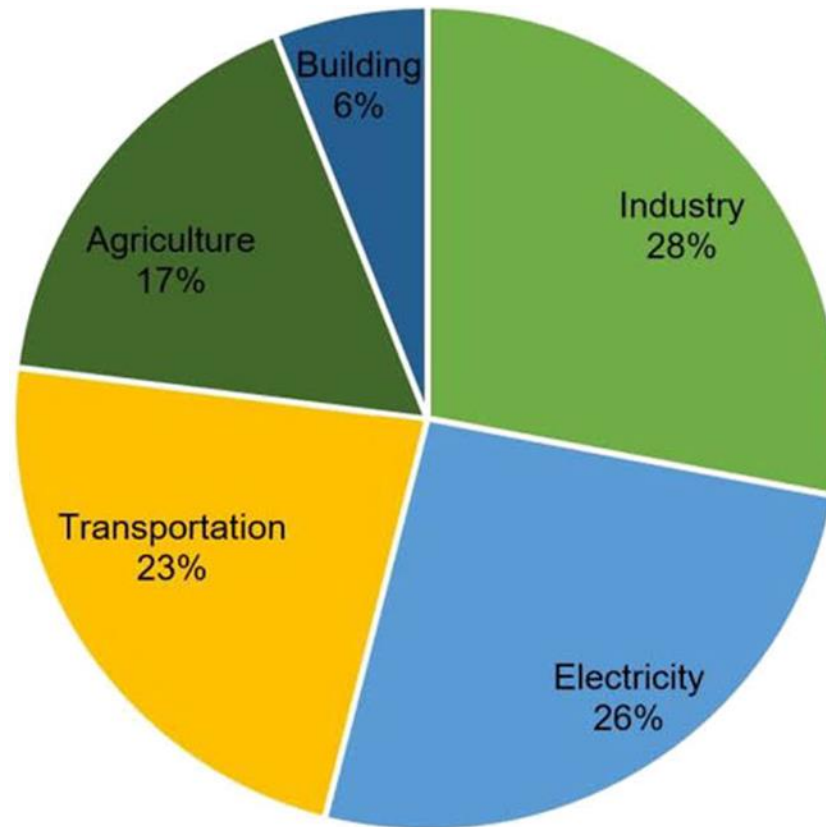
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Health is one of the contributors to Global Warming



In 2019 (HCWH), global health sector carbon footprint is 2.0 GtCO₂, equivalent to 4.4% of global net emissions

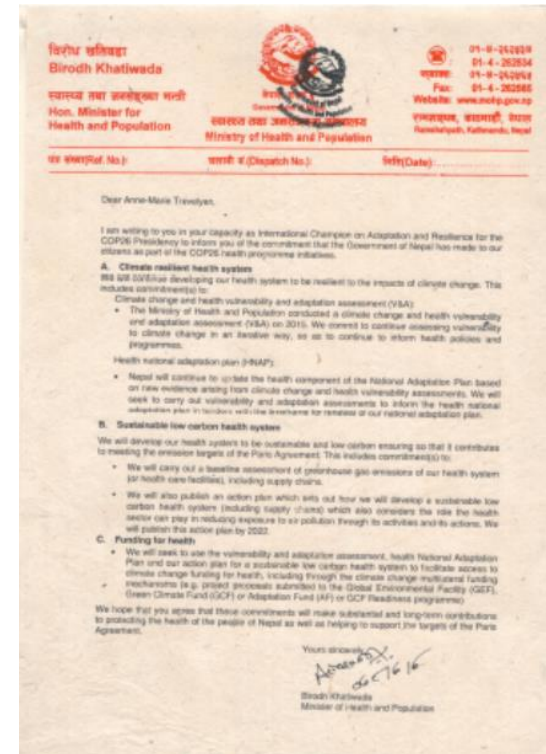
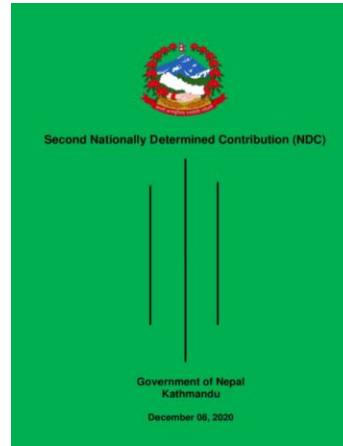
Towards low carbon health system in Nepal



