CITIES AND MUNICIPALITIES COMPETITIVENESS INDEX

MANUAL

I. INTRODUCTION

For developing economies like the Philippines, the importance of establishing local indicators of development and competitiveness cannot be stressed enough. Such an indicator system can pinpoint the benefits and connections of the outcomes of global ranking efforts to local government units (LGUs). It can also identify the economic strengths and weaknesses of LGUs, and allow local-level comparisons, which could help lagging LGUs to catch up with better-performing local governments. Cities and large municipalities can gain especially from such indicators as they are centers of economic activity and generate investments and resources for areas around them and provinces where they are located. Moreover, with the current pandemic situation, there is a glaring difference on how the most and least competitive cities were able to combat and adapt in this pandemic.

In 2012, the National Competitiveness Council (NCC), with the assistance of the United States Agency for International Development (USAID), through its Investment Enabling Environment Project (INVEST); developed a framework for identifying local economic indicators spanning three pillars of Economic Dynamism, Government Efficiency, and Infrastructure. This initiative has been formalized by the NCC in 2013, wherein, the gathering of such indicators among local governments was established and was named, the Cities and Municipalities Competitiveness Index (CMCI). Since then, the CMCI has addressed the lack of a standardized system for compiling such local indicators in the Philippines, while allowing LGUs to assess their relative level of competitiveness and derive insights for local policymaking and planning. As part of this initiative, Regional Competitiveness Committees (RCCs) were also established, headed by DTI Regional Directors, which have been responsible for regularly tracking local competitiveness indicators, formulating programs to improve competitiveness, and harmonizing investment promotion activities across their respective regions.

After three (3) year (2015), more competitiveness ranking categories were put into place, as data gathered from the index where grouped according to income classification, i.e. Highly Urbanized Cities (HUCs), Component Cities (CC's), 1st and 2nd Class Municipalities, 3rd and 4th Class Municipalities, 5th and 6th Class Municipalities, and Provinces. The following year (2016), while the country was picking up with the impact of the typhoon Haiyan (locally Yolanda), the CMCI was further expanded, with the help of USAID's Strengthening Urban Resilience for Growth with Equity (SURGE) project, to account for sustainability and resilience as critical factors of local and regional competitiveness. The fourth pillar of Resilience was added to the CMCI, and the list of indicators included within the index was expanded from 30 to 40 indicators.

In 2018, Republic Act 11032 ("The Ease of Doing Business and Effective Government Service Act") was implemented, which put most functions of the NCC with the Anti-Red Tape Authority (ARTA). This is when the DTI-CB implemented the CMCI Program to continue advocating for competitiveness.

Because of the Covid-19 pandemic in 2020, which severely affected the global economy, the rush to economic recovery has given an imperative for local governments to be ready for digitalization or intensify capacities if they had already embarked on it. The lockdowns have shifted economic activities online. Without access to stable internet connections, local governments are handicapped from participating in the new global economy. LGUs that have prepared for the fourth industrial revolution and the advent of artificial intelligence (AI) recognized that innovation is an important component of competitiveness. Hence, the Innovation Pillar started to be crafted and have been formally introduced as the 5th Pillar in 2022. Simultaneously, more LGUs were taking part in the program, including those from the Bangsamoro Autonomous Region of Muslim Mindanao

Implementation of the CMCI Program for a decade is a milestone as it reaches 99.8% of local government units (LGUs) participation in the country. From 285 LGUs in 2012, the coverage has been maximized to 1,631 LGUs.

II. THE FRAMEWORK FOR LOCAL COMPETITIVENESS

A. Definition of Competitiveness, Productivity, and Resilience

The CMCI uses the framework on competitive advantage developed by Harvard University professor Michael Porter, which has also been adopted by various global competitiveness surveys. Porter's definition of competitiveness focuses on the idea of productivity— that is, on how many final products and services, able to command value in local, national, and global markets, can be produced using a limited number of inputs. Greater productivity allows the creation of the same or greater amounts of outputs using less inputs (e.g., rice harvested using agricultural inputs, or jeepney passengers per trip using fuel and labor inputs). However, productivity can also be measured based on time (e.g., the productivity of t-shirt sewers, based on the number of t-shirts produced per hour). In these, productivity is mostly the same as efficiency, allow the creation of more valuable products and services with less inputs and activities.

Porter defined competitiveness as based ***on location*** and as ***essentially the productivity*** that companies located there can achieve (Porter, 2004). He explains location as a country's underlying source of its resources, and productivity as how a country harnesses such resources. Local competitiveness refers to how a city or a municipality takes stock of its resources, as well as how it uses them to improve its standard of living. Improving productivity allows firms, cities, municipalities and countries to improve their standards of living and thereby deliver heightened prosperity to citizens.

It is also important to distinguish between "*created*" and an "*inherited*" prosperity (*Ketel 2006*). Inherited prosperity is based on limited natural resources which are transformed financial assets (e.g. mineral, fuels, agricultural lands). But even more important is prosperity which is "*created"* through purposeful activities that allow a locality to realize substantial value creation based on its existing natural and physical conditions, its human, physical, financial and natural resources, as well as the systems under which it operates. Because of this, the promotion of competitiveness requires a whole-of-society approach to drive long-term gains in a locality's standard of living.

Finally, competitiveness should allow for *sustainable prosperity* over time. Localities and countries have to consider the capacity of their value-creation activities to mitigate, adapt, and to recover from various shocks and stresses in a manner that reduces vulnerabilities and facilitates inclusive growth. Here, ***resilience*** is defined as the capacity of a locality to facilitate its firms and industries to create jobs, raise productivity, and increase the incomes of citizens over time no matter what shocks and stresses it encounters (*Ang 2016; Llanto 2016*). This means that

the role of local government is paramount in ensuring a competitive environment to enable firms to sustain their profits, create jobs and increase the productivity of people. Localities must be resilient in their infrastructure, governance, social and environmental systems to achieve this.

