

International Meeting on Land Cover/Land Use Change (LCLUC) in South/Southeast Asia and Synthesis 31st January, February 1st, and 2nd , 2024, Hanoi, Vietnam

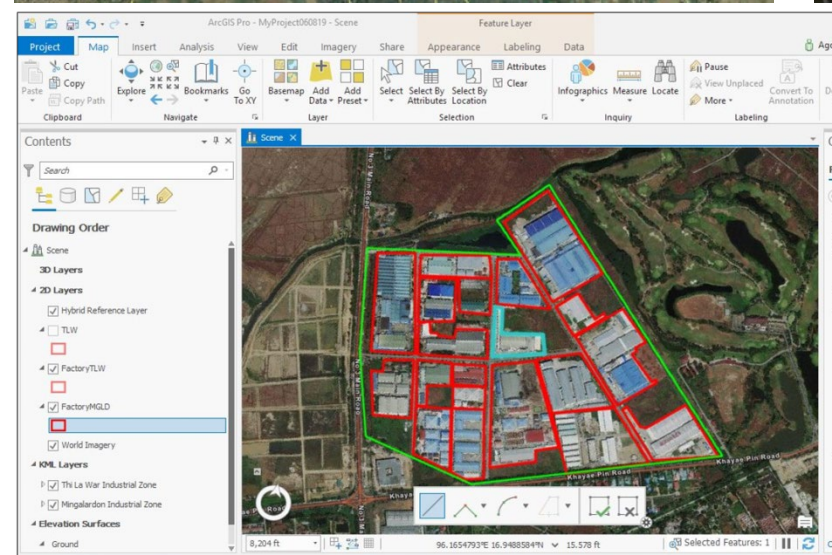
LCLUC and Social And Economic Implications of Industrial Zones In Yangon, MYANMAR

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MYANMAR & YANGON

- Yangon = Myanmar's Commercial Capital
- Myanmar = The 2nd largest country in Southeast Asia



Capital: Naypyitaw

Major cities: Yangon (Pop-7 m) and Mandalay (Pop-1 m)

Area: 676,578 km²

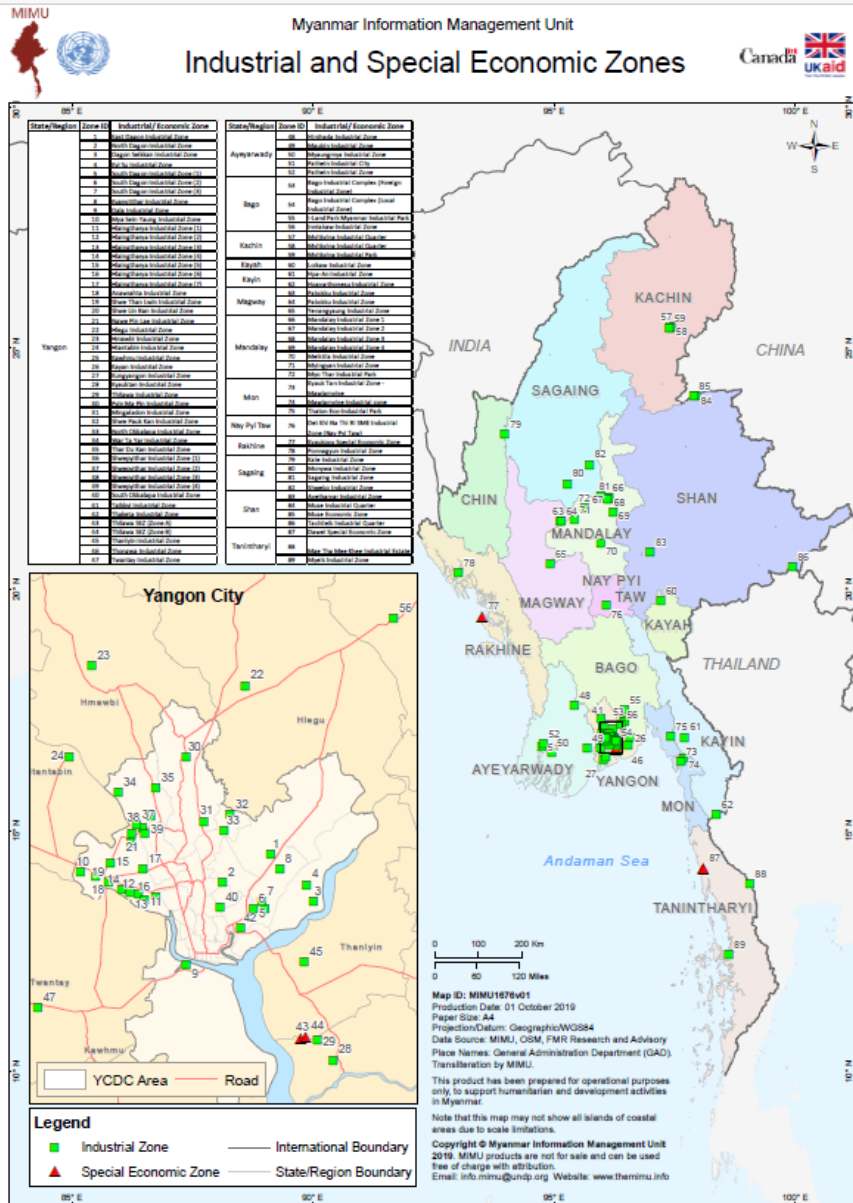
(About **2 times larger than Vietnam** _331,210 km²)

