EXPLORING INNOVATIVE WAYS OF FINANCING CLIMATE COMPATIBLE DEVELOPMENT IN SECOND TIER ASIAN CITIES

by

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Rationale: Second-tier Cities

Why They are Important

of the world's population lives in settlements of less than 500,000 people

Produce nearly 40% of the global GDP

Metropolitan City Clusters

Economic support systems for large cities

Subnational Urban Centers

Responsible for critical planning, governance, and development

Economic Corridors

Linkage points in regional and global supply chains

BUT

many lack resources and capacity to:

- Manage rapid urbanization
- Secure investment
- Combat poverty

Increasing efficiency and connectivity of secondary cities could

Double or Triple Global GDP

Sources:
Roberts (2014). Managing Systems of Secondary Cities. Cities Alliance/UNOPS, Brussels.
Cobbett, W. (2015). [Verbal presentation]. Presented at the Woodrow Wilson Center. Washington, DC.

Infographic by: Jessica Wiggins, Intern, Urban Sustainability Laboratory, Wilson Center

Rationale: Financing Climate Compatible Development

Sources:
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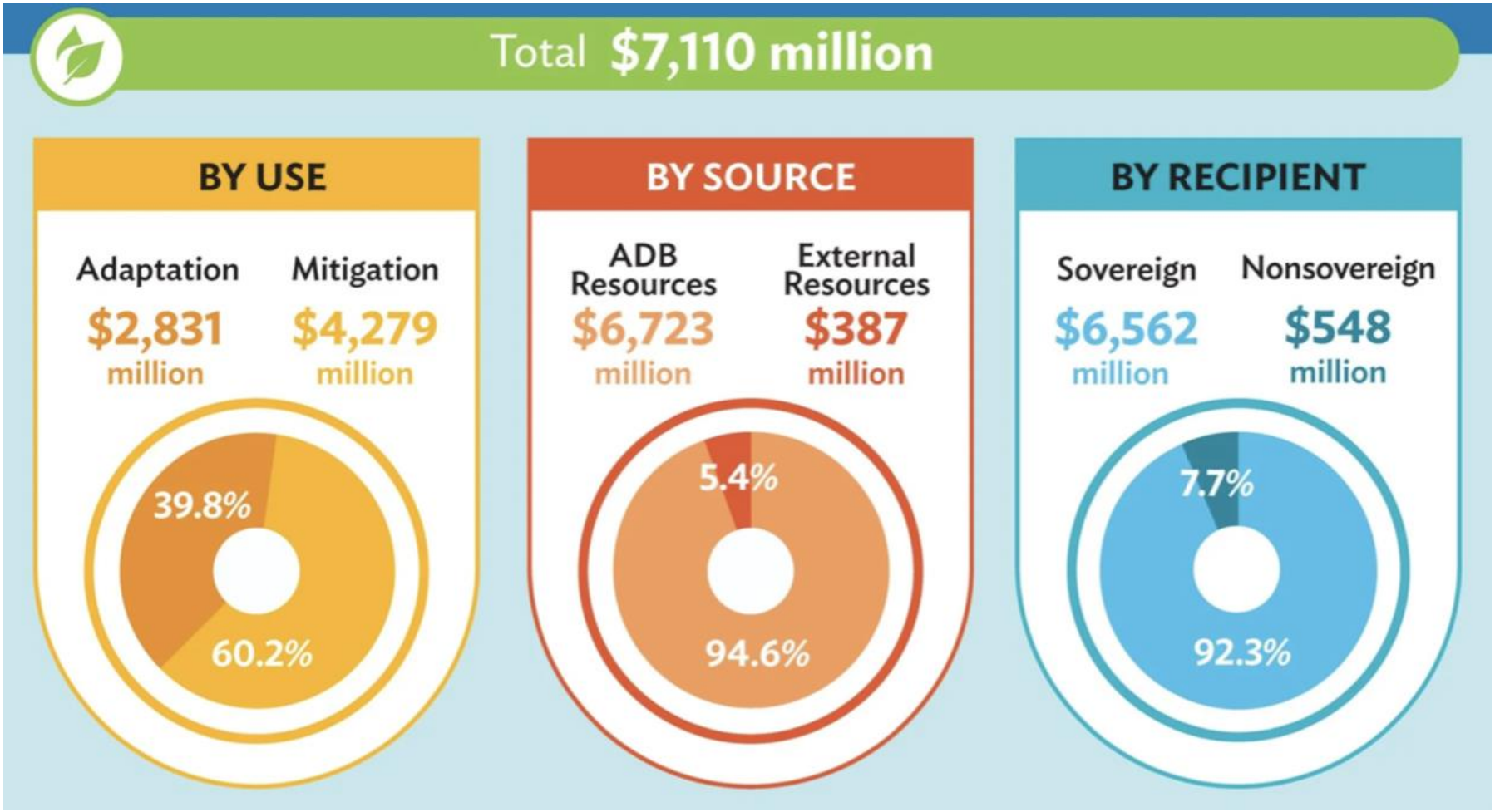
Climate Risk Index for Southeast Asia 2021

Table 1: Summary of Climate Risk Indicators for Southeast Asian Countries

Country	Climate Risk Index Rank (2021)	No. of Climate Disaster Events (2000-2019)	Average Yearly Total Deaths (2000-2019)	Average Yearly Total Affected (2000-2019)	Average Yearly Total Damages in Millions (adj. US dollars) (2000-2019)
Myanmar	2	40	7,753	352,542	278.663
Philippines	4	274	1,135	7,208,145	1,183.930
Thailand	9	82	136	4,063,950	2,845.912
Vietnam	13	143	240	1,938,384	1,096.849
Cambodia	14	23	59	887,260	91.687
Laos	52	20	22	289,084	38.419
Indonesia	72	195	283	363,941	480.810
Malaysia	116	49	10	170,936	94.821

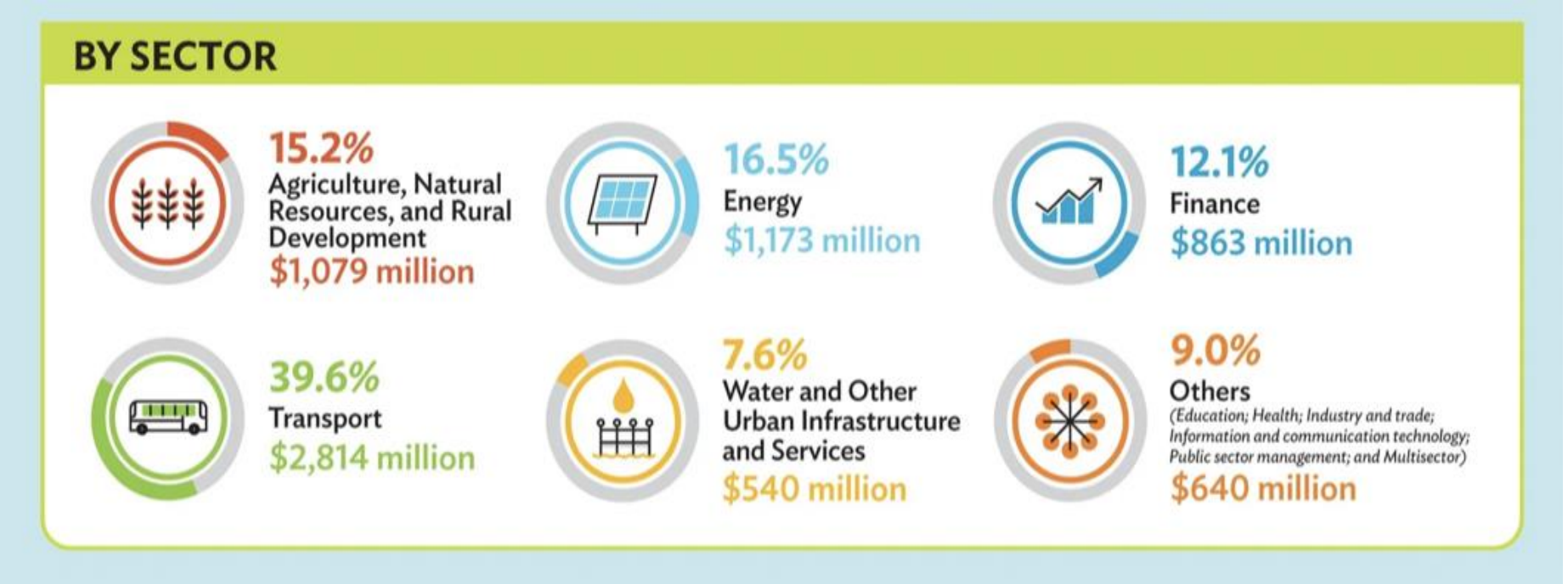
Source: Long-term Climate Risk Ranking, Germanwatch, 2021

Climate Financing in ASIA



Source: Climate Finance in Asia, ADB (2022)

