Sustainability and Climate Actions in Myanmar

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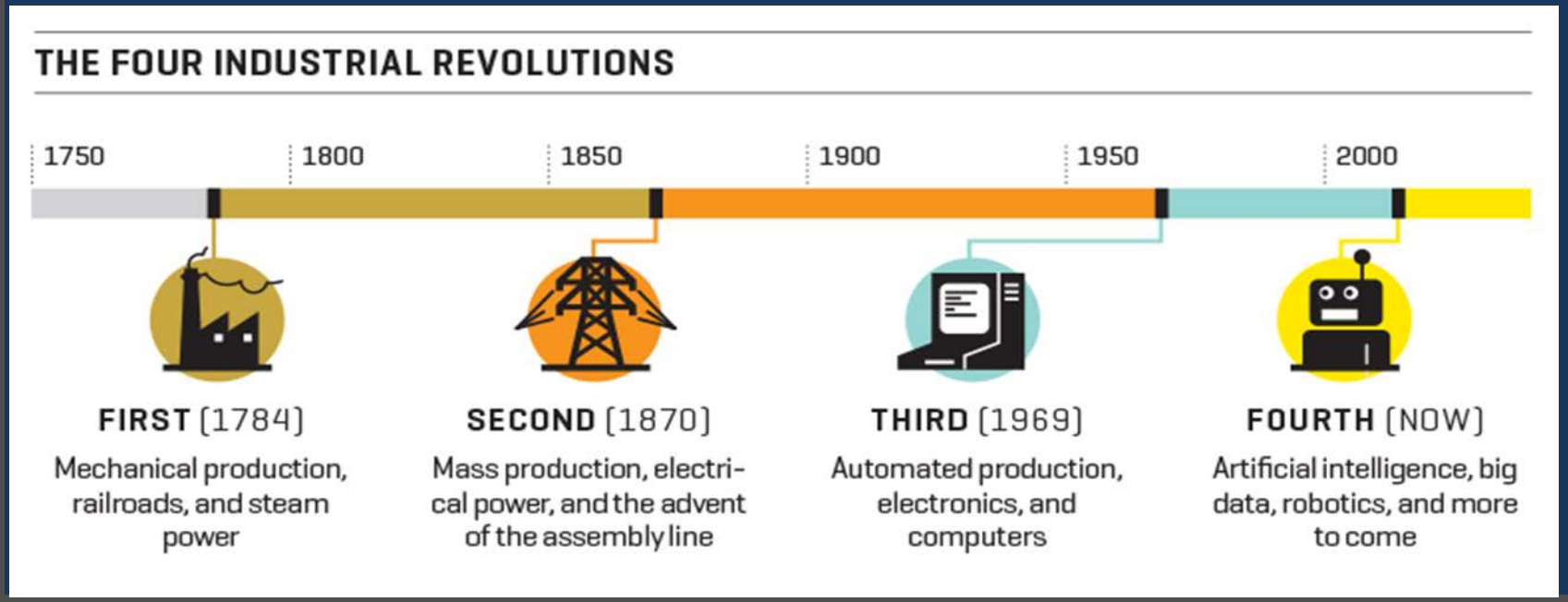
Place_ Novotel Yangon Max Hotel

Date- 22.1.2020

IPCC Special Report: Understanding Global Warming of 1.5°C

- Human activities are estimated to have caused approximately 1.0°C of global warming5 above pre-industrial levels, with a likely range of 0.8°C to 1.2°C.
- Global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate. (high confidence).



Year	Temperature (°C)	CO_2 concentration (ppm)
1880	13.75	~ 280
1957	13.97	315
1967	14.00	322
1977	14.13	335
1987	14.26	350
1997	14.39	365
2007	14.44	385

IPCC Special Report: Understanding Global Warming of 1.5°C

- How long will be Global Warming?
  - from anthropogenic emissions from the pre-industrial period to the present will persist for centuries to millennia and will continue to cause further long-term changes in the climate system.

- What are the impacts?
  - such as sea level rise, with associated impacts (high confidence), but these emissions alone are unlikely to cause global warming of 1.5°C (medium confidence).
  - Climate-related risks for natural and human systems are higher for global warming of 1.5°C than at present, but lower than at 2°C (high confidence).
  - These risks depend on the magnitude and rate of warming, geographic location, levels of development and vulnerability, and on the choices and implementation of adaptation and mitigation options (high confidence).