Main Export: Natural gas, beans, pulses, teak, minerals, gems and jewelries

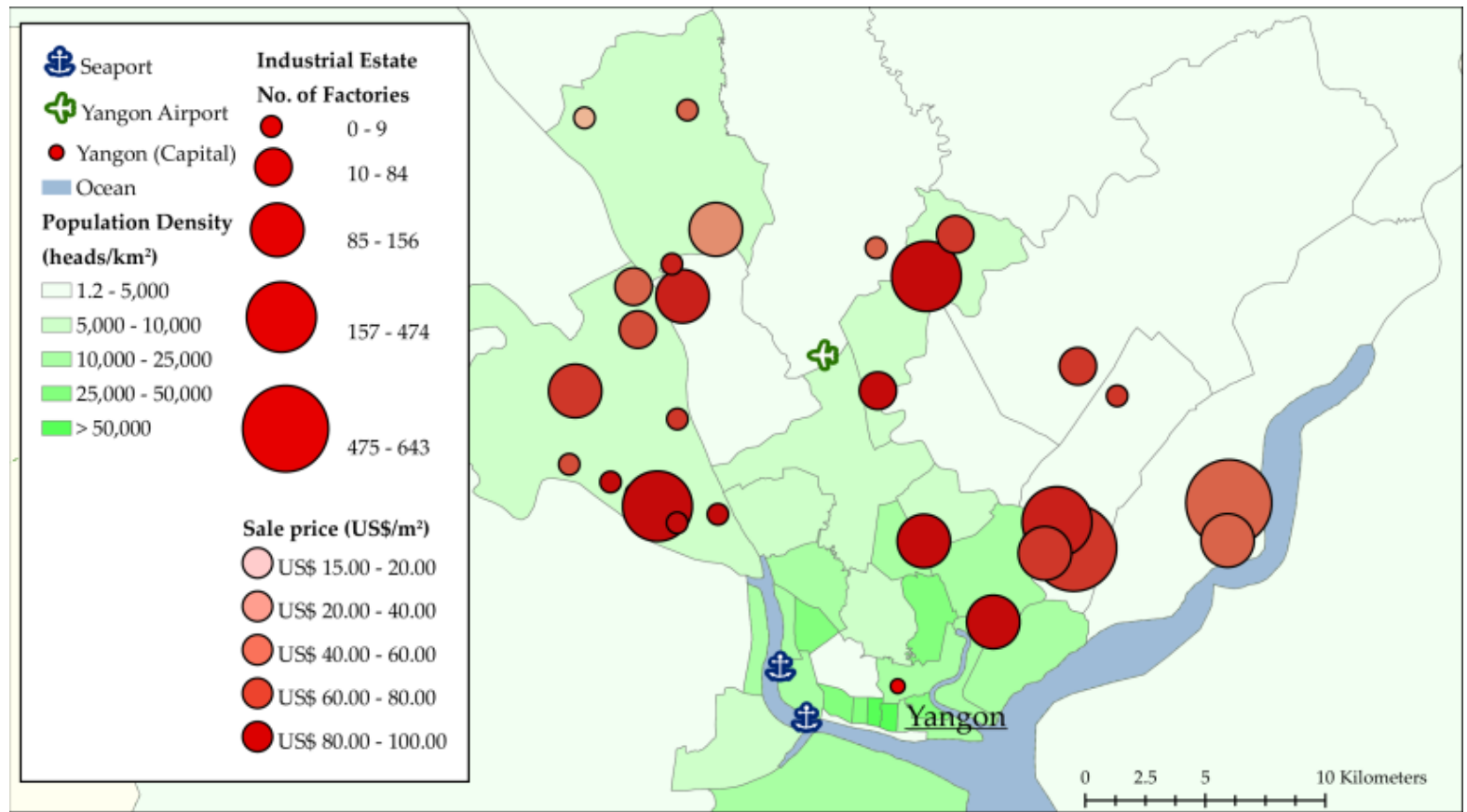
GDP - per capita (PPP): \$1,170 (2022 est.)

Population: 54 millions

Industrial Zones (IZs) in Myanmar and in Yangon



- Introduced IZs and SEZs in early 1990
- About 50% of Industrial Zones located in and around YANGON due to the transportation networks, roads, and ports infrastructure
- Yangon City Area = 598.75 sq-km
- 29 Industrial Zones = 65.42 sq-km = 10.92% of Yangon City Area



Source: Yangon Industrial Zones: Challenges and Recommendations; 2017, Tractus Research and Analysis

- East Dagon Industrial Zone
- North Dagon Industrial Zone
- Dagon Seikkan Industrial Zone
- Kyi Su Industrial Zone
- South Dagon Industrial Zone 1, 2, 3
- Kyansitthar Industrial Zone
- Dala Industrial Zone
- Mya Sein Yaung Industrial Zone
- Hlaingtharya Industrial Zone 1, 2, 3, 4, 5, 6, 7
- Anawrahta Industrial Zone
- Shwe Than Lwin Industrial Zone
- Shwe Lin Ban Industrial Zone
- Ngwe Pin Lae Industrial Zone
- Hlegu Industrial Zone
- Hmawbi Industrial Zone
- Htantabin Industrial Zone
- Kawhmu Industrial Zone
- Kayan Industrial Zone
- Kungyangon Industrial Zone
- Kyauktan Industrial Zone
- Thilawa Industrial Zone
- Pyin Ma Pin Industrial Zone
- Mingaladon Industrial Zone
- Shwe Pauk Kan Industrial Zone
- North Okkalapa Industrial Zone
- War Ta Yar Industrial Zone