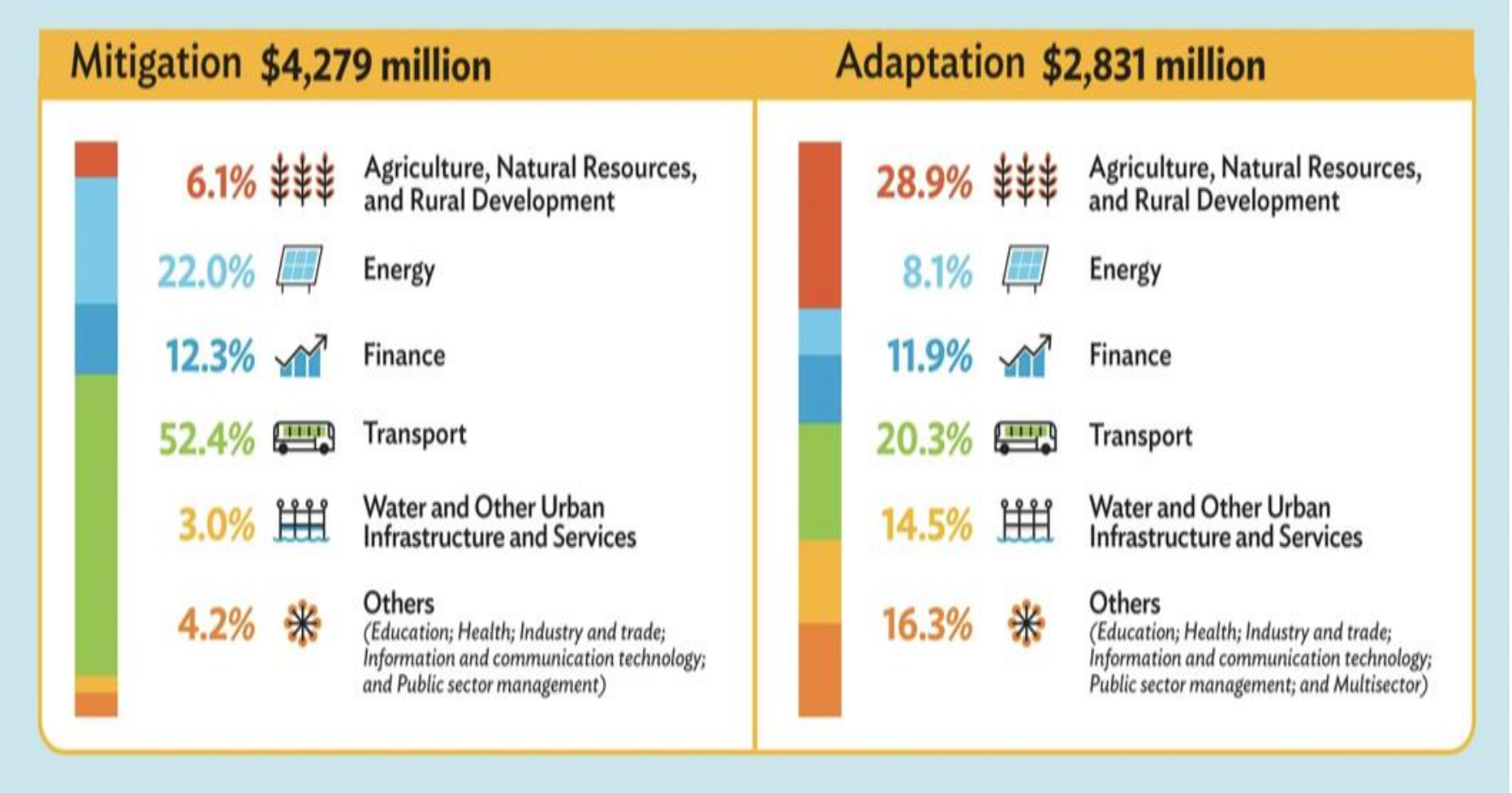
Climate Financing in ASIA



- Top 3: Transport, Energy, and Agriculture, Natural Resources, and Rural Development.

Source: Climate Finance in Asia, ADB (2022)

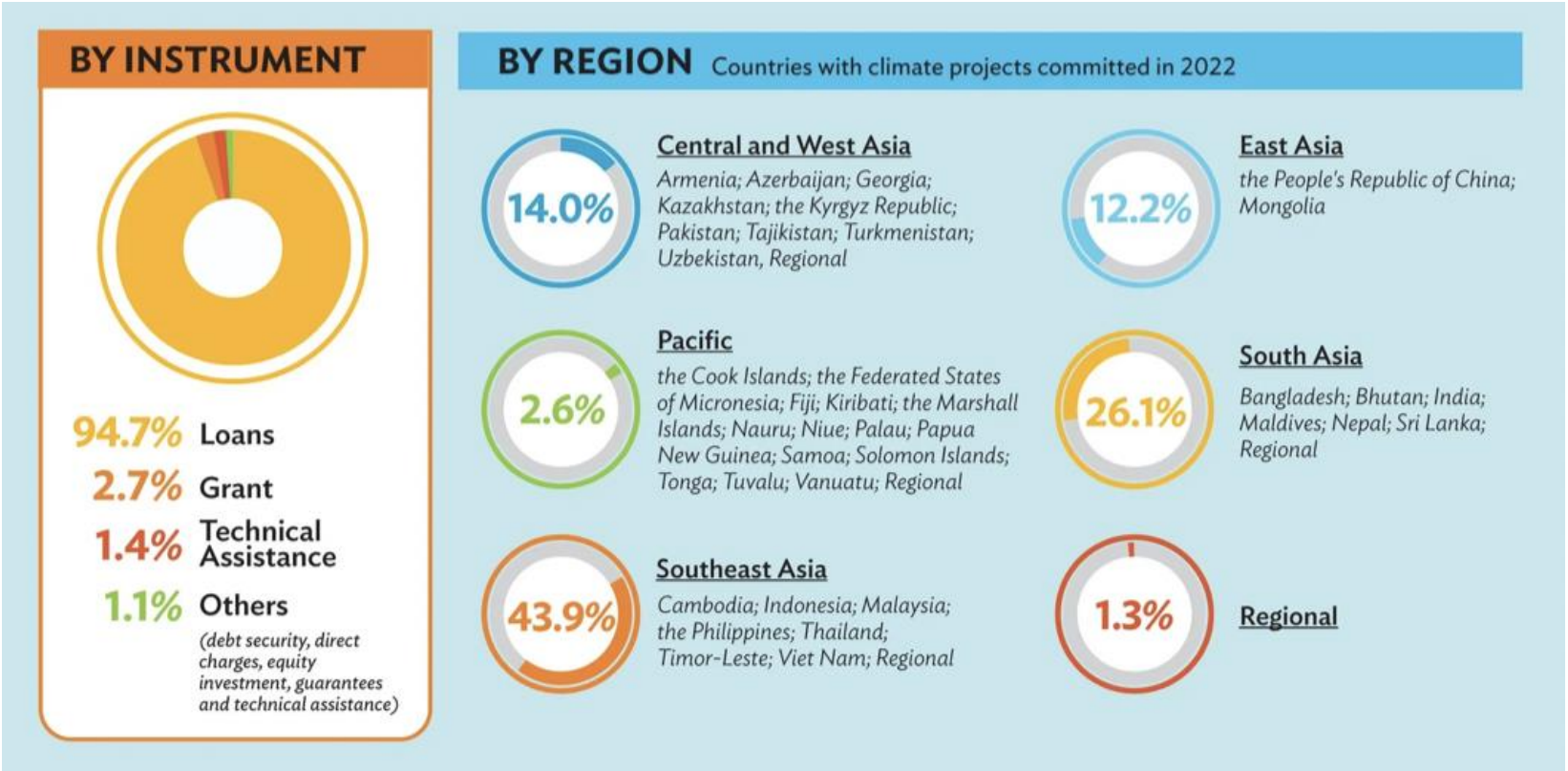
Climate Financing in ASIA



Source: Climate Finance in Asia, ADB (2022)

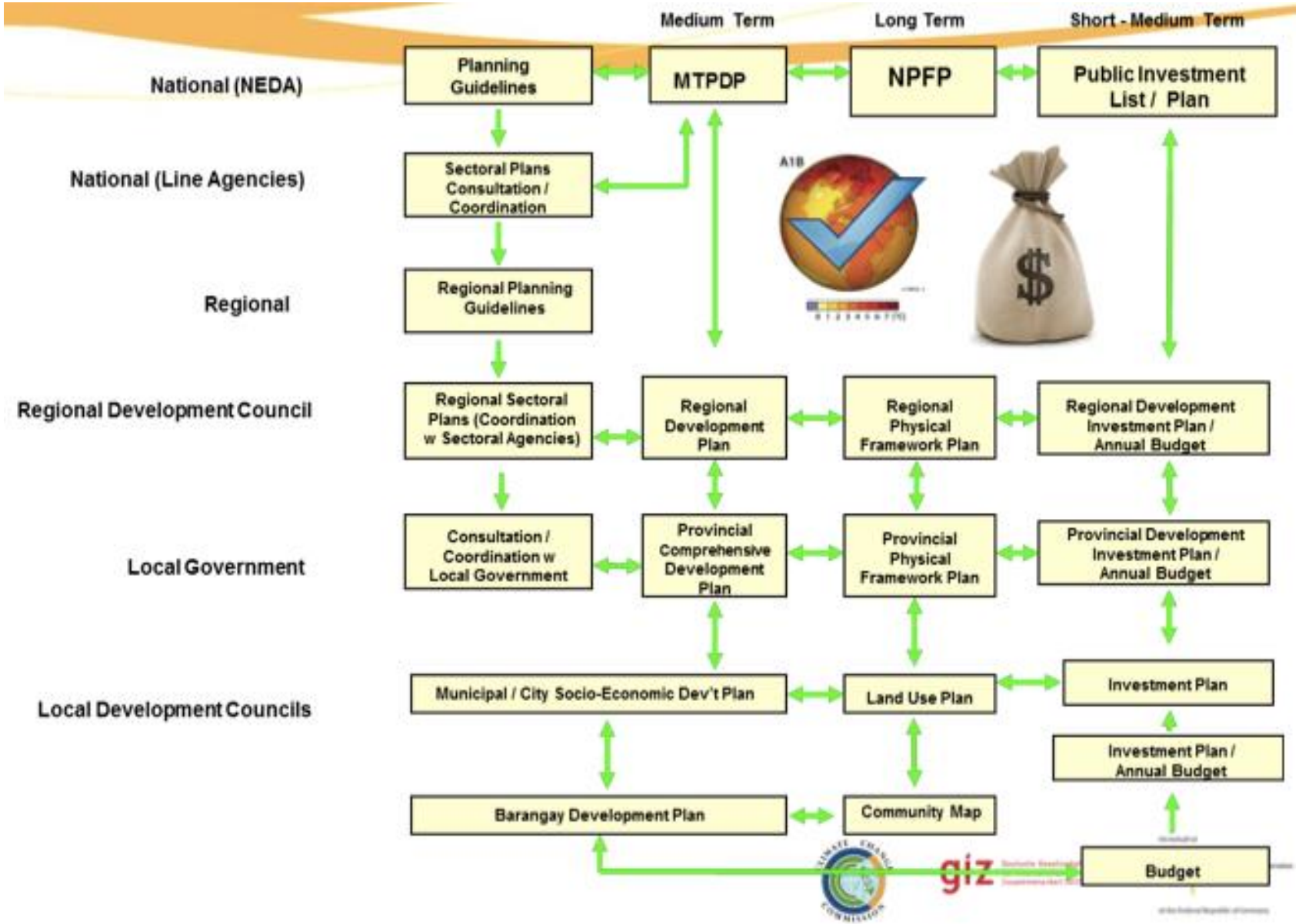
Climate Financing in ASIA

- Southeast Asia and Chian received 56% of the funding approved for mitigation projects since 2003-2022.

