

Government of Nepal National Planning Commission Central Bureau of Statistics

# Environment/Climate Change Statistics Experience of Nepal

## Sushil Kumar Sharma Director Central Bureau of Statistics Nepal

## **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

## **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

### National Climate Change Impact Survey 2016

A Statistical Report



Both of these publications inform corresponding indicators in the Global Set

### WASTE MANAGEMENT BASELINE SURVEY OF NEPAL 2020



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

### National consultation on the draft Global Set of Climate Change Statistics and 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

## Climate Change Impacts on Crops, and Livestock

_ ^ `	U	C			0				IX IX	-	141		Ŷ
Area		<b>~</b>	Statistics	Code	Preliminar, <mark>≯</mark> Tier	Themes	► National Data Sources		Relevance		Methodological Soundness		Data Availability
								Yes/No	Reference/ Link	Partiall	Reference/	Yes/Nc	Reference/ Link
IMP	ACTS			2									
	Agric	ultur	al 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
	1	4.0	<b>n</b>										



### **Climate Change Impacts on Human Health**

3 C	D	E	F	G	Н	I	J	К	L	М	Ν	0
	Indicator •	Statistics	Code	Preliminar <mark>,</mark> ⊁ Tier	Themes	National Data Sources		Relevance		Methodological Soundness		Data Availability
							Yes/No	Reference/ Link	Partiall	Reference/	Yes/Nc	Reference/ Link
34	Clin	ate refugees, migrant and displaced persons by climate c	2150	3	Disasters	Disaster pr						
		Number of people whose destroyed dwellings were attrib	2151	2	Disasters	Ministry re						
mate	chang	e and human health	216									
35	Incr	ease 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 condit	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 c	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	<b>Planning Commission</b>	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
36	Incr	ease 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
	34 mate 35	34 Clim mate chang 35 Incre	34       Climate refugees, migrant and displaced persons by climate climate climate change and human health         35       Increase of cases of climate-related diseases         1       Incidence of climate-related airborne diseases and condit         1       Incidence of climate-related water-related diseases and condit         2       Incidence of climate-related water-related diseases         36       Increase in heat and cold related illnesses	34       Climate refugees, migrant and displaced persons by climate cl	34       Climate refugees, migrant and displaced persons by climate c       2150       3         34       Climate refugees, migrant and displaced persons by climate c       2150       3         mate change and human health       2151       2         35       Increase of cases of climate-related diseases       2160       3         1       Incidence of climate-related airborne diseases and condit       2151       2         2       Incidence of climate-related diseases       2160       3         35       Increase of cases of climate-related diseases       2160       3         36       Incidence of climate-related vector-borne diseases and condit       2163       2         36       Increase in heat and cold related illnesses       2170       3	34       Climate refugees, migrant and displaced persons by climate of 2150       3       Disasters         34       Climate refugees, migrant and displaced persons by climate of 2150       3       Disasters         35       Number of people whose destroyed dwellings were attrib 2151       2       Disasters         35       Increase of cases of climate-related diseases       2160       3       Health         4       Incidence of climate-related water-related diseases and condit       2151       2       Health         35       Increase of cases of climate-related water-related diseases       2160       3       Health         4       Incidence of climate-related water-related diseases and condit       2151       2       Health         5       Increase in heat and cold related illnesses       2160       3       Health         5       Increase in heat and cold related illnesses       2160       3       Health         5       Increase in heat and cold related illnesses       2161       2       Health	34       Climate refugees, migrant and displaced persons by climate of 2150       3       Disasters       Disasters         34       Climate refugees, migrant and displaced persons by climate of 2151       2       Disasters       Disasters         35       Increase of cases of climate-related diseases       2160       3       Health         35       Increase of climate-related diseases       2160       3       Health         4       Incidence of climate-related diseases       2160       3       Health         35       Increase of climate-related diseases       2160       3       Health         4       Incidence of climate-related diseases       2161       2       Health         5       Incidence of climate-related water-related diseases and could the could be c	A       Indicator       Statistic       Column of performination of performination of performination of performance of performination of performance of perfor	A       Indicator       Statistic       Co       Image: Statistic       Statistic       Statistic       Relevance         Image: Statistic       Image: Stati	A       Indicator       Statistic       O       O       P       Indicator       Surges       Relevance       Ves/No       Relevance         Image: Inclusion of the pope whose destroyed dwellings were attribute       2150       3       Disasters       Disaster p       Ministry re       Ministry re       Ministry re       Ministry re       Ministry re       Ministry of the pope whose destroyed dwellings were attribute       2161       3       Disasters       Ministry re       Ministry of the pope whose destroyed dwellings were attribute       216       3       Health       Ministry of the pope whose destroyed dwellings were attribute       216       1	Indicate       Soft Site       Soft Site       Soft Site       Soft Site       Soft Soundness         Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness       Soundness         Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness         Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness         Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness         Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness         Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness         Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness         Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness         Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness         Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness       Image: Soundness         Image: Soft Image: Soundnes	Indicator       Strict       O       O       Indicator       Strict       Indicator       Methodological       Soundness         Image       Imagee       Ima