IPCC Special Report: Projected Climate Change, Potential Impacts and Associated Risks

- By **2100**, global mean sea level rise is projected to be around 0.1 meter lower with global warming of 1.5°C compared to 2°C (medium confidence).
- Sea level will continue to rise well beyond 2100 (high confidence), and the magnitude and rate of this rise depend on future emission pathways.
- Climate-related risks to health, livelihoods, food security, water supply, human security, and economic growth are projected to increase with global warming of 1.5°C and increase further with 2°C.

Myanmar Climate Change

- **Long term climate change occurred since** 1978 **nsoon**- came lately, leave early, short duration, unstable, weak, less rain and storm, rising heat index, abnormal weather events occurrences.

- **Mid term climate change** since 2006 under storms, flash flood, land slide.

Climate scenario for Myanmar(2001-2100) (MAGICC/SCENGEN Model)

- The temperature for 2001-2020 shows 0.5-0.7ºC increase during the whole year in lower parts of Myanmar and record high maximum temperature may be expected. There is an increase in precipitation of about 4% during March November in the whole country.

- The temperature for 2021-2050 shows 1.4-1.7ºC increase in the months June-November in the whole country. From March to November there is an indication of about 10% increase of precipitation in the whole country.

- The temperature for 2051-2100 shows the warming trend throughout the year especially in the cool season. The whole country will generally receive about 10% increase of precipitation during March to November and deficient rain of up to 80% is likely during the cool months from December to February

Climate scenario for Myanmar(2001-2100) (PRECIS Model)

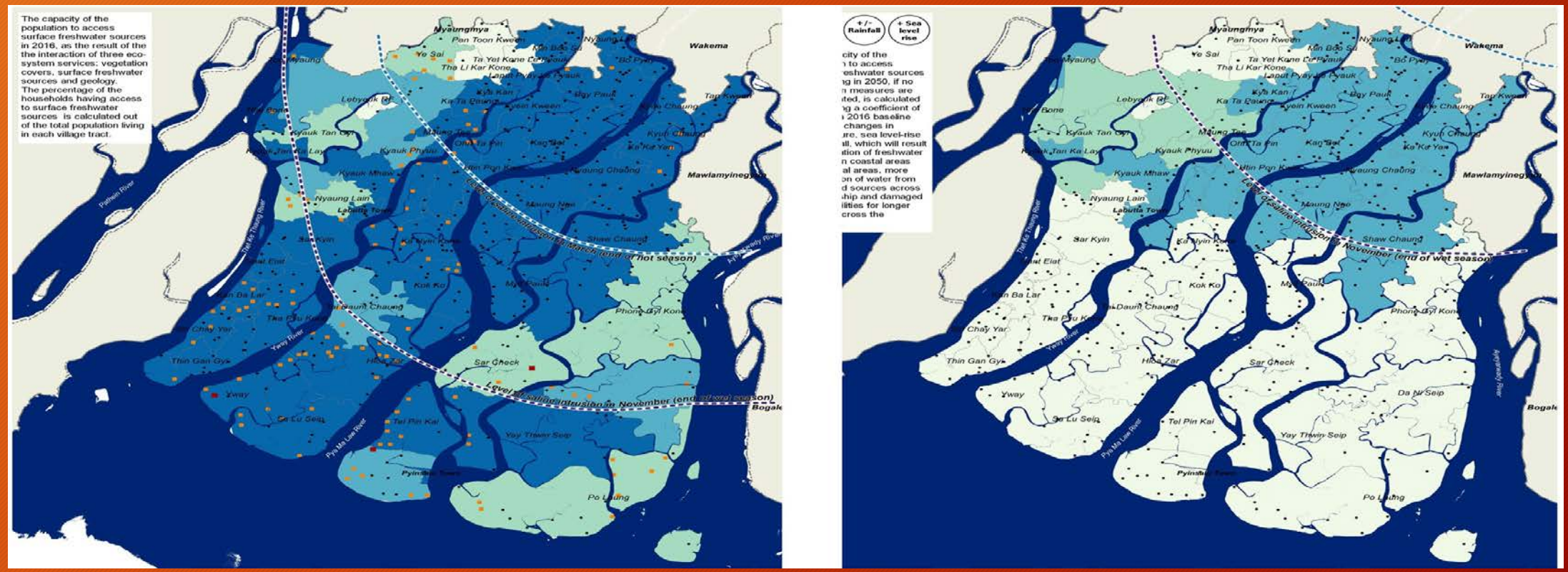
- The standard deviation of mean temperature for 2001-2020 is generally less than 0.5ºC in the whole country except Mandalay and Myitkyina. Annual rainfall will deviate more than 18% at Mandalay, Sittwe, Pathein and Dawei, more than 14% at Myitkyina, Kengtung and Yangon.
- For 2021-2050, there is an increasing trend in temperature from 1ºC to 1.4ºC at Yangon, Pathein, Myitkyina, Sittway, Dawei, Kengtung, and Mandalay. A largest standard deviation at Sittway indicated 1,130mm, compared to 891 mm in 1971-2000.
- For 2051-2100, the scenario indicates increases of 2.8°C to 3.5°C in many places from 1971-2000 baseline data due to decreasing cloudiness coverage. Periods of drought are likely at Myitkyina, Mandalay, Sittway, Pathein and Yangon where the standard deviation of mean temperature is generally about 0.9ºC.

