Government of Nepal

National Planning Commission

Central Bureau of Statistics

Environment/climate change statistics Data collection
Experience of Nepal

Sushil Kumar Sharma
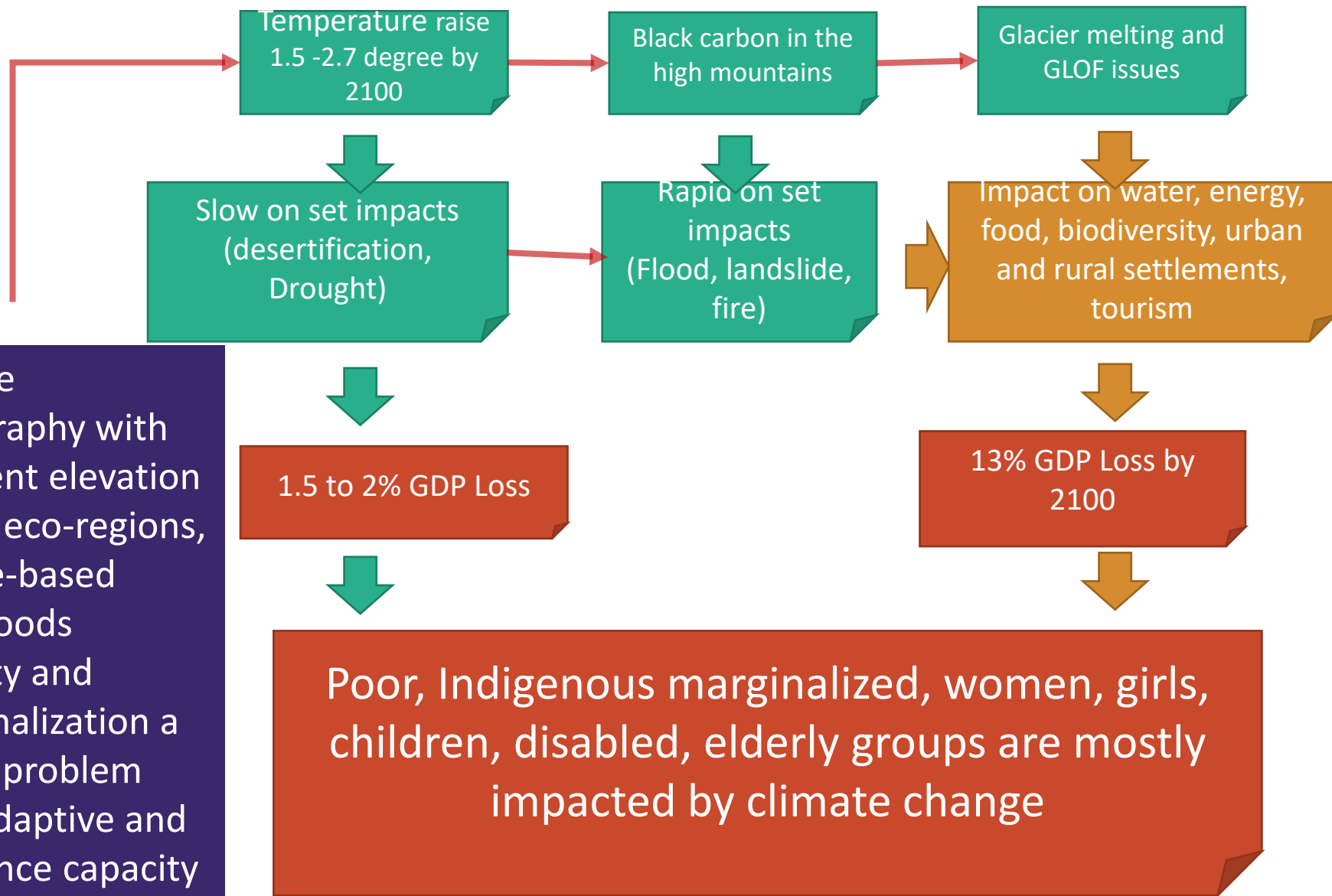
Director

Central Bureau of Statistics Nepal

Background

- Nepal is disaster prone country due to topography & climatic condition
- Country is small but having different topography(plain, hill & mountain) and climatic zone

- Earthquakes, landslides, floods, fire, thunderbolts are the major causes of disaster events

- Environmental degradation and climate change both interact with and exacerbate the occurrence and impact of natural hazard events

- Yearly loss of life, property and a significant proportion of Gross Domestic Product (GDP)

Climate Change Issues in Nepal

- Nepal contributes only around 0.027 percent to total global emissions, although it is one of the countries most vulnerable to the impacts of climate change

- Nepal submits its second nationally determined contribution(NDC) document to UN outlining its targets for the next decade to reduce emissions and support vulnerable communities to adapt to the impacts of climate change

- The government strongly believes that these targets can be achieved as they have been set after consultation with various ministries, stakeholders and experts

Climate Impacts in Nepal

Temperature raise 1.5 -2.7 degree by 2100 → Black carbon in the high mountains → Glacier melting and GLOF issues