B. Framework for Local Competitiveness and Resilience

Taking off from these definitions, the CMCI consists of a framework for promoting sustainable productivity and prosperity across cities and municipalities in the Philippines. It is based on an analysis of the most common factors determining competitiveness and productivity found among the surveys conducted globally and nationally. Among others, five global surveys - the Doing Business Survey of the International Finance Corporation (IFC), the sustainability-adjusted Global Competitiveness Index prepared annually by the World Economic Forum (WEF), the IMD's Competitiveness Survey, SOLABILITY's Global Sustainable Competitiveness Index, and the United Nations World Risk Report - were examined to determine common factors that were relevant to the Philippines. Seven local-level surveys and measurement tools were also studied – the Philippine Cities Competitiveness Ranking Project of the Asian Institute of Management (AIM), the NCC's internally generated factors, Regional Competitiveness Factors, the Asian Development Bank's (ADB) CCED, the Rockefeller Foundation's City Resilience Index, the US Agency for International Development's Resilience Agenda, as well as the Food and Agriculture Organization's Resilience Measurement Tool.

To construct the CMCI's sustainable competitiveness framework, guidelines in developing indicators from the Chief Economic Development Society - UK (CEDOS, 2011), the Local Government Economic Indicators Framework – New Zealand (*BERL, 2010*) and the POLICOM Local Economic Strength Ranking (2012) were adapted. The FEEE Principle, i.e., Few in Number, Easy to Collect, Easy to Understand and Effective Measures of Performances, was also observed.

C. Framework for Local Competitiveness and Innovation

Digitalization is a global force that innovation can ride through and expand a locality's competitiveness. The pandemic only hastened its expansion and importance. Towards these, the CMCI has been expanded to add the element of innovation as another pillar. With or without the pandemic, innovation has become a critical element of local competitiveness. Combined with the other pillars, innovation can attract more investments, foster inter local cooperation and improve social and economic indicators of practicing localities.

Compared to the overall competitiveness and resiliency, innovation models at the global and national levels are still limited. Nonetheless, we already explained in the foregoing the necessity of adding this pillar as a critical element of competitiveness. We cited the idea that competitiveness is productivity that is based on creativity and not on inheritance. This idea already incorporates innovation as it is primarily the process of making creativity useful or adding value. Note that inherited prosperity is heavily dependent on the natural endowments of a locality which over time and overuse of these endowments may lead to its eventual end as in the case of minerals. Created prosperity hinges on the idea that it is not only focused on the benefits reaped today but also is concerned about the benefits that will accrue to the future generation. Hence, the present economic growth of the locality is necessary but not sufficient condition for competitiveness. This is because economic growth on its own can put pressures on the natural environment leading to scarcity in basic resources or inherited prosperity such as water, energy and minerals making productivity of that locality unsustainable. At the same time, economic structures can cause disparities in income and development making it necessary to increasing demand for inclusion and participation of those left behind by the economic expansion. Thus, for competitiveness to be sustainable, it has to consider the social and environmental dimensions apart from the purely economic ones. Likewise, even if a locality has sustainable mechanisms in place, it still has to consider how to manage and adopt productivity when it reaches a point where it can no longer improve. Therefore, there is a need to consciously consider how creativity can further improve the productivity levels and subsequently improve overall competitiveness of the locality as well.

To construct the CMCI's innovative competitiveness framework, rankings, reports and guidelines and in developing indicators from both the global and national level were examined: World Intellectual Property Organization's (WIPO) Global Innovation Index (GII), International Innovation Index, Bloomberg Innovation Index, Consumer Technology Association (CTA)'s International Innovation Scorecard[1], US Chamber International Intellectual Property Index[2], Illinois Innovation Index[3] , American Innovation Index (AII)[4] , and Kelly Business School in Indiana University's Innovation Index 2.0.

After studying and comparing existing global, national and sub-national reports on innovation and competitiveness, as well as comparisons and studies on cities and municipalities used by different agencies, relevant indicators were identified and considered to be integrated into the existing CMCI. In this process, it is crucial to put in perspective the experience of the past CMCIs. It can be understood that the process as of date required significant efforts from the different local governments and the national government through the DTI to come up with a database system. As explained earlier, many elements of innovation are already included in the CMCI. However, there is a need to be deliberate and intentional in adding innovation-related components into the CMCI in order for it to include elements of creativity and risk-taking. Furthermore, Prof. Porter himself added the idea of innovation when he said, "advantage must come from the ability to create and then commercialize new products and processes…" (Porter, 2011). Basically, elements in a locality that support the ability to create and

[1] https://www.cta.tech/Advocacy/Innovation-Scorecard/International-Scorecard
[2] https://www.theglobalipcenter.com/report/ipindex2021/
[3] https://www.istcoalition.org/data/index/
[4] https://americaninnovationindex.com/about/the-american-innovation-index/

commercialize new products are what comprise what innovation element is. He further explains that competitiveness advances when the public and private sectors work together to promote a favorable environment for innovation.

The convergence among the different surveys, frameworks, and reports led to five (5) core and convergent pillars necessary for realizing sustainable competitiveness (see Figure 1): **Economic Dynamism, Government Efficiency, Infrastructure, Resilience, and Innovation.**

Figure 1. The Five Pillars for Sustainable Competitiveness

1. **Economic dynamism** is usually associated with activities that create stable expansion of businesses and industries and higher employment. The pillar matches the output and productivity of the local economy with the local resources. Localities are centers of economic activities, and due to this, business expansion and job creation are easily observable in local settings.