Scientific Findings: Local level impacts:

Myanmar Climate Change Alliance

Session 2.1

Capacity of the population to access freshwater for drinking in 2016 (left) and 2050 (right)



(Source: Fee, L. et al. (forthcoming, 2017))

Scientific Findings: Local level impacts

Myanmar Climate Change Alliance

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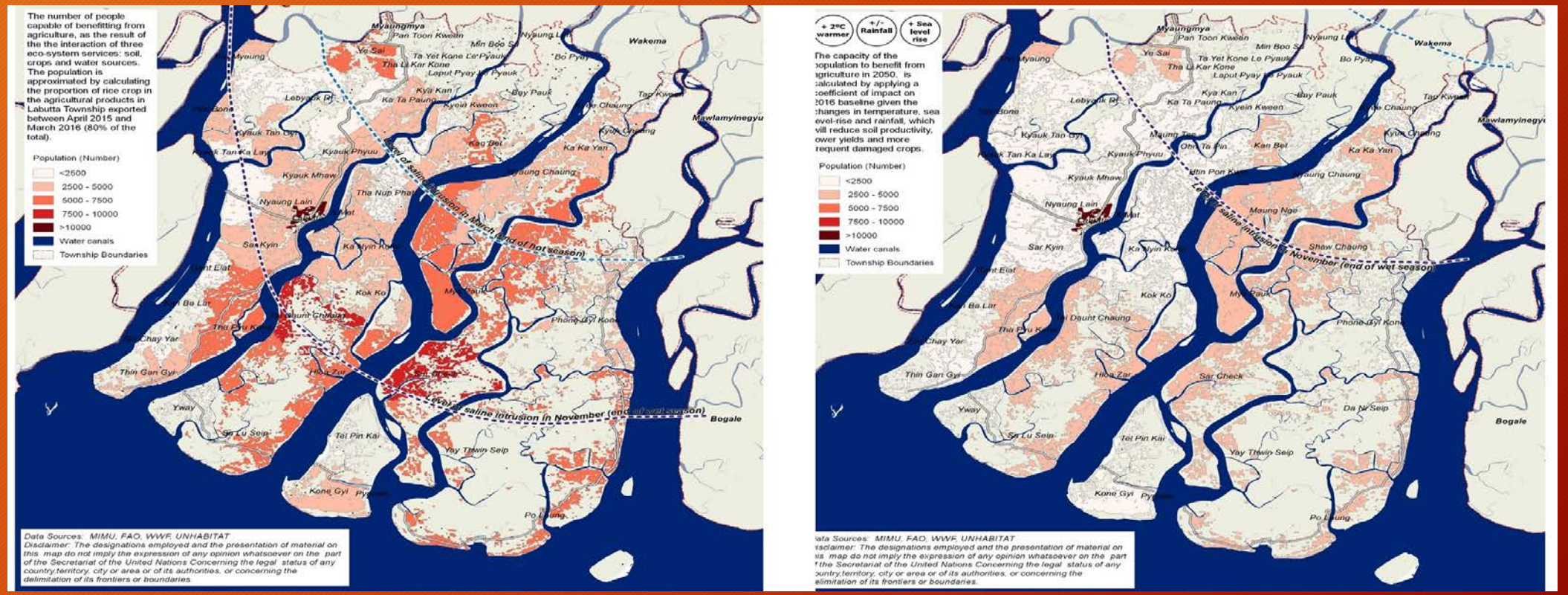
Capacity of the population to benefit from agriculture in 2016 (left) and 2050 (right)