Slow on set impacts (desertification, Drought) → Rapid on set impacts (Flood, landslide, fire) → Impact on water, energy, food, biodiversity, urban and rural settlements, tourism
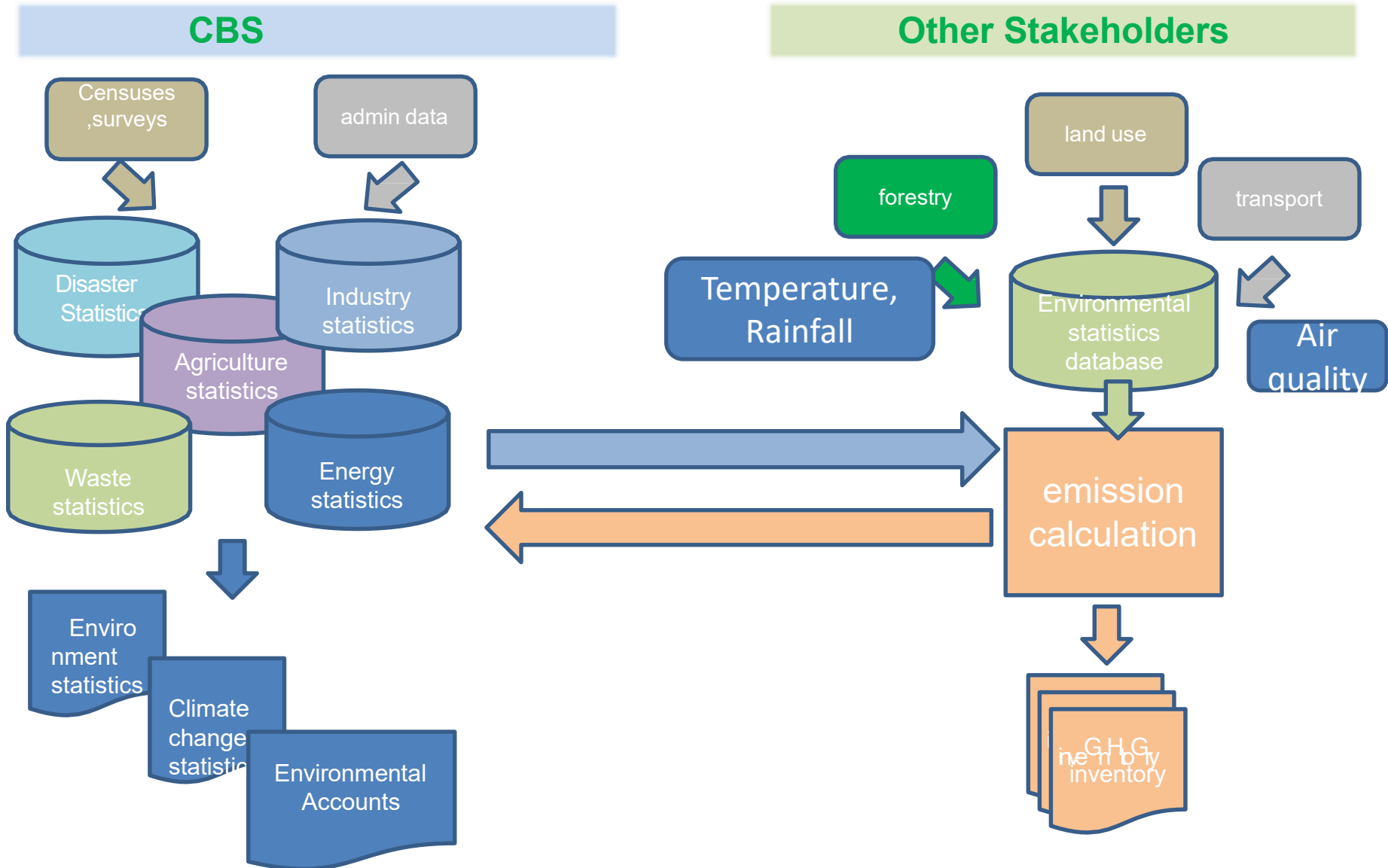
1.5 to 2% GDP Loss

13% GDP Loss by 2100

Unique topography with different elevation based eco-regions, nature-based livelihoods
Poverty and marginalization a major problem
Low adaptive and resilience capacity

Poor, Indigenous marginalized, women, girls, children, disabled, elderly groups are mostly impacted by climate change

Current status

- Separate Environment Statistics Section in CBS
- Regular publication of Environment Statistics (Censuses, Surveys, admin data)
- National Climate Change Impact Survey Report, Waste management Baseline Survey Report
- Second Nationally Determined Contribution (NDC) Report (Ministry)
- National Communication Report (Ministry)
- Community questionnaire is added in Population census where one of the thematic area is environment/disaster

Co-operation loop for environment & climate change statistics

CBS

Censuses, surveys

admin data

Disaster Statistics

Industry statistics

Agriculture statistics

Waste statistics

Energy statistics

Environment statistics

Climate change statistics

Environmental Accounts

Other Stakeholders

land use

forestry

transport

Temperature, Rainfall

Environmental statistics database

Air quality

emission calculation

GHG inventory

National Climate Change Impact Survey 2016 — A Statistical Report

Waste Management Baseline Survey of Nepal 2020

Government of Nepal
National Planning Commission
Central Bureau of Statistics
Thapathali, Kathmandu Nepal

Both of these publications inform corresponding indicators in the Global Set

CBS Publication

ENVIRONMENT
STATISTICS
OF NEPAL
2019

Government of Nepal
National Planning Commission

Central Bureau of Statistics
Thapathali, Kathmandu, Nepal

COMPENDIUM OF
**ENVIRONMENT
STATISTICS**

NEPAL 2015

Government of Nepal
National Planning Commission Secretariat
Central Bureau of Statistics

National consultation on the draft climate change indicators

Formation of technical committee leading by CBS including from Ministry of Forest and Environment & other stakeholders

- *Meetings conducted and discussed about how we can contribute*

Consultation workshop with stakeholders

- The discussions were made to develop indicators which can respond to main climate change policy questions in an internationally comparable way

- As provisioned in UNSD framework agreed to keep these as five areas to be consistent with the UNSD framework.