2. **Government efficiency** refers to the quality and reliability of government services and support for effective and sustainable productive expansion. This factor looks at government as an institution that is generally not corrupt; able to protect and enforce contracts; apply moderate and reasonable taxation and is able to regulate proactively (*La Porta et al, 1999*).

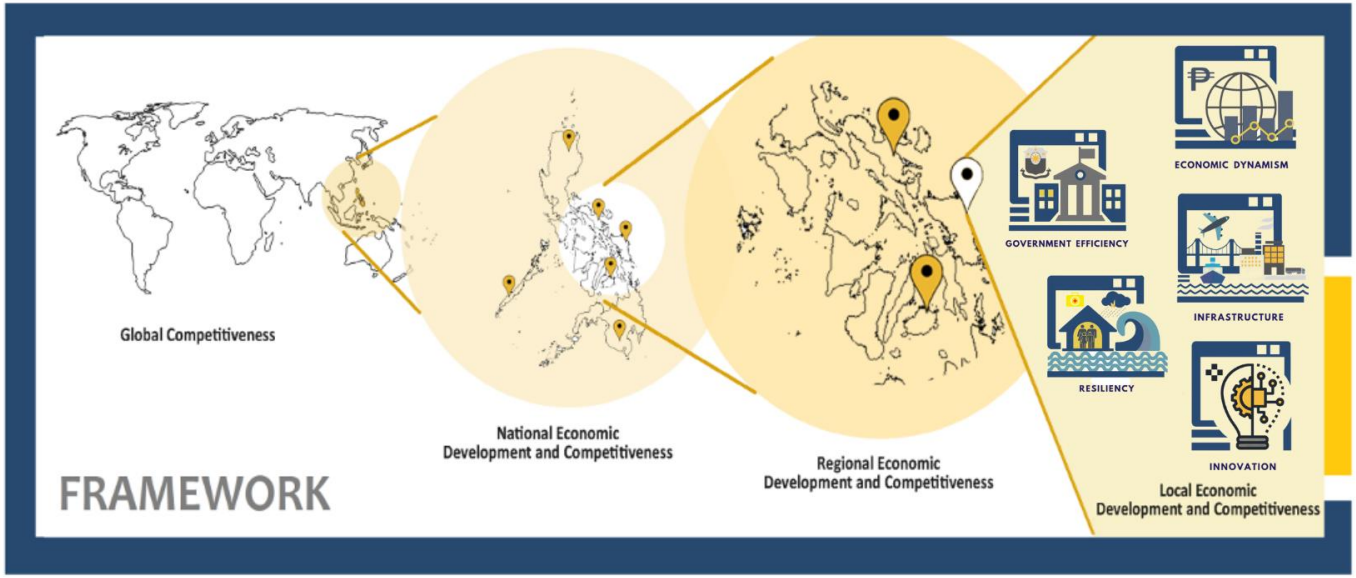
3. **Infrastructure** refers to the physical assets that connect, expand, and sustain a locality and its surroundings to enable the provision of goods and services. It involves basic inputs of production such as energy, water; interconnection of production such as transportation, roads and communications; sustenance of production such as waste, disaster preparedness, environmental sustainability; and human capital formation infrastructure.

4. **Resilience** refers to the capacity of a locality to build systems that can absorb change and disturbance and being able to adapt to such changes (*Llanto, 2016*). It spans frameworks that bind LGUs and their constituents to prepare for possible shocks and stresses; budgeting for disaster risk reduction; hazard/risk identification mechanisms; resilience-related infrastructure; and resilience-related mechanisms.

5. **Innovation** is the creation, development, and implementation of a new product, process, or service in the aim of improving efficiency, effectiveness, or competitive advantage.

These core pillars need to be linked to the sub-national, national, and global indicator systems so that they can contribute to overall national competitiveness within the global perspective. In this regard, Figure 2 shows how the five pillars of CMCI link the local up to the global levels of competitiveness and development. By contributing to the aggregation/disaggregation of indicators as well as planning and policy-making efforts, the CMCI can be seen as a tool for diagnosing, guiding, improving, and monitoring local, regional, and even national dimensions of economic development and competitiveness. In distinguishing the different pillars of sustainable competitiveness at different levels, the CMCI can also generate knowledge and insights not only for the national and local government, but also other competitiveness stakeholders, such as the private sector, the academe, and civil society.

Figure 2. National Economic Development and Competitiveness Framework



III. DESCRIPTION, COLLECTION, AND PROCESSING OF COMPETITIVENESS INDICATORS

Each pillar of competitiveness has contributory indicators that, in turn, are the basis of the sub-indicators that will be collected and used as bases for ranking cities, municipalities, and provinces in the country. This chapter contains the details needed to collect the data for the indicators—definition or description of the indicator, the measurement type or data required, and the source of data with, the lists of sub-indicators for the indicators under each pillar.

A. Economic Dynamism

1. Size of the Local Economy

The size of the economy approximates the level of economic activity in the LGU, which, at the national level, is measured by gross domestic product. At the local level, the proxies for local economic activity include gross sales, which can be a measure of local production, and the number of business registrants and total capitalization of newly registered business enterprises, which indicate the level of new investment in the locality.

Table 1. Detailed Indicators for Size of the Local Economy

Sub-Indicators	Data Required	Source	Definition
1.1. Gross Sales of Registered Firms	Philippine Pesos (PhP) (e.g 12345678.90)	Municipal/City Treasurer's Office (M/CTO) of the local government. Note that the business (or Mayor's Permit) application form of cities and municipalities contains a field on gross sales	-This indicator is a proxy for the level of production in the LGU. -It refers to the income (at invoice values) received for goods and services over some period of time - Measures size of local economic expansion.