(Source: Fee, L. et al. (forthcoming, 2017))

Scientific Findings: Local level impacts:

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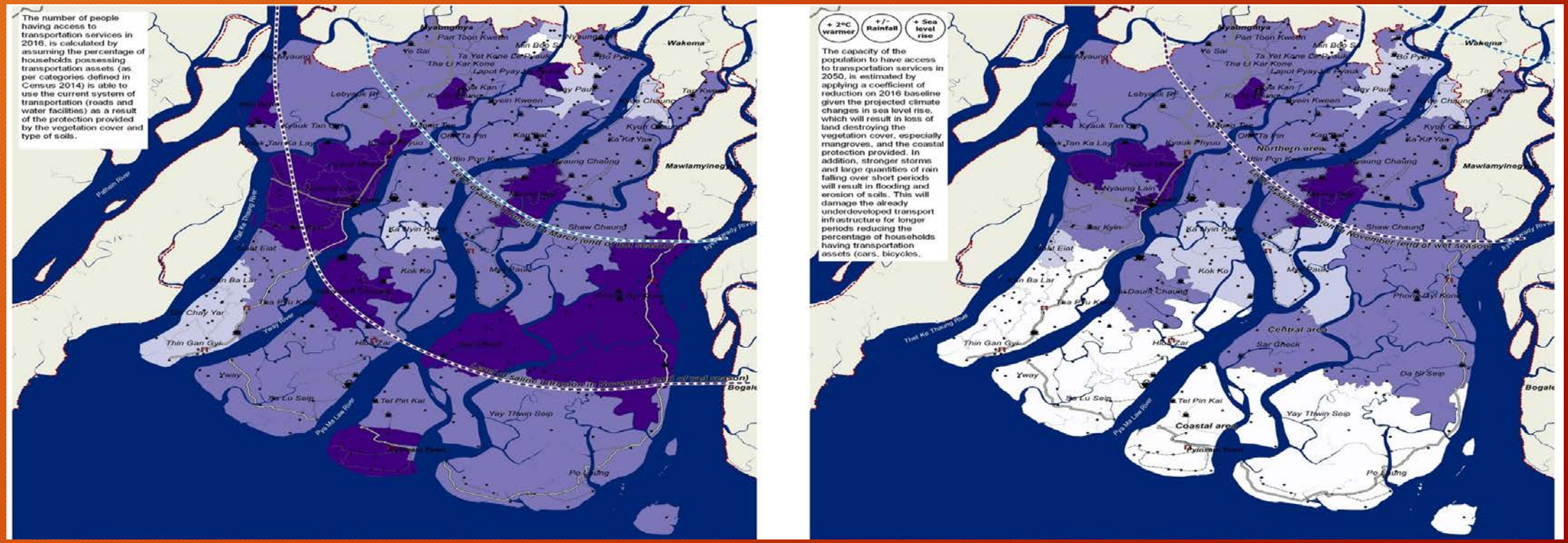
Capacity of the population to access transportation services in 2016 (left) and 2050 (right)



(Source: Fee, L. et al. (forthcoming, 2017))