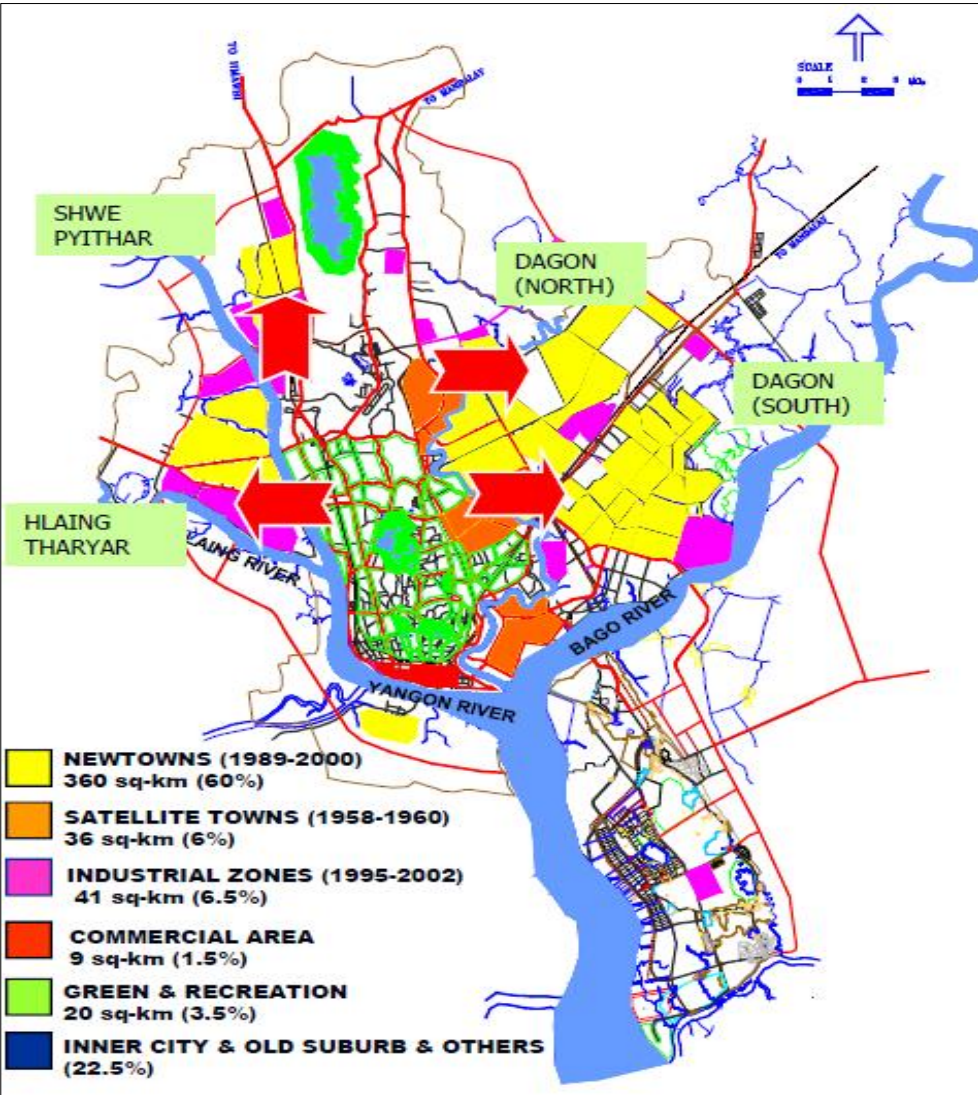


- Shwepyithar Industrial Zone 1, 2, 3, 4
- South Okkalapa Industrial Zone
- Taikkyi Industrial Zone
- Thaketa Industrial Zone
- Thar Du Kan Industrial Zone
- Thanlyin Industrial Zone
- Thongwa Industrial Zone
- Twantay Industrial Zone

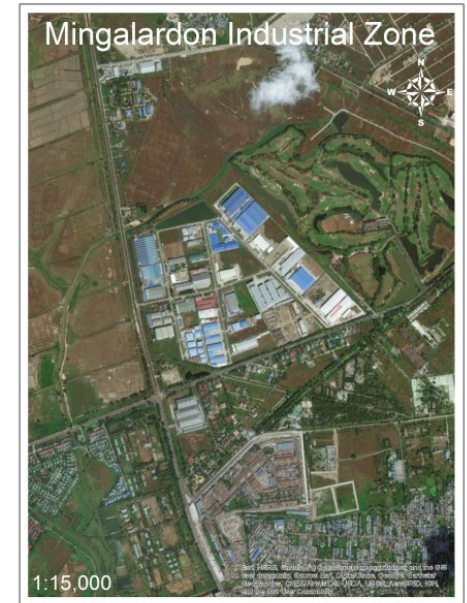
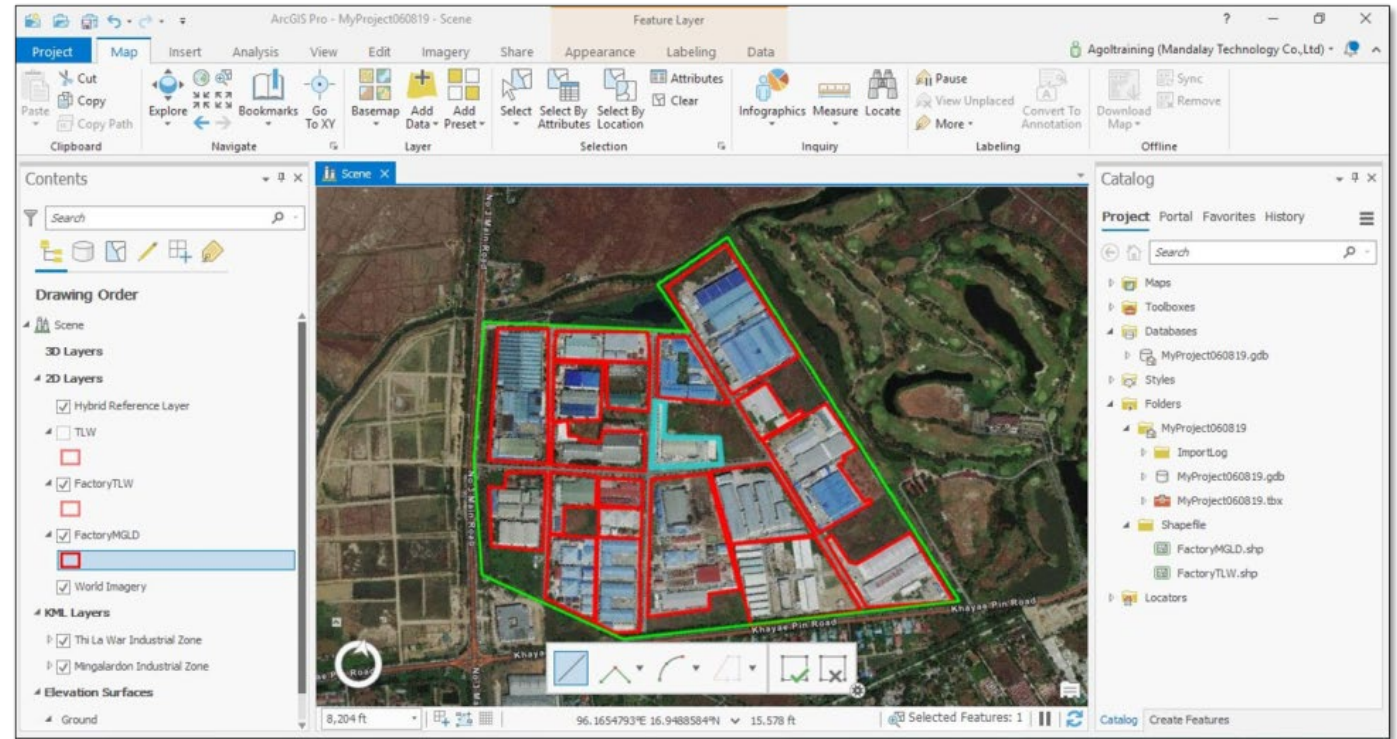
No	Zone	Area		Township
		Acres (Doc.)	sq-km (Map)	
1	Dagon Seikkan	1209	6.33	
2	East Dagon	666	8.55	
3	North Oakkalapa	110	0.48	North Oakkalapa
4	South Oakalapa	35	0.18	South Oakalapa
5	Shwe Lin Pan	1	5.49	
6	Hlaingtharyar (1)	1401	1.79	Hlaingtharyar
7	Hlaingtharyar (2)		2.28	Hlaingtharyar
8	Hlaingtharyar (3)		1.46	Hlaingtharyar
9	Hlaingtharyar (4)		1.52	Hlaingtharyar
10	Hlaingtharyar (6)		0.31	Hlaingtharyar
11	Hlaingtharyar (7)		0.51	Hlaingtharyar
12	Hlaingtharyar (5)		223	0.97
13	South Dagon (1)	475	2.55	Dagon new (south side)
14	South Dagon (2)	215	1.1	Dagon new (south side)
15	South Dagon (3)	53	0.42	Dagon new (south side)
16	Shwe Than Lwin		1.91	Hlaingtharyar
17	Mingalardon	7447	0.91	Mingalardon
18	Anawrahta		5.57	
19	Thadukan		2.16	
20	Shwe Pyi Thar (1)	336	2	Shwe Pyi Thar
21	Shwe Pyi Thar (2)	205	1	Shwe Pyi Thar
22	Shwe Pyi Thar (3)	395	1.67	Shwe Pyi Thar
23	Shwe Pyi Thar (4)	388	1.82	Shwe Pyi Thar
24	Myaung Takar	683	3.92	Mhawbi
25	Yangon	903	5.71	Mingalardon
26	Wataya	468	1.74	Shwe Pyi Thar
27	Thilawa		1.87	
28	Thaketa	200	0.41	Thaketa
29	Shwepaukkan	95	0.79	North Oakkalapa
		15506	65.42	