Nepal's Long-term Strategy for Net-zero Emissions

Government of Nepal
Kathmandu

October 2021



NEPAL

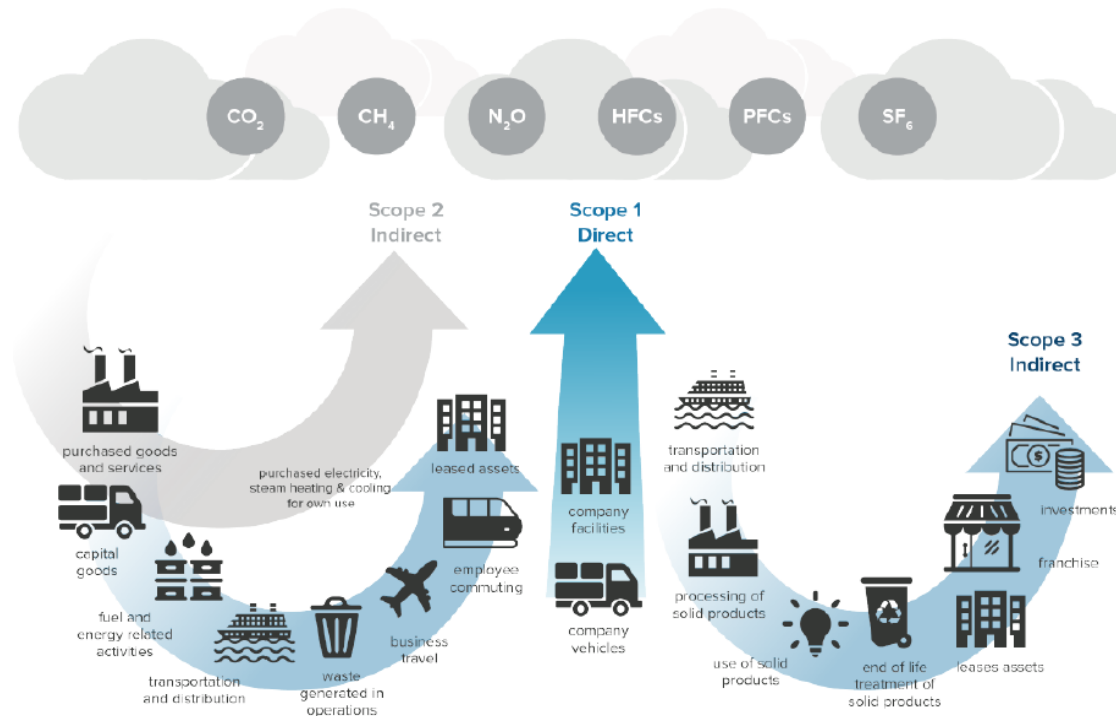
THIRD NATIONAL COMMUNICATION
TO THE UNITED NATIONS
FRAMEWORK CONVENTION ON
CLIMATE CHANGE



जलवायु परिवर्तन न्यूनीकरण तथा अनुकूलन राष्ट्रिय कार्यान्वयन योजना (२०८०-२०८५)