- Basically, indicators in Agriculture, Forestry and Other Land Use (AFOLU), Energy, and Waste sectors were discussed in priority on the basis of relevancy of Nepal

- Consensus was made to omit some indicators from global set, which are not relevant in the context of Nepal for example, issues related with ocean and other statistics which were beyond the scope of national assessment

Filled in information in Part 2 of the Global Consultation

|				Statistics	Code	Preliminary Tier	Themes	National Data Sources	Relevance			Methodological Soundness		Data Availability	
Area	Topic		Indicator						Yes/No	Reference/ Link	Yes/No/ Partially		Reference/ Link	Yes/No	Reference/ Link
		111	Average increase of insurance premiums incurred due to clima	5140	3	Insurance									
			Insurance premiums incurred due to climate change	5141	3	Insurance	National In								
Climate change public awareness and education					520										
		112	Proportion of population with access to climate information	5200	3	Education			yes	Planning Commission	yes		Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
			Number of households with timely access to climate infor	5201	3	Education	NSO		yes	Planning Commission	yes		Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
			Number of people reached through climate change public	5202	3	Education	NSO/Envir		yes	Planning Commission	yes		Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
		113	Extent to which (i) global citizenship education and (ii) educat	5210	2	Education	Ministry o								
				5211		Education									
		114	Number of companies publishing sustainability reports (SDG 1	5220	2	Corporate	NSO/Envir								
				5221		Corporate reports									

Results on Perception of Climate Change

Informs indicator 112 in Global Set: Proportion of population with access to climate information

Households' knowledge on climate change
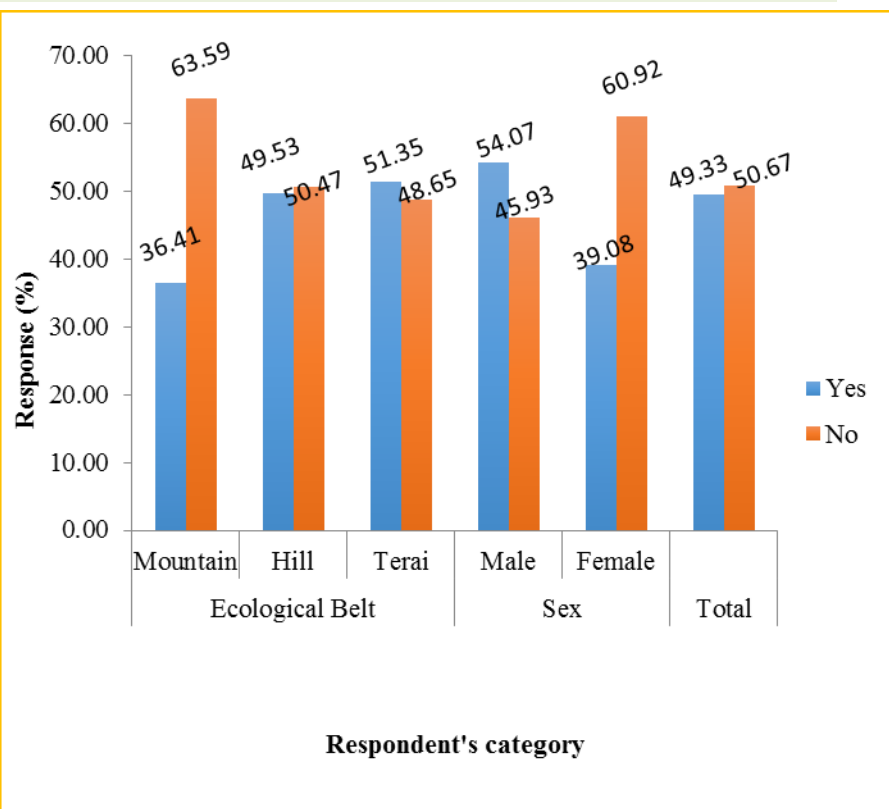
Main source of information about climate change
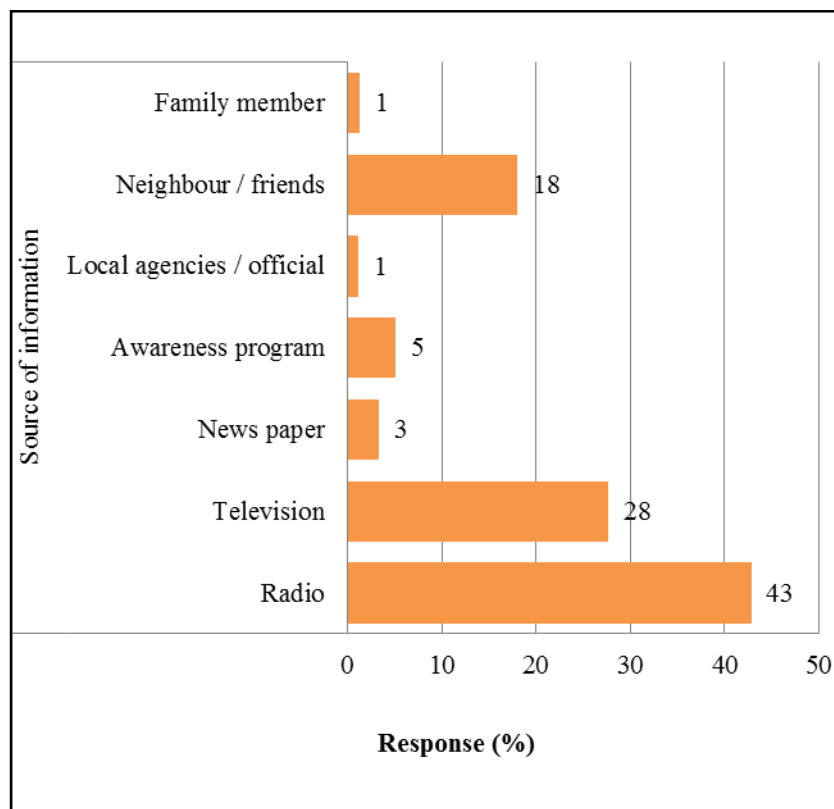
Statistics in the Global set: Number of households with timely access to climate information