1.2. Total Capitalization of NEW Businesses	Philippine Pesos (PhP) (e.g 12345678.90)	City/Municipal Treasurer's Office (M/CTO) of the local government. -Business Permits approved by the BPLO-LGU; -Individual BPLS Forms processed.	-This indicator is a proxy for new investment in the locality. -Capitalization is usually defined as the aggregate valuation of a company based on its current share price and the total number of outstanding stocks.

2. **Growth of the Local Economy**

The dynamism of the local economy can also be gauged by the rate of expansion of production activities, number of establishments and investment in the area. Hence, the growth of the proxy indicators for local production described above can approximate the economic expansion in the LGU. At the national level, this indicator is similar to the growth of gross domestic production.

Table 2. Detailed Indicators for Size of the Growth of the Local Economy

Sub-Indicators	Data Required	Source	Definition
2.1. Gross Sales of Registered Firms	Number (e.g. 123)	Municipal/City Treasurer's Office (M/CTO) of the local government. Note that the business permit application form of cities and municipalities contains a field on gross sales	-This indicator measures the growth of the level of production in the LGU. -It is based on the income (at invoice values) received for goods and services over some period of time - Measures growth of local economic expansion.
2.2. Total Capitalization of NEW Businesses		City/Municipal Treasurer's Office (M/CTO) of the local government. -Business Permits approved by the BPLO-LGU;	-This indicator measures growth of new investment in the locality.

		-Individual BPLS Forms processed.	

3. Active Establishments in the locality

Table 3. Detailed Indicators for Growth of the Active Establishments in the locality

Sub-Indicators		Data Required	Source	Definition
3.1. Total Number of Business Registrations	3.1.1. Number of approved business permits for NEW business applications	Number (e.g. 123)	Business Permits and Licensing Office (BPLO) or the City/Municipal Treasurer's Office (M/CTO) (if city/municipality has no separate BPLO)	This indicator measures the number of "active" establishments in a locality. -Measures expanse of local economic activity
	3.1.2. Number of approved business RENEWALS			

4. Safety Compliant Business

Table 4. Detailed Indicators for Structure of Safety Compliant Business

Sub-Indicators		Data Required	Source	Definition
4. Safety Compliant Business*	4.1. Number of Occupancy Permits Approved	Number (e.g. 123)	Office of Building Official (OBO) and City or Municipal Engineer's Office	This indicator measures regulation compliant construction activities in a locality, which in turn, also approximates investment activities.
	4.2. Number of approved fire safety inspection	Number (e.g. 123)	Local Bureau of Fire Protection	Actual number of Fire Safety Inspection Certificates (FSIC) released by local BFP in the LGU representing Safety compliant businesses

5. Employment Generation

The level of employment is an indicator of an economy's performance. Usually a robust economy, which produces goods and services at a fast pace, will require people at factories and service establishments. Hence, the demand for jobs in an LGU can be gauged from a locality's employment level.

Table 5. Detailed Indicators for Employment Generation

Sub-Indicators	Data Required	Source	Definition
5.1. Number of declared employees for NEW business applications	Number (e.g. 123)	BPLO or the M/CTO where data will come from the application form which has a field on "number of	Comprising of all persons of working age who during a specified brief period, either one week or one day, were in paid employment (i.e. at work receiving some salary or payment in cash or kind) or self-
5.2. Number of declared employees for business RENEWALS			

		employed." PESO Office.	employed. -This indicator Measures local employment and job absorption.

6. Cost of Living

Cost of living (COL) is usually defined as “the basic cost of the food, clothing, shelter, and fuel necessary to maintain life, especially at a standard regarded as basic or minimal.” The COL is a usual measurement that allows comparison of expenses of basic commodities across locations. An investor may opt to go to a place with low prices of goods and services since it may imply lower costs of production. Lower cost of goods and services may also mean adequate basic resources, since cost of goods is a function of supply and demand conditions. Generally, places with low cost of living may be more attractive, though across locations, higher cost of living is observed in highly urbanized areas compared to lower-income classed LGUs.

Table 6. Detailed Indicators for Cost of Living

Sub-Indicators	Data Required	Source	Definition
6.1. Local Inflation Rate	Rate	Databank and Information Services Division of the NSO – info@census.gov.ph	Measures general local cost of living. - NSO Provincial Inflation Rate where LGU is located. - the local Inflation Rate will be based on the changes in the price level in the province where LGU is located

7. Cost of Doing Business

Investors are usually attracted to areas with low prices of critical inputs to production. For purposes of computing for the competitiveness index, there are six cost sub-indicators included in the sub-factor on the cost of doing business, i.e. water, electricity, petroleum, rent, land and labor.

Table 7. Detailed Indicators for Cost of Doing Business

Sub-Indicators	Data Required	Source	Definition
7.1. Cost of Electricity of Commercial Users	PhP per kilowatt hour (e.g. 16.50) (O : "Zero" if its free, NDA: for No Data Available)	-Local electric cooperative	Power is a major cost component of production. -Price after minimum per kilowatt hour consumption for Commercial
7.2. Cost of Water of Commercial Users	PhP per cubic meter (e.g. 16.50) (O : "Zero" if its free, NDA: for No Data Available)	-Local Water Service Provider	Water is a major cost component of production, the rates of which are classified according to type of users. -Price after minimum per cubic meter consumption for Commercial
7.3. Price of Diesel as of December 31 per year	PhP per liter (ex. 37.50)	-Biggest Gas Station Based on Volume/	-Price of Diesel at the biggest Gas station in the locality (as of December 31)