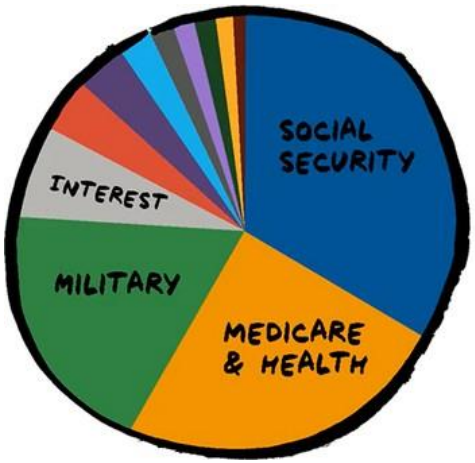


Source: Climate Finance in Asia, ADB (2022)

Climate Change Planning in the Philippines



Where is the money?



PSF
People's Survival Fund

DEPARTMENT OF THE INTERIOR AND LOCAL GOVERNMENT
D I L G

DEPARTMENT OF FINANCE
PHILIPPINES

National Government Funds

Green Climate Fund

- The Green Climate Fund is a fund established in 2010 within the framework of the UNFCCC as an operating entity of the Financial Mechanism to assist developing countries in adaptation and mitigation practices to counter climate change.
- GCF accredited in October 2018 the Land Bank of the Philippines as a conduit in financing climate change mitigation and adaptation programs and projects of national and local government agencies, business enterprises, communities, as well as local and civil society organizations.
  - LANDBANK was accredited as the country's first Direct Access Entity (DAE) by GCF

Research Objective

- Determine the financing options of a second-tier city in the attainment of a climate compatible development.

Conceptual Framework

- Climate Finance Readiness
- "The capacities of countries to **plan**, **access**, **deliver**, **monitor** and **report on climate finance**, both international and domestic, in ways that are catalytic and fully integrated with national development priorities and the achievement of the MDGs."

– UNDP (2012)

Methodology

- Science-based Stakeholder Dialogues
  - dialogues are structured communication processes linking researchers with societal actors, such as representatives of governments, non-government organizations (NGOs), private sector and the wider public
  - composed on three major workshops
    - World Café Techniques
    - Paired comparison technique
    - Structured Stakeholder Analysis

Methodology

- Focus Group Discussions (FGDs)
- Key Informant Interviews
- Document analysis of BDFs
- Descriptive analysis of existing secondary data

Located in the northern part of Mindanao is the City of Golden Friendship, Cagayan de Oro, Philippines

Source: http://cdn.cnn.com/cnnnext/dam/assets/111217115713-philippines-storm-map-story-top.jpg

How is development taking place in CDOC?

Urbanization and Demand for Water

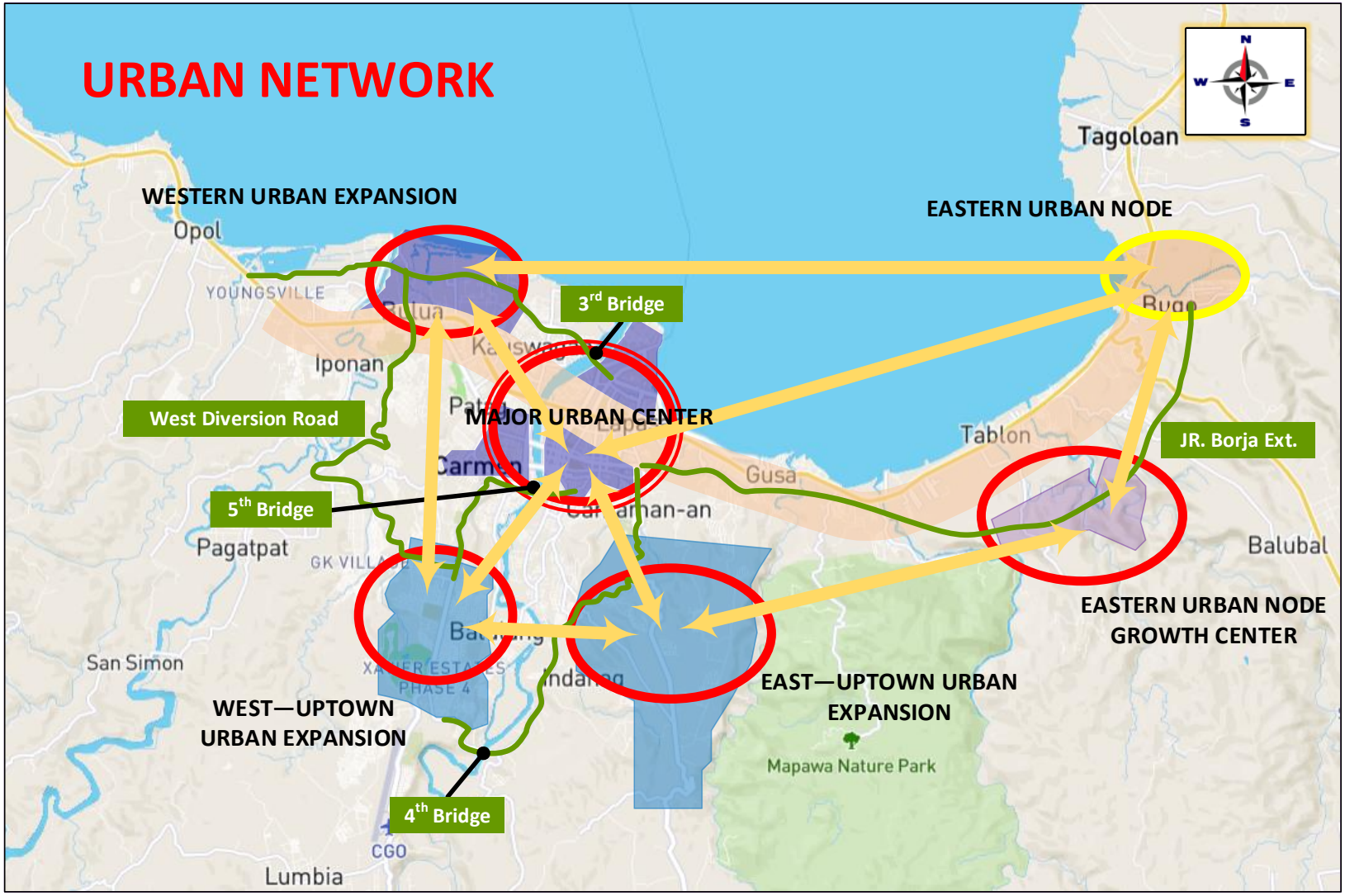


Figure 6. Cagayan de Oro City Urban Network Map

The Cagayan de Oro River Basin (CDORB)

- Estimated length of 90 km and aggregate drainage area of **1,374.16 km2.**
- Traverses 3 municipalities and 2 cities in 3 Provinces, namely:
  - Baungon, Talakag, and Libona in Bukidnon
  - Iligan City in Lanao del Norte
  - Cagayan de Oro City (CDOC) in Misamis Oriental