Statistics in the Global set: Number of people reached through climate change public awareness campaigns
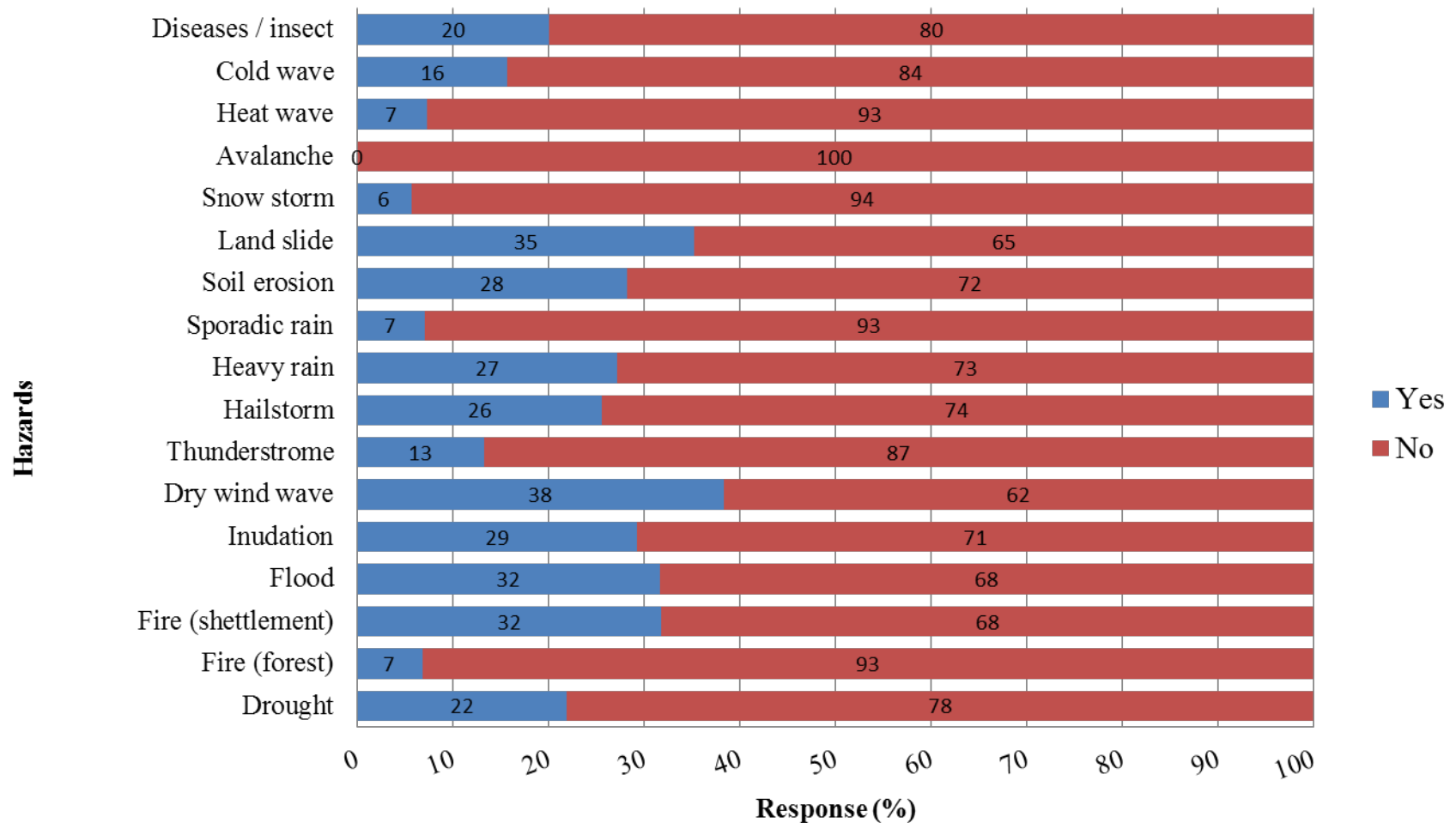
Filled in information in Part 2 of the Global Consultation

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	Area	Topic	Indicator		Statistics	Code	Preliminary Tier	Themes	National Data Sources	Relevance			Methodological Soundness		Data Availability
										Yes/No	Reference/ Link	Yes/No / Partiall y	Reference/ Link	Yes/No	Reference/ Link
				pH/acidity/alkalinity (FDES 1.3.2.f.1)	2111	2	Water qual	Ministry o						
			Hazardous events and disasters		212									
			31	**Frequency of hazardous events and disasters**	2120	1	Disasters		yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
				Occurrence of hazardous events and disasters (FDES 4.1.1	2121	1	Disasters	Disaster a	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
				Occurrence of extremes of temperatures and precipitatio	2012	2	Disasters	Meteorolo	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
			32	**Direct economic loss attributed to disasters in relation to glob**	2130	2	Disasters		yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
				Economic losses due to natural extreme events and disast	2131	2	Disasters	Disaster a	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
				Occurrence of hazardous events and disasters (FDES 4.1.1	2132	1	Disasters	Disaster a	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
				GDP	1082	1	Disasters	NSO						

