Climate Resilient City and Urban Environmental Sustainability Training

11-17 April, 2018

ULAANBAATAR CITY

International Urban Training Center
IUTC Training Leaders For a Sustainable Future

UN HABITAT
FOR A BETTER URBAN FUTURE

Brief introduction

GOVERNOR'S OFFICE OF ULAANBAATAR CITY
THE CAPITAL OF MONGOLIA

Brief introduction

TERRITORY: 4700 KM² (0.3% OF MONGOLIA)

HEIGHT ABOVE SEA LEVEL: 1300 METER

POPULATION: 1.4 MILLION (46% OF MONGOLIA)

GDP: US$ 7.4 BILLION (65% OF NATIONAL GDP)

GDP PER CAPITA: US$ 5200

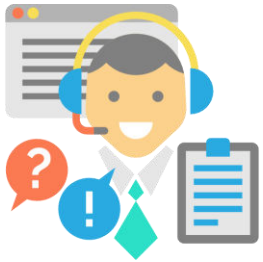
DEMOGRAPHIC DENSITY: 298 PEOPLE PER KM²

HDI: 0.735 RANK 92

Brief introduction

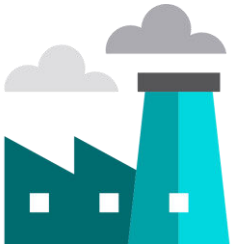
City profile

Service sector



65%

Industrial sector



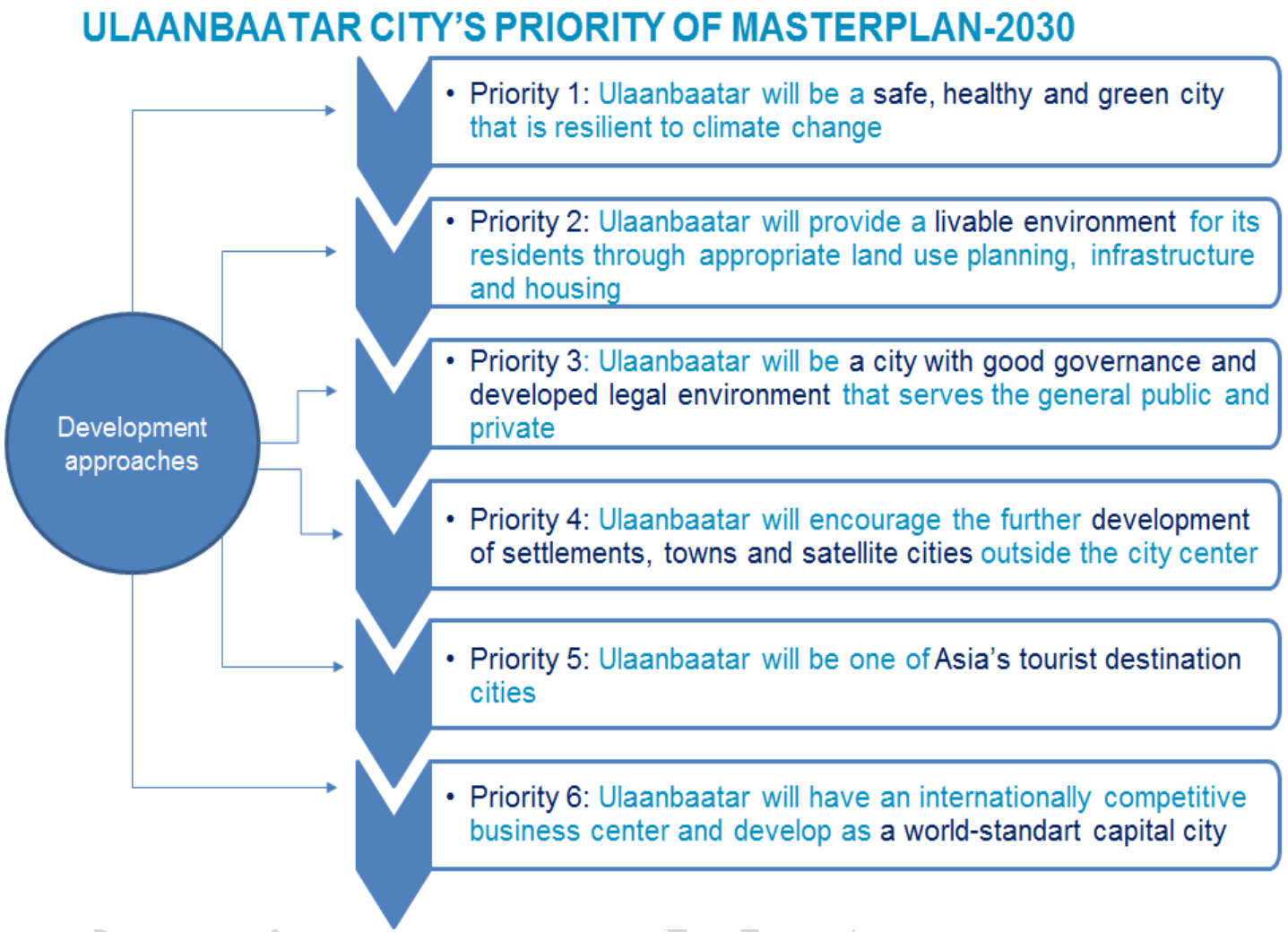
30%

Other

5%

35% 16-35 aged

Brief introduction of policies



Brief introduction of policies

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ULAANBAATAR GREEN DEVELOPMENT STRATEGY, ACTION PLAN