Myanmar: Vulnerability and Adaptation(V&A)assessment

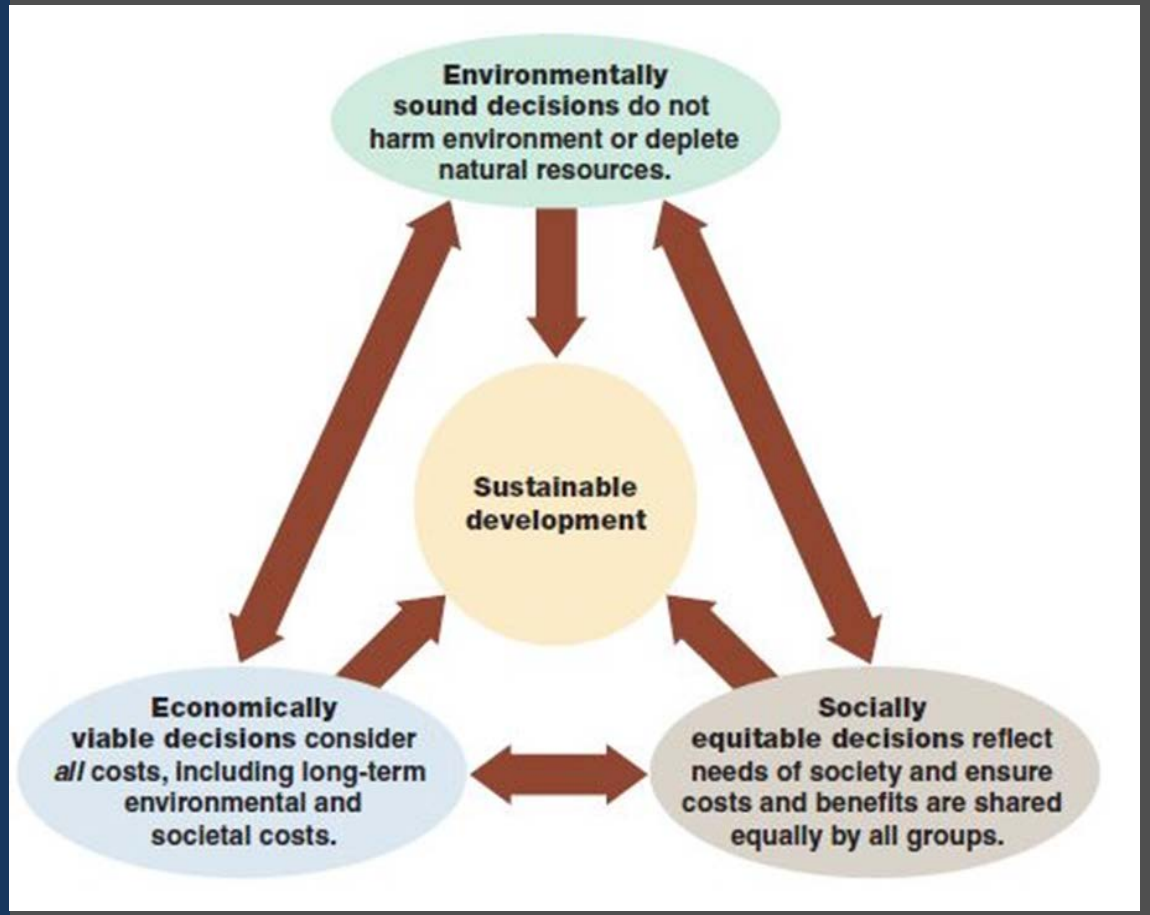
- The most vulnerable areas to climate change in Myanmar:
  - public health
  - biodiversity sectors
  - water resources,
  - forestry,
  - coastal zones
  - Agriculture
- Myanmar is situated under the high potential hazard levels. There are six potential natural hazards:
  - Cyclone and strong winds,
  - flood and storm surge,
  - intense rain,
  - extreme day temperature,
  - drought
  - sea level rise

Sustainability

- World Commission on Environment and Development in 1987 stated that sustainability is economic-development activity that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987: 39).

Sustainability

Sustainability can be achieved only by simultaneously protecting the environment, preserving economic growth and development, and promoting equity and that achievement in one pillar cannot and should not be accomplished by sacrificing another.