Climate Induced Disasters and Impacts…

Households affected by disasters in last 25 years

Climate Change Impacts on Crops, and Livestock

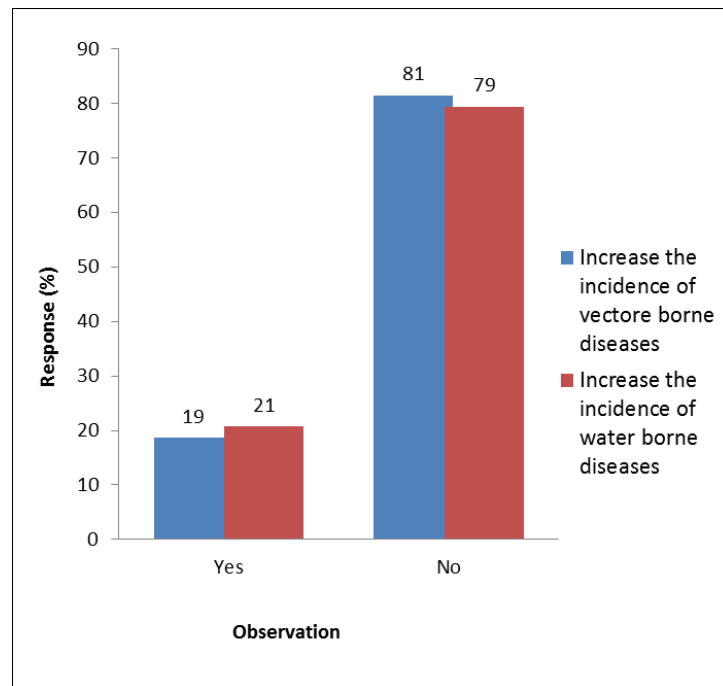|	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	Area	Topic		Indicator	Statistics	Code	Preliminary Tier	Themes	National Data Sources	Relevance			Methodological Soundness		Data Availability
										Yes/No	Reference/ Link	Yes/No / Partiall y	Reference/ Link	Yes/No	Reference/ Link
IMPACTS						2									
	Agricultural production impacted by climate change					201									
		20		Crop loss due to climate extremes		2010	3	Agriculture	Ministry o	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
					Crop yield	2011	1	Agriculture	Ministry o	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
		21		Impact of climate change on livestock productivity		2020	3	Agriculture	Ministry o	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
					Livestock yield	2021	1	Agriculture	Ministry o	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016

Climate change impact on crops and livestock in last 25 years

Climate Change Impacts on Human Health

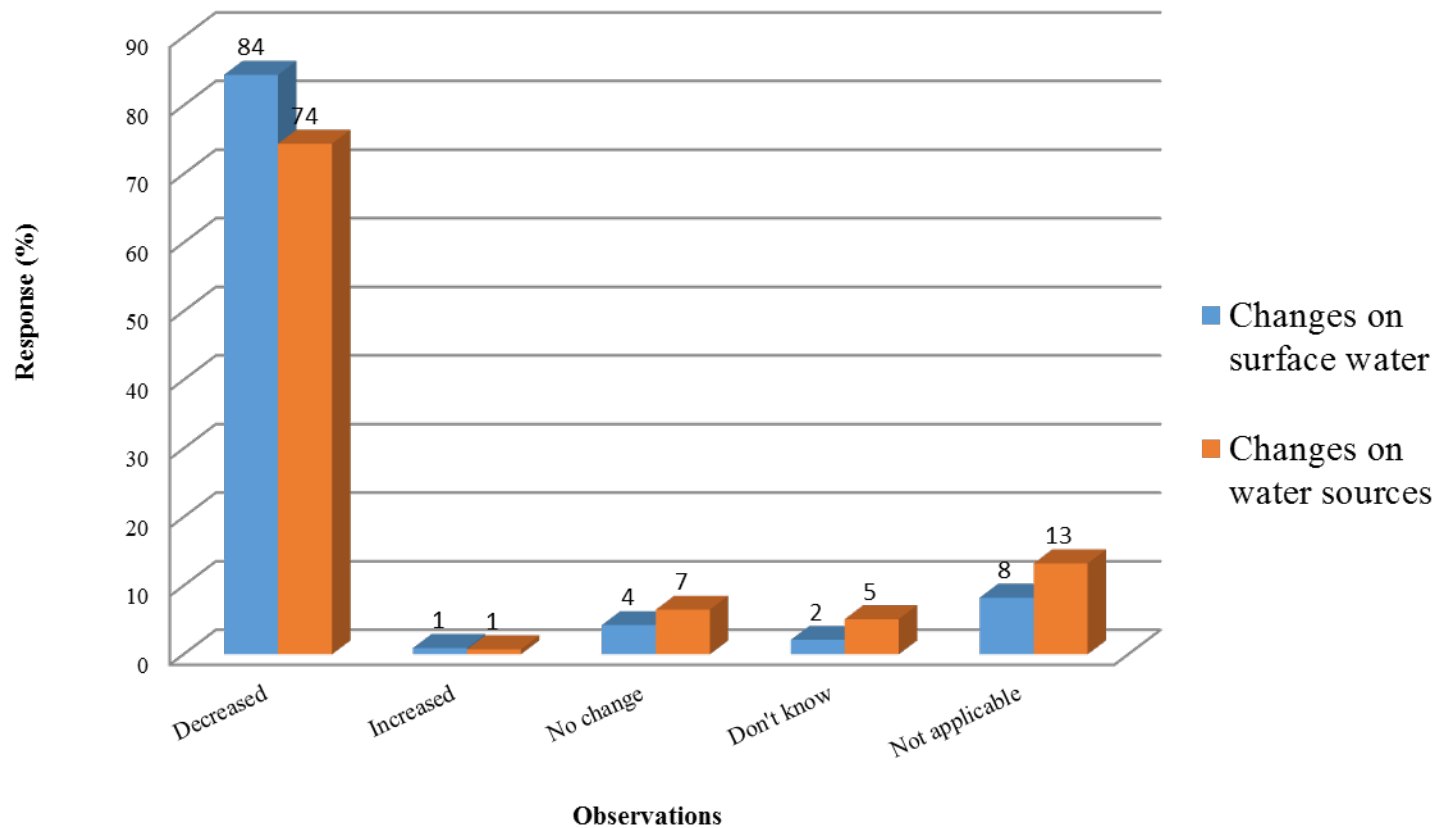|	Area	Topic	C	Indicator	Statistics	Code	Preliminary Tier	Themes	National Data Sources	Relevance		Methodological Soundness		Data Availability	
										Yes/No	Reference/ Link	Yes/No / Partially	Reference/ Link	Yes/No	Reference/ Link
			34		Climate refugees, migrant and displaced persons by climate cl	2150	3	Disasters	Disaster pr						
					Number of people whose destroyed dwellings were attrib	2151	2	Disasters	Ministry re						
				Climate change and human health		216									
			35	Increase of cases of climate-related diseases		2160	3	Health		yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
					Incidence of climate-related airborne diseases and conditi	2161	2	Health	Ministry o	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
					Incidence of climate-related water-related diseases and co	2162	2	Health	Ministry o	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
					Incidence of climate-related vector-borne diseases (UN-E	2163	2	Health	Ministry o	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
			36	Increase in heat and cold related illnesses		2170	3	Health	Ministry o	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
					[incidence/mortality from] Heat and cold related illnesses	2171	3	Health	Ministry o	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016