Approved by provision of Citizen's Representatives Khural in 2016.

VISION

Ulaanbaatar will be a green city, environmentally sustainable with inclusive economic growth, active public participation and a safe and a healthy living environment for its citizen.

Based on challenges the identified seven interconnected green goals:

1. Cleaner air
2. Sustainable transport
3. Improved solid waste management
4. Water security
5. Cleaner soil
6. Participation in sustaining the environment
7. Climate change resilient

City contribution to the Mongolia's iNDC

Climate change in Ulaanbaatar

UB City's Climate Change

- Average temperature has risen by 2.6°C, which is 0.4 °C higher than national average
- Annual precipitation decreased by 5%

Seasonal temperature increased

- Winter - by 3.7°C,
- Spring – by 2.5°C,
- Summer & Autumn by 2.2°C

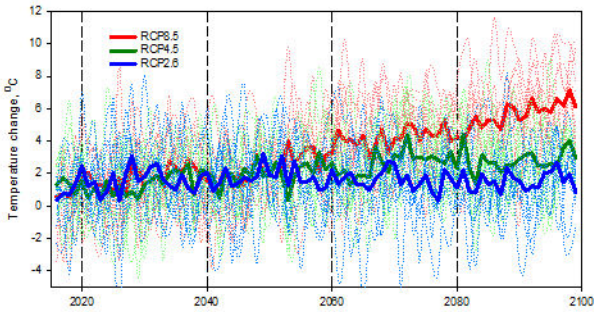
Changes in seasonal precipitation

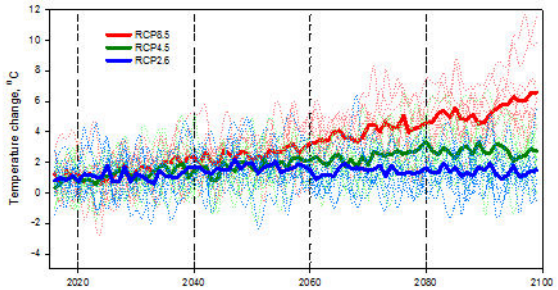
- Increase in Winter 38%, Spring 57%
- Decrease in Summer 13%, Autumn 9%