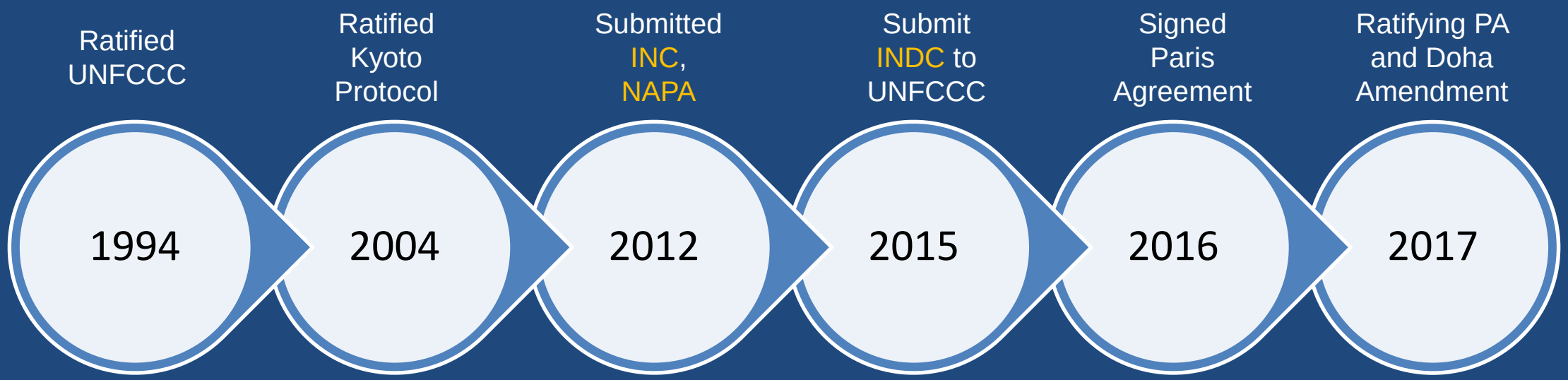
Ways To Address Climate Change Impacts

- **Develop a knowledgeable** *human resource pool through education and targeted trainings*
- **Learn:** *For DRR systems to work, the rural poor in Myanmar's coastal areas and floodplains must be able to react to cyclonic storm or flood early warnings.*
- **Plan**: *Making and following a plan can ensure local, regional and national-level resilience are developed gradually*
- **Execute and implement** *adaptive activities to reduce vulnerabilities,*
- **Decrease** *energy intensity* and **reduce** *emissions*
- **Monitoring and assessing** *the effectiveness of existing programs to evaluate what needs to be done to make the system more resilient*
- **Institutional capacities** *to deal with climate change activities are particularly important for making the system more efficient*
- **Generate funds** from *local and international* sources: Tapping on available sources of international funds is particularly important
- **Negotiate in international forums on climate change:** *Taking part in international negotiation processes ensures that delegation members are aware of the availability of funds and other opportunities, allowing them to align themselves with ideas and mechanisms that are discussed and decided during international negotiations.*

Strengthening the Global Response in the Context of Sustainable Development and Efforts to Eradicate Poverty

- Limiting the risks from global warming of 1.5°C in the context of sustainable development and poverty eradication implies system transitions that can be enabled by an increase of adaptation and mitigation investments, policy instruments, the acceleration of technological innovation and behaviour changes (high confidence).
- Sustainable development supports, and often enables, the fundamental *societal and systems transitions and transformations* that help limit global warming to 1.5°C.
- Such changes facilitate the pursuit of *climate-resilient development pathways* that achieve ambitious mitigation and adaptation in conjunction with poverty eradication and efforts to reduce inequalities (high confidence).
- Strengthening the capacities for climate action of *national and sub-national authorities, civil society, the private sector, indigenous peoples and local communities* can support the implementation of ambitious actions implied by limiting global warming to 1.5°C (high confidence).
- International cooperation can provide an enabling environment for this to be achieved in all countries and for all people, in the context of sustainable development- a critical enabler for developing countries and vulnerable regions (high confidence).