Climate change impacts on human health in last 25 years

Climate Change and Natural Resources: Water and Biodiversity

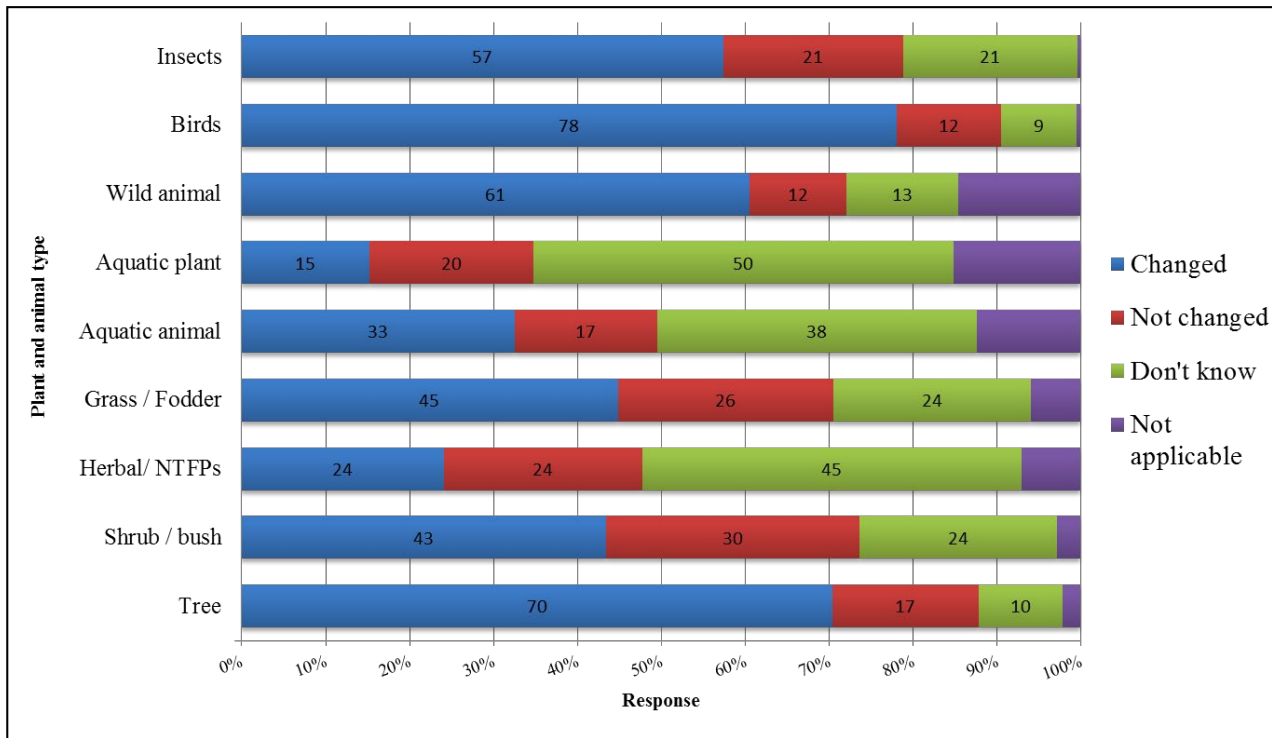|	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	Area	Topic		Indicator	Statistics	Code	Preliminary Tier	Themes	National Data Sources	**Relevance**			**Methodological Soundness**		**Data Availability**
										Yes/No	Reference/ Link	Yes/No / Partially	Reference/ Link	Yes/No	Reference/ Link
	Freshwater abstraction, supply and use					209									
			28		Freshwater abstracted as proportion of renewable freshwater	2090	1	Water reso	Meteorolc	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
					Freshwater abstracted (FDES 2.6.2.a)	2091	1	Water reso	Meteorolc	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
					Renewable freshwater resources (FDES 2.6.1.c)	2092	1	Water reso	Meteorolc	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016

Observed changes on water resources in last 25 years

Climate Change and Natural Resources: Water and Biodiversity...

|	Area	Topic		Indicator	Statistics	Code	Preliminary Tier	Themes	National Data Sources	Relevance Yes/No	Relevance Reference/Link	Methodological Soundness Yes/No/Partially	Methodological Soundness Reference/Link	Data Availability Yes/No	Data Availability Reference/Link
		Distribution and status of species				242									
			51		Proportion of population maintained within a species	2420	3	Species	Ministry o	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
					Species population (FDES 1.2.2.c.4)	2421	2	Species	Ministry o	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
			52		Red list index (SDG 15.5.1)	2430	2	Species	Ministry o						
					Number of red list species (FDES 1.2.2.c.1)	2431	2	Species	Ministry o						
			53		Species habitat index	2440	2	Species	Ministry o	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
					Area of ecosystems (FDES 1.2.2.a.1)	2441	2	Species	Ministry o	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
					Known flora and fauna species (FDES 1.2.2.c.1)	2442	2	Species	Ministry o	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016