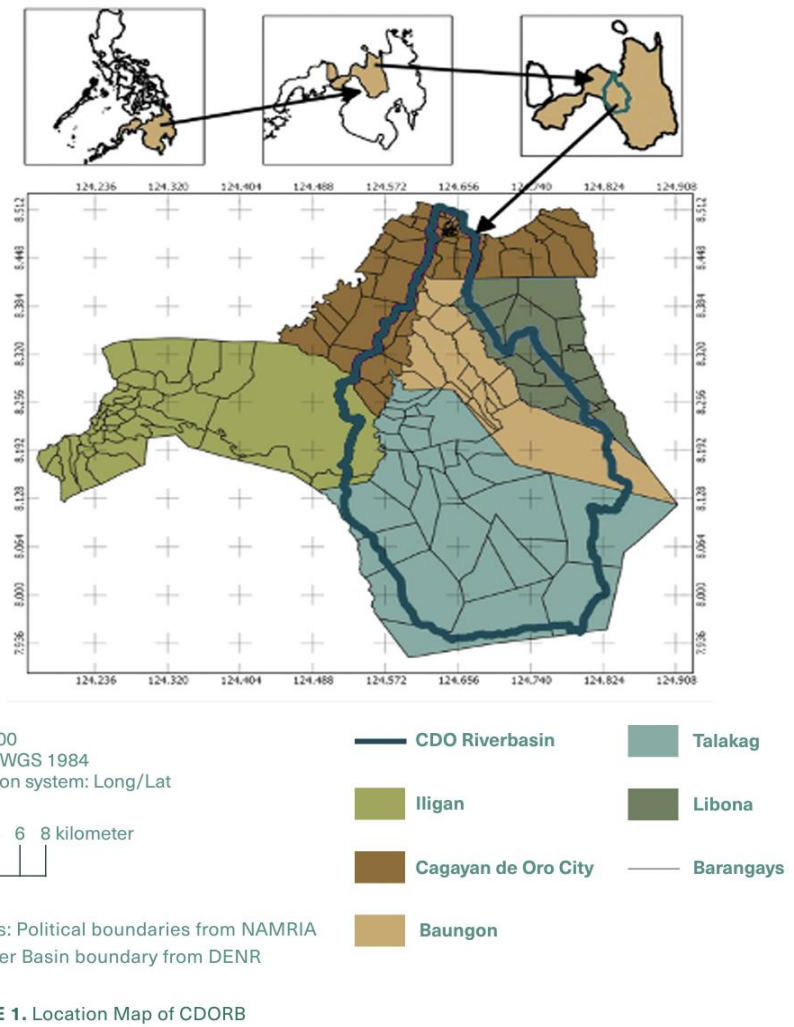
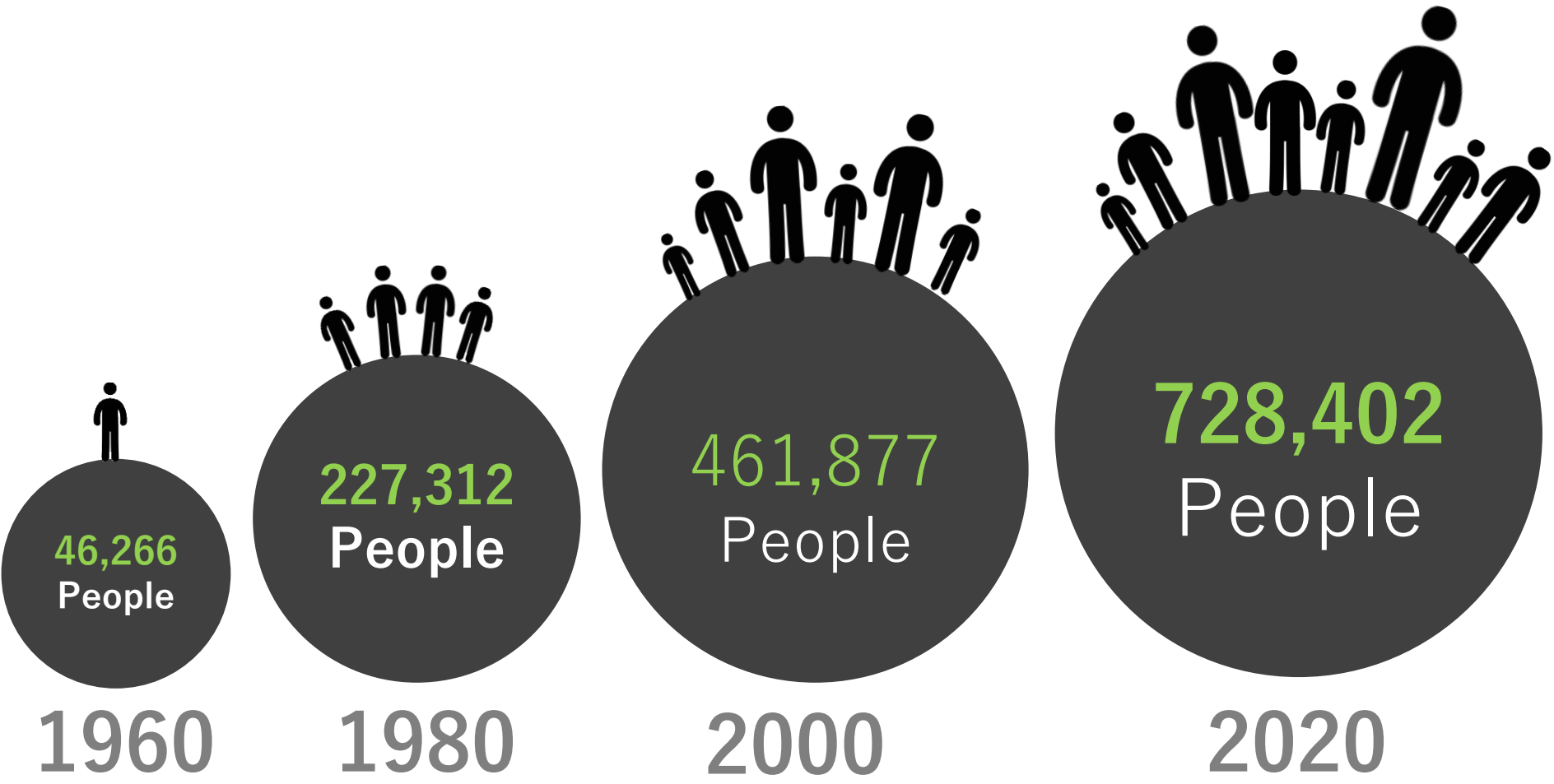


FIGURE 1. Location Map of CDORB

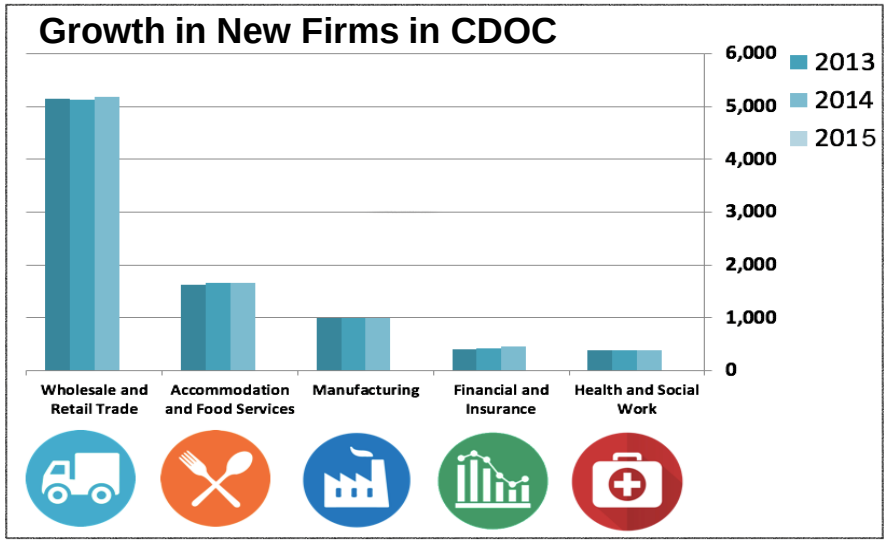
Urbanization and Demand for Water



Cagayan de Oro City Population Trends (Actual)

Source: Philippine Statistics Authority, 2022

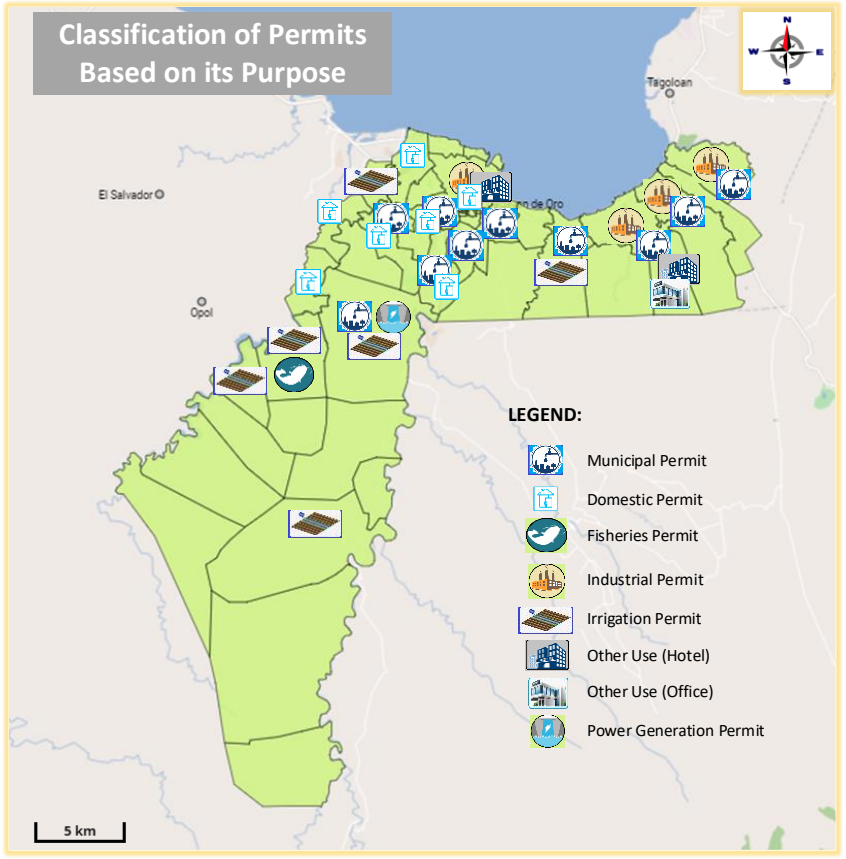
Urbanization and Demand for Water



Source: Cagayan de Oro City Finance Department

Groundwater Potential vs. Projected Water Demand

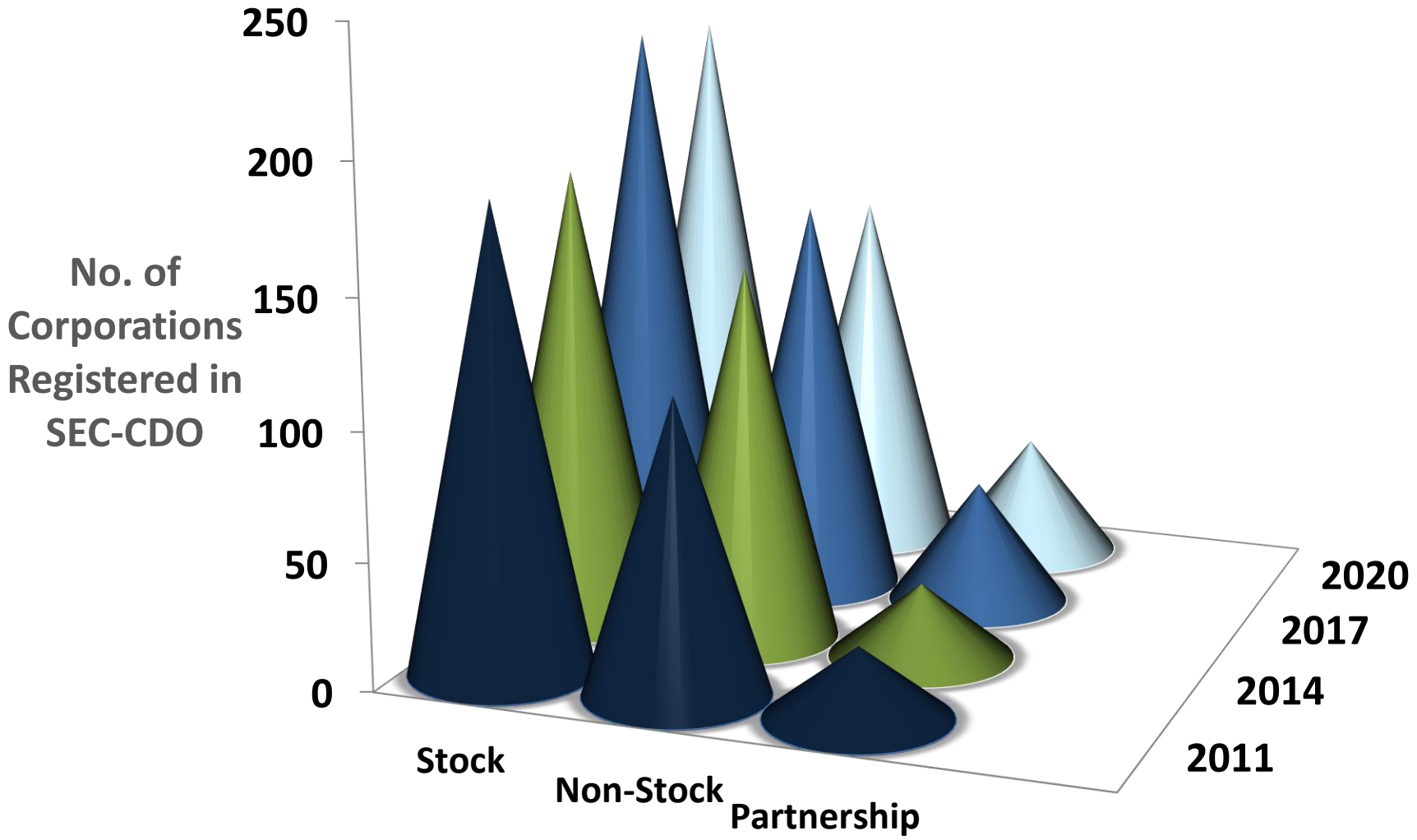
CONSUMPTION	2010	2015	2020	2025	2030
Total Estimated Consumption	170,236	203,337	241,474	284,081	331,187
GW Potential	539,427	539,427	539,427	539,427	539,427
GW Potential - Consumption	369,191	336,090	297,953	255,346	208,240
% of Consumption to GW Potential	31.6	37.7	44.8	52.7	61.4