• Yangon City Area = 598.75 sq-km
 • 29 Industrial Zones = 65.42 sq-km =
10.92% of Yangon City Area

Industrial Zones in Yangon



Source: The Project for the Strategic Urban Development Plan of the Greater Yangon, Final Report I

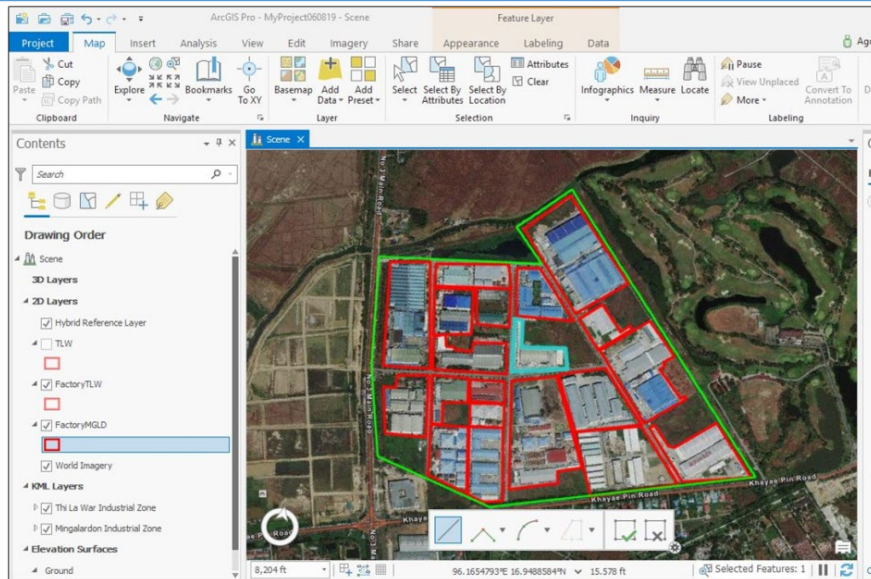
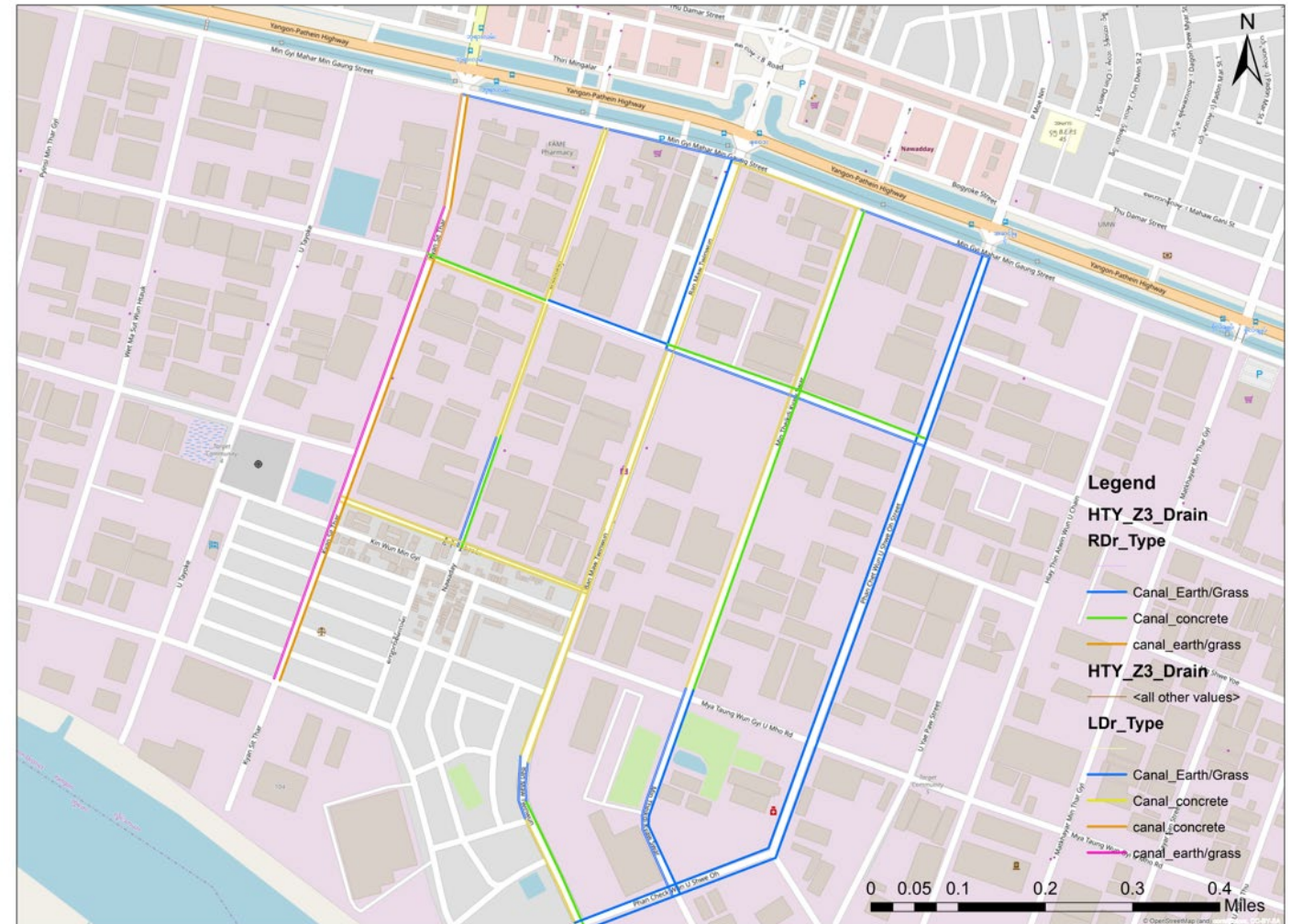