Changes in the status of animal and plant species in last 25 years

Adaptation Measures

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Area	Topic		Indicator	Statistics	Code	Preliminary Tier	Themes	National Data Sources	Relevance		Methodological Soundness		Data Availability	
									Yes/No	Reference/ Link	Yes/No / Partiall	Reference/ Link	Yes/No	Reference/ Link
		124		Proportion of agricultural area under productive and sustaina	5260	2	Agriculture	NSO/Minis	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
				Risk mitigation mechanisms (Subindicator of SDG 2.4.1)	5261	2	Agriculture	NSO/Minis	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
				Variation in water availability (Water use, Subindicator of	5270	2	Agriculture	NSO/Minis	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
				Use of agro-biodiversity-supportive practices (Subindicato	5280	2	Agriculture	NSO/Minis	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
		125		Progress towards sustainable forest management (SDG 15.2.1	5360	2	Forests	Forestry d						

Adaptation measures (farm based) adopted in last 25 years
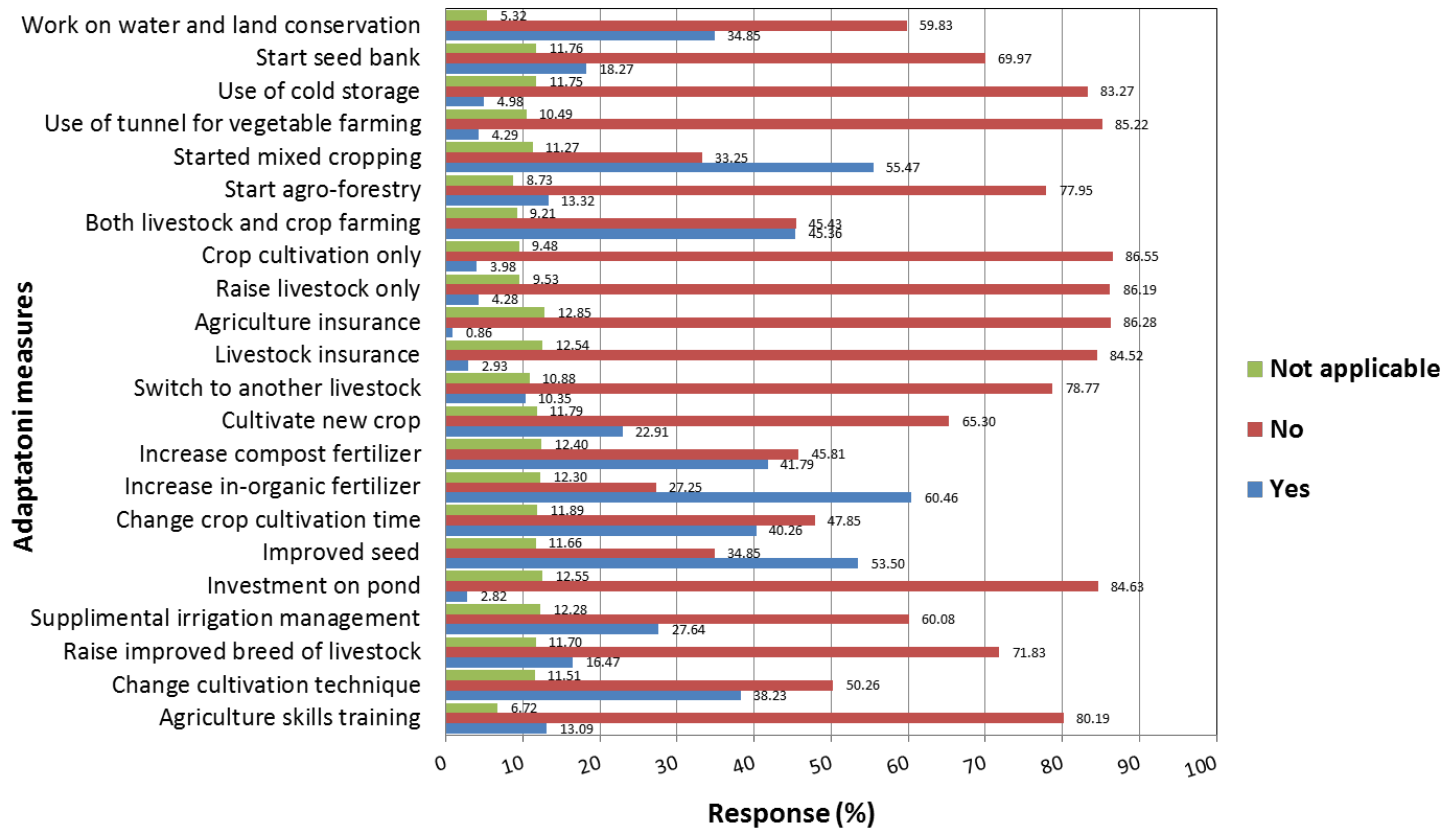
Recent activities

- Shared the prefilled Consultation parts and discussed with the national focal point reporting to UNFCCC

- Conducted technical committee meeting and make a work plan to develop the proposed Nepal specific climate change indicators

- Not possible to conduct the stakeholders workshop but it is planning to conduct when the draft indicators list will be finalized

Environment statistics on population census, 2021

- First time introduce community questionnaire in population census

- Each questionnaire filled in every ward(lowest administrative unit) of Nepal, 6743 wards in Nepal