Baseline assessment of GHG emissions of Nepal's health sector

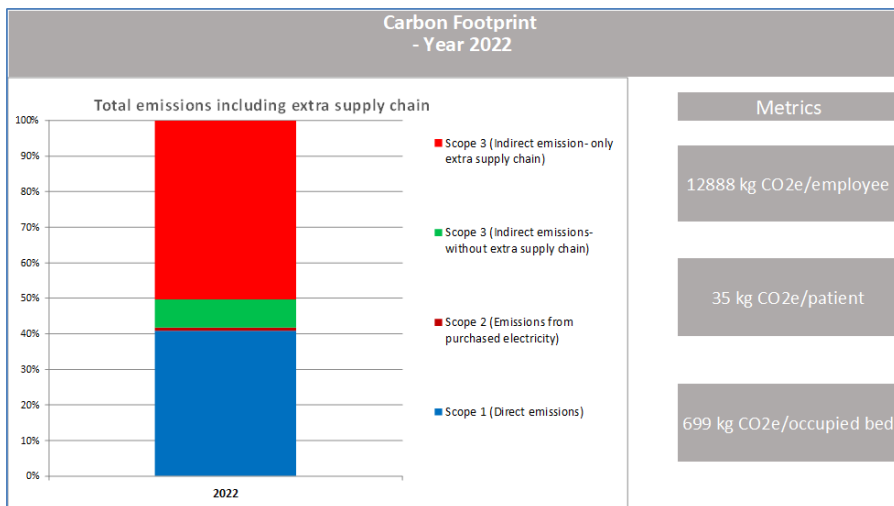


Use of Climate Impact Checkup (CIC) tool, developed by HCWH

Total emissions from Nepal's HCFs

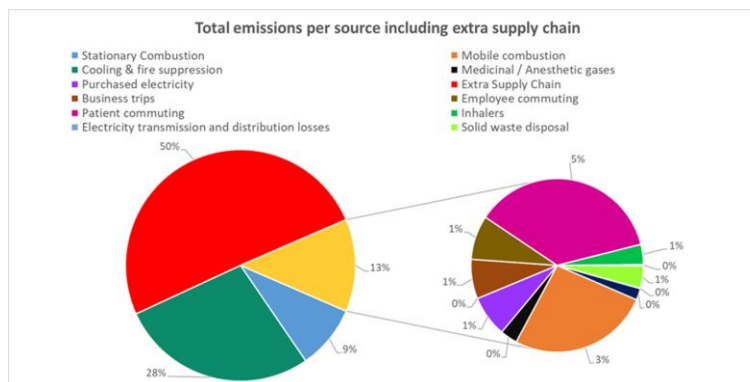
GHGs emissions

Indirect emissions > direct emissions > emissions from purchased electricity



Total CO₂e emissions from HCFs in Nepal in 2022 was 1,164,719 tons.

GHG total emissions (tCO ₂ e)	1,164,718.91	100%
Scope 1 (Direct emissions)	474,846.93	40.77%
1.1 Stationary Combustion	104,151.89	8.94%
1.2 Mobile combustion	39,788.49	3.42%
1.3 Fugitive Emissions	327,674.74	28.13%
1.3.1 Cooling & fire suppression	322,816.24	27.72%
1.3.2 Medicinal / Anesthetic gases	4,858.51	0.42%
1.4 Waste	3,231.82	0.28%
1.4.1 Solid waste disposal	Estimated in indirect emissions	0.00%
1.4.2 Composting	Estimated in indirect emissions	0.00%
1.4.3 Incineration	3,231.8	0.28%
Non-hazardous/general health care waste	2,783.7	0.24%
Clinical mix (biohazardous & hazardous)	246.2	0.02%
Hazardous	201.9	0.02%
Scope 2 (Emissions from purchased electricity)	11,555.40	0.99%
2.1 Purchased electricity	11,555.40	0.99%
2.2 Purchased steam, heat and cooling	Not Occurring	0.00%
Scope 3 (Indirect emissions)	678,316.57	58.24%
3.5 Extra Supply Chain	587,102.03	50.41%
3.1 Business trips	11,076.83	0.95%
3.2 Employee commuting	12,413.72	1.07%
3.3 Patient commuting	55,343.18	4.75%
3.4 Inhalers	5,652.19	0.49%
3.4.1 MDI	5,248.89	0.45%
3.4.2 DPI	403.30	0.03%
3.5 Electricity transmission and distribution losses	372.20	0.03%
3.6 Waste	6,356.42	0.55%
3.6.1 Solid waste disposal	6,246.93	0.54%
3.6.2 Composting	109.5	0.01%
3.6.3 Incineration	-	0.00%
Non-hazardous/general health care waste	Estimated in direct emissions	0.00%
Clinical mix (biohazardous & hazardous)	Estimated in direct emissions	0.00%
Hazardous	Estimated in direct emissions	0.00%