Source: GIS Database project of Industrial Zones in Yangon, 2019

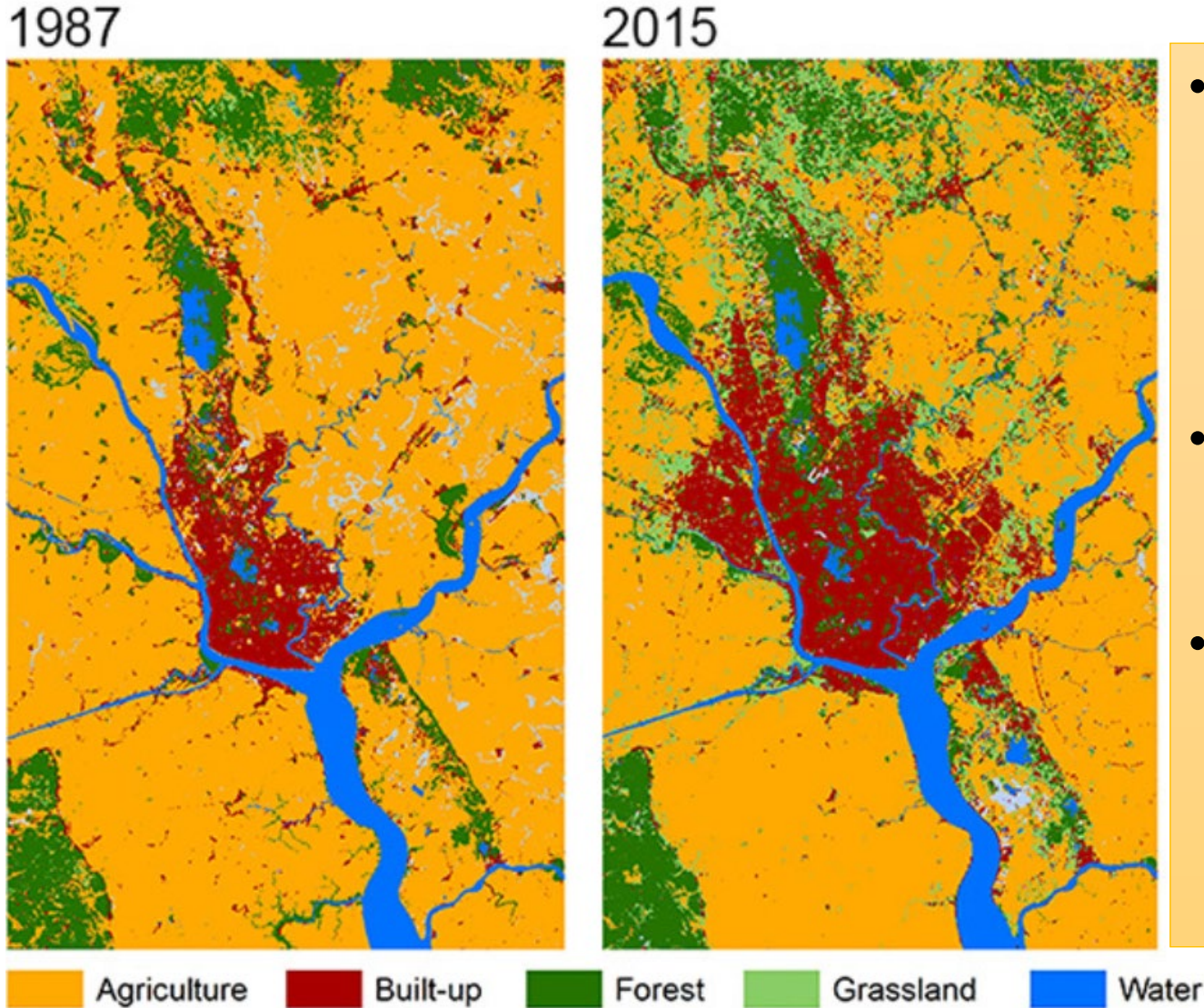
GIS project of Industrial Zones in Yangon (2019-2020)

- GIS database covering the Yangon City-region and detailing the 28 Industrial Zones
- Digitizing existing paper based data, compiling digital spatial data and establishment of a Yangon Region Industrial Zone GIS database.