Source: DENR (2019)

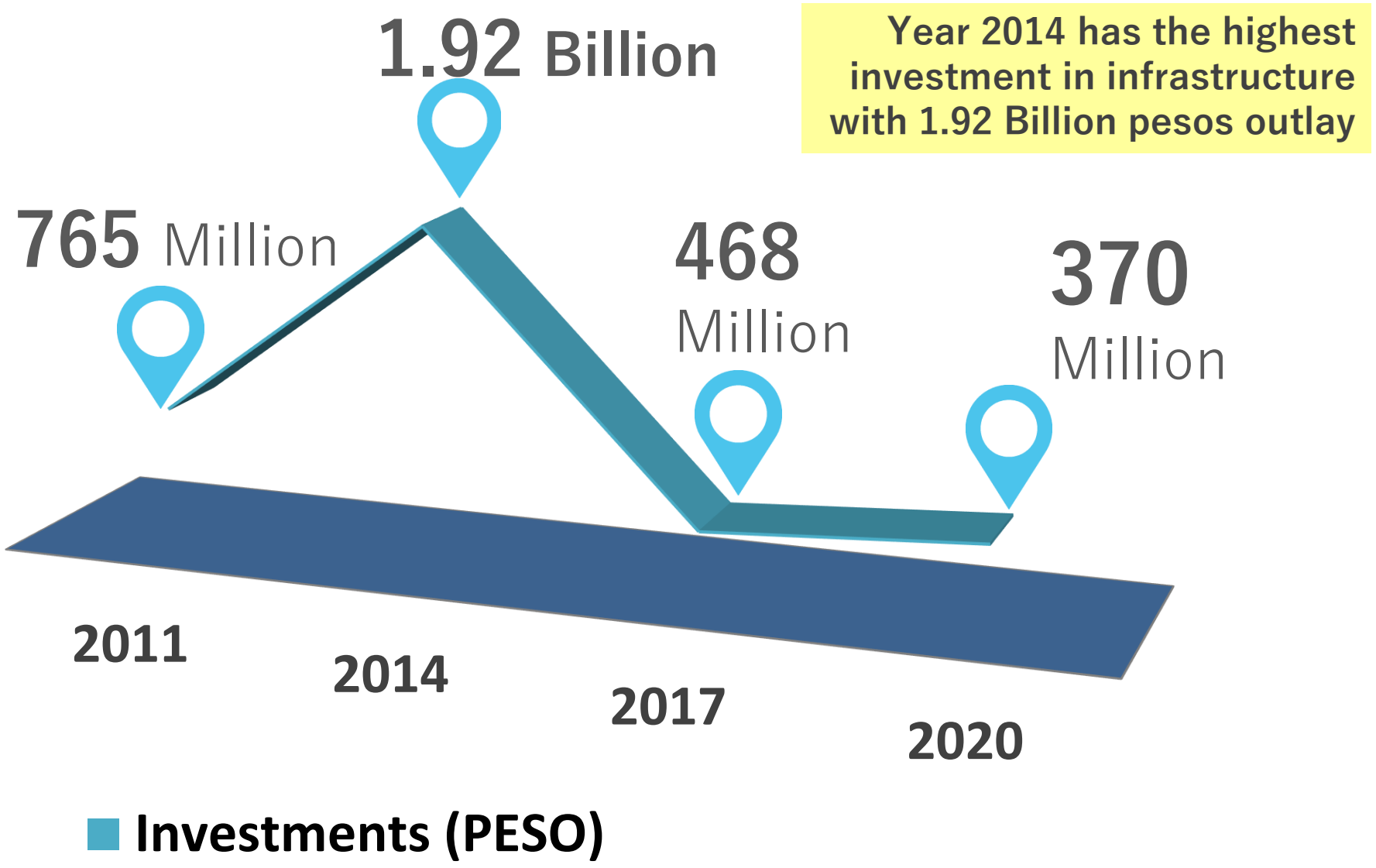
Investment Trends

Source: Securities and Exchange Commission, Region X



Annual Investment in Infrastructure by LGU

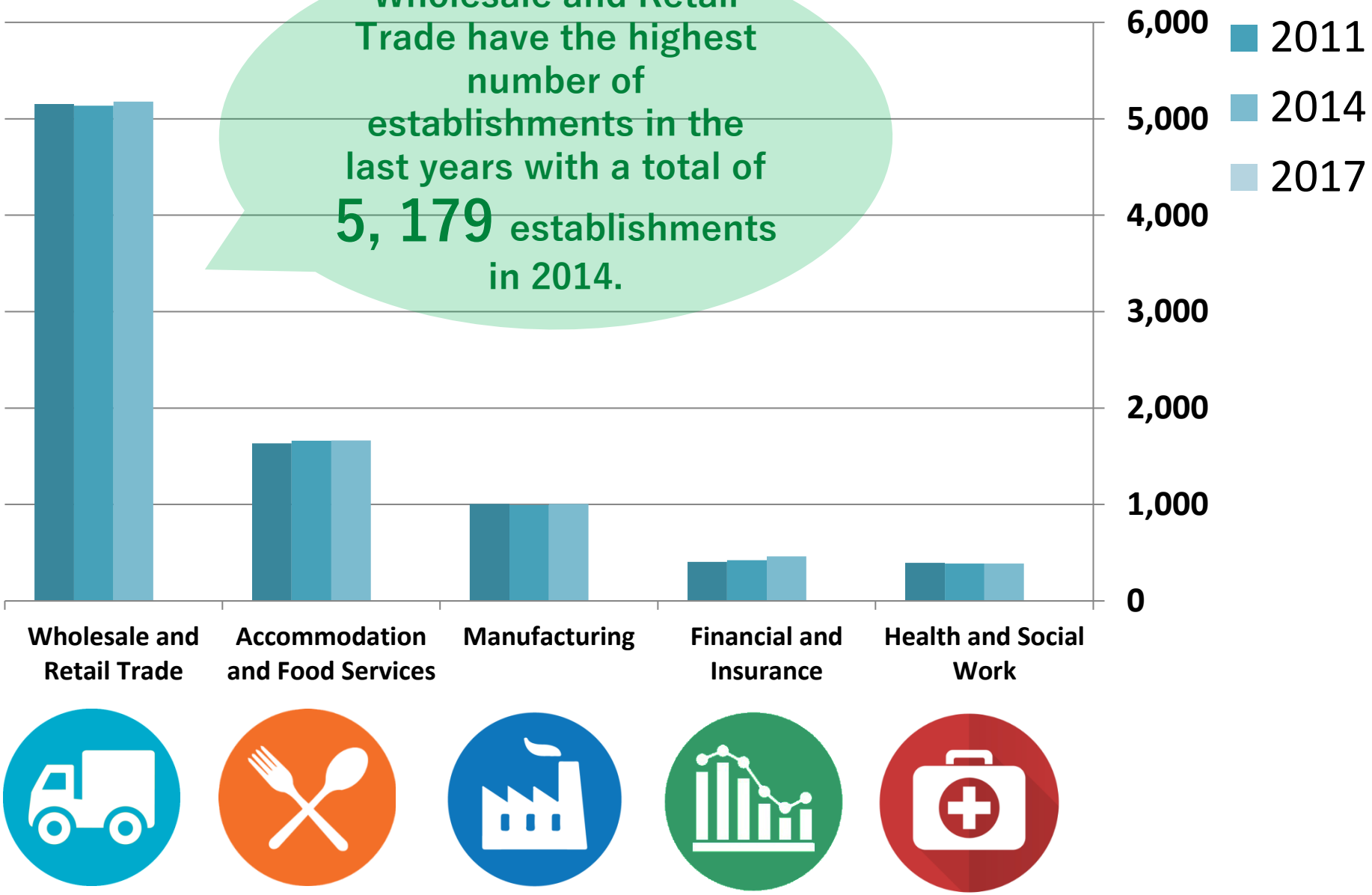
Source: Source: National Competitiveness Council



Year 2014 has the highest investment in infrastructure with 1.92 Billion pesos outlay