## Climate change impacts on human health in last 25 years

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

B C	D	E	F	G	Н		J	K	L	M	N	0
Tonic 🕨	Indicator	Statistics	Code V	Preliminar,► Tier	Themes	National Data Sources		Relevance		Methodological Soundness		Data Availability
							Yes/No	Reference/ Link	Partiall	Reference/	Yes/No	Reference/ Link
eshwat	er abstra	action, supply and use	209									
28	Freshwa	ater abstracted as proportion of renewable freshwat	<b>e</b> 2090	1	Water reso	Meteorolo	yes	<b>Planning Commission</b>	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
	Fr	reshwater abstracted (FDES 2.6.2.a)	2091	1	Water reso	Meteorolo	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
	Re	enewable freshwater resources (FDES 2.6.1.c)	2092	1	Water reso	Meteorolo	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
	• •	eshwater abstra	eshwater abstraction, supply and use	eshwater abstraction, supply and use     209       28     Freshwater abstracted as proportion of renewable freshwate     2090       1     Freshwater abstracted (FDES 2.6.2.a)     2091	Indicator       Statistic       Code       Feinitian         Indicator       Statistic       V       V         Image: State of the state of t	Topic       Indicator       Statistics       Code       Freeliminar         Tierr       Statistics       V       V       V         eshwater abstraction, supply and use       209       V       V         28       Freshwater abstracted as proportion of renewable freshwate       209       1       Water reso         V       V       Freshwater abstracted (FDES 2.6.2.a)       209       1       Water reso	Topic       Indicator       Statistics       O       Preliminar       Freshwater abstracted as proportion of renewable freshwate       209       Image: Constraint of the second seco	Indicator       Statistics       Image: Statistic stress of the s	Indicator       Statistics       Open Holds       Indicator       Relevance         Image: Statistics       Image: Statistics <td>Indicator       Statistics       O       Indicator       Relevance         Image: Statistic struction       Statistic struction       Image: Statistic struction</td> <td>Indicipation       Statisticity       Statisticity       Indicipation       Indicipation       Methodological Soundness         Image: Statistic of the state of th</td> <td>Image: Statistic straction, supply and use 209   28   Freshwater abstracted as proportion of renewable freshwater   209   1   Water reso   Meteroolcyes   Planning Commission   yes   Climate Change Impact Survey 2016   yes   1   Water reso   Meteroolcyes   Planning Commission   yes   Climate Change Impact Survey 2016   yes</td>	Indicator       Statistics       O       Indicator       Relevance         Image: Statistic struction       Statistic struction       Image: Statistic struction	Indicipation       Statisticity       Statisticity       Indicipation       Indicipation       Methodological Soundness         Image: Statistic of the state of th	Image: Statistic straction, supply and use 209   28   Freshwater abstracted as proportion of renewable freshwater   209   1   Water reso   Meteroolcyes   Planning Commission   yes   Climate Change Impact Survey 2016   yes   1   Water reso   Meteroolcyes   Planning Commission   yes   Climate Change Impact Survey 2016   yes