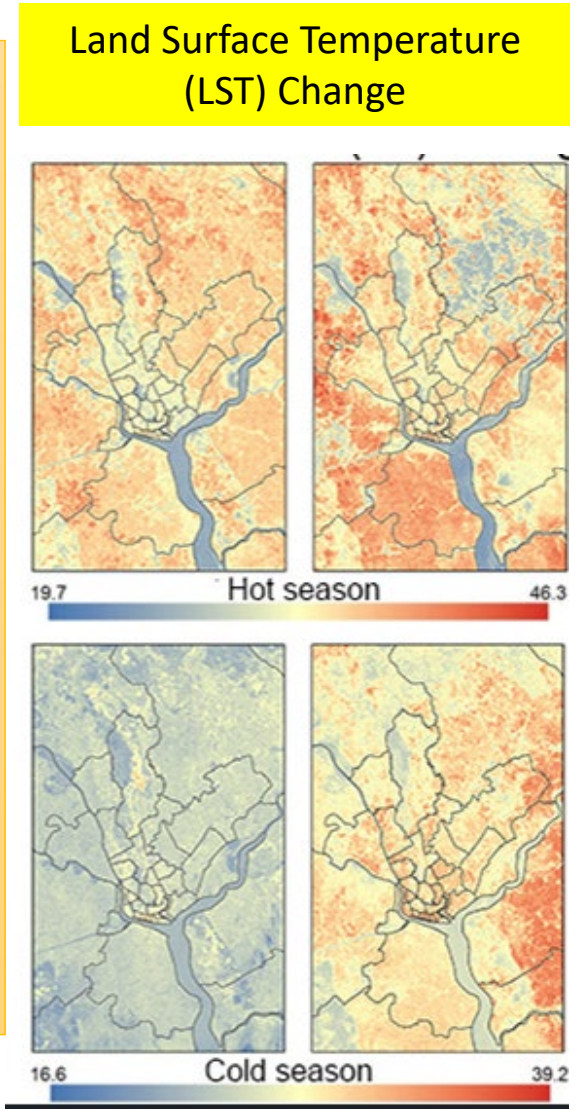
Hlaing Tar Yar Industrial Zone 3_Drain Type



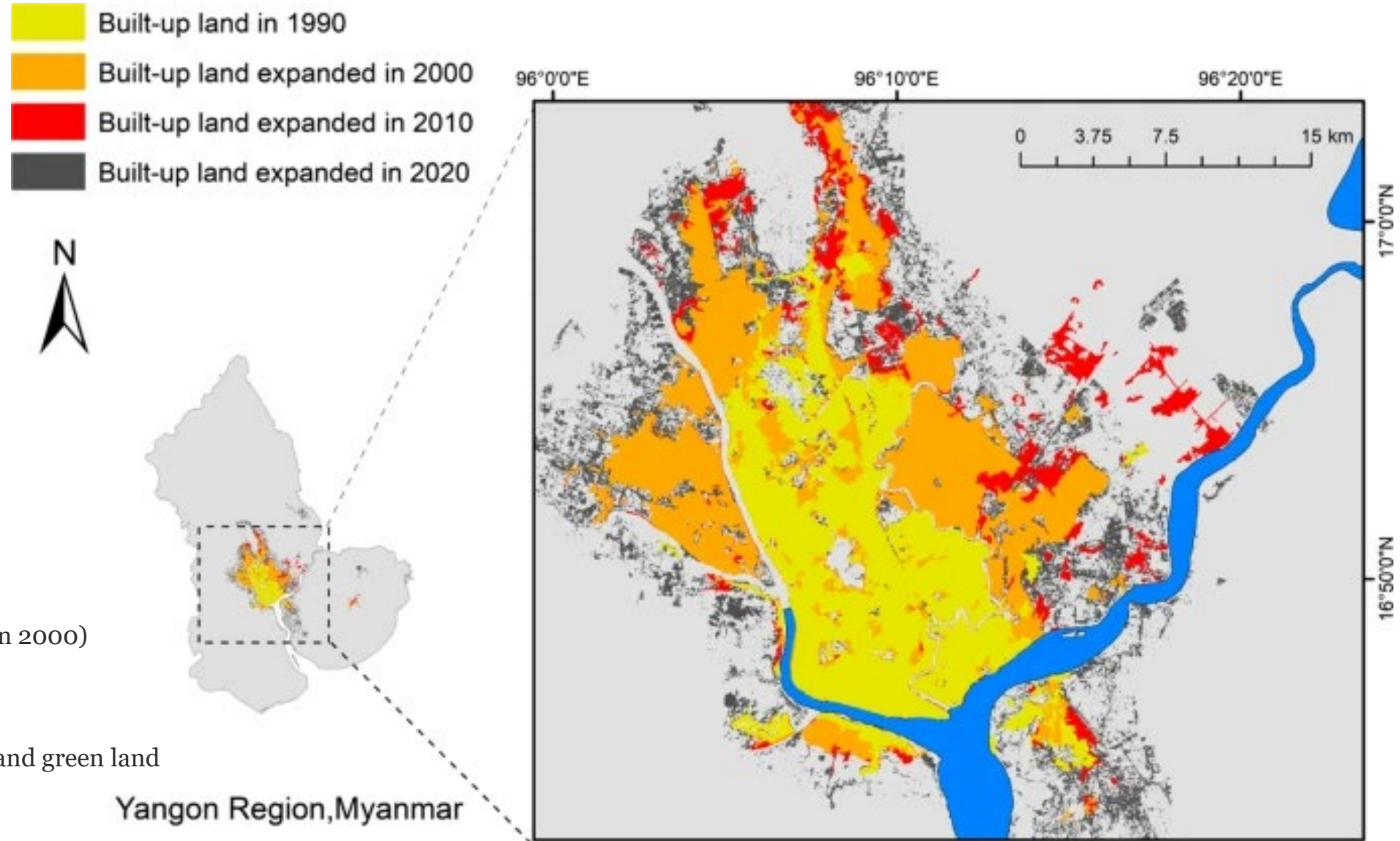
Urban Expansion and Urban Transformation of YANGON (1985 – 2015)



- Rapid urbanization and accelerated development, putting pressure on the environment
- Agricultural lands changed to built-up areas
- LST changed all over the land types



Urban Expansion and Urban Transformation of YANGON (1990 – 2020)