City contribution to the Mongolia's iNDC

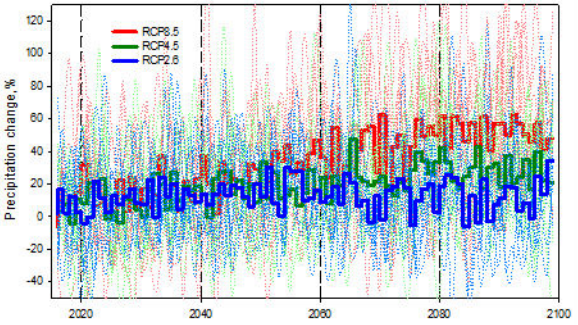
FUTURE CLIMATE CHANGE TRENDS IN UB CITY

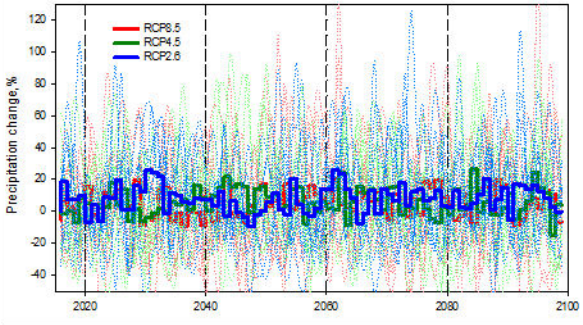
a) Winter and b) Summer temperature future trend, up to year 2100





a) Winter and b) summer precipitation trend, up to year 2100





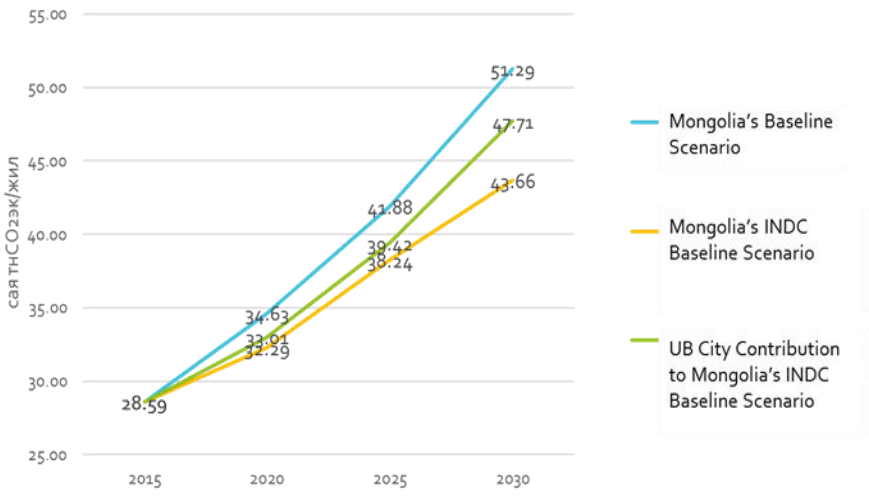
City contribution to the Mongolia's iNDC

UB City contribution to Mongolia's NDCs

Mitigation - GHGs emissions in UB City Territory & Scenario

UB mitigation scenarios, 1000t CO_2-eq/year

Items	2015	2020	2025	2030
Baseline Scenario				
INDC Baseline Scenario	**28,591**	**34,632**	**41,877**	**51,294**
UB Mitigation Scenario				
1. Efficiency improvement of electricity, heat production and distribution	**0.00**	**786.16**	**990.00**	**1280.69**
1.1 Reduction of internal use of electricity in CHPs	0.00	93.51	160.00	226.95
1.2 Reduction of electricity transition and distribution losses	0.00	276.95	370.00	417.94
1.3 Reduction of heat distribution losses	0.00	385.70	420.00	583.80
1.4 Efficiency improvement of water heating boilers	0.00	30.00	40.00	52.00
2. Efficiency improvement of electricity, heat consumption	**0.00**	**480.00**	**638.00**	**825.60**
2.1 Electricity and heat saving in big industries and entities	0.00	80.00	88.00	94.40
2.2 Reduce heat losses in buildings	0.00	400.00	550.00	731.20
3. GHG emission reduction in transport sector	**0.00**	**150.00**	**435.00**	**880.00**
4. Increase the share of renewable energy in the total electricity generation capacity	**0.00**	**200.00**	**400.00**	**594.00**
GHG emission reduction total	**0.00**	**1616.16**	**2463.00**	**3580.29**



Baseline scenario and UB mitigation scenarios, 1000CO_2-eq/year

	2010	2015	2020	2025	2030
Baseline scenario	21,950	28,591	34,632	41,877	51,294
UB mitigation scenario	**0**	**0**	**1,616**	**2,463**	**3,580**
%			4.67	5.88	6.98

ADAPTATION

- Rapid population growth and density are increasing vulnerability of UB City to the climate change.
- Between 2005 and 2010, there are around 9100 dangerous incidents and accidents, of which 8902 are related to climate change at some extent.