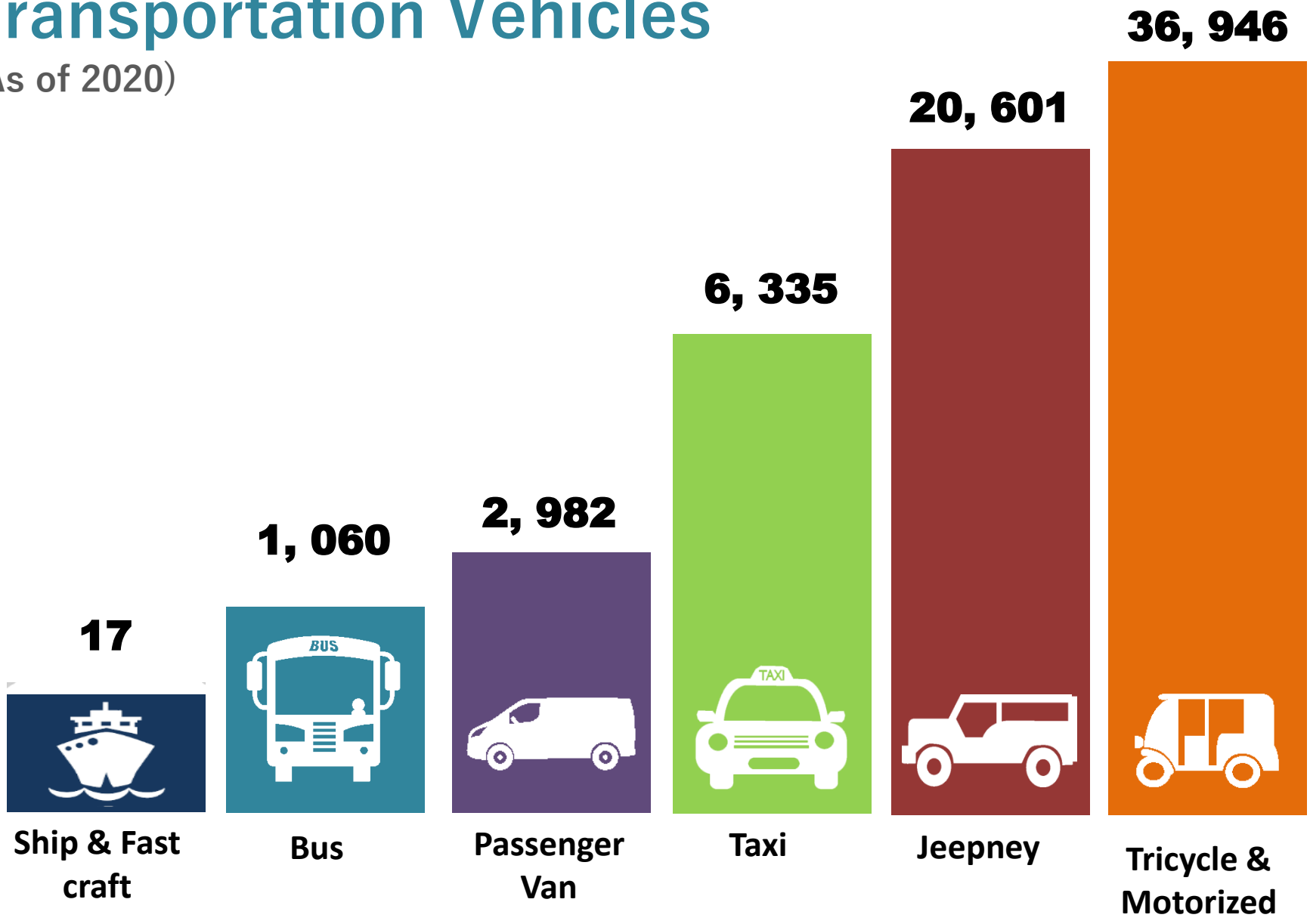
Number of Establishments (Trend)

Wholesale and Retail Trade have the highest number of establishments in the last years with a total of **5, 179** establishments in 2014.



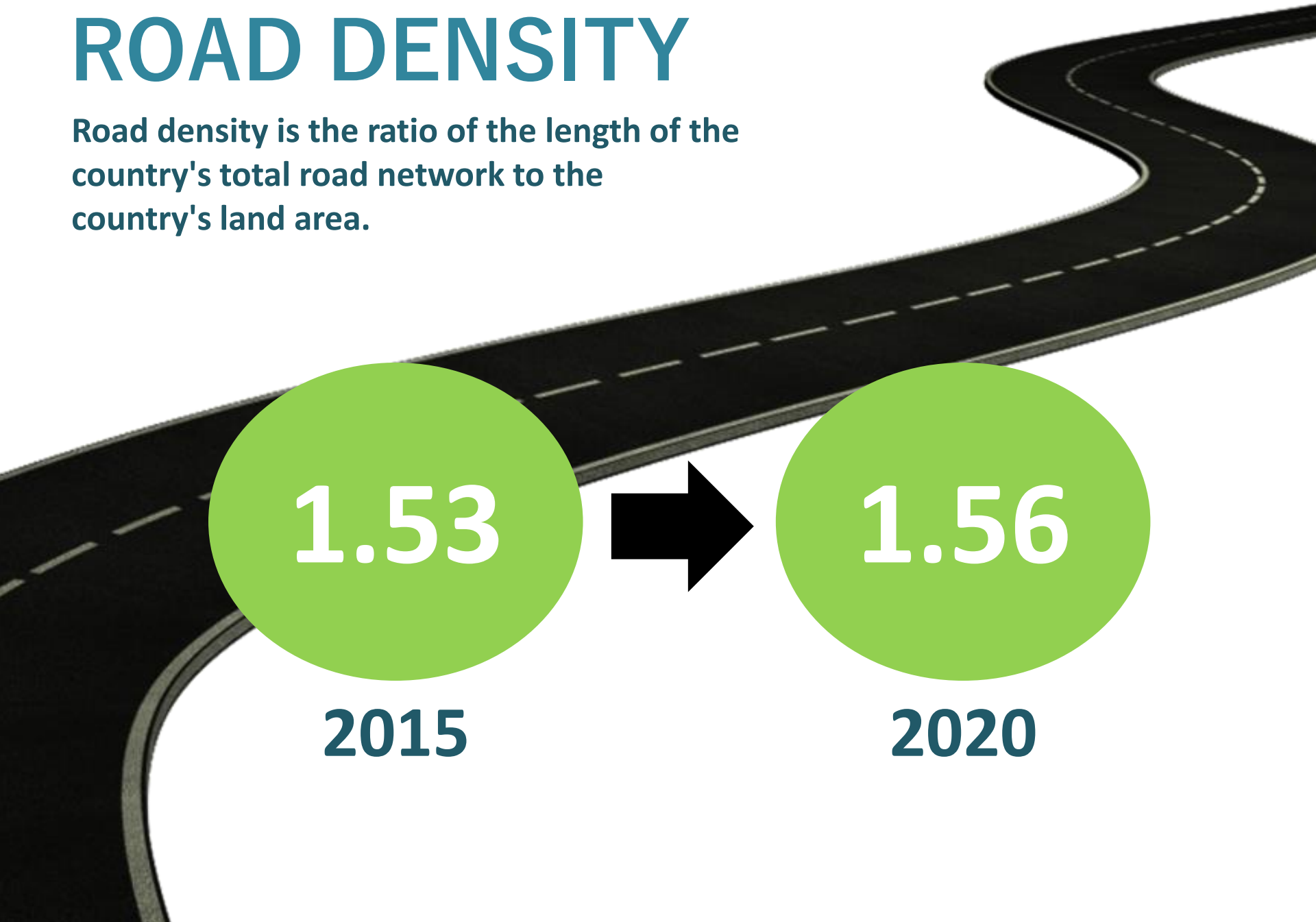
Number of Public Transportation Vehicles

(As of 2020)



ROAD DENSITY

Road density is the ratio of the length of the country's total road network to the country's land area.



CDO gets these energy sources from the different power companies in the city.

Diesel

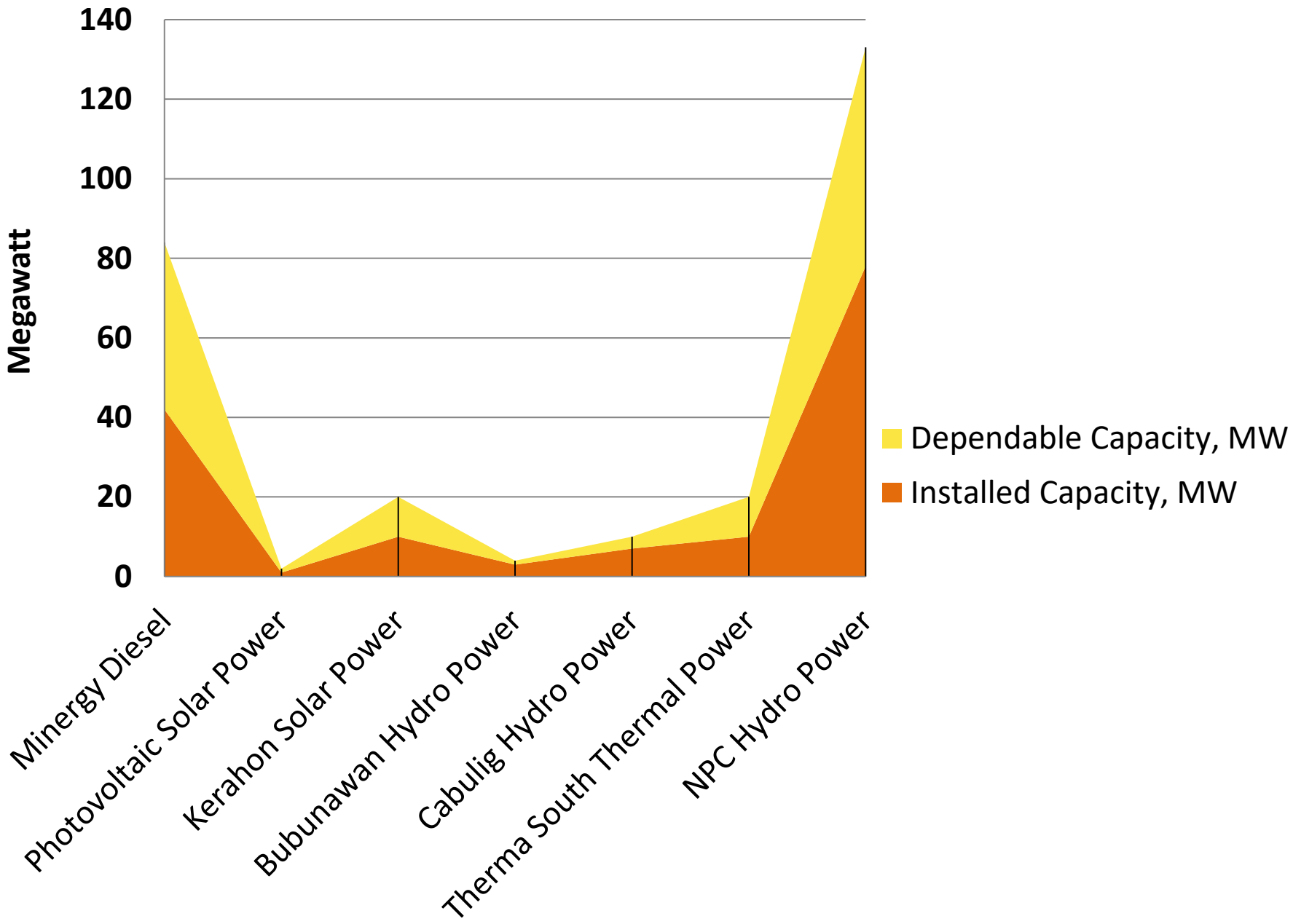
Solar

These power companies are Minergy Power Corporation, Kerahon Solar Energy Power Corporation, CEPALCO, Bubunawan Power Corporation, National Power Corporation, Therma South and Cabulig Hydroelectric Power Plant.