460%
in 30 years

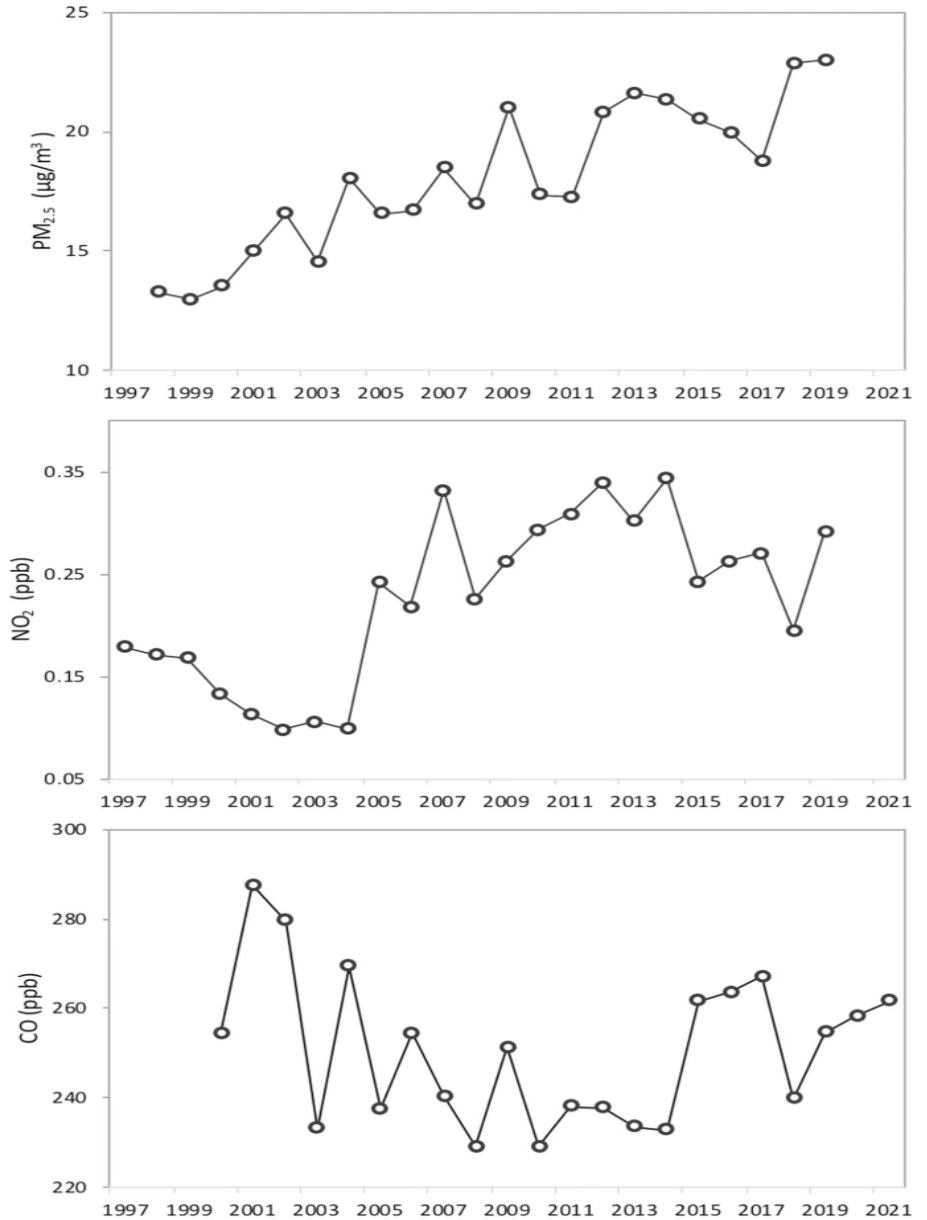
The urban built-up area increased by

- 79% (161 km² in 1990 to 289 km² in 2000)
- 104% to 329 km² in 2010, and
- 225% to 739 km² in 2020.
- Mostly converted from farmlands and green land

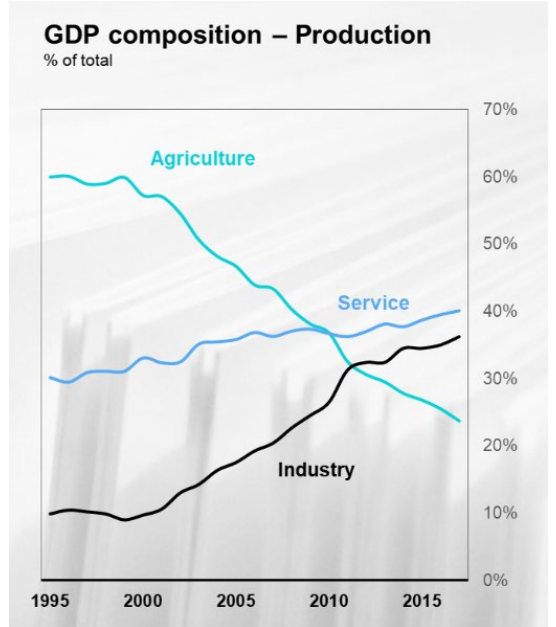
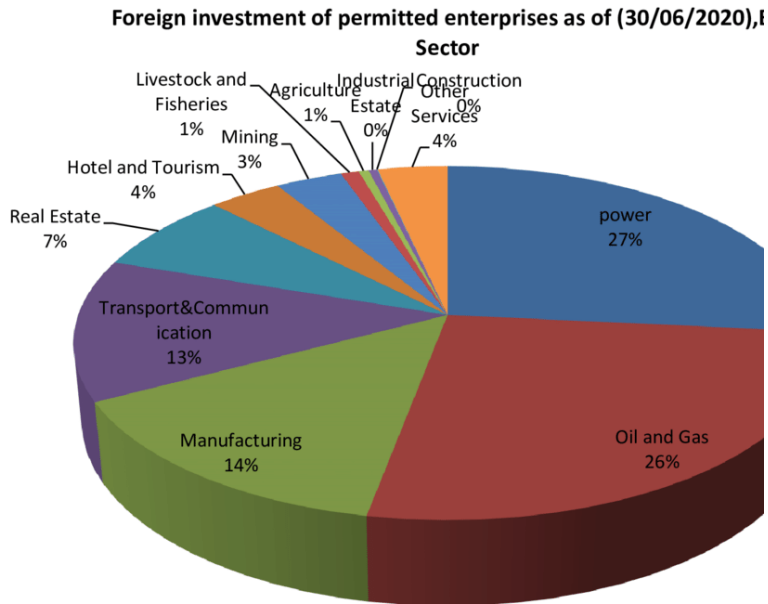
Air Pollution in Myanmar