UB City Vulnerability caused by climate change

Population structure and human health

- Elderly people, children and people with chronic diseases
- Allergy, transmittable diseases
- Cardiovascular disease

City infrastructure

- City flood prevention system and drainage network
- Roads
- Buildings, streets
- Drinking water network

City ecosystem

- Decrease of plant species and green space
- Frequency of freezing and thawing of soil
- Increase of pest infectious disease
- Increase of natural disasters

Ulaanbaatar climate change program

VISION ;

The city of Ulaanbaatar will develop sustainably by adapting climate resilient actions.

OBJECTIVES;

- Capacity of legislation is enhanced by establishing integrated climate change management structure.
- Capacity of climate change adaptation is improved by reducing social economics vulnerability.
- Reduce GHG emission by increasing efficiency of productivity and introducing environmentally friendly technology.
- Public awareness is increased by supporting active participation.

City contribution to the Mongolia's iNDC

UB CITY CLIMATE INVESTMENT NEEDS – 7 PRIORITY AREAS

	Sector	Number of projects	Adaptation, Mitigation	Investments needed	Impact in climate change/per year
1	Energy (renewable energy, energy efficiency, heat)	5	Mitigation	USD 141.5 million	Reduction of 328,328 tons of CO2 annually
2	Transport (fuel, model shift)	3	Mitigation	USD 140.5 million	Reduction of 120, 000 tons of CO2 annually
3	Industry	3	Mitigation	USD 453.7 million	Reduction of 267,000 tons of CO2 per year
4	Waste	2	Mitigation Adaptation	USD 120 million USD 350	Reduction of 37,200 tons of CO2
5	Water source	3	Adaptation	USD 404.4 million	Resilience, water stress reduction
6	Forest	1	Adaptation	USD 3.5 million	Absorption of 12,000 tons of CO2 per year
7	Disaster management	1	Adaptation	USD 10.5 million	Adaptation climate change and strengthening of early warning system
	Total	18		USD 1.6 billion	882,328 tons

Municipality initiative examples

NDC Implementation
Case Project 1
Building energy efficiency

National NDC

Reduce building heat loss by 20% by 2020 and 40% by 2030.

UB City Contribution

Total number of 426 pre-cast panel 5, 9, 12 storey buildings will require thermo-technical retrofitting which will reduce energy usage by 750 million kWh or 562.5 thousand tons of coal, i.e. 731.2 thousand ton CO2 per year.

Identified project

Thermo-technical retrofitting of precast buildings

Implementing agency

Mayor's Office, Ulaanbaatar Environmental Department, Energy Regulatory Commission

Preparatory works – Current Status

Energy audit for 5, 9, 12 storey buildings, calculate heat loss

Develop business case to attract climate financing, particularly mobilising private financing

International Partners:

Global Green Growth Institute

Building Efficiency Accelerator

ICLEI Local Governments for Sustainability

WORLD RESOURCES INSTITUTE

NDC PARTNERSHIP ACCELERATING CLIMATE AND DEVELOPMENT ACTION

Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung

Municipality initiative examples

NDC Implementation
Case initiative 3
Electric vehicles

National NDC

- Increase the share of private hybrid and electric road vehicle from approximately 6.5% in 2014 to 13% in 2030
- Shift from liquid fuel to LPG and electric vehicles in Ulaanbaatar and aimag (province) centres by improving taxation and environmental fee system
- Improve enforcement mechanism of standards for road vehicles and non-road based transport

UB City Contribution

GHG emission from transport sector reduced 10% in 2020, 35% in 2030, by increasing number of hybrid and electric vehicles and promotion of public and non-motor transports modes

Project and Initiatives Identified

Governor of the Ulaanbaatar City issued decree No 613 and 614 that grants road tax exemption and removed plate number restriction of full electric vehicles from 1st of September, 2017.

Further project developments

Further exploration of comprehensive EV projects, including charging stations, promotion of electric vehicles in public and private transport

Implementing agency

UB City Road development department, UB City Environment Department

Thank you!

Capital city Governor's office
www.ulaanbaatar.mn

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