#### **Observed changes on water resources in last 25 years**



Observations

### **Climate Change and Natural Resources: Water and**

### **Biodiversity...**

Α	B	C D	E	F	G	Н	1	J	K	L	M	N	0
	Topic	Indicator <b>•</b>	Statistics		Preliminar, <mark>≯</mark> Tier	Themes	► National Data Sources		Relevance		Methodological Soundness	Data Availability	
								Yes/No	Reference/ Link	Partiall	Reference/ Link	Yes/No	Reference/ Link
L	Distribu	ution and	l status of species	242									
	51	l <u>Propo</u>	ortion of population maintained within a species	2420	3	Species	Ministry o	yes	<b>Planning Commission</b>	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	2 Red l	ist 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	3 Specie	es 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**

Α	В	С	D	E	F	G	Н	1	J	К	L	Μ	Ν	0
Area	Topic 🔸	~	Indicator <b>•</b>	Statistics	Code	Preliminar,• Tier	Themes	National Data Sources		Relevance		Methodological Soundness		Data Availability
									Yes/No	Reference/ Link	Partiall	Reference/ Link	Yes/N	Reference/ Link
		124	Propo	rtion of agricultural area under productive and sustaina	5260	2	Agriculture	NSO/Minis	yes	<b>Planning Commission</b>	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	<b>Planning Commission</b>	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
				Variation in water availability (Water use, Subindicator of	f 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 (Subindicate	c5280	2	Agriculture	NSO/Minis	yes	Planning Commission	yes	Climate Change Impact Survey 2016	yes	Report on Climate Change Impact Survey 2016
		125	Progre	ss towards sustainable forest management (SDG 15.2.:	15360	2	Forests	Forestry d						
		_			-	-			_					

59.83

69.97

#### Adaptation measures (farm based) adopted in last 25 years

11.76

Work on water and land conservation Start seed bank Use of cold storage Use of tunnel for vegetable farming Started mixed cropping Start agro-forestry Both livestock and crop farming Crop cultivation only Raise livestock only Agriculture insurance Livestock insurance Switch to another livestock Cultivate new crop Increase compost fertilizer Increase in-organic fertilizer Change crop cultivation time Improved seed Investment on pond Supplimental irrigation management Raise improved breed of livestock

**Adaptatoni** measures

11.75 18.27 83.27 4.98 10.49 85.22 4.29 11 27 55.47 8.73 9.21 13.32 77.95 45:38 9.48 86.55 3.98 0.52 86.19 4.28 12.85 86.28 0.86 12.54 84.52 2.93 10.88 78.77 10.35 65.30 22.91 12.40 41.79 12.30 60.46 11.89 47.85 40.26 11.66 53.50 12.55 84.63 2.82 12.28 60.08 11.70 71.83 16.47 Change cultivation technique 50.26 38.23 6.72 Agriculture skills training 80.19 13.09 0 10 20 30 40 50 60 70 80 90 100



**Response (%)** 

## 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

## **Recent activities**

- Shared the prefilled Global Consultation parts and discussed with the national focal point reporting to UNFCCC
- Conducted technical committee meeting and working on to develop the proposed Nepal specific climate change indicators
- <u>Climate change indicators Nepal draft.docx</u>
- Preliminary work is starting for the national climate change impact survey (second round)

## **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**

- Plans to use the Global Set as the framework for the Nepal-specific climate change indicators.
- 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
- Technical & financial support for the National Climate Change Impact Survey (second round)



### Thank you !!!

Your comments and queries are highly appreciated !!!