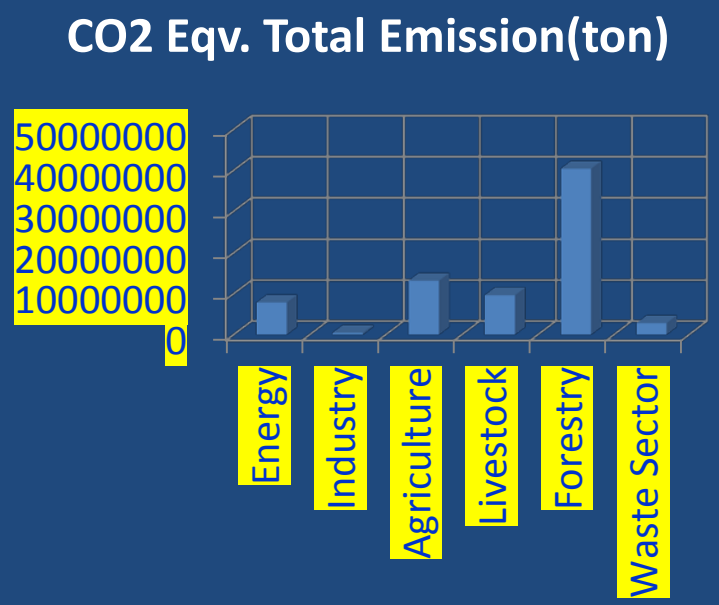
Myanmar and Climate Change Governance



Initial National Communication Report (INC) (2000)

- **GHGs emission** in CO2 equivalent is approximately **74 m tons based** in the year 2000.
- Carbon sequestration from forestry sector was about **142 m tons**
- **Myanmar is not a net-emitter and in fact, a carbon sink country**.

- **Currently, 2nd National Communication is preparing**

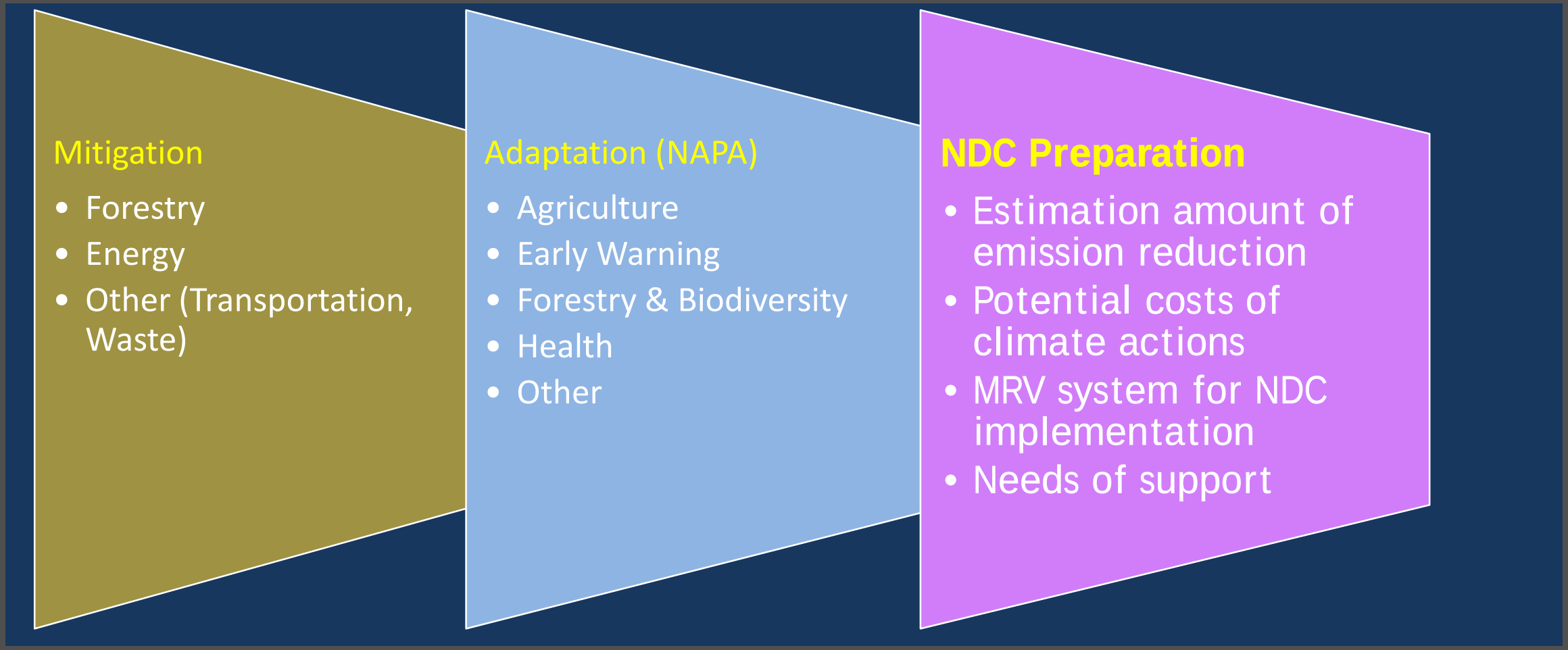


Energy - 10.6%
Industry - 0.6%
Agriculture/livestock- 30.7%
Forestry - 54.3%
Waste - 3.8%