- Acute environmental health issues are on the rise, caused by rapid **urbanization** and **industrialization**.
- 2017, over 45,000 deaths in Myanmar were attributed to air pollution.
- A higher mortality risk factor than in other countries in the region, at almost twice the average for Southeast Asia ^{29. Industrial Zones}
- Yangon and Mandalay have the highest PM concentration, PM10, among the cities in Southeast Asia

Air pollutant concentrations in Yangon

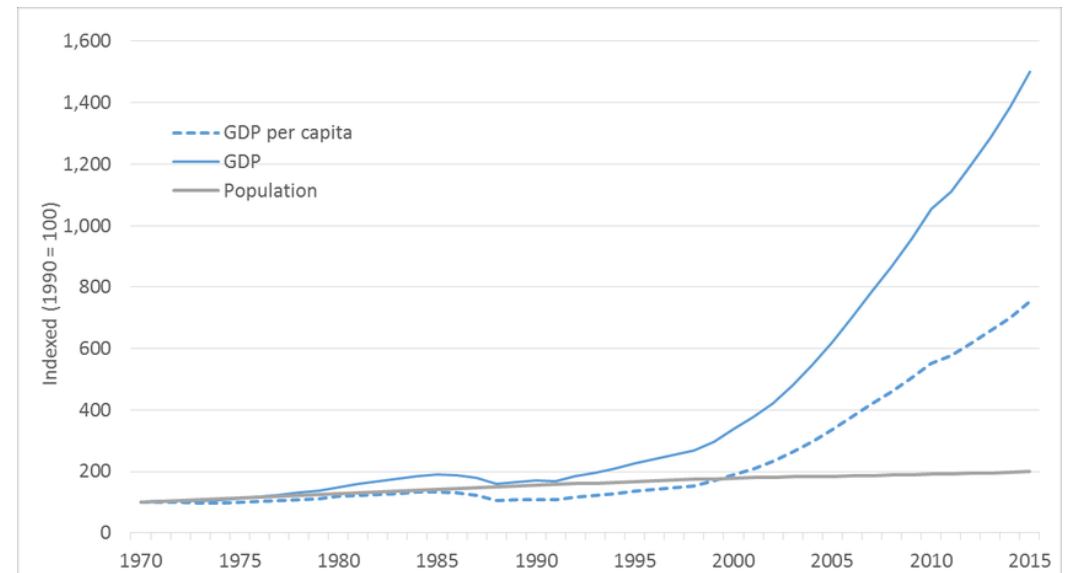


Social And Economic Implications



Positive Economic Impacts

- Attracted FDI especially in labor-intensive manufacturing industries
- Contributed to the economic development and composition of economy



Social And Economic Implications



Positive Economic Impacts

- **Created the employments**
- **Make improvements in technological upgrading of the industries and competitiveness in the targeted industries**
 - garment factories, steel fabrication factories
 - chemical industries such as emulsion and food production manufacturing

Social And Economic Implications

Land Confiscations

- **Development of industrial zones came at the expense of farmers.**
- **A parliamentary report in early 2013 recorded 63 complaints about 109,634 acres taken from farmers in several townships in Yangon for urban area expansion and the establishment of industrial zone projects.**



Social And Economic Implications



Inadequate infrastructure and of environmental issues

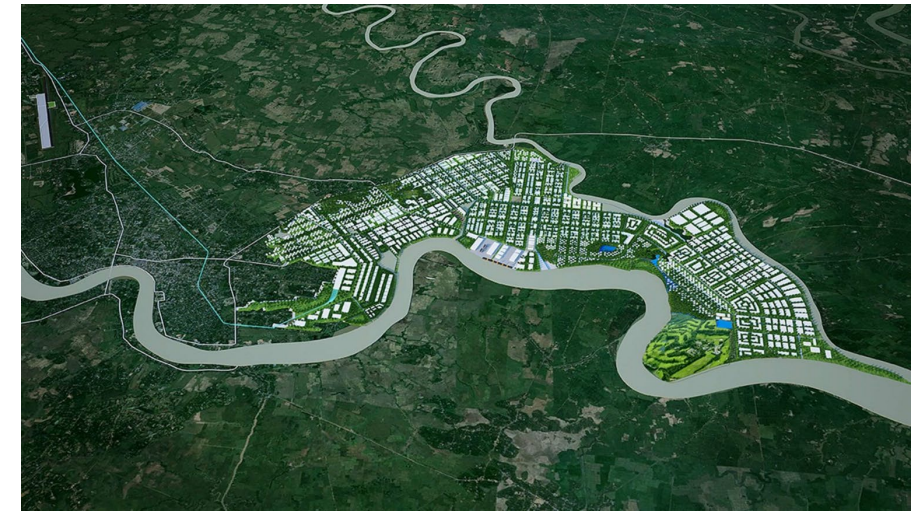
- Fair road conditions, but poor drainage systems
- Power issues (Electricity Black-outs)
- Almost no rail service

Social And Economic Implications



Inadequate infrastructure and of environmental issues

- **Poor waste management issues**
- **Few clean water supply and waste-water treatment systems**
- **Needs further assessment of the water pollution and air pollution**



Social And Economic Implications



Informal settlements/ Slums

- Internal migration and squatters
 - Rural poor moving to the city and work at the industrial zones, but lack of affordable housing push them to be squatters

Conclusion

Urban Expansion and Urban Transformation of YANGON (1990 – 2020)= 4.6 times in 30 years

Industrial Zones occupy 10.92% of Yangon City Area

Industrial zones attracted and brought in the FDI especially in the labor-intensive industries

Industrial zones contributed to the change in GDP composition, and economic development

Industrial zones created employment

Industrial zones could improve technological upgrading

Still needs to address land confiscation issues, and many areas to improve to go for a cleaner and greener economy

Cảm ơn Thank you

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