Hydro

Thermal

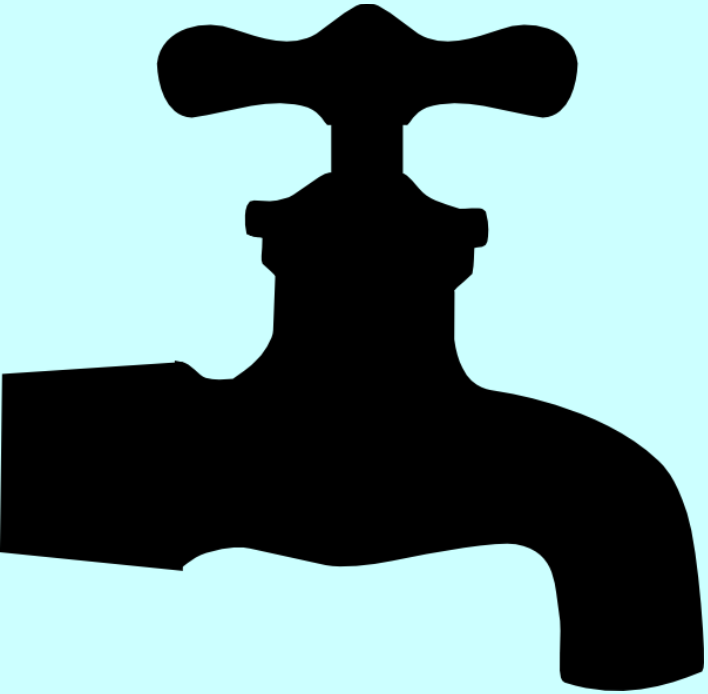
Power Generation Mix of CEPALCO as of December 2020



Results of the SBS Dialogues

What are the challenges?

- Power Shortage
- Water Shortage
- Solid Waste Management
- Housing
- Employment



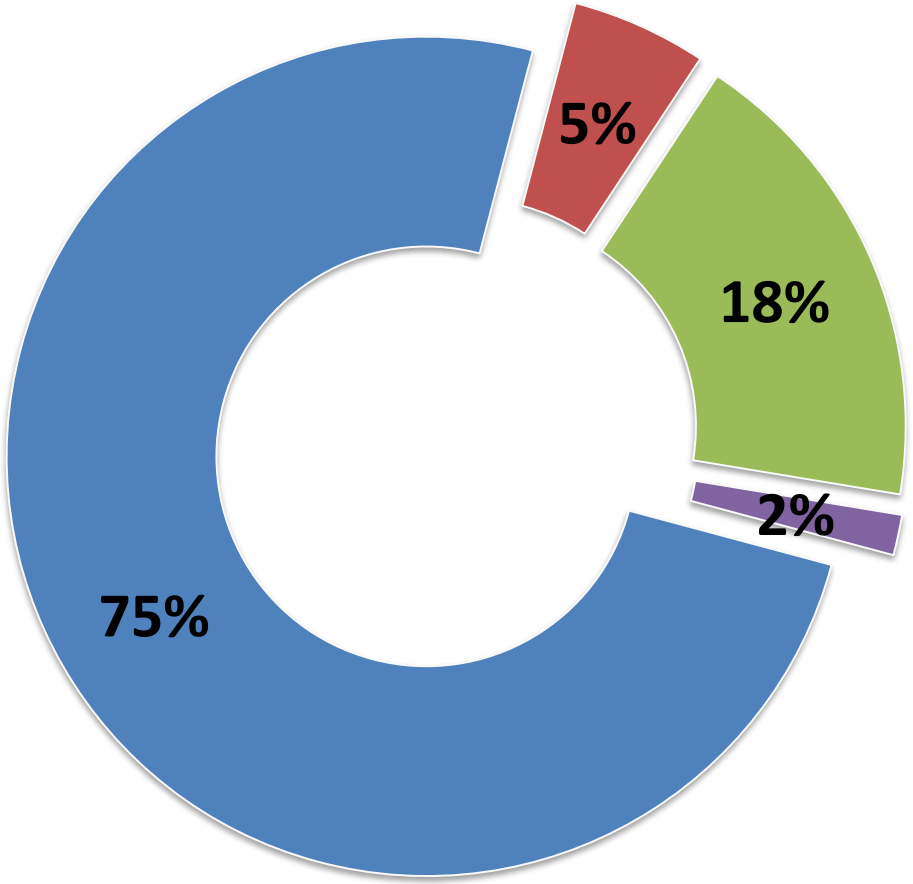
Water Shortage

As of 2021, Cagayan de Oro Water District (COWD) provides water to 64 out of 80 barangays in the City.

The average production per month is 4, 763, 019 cubic meters and the water consumption per liter per day is 122.

The average water consumption of the entire city is about 2, 059,561 cubic meters.

CDO Solid Waste Management



How wastes are disposed in the city:

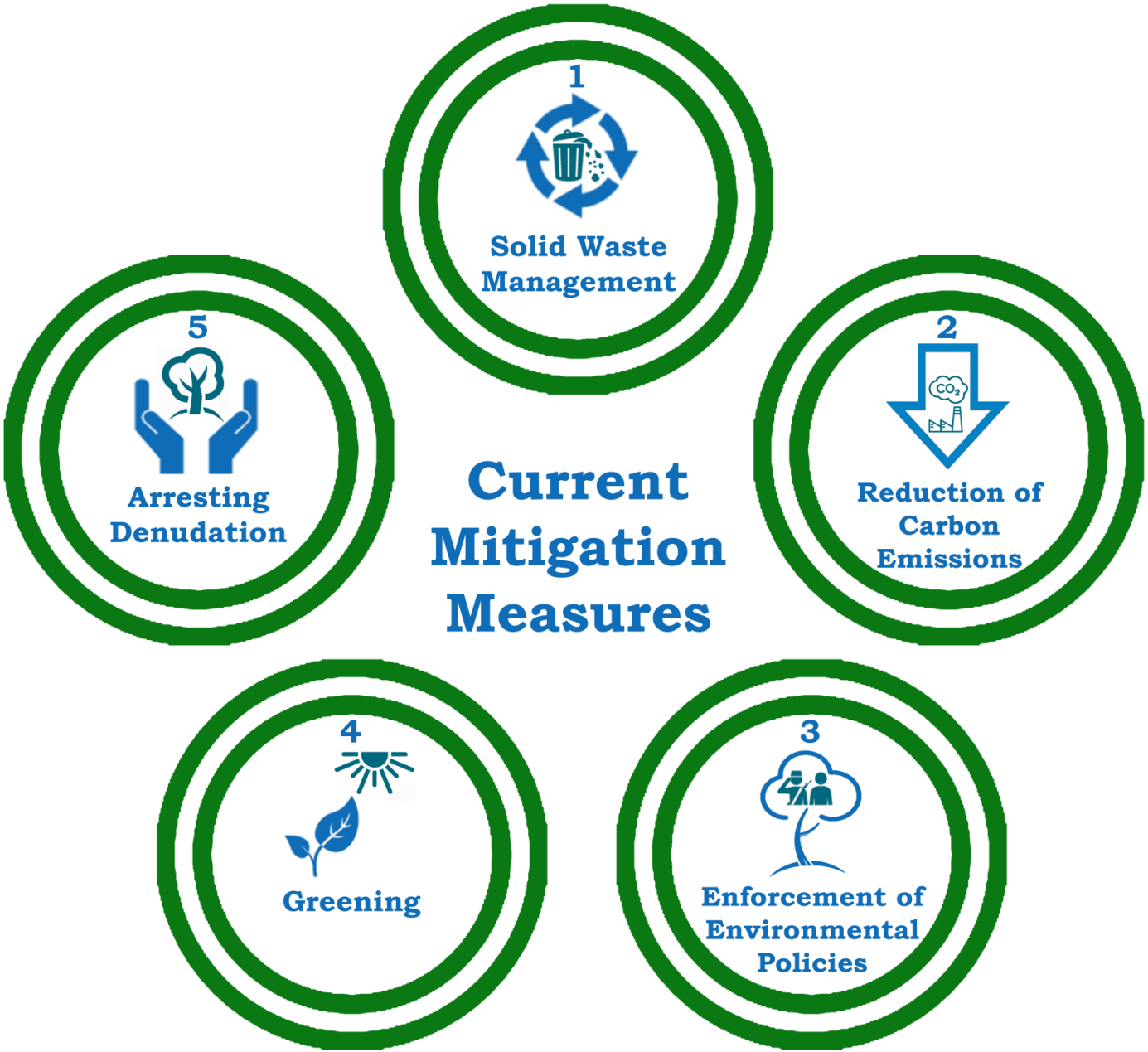
75% collected by dump trucks

18% burned

5% dumped in individual pits

2% composted in individual pits

Current Mitigation Measures



Current Adaptation Measures

1

Disaster Risk Reduction

2

Policy Creation

3

Engineering Solutions

4

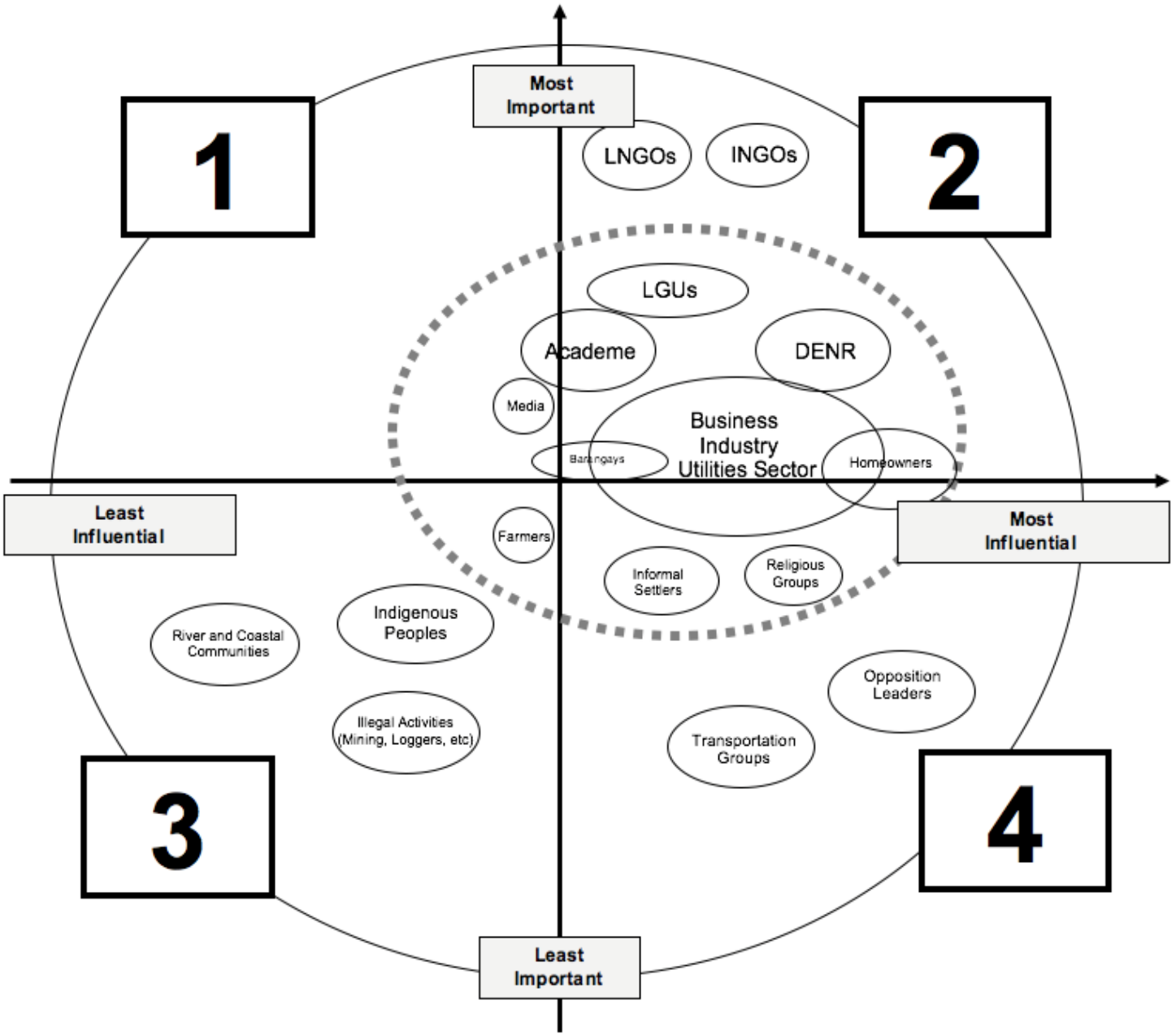
Environmentally Friendly Alternatives

5

Relocation of Communities

Prioritized Plans

Stakeholders' Degree of Importance and Influence



Inters-sectoral Collaboration

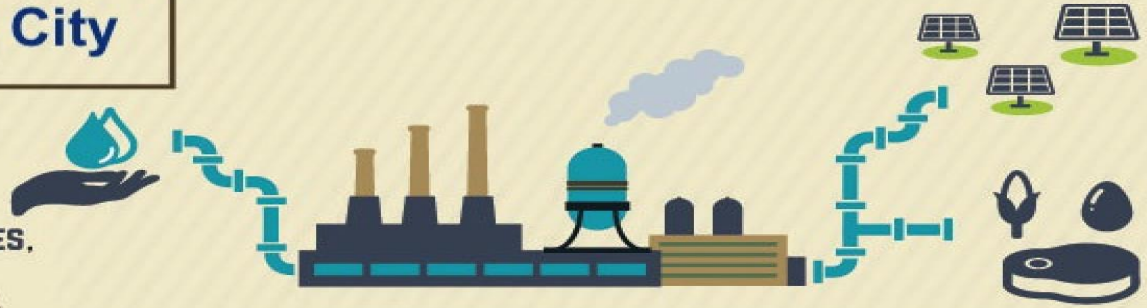
Source: https://newcapp.wordpress.com/2014/05/25/pes-launching-in-cdo-with-denr-minda-newcapp/

Payment for Ecosystem Services

Projects Funded through International Agencies

Projects	Funding agency	Current related activities/initiatives
Decentralized Framework for Sustainable Natural Resources and Rural Infrastructure Management	ADB	Watershed management, Rural infrastructure, Agroforestry based livelihoods and enterprises
EWWP	European Union	Promotion of PES, Biodiversity Conservation, Procurement of (5M) 2013 Satellite Images
B+ WISER	USAID	Ecological Governance, PES
INREM	ADB	Infra support, PES, Watershed Planning
NewCAPP	WB-GEF	PA sustainable financing, PES
Safer River, Life Saver Foundation Inc.		Protection and /or enhancing the ecology of the Cagayan River
Project Climate Twin Phoenix	USAID/ UNDP	Community's adaptive capacity ; mainstream climate change adaptation and DRRM in local development and land use plans and into the national policy framework
WQMA	DENR	Decentralized management system for water quality protection of river systems

Sustainability Issues in Water Dependent Sectors of Cagayan de Oro City



WATER IS AN ESSENTIAL RESOURCE IN THE PRODUCTION OF **GOODS** AND **SERVICES**, INCLUDING FOOD, ELECTRICITY AND MOST MANUFACTURED PRODUCTS.

WATER SUPPLY (QUANTITY AND QUALITY) MUST BE RELIABLE AND PREDICTABLE TO SUPPORT FINANCIALLY **SUSTAINABLE ECONOMIC** ACTIVITIES. INFRASTRUCTURE THAT REDUCES RISKS FROM WATER SCARCITY AND WATER-RELATED DISASTERS SUCH AS **FLOODS** AND **DROUGHTS**

IMPACTS OF
3 YEARS OF REPEATED
(2010-2012) FLOODS

Total estimated direct damages and losses due to the TS Sendong in 2011 was at PhP3.6 Billion Pesos

Climate Crisis and Anthropocene Linkages

OVER 80% OF WASTEWATER
IS NOT COLLECTED OR TREATED.

INDUSTRIES, RELEASE TOXIC POLLUTANTS INTO LOCAL WATERS.

DEFORESTATION

RESULTS IN DEGRADATION AND DESERTIFICATION OF WATERSHEDS AND CATCHMENT AREAS, AND REDUCES THE AMOUNT OF SAFE WATER AVAILABLE DOWNSTREAM.

CLIMATE CHANGE HAS A SIGNIFICANT IMPACT ON ECOSYSTEMS, THREATENING BIODIVERSITY, WHILE INCREASED FREQUENCY AND STRENGTH OF STORMS AND TIDAL SURGES WILL INCREASE DAMAGE AND VARIATION OF SEDIMENT TRANSFER IN RIVER FLOWS.

DROUGHTS

80% of crops lost due to the droughts in 2015-2016, 2018 and 2019

THE REAL CHALLENGE IS IN BUILDING AWARENESS OF THE ECONOMIC VALUE OF HEALTHY ECOSYSTEMS.

THE CREATION OF 'GREEN CORRIDORS' ALONG RIVERS, FLOODPLAINS AND STREAMS CAN LINK ECOSYSTEMS, THUS ABSORBING NUTRIENTS AND REDUCING WATER POLLUTION.

THERE IS A NEED TO SHIFT TOWARDS ENVIRONMENTALLY SUSTAINABLE ECONOMIC POLICIES THAT ALSO CONSIDER THE INTERCONNECTION OF ECOLOGICAL SYSTEMS TO ADDRESS HUMAN IMPACTS AND MAINTAIN PRODUCTIVE ECOSYSTEMS.

POLICIES SHOULD SEEK TO INCREASE PARTICIPATION OF ALL STAKEHOLDERS (LOCAL, REGIONAL AND NATIONAL)

AS POPULATIONS INCREASE AND ECOSYSTEM SERVICES DECLINE, THE RISK OF RESOURCE CONFLICTS RISES ESPECIALLY WHERE TENSIONS ALREADY EXIST.

ECOSYSTEM VALUATION IS BASED ON WHAT USERS WOULD BE WILLING TO PAY DIRECTLY FOR SERVICES, OR WHAT IT WOULD COST TO REPLACE THE SAME SERVICES WITH BUILT INFRASTRUCTURE.

SUSTAINING THE GAINS OF ECONOMIC PROGRESS REQUIRES INVESTING IN THE PROTECTION OF ECOSYSTEMS FOR MAINTAINING THE VARIOUS WATER-RELATED ENVIRONMENTAL SERVICES THEY PROVIDE, AND UPON WHICH THE DOWNSTREAM ECONOMY OF CAGAYAN DE ORO CITY DEPENDS.

Conclusion

Climate Finance Readiness

- *Access: Capacity to Access Climate Finance*
  - incapacity in the funding procedures
  - institutional, financial and political capacity
  - weakness in the use of legislative authority to generate funds on environment-enhancing PAPs

Conclusion

Climate Finance Readiness

- *Enabling Institutional Environment*
  - Dependence on the City government for decision-making
  - Coordination failure
  - Absence of comprehensive tracking system

Thank You!