National Adaptation Plan of Action (NAPA)(2012)

- Agriculture
- Early Warning System
- Forestry
- Public Health
- Water Resource
- Costal Zones
- Energy and industry
- Biodiversity

Myanmar INDC (2015)



Mitigation actions in INDC

Sector	Intended contribution(s)	Supporting actions
Forestry	• **Reserved Forest** (RF) and Protected Public Forest(PPF) = 30% of total national land area • **Protected Area Systems**(PAS) = 10% of total national land area	• 30-Year National Forestry Master Plan (2001-30) • UN-REDD Programme • European Union's Forest Law Enforcement Governance Trade-FLEGT
Renewables		
- Hydro	9.4 GW installed capacity by 2030	Long Term Energy Master Plan National Electrification Master Plan
- Rural electrification	Rural electrification through the use of at least 30% renewable sources.	Comprehensive Village Development Plan
- Industrial energy efficiency	20% energy saving by 2030 of the total forecast electricity consumption.	Partnership with Global Environment Facility to demonstrate possible economy wide savings
- Cookstoves	To distribute approximately 260,000 cookstoves between 2016 and2031.	Comprehensive Plan for Dry Zone Greening (2001-31) programme

Myanmar Climate Change Alliance

MCCA was the **first large programme in Myanmar focusing on climate change issues** and it has created the awareness through various modes among communities, media and policy makers but still there is a substantial amount of work to be done especially at the local level to make people understand the impact of climate change into their lives and livelihoods in order to build trust and their engagement for undertaking local climate actions. The nexus of Climate Change, Poverty and Sustainable Development has to be studied more in detail from various angles such as Gender and Youth role, Migration, role of Indigenous people, climate change and peacebuilding process, among others

National Climate Change Policy, Strategy and Action Plan- 2018

Vision:Myanmar's vision is to be a climate-resilient, low-carbon society that is sustainable, prosperous and inclusive, for the wellbeing of present and future generations.

Goal: By 2030, Myanmar is achieving climate resilience and is engaged in low-carbon, resource efficient & inclusive development as a contribution to sustainable development

STRATEGIC OBJECTIVES

Increase adaptive capacity and resilience of communities and sectors

Maximise opportunities for low carbon development in potential sectors

FOCUS AREAS (KEY ENTRY POINTS)

- **Agriculture and Food Security**
- **Environment, and Natural Resources**
- **Energy, Transport, and Industry**
- **Urban, Building and Human Settlements**
- **Education, Awareness, Science and Technology**
- **DRR, Health and Early Warning Systems**

STRATEGIC PRIORITIES (FOR EACH FOCUS AREAS)

- **Integrating Climate Change**
  Policy, Legislation, Planning, Budgeting
- **Institutional Arrangements**
  Coordination Mechanisms, Human Skills, Implementation, Monitoring and evaluation
- **Financial Mechanisms**
  Fund management, Financial instruments
- **Access to technology**
  Access to environmentally sound technology for adaptation and mitigation
- **Awareness, and Capacity**
  Capacity, Education and awareness, Research data & innovation
- **Muliti-stakeholder Partnerships**
  Public, (including CSOs) private partnership; Joint implementation; International cooperation

Institutions for Environmental Safeguards

National Environmental Conservation and Climate Change Central Committee (NECCCCC) (2016)

Central Working Committee

- Policy, Law and Standards Working Committee
- Industries , Urban and Waste Management Working Committee
- Natural Resources , Biodiversity and Culture /Heritage Working Committee
- Climate Change Mitigation and Adaptation Working Committee
- Environmental Capacity Building , Education Working Committee
- Green Economy & Development Working Committee

Regional/Local

Regions/States Environmental & Climate Change Supervision Committee

States & Regions (2016)

District & Township Environmental & Climate Change working group

(2017)

Thank You for kind Attention..