- One of the module is environment/disaster /hazard

- Milestone for the base line data for disaster mapping and other special environment related surveys

1. Condition of natural disaster and hazard in this area

- ❖ Flood
- ❖ Landslide
- ❖ Soil erosion
- ❖ Inundation
- ❖ Thunderstorm
- ❖ Hailstorm
- ❖ Heavy rain
- ❖ Sporadic rain

- ❖ Heat wave
- ❖ Cold wave
- ❖ Drought
- ❖ Avalanche
- ❖ Forest fire
- ❖ Fire in settlement
- ❖ No hazard

2. Loss of life and property in one year due to disaster/hazard

- How many people died
- How many people injured
- Total number of loss /damage of houses
- Loss of land
- Loss of livestock
- Loss of agricultural product
- Loss of people and property due to wild animals

# Environment/climate change/ agro waste statistics on agriculture census 2022 (proposed questions)

- Agro-forestry practiced & area covered
- Soil degradation, types and area of soil degraded
- Soil test
- Tunnel farming under protective cover
- Knowledge of climate change
- Effect and impact of climate change on the agricultural activities
- Management/treatment of agriculture waste
- Percent of crop residues been burnt

Issues and challenges

- Data gaps
- Administrative data is not reporting on time
- Capacity development
- Coordination/collaboration
- Prevailing statistical laws and regulations have not been updated/amended
- Data sharing policy
- Weak statistical infrastructure
- Covid-19 Pandemic (First wave, second wave, ………)

Expectations & way forward

- Needs special surveys and censuses
- Improved institutional arrangements and structures
- Bilateral and international cooperation for knowledge and technology
- Strengthen data capturing mechanism in province and local governments
- Strengthen Environment Section/GIS of CBS
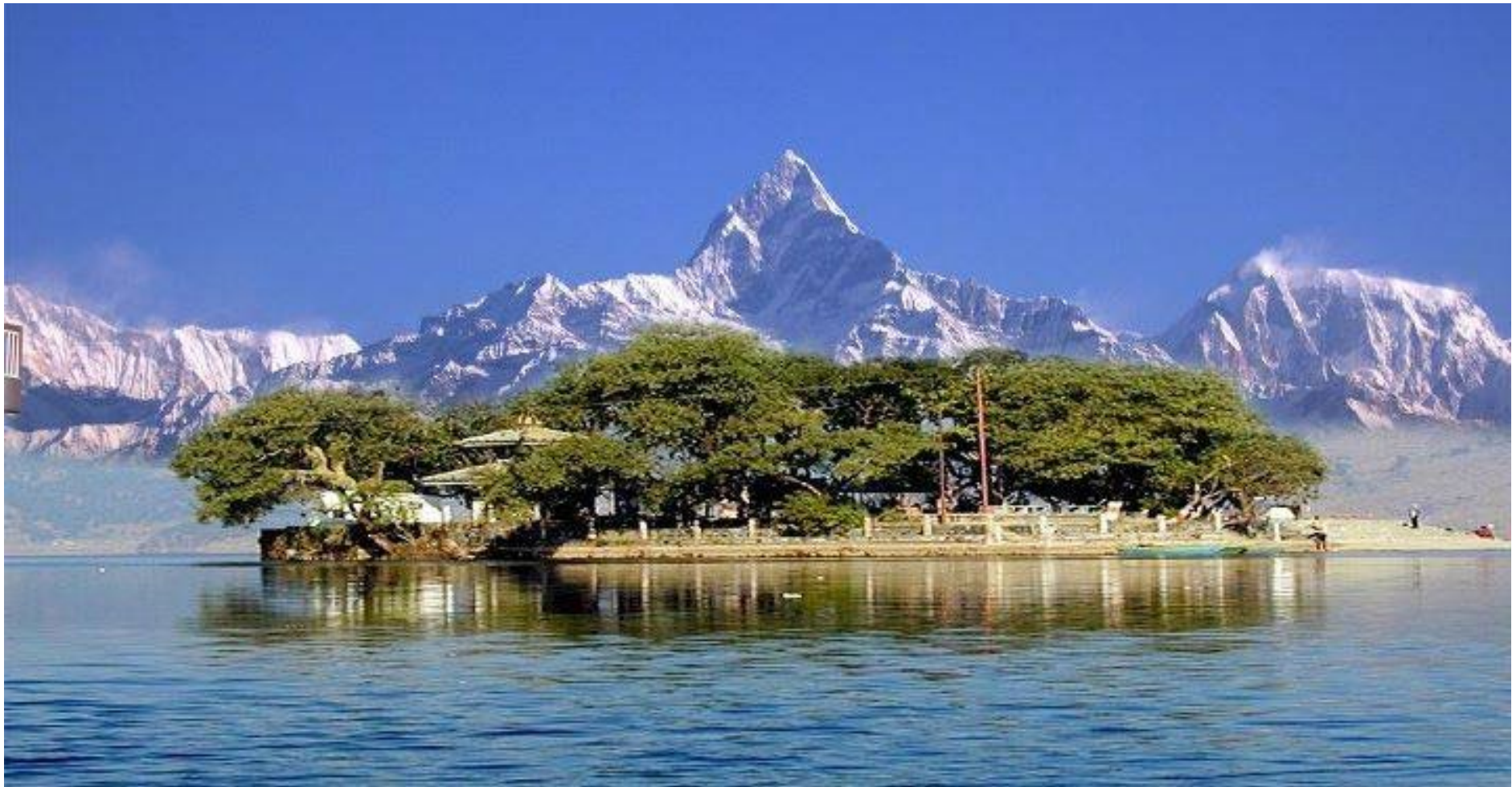
Thank you !!!
Your comments and queries are highly appreciated !!!