			Sales in the Locality.		
7.4. Daily Minimum Wage Rate	7.4.1. Agricultural	7.4.1.1. Plantation	PhP per day (ex. 416.50)	-Regional Minimum Wages: National Wages and Productivity Council (NWPC) website (http://www.nwpc.dole.gov.ph) which contains a section on daily minimum wage rates per region. -- Wages by sector: Regional offices of the Department of Labor and Employment (DOLE)	-This indicator is a proxy for the cost of labor in the locality. -The minimum wage rate prevailing in the region where the LGU is located will be the relevant data for this indicator.
		7.4.1.2. Non-Plantation			
	7.4.2. Non-Agricultural	7.4.2.1. Establishments with more than 10 workers			
		7.4.2.2. Establishments with 10 workers or below			
7.5. Cost of Land in a Central Business District		PhP per square meter	City Planning Office or LGU Engineer's Office	Rental Rate of largest commercial space in the poblacion/CBD. This is where the economic activity is centralized such as the Poblacion if there are no CBDs	
7.6. Cost of Rent of the Largest Commercial Space in the Locality		PhP per square meter per month. If rent is in pesos monthly, must divide by sq m (ex. 496.50)			

8. Financial Deepening

Investors are usually attracted to areas with low prices of critical inputs to production. For purposes of computing the competitiveness index, there are six cost sub-indicators included in the sub-factor on the cost of doing business, i.e. water, electricity, petroleum, rent, land and labor.

Table 8. Detailed Indicators for Cost of Doing Business

Sub-Indicators	Data Required	Source	Definition
8.1. Number of Universal/Commercial Banks	Number	-Bangko Sentral ng Pilipinas (BSP) – for most of the data on banks and non-bank financial institutions -BPLO to get data from the business permit application form, i.e. the field on "lines of activity" which can be used in getting the number of financial institutions by type; -Cooperative Development Authority (CDA) -Local groups on	The Bangko Sentral ng Pilipinas (BSP) classifies financial institutions into 2 categories: (1) the broad category of banks constituting the Philippine banking system which is composed of universal and commercial banks, thrift banks, rural and cooperative banks; (2) non-banks with quasi banking functions such as financial cooperatives, savings and loan associations, pawnshops, microfinance institutions. If the pawnshop functions as a money changer or remittance center, it must only be counted once since
8.2. Number of Thrift and Savings Banks			
8.3. Number of Rural Banks			
8.4. Number of Non-Bank Financial Institutions (microfinance, cooperatives)			
8.5. Number of Pawnshops/Money Changers / Foreign			

Exchange/Remittance Center		financial institutions like the local branches of the Banking Association of the Philippines, Rural Banks Association of the Philippines	this is now grouped into 1 category.

9. Productivity

The number of financial institutions operating in a locality is usually a good measure of financial deepening. Progressive LGUs in highly urbanized areas will have more banks[5] and financial institutions than the secondary or lower classed LGUs. Hence the more financial institutions in different forms are available in a locality, the more liquid and financially facilitative business activities will be.

Table 9. Detailed Indicators for Financial Deepening

Sub-Indicators	Data Required	Source	Definition
9.1. Gross Sales of Registered Firms	PhP sales/worker (e.g. 10000.00)	Business Permits approved by the BPLO – LGU; individual BPLS Unified forms processed	Productivity based on gross sales and number of employed. -Measures efficiency of local production and potential wage and profit increase.
9.2 Number of declared employees for business RENEWALS			

10. Presence of Business, Professional and Civil Society Organizations

In economics, it is often said that the private sector is the driver of economic growth. Following this, it is important to harness private sector organizations, especially the business groups, to support the LGUs' efforts at enhancing their competitiveness. The presence of organized business groups is positively correlated with the potential of an area to improve its competitiveness.

Table 10. Detailed Indicators for Presence of Business and Professional Organizations

Sub-Indicators	Data Required	Source	Definition
10.1 Total number of LGU recognized / registered business groups	Number	- LGU-accredited business groups – LGU's Planning Development Office - Other Business Organizations - Records of business associations such as the Philippine Chamber of Commerce and Industry (PCCI) at national and regional levels.	- Organized business groups in the locality that have legal personalities and are accredited in the locality. Operationally, these pertain to: (1) organizations that are registered with the Securities and Exchange Commission and are members of nationally accredited business organizations like the Philippine Chamber of Commerce and Industry; or (b) business groups that are accredited by the LGU. - With promotion strategies for existing businesses. (Actual list of business organizations to be provided and validated by the RCC focal person/academe)

B. Government Efficiency

Investors are attracted to areas, which foster a business-friendly environment. Local governments play a critical role in ensuring that policies are conducive to attract investment. Citing the Global Competitiveness Report again, “Government attitudes toward markets and freedoms and the efficiency of its operations are also very important: excessive bureaucracy and red tape, overregulation, corruption, dishonesty in dealing with public contracts, lack of transparency and trustworthiness, inability to provide appropriate services for the business sector, and political dependence of the judicial system impose significant economic costs to businesses and slow the process of economic development.”

11. Compliance to National Directives: Comprehensive Development Plan (CDP)

The responsiveness of LGUs is assessed in relation to compliance to national directives. Locational preferences and decisions of investors at the local level are influenced by zonal classifications, which in turn are dependent on the LGUs’ Comprehensive Land Use Plan (CLUP). Hence, Local Chief Executives, who are forward looking, will usually be up-to-date in revising their CLUP, which is required to be done every ten years. With the adverse impact of climate change these days, which can destroy localities, the revision of CLUPs has become more important and so with the need to formulate Disaster Risk Reduction and Management Plans (DRRMP).

Table 11. Detailed Indicators for Compliance to National Directives

Sub-Indicators		Data Required	Source	Definition
11.1. Comprehensive Development Plan (CDP)	11.1.1. Presence of CDP	YES or NO	Planning and Development Office of LGU	-The document that pertains to the multi-sectoral plan formulated at the city/municipal level, which embodies the vision, sectoral goals, objectives, development strategies and
	11.1.2. Year of Last Update	Year		

				policies within the term of LGU officials and the medium-term.