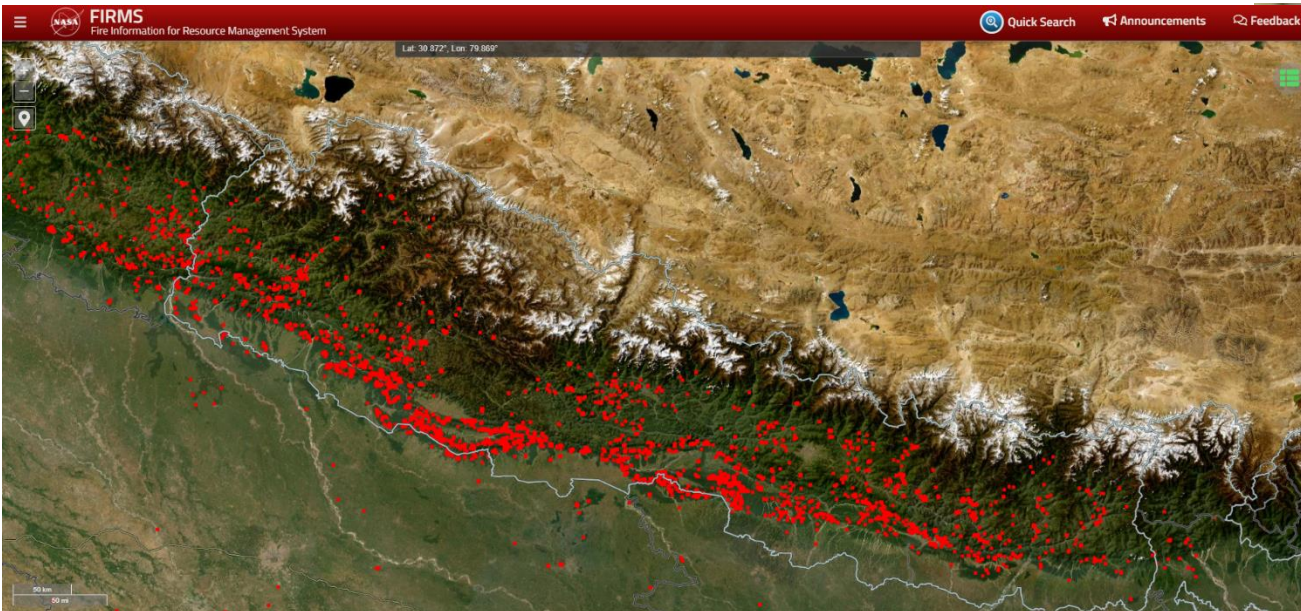


Maximizing health Co-benefits through multi-sectoral collaboration

WASH

Food Safety

Disaster



Air pollution

Discussion

towards addressing greatest health threat of 21st century

- Preventive/Curative – Resilient/Mitigation
- Health at the center of Climate agenda at COPs
- H-NAP implementation through integration of climate change issues in health programmes
- Enhancing adaptive capacity to reduce health vulnerability at local levels through sharing of national/international good practices and knowledge
- Transition away from fossil fuels
- Leverage sustained large scale global climate finance



**My health,
my right**



Thank You