12. Presence of Investment Promotions Unit (IPU)

The presence of an investment promotions unit highlights the obligation of the local government to provide a conducive business environment and attract investments. This implies putting in place efficient business permitting processes that grants permits and licenses at the shortest possible time and with reasonable documentary requirements from business applicants. At the same time, LGUs that set up investment promotion offices reflect their seriousness in taking care of investor interest and are favorably looked upon by investors.

Table 12. Detailed Indicators for Presence of IPU

Sub-Indicators	Data Required	Source	Definition
12.1. Order/Resolution Creating Code	YES or NO	BPLO, Planning and Development Office of LGU	This signifies the seriousness of the LGU to attract investments by having a single unit of investment processing. Observation of the presence of the following: a) local investment incentives code; b) physical office; c) staff; d) executive order of the mayor or resolution of the Sanggunian (Attach pictures of Physical Office and Staff; Copy of EO and Investment Code)
12.2. Date of Last Update	Year		
12.3. Presence of Office and Staff	YES or NO		

13. Compliance to ARTA Citizens Charter

Business registration efficiency also highlights the obligation of the local government to provide a conducive business environment and attract investments. This implies putting in place efficient business permitting processes that grants permits and licenses at the shortest possible time and with reasonable documentary requirements from business applicants. At the same time, LGUs that set up investment promotion offices reflect their seriousness in taking care of investor interest and are favorably looked upon by investors.

Table 13. Detailed Indicators for Compliance to ARTA Citizens Charter

Sub-Indicators	Data Required	Source	Definition
13.1. Submission of Citizens Charter to ARTA	YES or NO	Submission and Validation by ARTA of LGU Citizens Charter. Picture proof of the visibility of CC in the LGU Office	This indicator measures the commitment of the LGU regarding it's efficiency in conducting business registration in the form of speed and effectiveness of LGUs' business registration processes as well as avoiding red tape.
13.2. Visible Citizens Charter in the LGU Office			

14. Capacity to Generate Local Resources

Revenue generation, especially from LGU's own resources, is an indicator of the capacity of the local government to implement investment-related programs and projects. Most LGUs depend heavily on Internal Revenue Allocation (IRA); hence the Department of Finance recognizes LGUs that are least dependent on IRA and can generate resources from its own set of taxes and fees. Consistent with this stance of the government, the capacity to generate resources is assessed based on the share of own-source revenues to the LGUs' total revenue collection. LGUs with high own-source revenue shares are associated with better fiscal management.

Table 14. Detailed Indicators for Capacity to Generate Local Resources

Sub-Indicators	Data Required	Source	Definition
14.1. Business Tax collected by the LGU (in Php)	PhP (e.g. 12000000.00)	http://www.blgf.gov.ph/#	This indicator measures the resources that the LGUs can generate through real property and business taxes, which are the two largest source of local revenues.
14.2. Real Property Tax collected by the LGU (in Php)			
14.3. Total Revenues of the LGU (in Php)			

15. Capacity of Health Services

Table 15. Detailed Indicators for Capacity of Health Services

Sub-Indicators			Data Required	Source	Definition
15. Capacity of Health Services	15.1. Capacity of PUBLIC	15.1.1 Doctors	Must get the number of each health worker category and	Regional Office of the Department of Health for data	Number of health human resource in the PUBLIC and PRIVATE health facilities in the locality as
		15.1.2. Nurses			

	Health Services	15.1.3. Midwives	then divided by Indicator 56 (Population of Locality) to get health human resource per capita.	on health manpower for the PUBLIC sector; LGU Health Office to validate; BPLO to check registration of health related business Philippine Medical Association (PMA) for health professionals (PUBLIC and PRIVATE) PSA for the population of the locality	represented by the number of doctors, nurses, mid-wives and medical technologists in both PUBLIC and PRIVATE health institutions in the LGU. By getting the ratio of each type of health human resource we know can know if the local health capacity is meeting standards
		15.1.4 Medical Technologists			
	15.2. Capacity of PRIVATE Health Services	15.2.1. Doctors			
		15.2.2. Nurses			
		15.2.3. Midwives			
		15.2.4 Medical Technologists			
	15.3. Ratio of Doctors in Public and Private Health Services to Population				
	15.4. Ratio of Nurses in Public and Private Health Services to Population				
	15.5. Ratio of Midwives in Public and Private Health Services to Population				

	15.6. Ratio of Medical Technologists in Public and Private Health Services to Population			

16. Capacity of School Services

Table 16. Detailed Indicators for Capacity of School Services

Sub-Indicators		Data Required	Source	Definition
16.1. Secondary Education Schools	16.1.1. Number of PUBLIC School Teachers	Numbers are collected but must be computed as a ratio to students in each segment to determine the capacity for quality education.	Regional and Division Office of the Department of Education for secondary schools. TESDA for technical vocational certificates. CHED for tertiary schools	The number of teachers per type of educational service, ie, secondary, tech-voc and tertiary in the public and private sector is compared to the number of students in the same category to enable us to see the education. service capacities of the locality. The total number of graduates represent the ready number of skilled human resources at the tertiary and at the technical levels.
	16.1.2. Number of PUBLIC School Students			
	16.1.3. Number of PRIVATE School Teachers			
	16.1.4. Number of PRIVATE School Students			
	16.1.5. Ratio of Teachers to Students in Public and Private Secondary Education Schools			
16.2. Tertiary Schools	16.2.1. Number of PUBLIC School Teachers			
	16.2.2. Number of PUBLIC School Students			
	16.2.3. Number of School PRIVATE Teachers			

	16.2.4. Number of School PRIVATE Students			
	16.2.5. Ratio of Teachers to Students in Public and Private Tertiary Schools			
16.3. Tertiary Graduates	16.3.1. Number of PUBLIC School Graduates			
	16.3.2. Number of PRIVATE School Graduates			
	16.3.3. Total No. of Tertiary Graduates from Public and Private Schools			
16.4. Technical Vocational Education and Training Schools	16.4.1. Number of PUBLIC School Teachers			
	16.4.2. Number of PUBLIC School Students			
	16.4.3. Number of PRIVATE School Teachers			
	16.4.4. Number of PRIVATE School Students			
	16.5.5. Ratio of Teachers to Students in Public and Private Technical Vocational Education and Training Schools			
16.5. Technical Vocational	16.5.1. Number of PUBLIC School Graduates			

Education and Training Schools Graduates	16.5.2. Number of PRIVATE School Graduates			
	16.5.3. Total No. of Tertiary Graduates from Public and Private Schools			

17. Recognition of Performance

Giving of awards to local governments to recognize good performance has been an accepted practice by both National Government agencies like the DILG and private sector organizations like the Philippine Chamber of Commerce and Industry. These awards systems have been an excellent motivator for LGUs. Hence, the number of awards, especially those that promote competitiveness is a good indicator of good performance of LGUs.

Good governance promotes economic growth and is a critical ingredient to attracting investors in a given locality. Good governance, however, requires transparency and accountability in public services. These two principles are included in DILG's LGU performance monitoring and management system called Local Government Performance Management System.

Table 17. Detailed Indicators for Recognition of Performance

Sub-Indicators	Data Required	Source	Definition
17.1. Number of DILG recognized awards	Number	-Office of the Mayor for the listing of awards (other awards not covered by the regional DILG must be based on certification) -Regional Offices of the DILG for the DILG awards (e.g. Seal of	-This considers the efforts of LGUs to improve its performance based on the following recognized awards: (a) Galing;(b) Seal of Good Housekeeping; (c) Pamana ng Lahi; (d) eGov Awards for LGUs;(e) PCCI's Most Business-Friendly LGU Award; (f)

			Good Local Governance)	Excellence in Local Governance Awards (EXCELL);(g) Outstanding LGUs in Streamlining BPLS.
17.2. Other awards conferred by credible institutions	17.2.1. Regional Awards		-No Common source, but counts all competitiveness related awards given by credible government and non-government institutions	Other Awards given by credible government and non-government institutions (Actual list of both DILG Recognized Awards and Other Awards to be provided and validated by the RCC focal person)
	17.2.2. National Awards			
	17.2.3. International Awards			

18. Compliance to Business Permits and Licensing System (BPLS) Standards

Table 18. Detailed Indicators for Compliance to BPLS Standards

Sub-Indicators			Measurement Type / Data Required	Source	Definition
18. Getting Business Permits	18.1. E-BPLS Software	18.1.1. Adoption of E-BPLS Software	YES or NO	City or Municipal Business Permits and Licensing Office, Department of Information and Communication	This indicator measures the speed and effectiveness of LGUs' business registration processes as well as their Compliance to Business One-Stop-Shop set by ARTA and e-BPLS Standards either LGU
		18.1.2. DICT E-BPLS Software	YES or NO		
	18.2. Business One-Stop-	18.2.1 Presence of BOSS	YES or NO		

	Shop (BOSS)	18.2.2 All year round	YES or NO	Technology (DICT)	Initiatiated or set by DICT from registration, payment and release, on the issuance of Mayor's Permits. This is assessed based on: number of procedures or steps and processing time. These two criteria for efficiency are applied to two types of permits that are processed by cities and municipalities in the Philippines: (1) Mayor's Permit for New Business Applications; and (2) Mayor's Permit on the Renewal of Business Applications. -This also looks at the availability of a computer-aided system (e.g. eBPLS) used for processing Business permits and licenses at the LGU level.

19. Peace and Order

Table 19. Detailed Indicators for Peace and Order

Sub-Indicators	Measurement Type / Data Required	Source	Definition
19.1. No. of Policemen	Number	Philippine National Police Regional Office ; Local PNP	The ratio of police to population to ascertain how close or far it is from the standard of 500 residents/policemen
19.2. Police to Population Ration	Ratio: Number of Policemen / Total Papulation		

20. Social Protection: Number of Local Citizens with PhilHealth Registration

Table 20. Detailed Indicators for Social Protection

Sub-Indicators	Measurement Type / Data Required	Source	Definition
20.1. Philsys Registered Members of Locality to population Ratio	Ratio: Number of local citizens registered for National ID over the total population of locality	Local Philippine Statistics Authority (PSA)	Refers to the overall reach of National ID registration which allows citizens to formally avail of social protection services such as social pension, 4Ps, PWDs, unemployment benefits, among others.

C. Infrastructure

The presence of infrastructure facilities is often a major consideration in investors' decision to locate in an area. The World Economic Report 2012-2013 aptly explains the important role of infrastructure in the competitiveness discussions, "Extensive and efficient infrastructure is critical for ensuring the effective functioning of the economy, as it is an important factor in determining the location of economic activity and the kinds of activities or sectors that can develop in a particular instance. Well-developed infrastructure reduces the effect of distance between regions, integrating the national market and connecting it at low cost to markets in other countries and regions. In addition, the quality and extensiveness of infrastructure networks significantly impact economic growth and reduce income inequalities and poverty in a variety of ways." In the Philippine competitiveness index, ten indicators of infrastructure are highlighted.

The adequacy of basic infrastructure facilitates the operations of businessmen and is therefore an important determinant of competitiveness. Basic infrastructure covers the road network, the distance of the LGU to different entry points, the number of tourist accommodations, availability of basic utilities and LGU investments in infrastructure.

21. Basic Infrastructure: Roads

Table 21. Detailed Indicators for Basic Infrastructure: Existing Road Network

Sub-Indicators	Measurement Type / Data Required	Source	Definition	Sub-Indicators
21.1. Existing Road Network	21.1. Asphalt (in km.)	Kilometers e.g. 25km, Final Input: 25 ; 2000m, Final Input: 2 (O - "Zero " if none, NDA for No Data Available)	Comprehensive Land Use Plan (CLUP) of LGU, City or Municipal Engineering office, DPWH.	This indicator measures interconnectivity and the level of mobility in the locality. The road network is estimated by getting the total length of roads in the locality (including bridges) as a proportion of the LGU's total land area.
	21.1.2. Concrete (in km.)			
	21.1.3. Gravel (in km.)			
	21.1.4. Unpaved (in km.)			

	21.1.5. Total Land Area	Total Square Kilometers e.g. 250 sq.km, Final Input: 250 ; 1000 sq.m = .001 sq.km, Final Input: 0.001 1 ha = 0.01 sq.km, Final Input: 0.01		Measures the total land area of the locality. (Note that data available on PSA website are in Hectares, Please convert data to square Kilometers)

22. Basic Infrastructure: Ports

Table 22. Detailed Indicators for Basic Infrastructure: Distance of City/Municipal Hall to Major Ports

Sub-Indicators	Measurement Type / Data Required	Source	Definition
22.1.1. Distance to Operating Airport (in Km.)	Kilometers e.g. 25km, Final Input: 25 ; 2000m, Final Input: 2 (NDA for No Data Available, N/A - If the data required is not	Comprehensive Land Use pLan (CLUP) of LGU, Engineer's Office	This indicator provides guidance on how near the center of government is to its entry points, such as operating airports with commercial flights, land transport (bus/jeep/UV express) terminals and seaports/local PUBLIC wharfs.
22.1.2. Distance to Land Transport Terminal (in Km.)			
22.1.3. Distance to Seaport /			

Local PUBLIC Wharf (in Km.)	applicable to your LGU)		

23. Basic Infrastructure: Availability of Basic Utilities

Table 23. Detailed Indicators for Basic Infrastructure: Availability of Basic Utilities

Sub-Indicators	Measurement Type / Data Required	Source	Definition	Sub-Indicators	Measurement Type / Data Required
23. Basic Infrastructure: Availability of Basic Utilities	23.1. Average hours of utility services per day at the Central Business District	23.1.1. Water 23.1.2. Electricity	Number of Hours per Day (ex. 24) (NDA for No Data Available, N/A if data is not applicable to your LGU)	Engineers Office, C/MPDO,Utility service provider in the locality to include LGU-owned service provider	Business environment needs consistency of and regularity of water and electricity services. - Hours per day of available water and electricity per LGU - Percentage of households with water and electricity connection per LGU
	23.2. No. of Household with Water Utility				

	23.3. Percentage of Households with Water Utility	Percentage (ex. 95) this will be computed over indicator 57 (NDA for No Data Available, N/A if data is not applicable to your LGU)		
	23.4. No. of Household with Electricity			
	23.5. Percentage of Households with Electricity	Percentage (ex. 95) this will be computed over indicator 57 (NDA for No Data Available, N/A if data is not applicable to your LGU)		

24. Number of Public Transportation Vehicles

Table 24. Detailed Indicators for Number of Public Transportation Vehicles

Sub-Indicators		Measurement Type / Data Required	Source	Definition
24.1. Buses		Number/Actual count (O - "Zero " if none, NDA for No Data Available, N/A - If the data required is not applicable to your LGU. ex. For landlocked areas, kindly put "N/A" for Water Transportation vehicles)	-Land Transportation Office – for data on the number of buses, passenger vans, jeepneys, taxis -Philippine Ports Authority –for data on ships and fast craft -Local Transport Associations – data will depend on the nature of the association, e.g. jeepney associations -C/MPDO – for data on tricycles	-This indicator represents the mobility of the local population. -PUBLIC transportation includes all types of motorized vehicles duly recognized by the LGU.
24.2. Passenger Vans				
24.3. Jeepneys				
24.4. Tricycles				
24.5. Taxis				
24.6. Ferries	24.6.1. Ship			
	24.6.2. Fast Craft			
24.7. Passenger Bancas				
24.8. Others	24.8.1. Motorized Vehicles			
	24.8.2. Non-Motorized Vehicles			

25. Education Infrastructure

The quality of the workforce, which is an important factor in productivity and competitiveness, is partly dependent on the availability of health and education services in the locality. The latter, in turn, depends on the manpower in these sectors as well the available related infrastructure. In the case of education, both the lack of teachers and schoolrooms have been the excuse for the deterioration in literacy rate. The importance of manpower in health and education has been addressed in the component on government efficiency in earlier sections (sub-factor on basic government services); the corresponding social infrastructure requirements are addressed in this sub-factor.

Table 25. Detailed Indicators for Education Infrastructure

Sub-Indicators			Measurement Type / Data Required	Source	Definition
25.1. Number of PUBLIC secondary schools and classrooms	25.1.1. Schools		Number/Actual Count (O - "Zero " if none, NDA for No Data Available)	Engineer's Office, DepEd Division Office, DepEd Regional Office.	-Indicate availability of facilities for basic education
	25.1.2. Classrooms				
25.2. Number of PRIVATE secondary schools and classrooms	25.2.1. Schools				
	25.2.2. Classrooms				
25.3. Tertiary Schools (for cities only)	25.3.1. PUBLIC Tertiary Schools and Classrooms	25.3.1.1. Schools		Engineer's Office, LGU Education Office, CHED Regional Office.	-Indicate availability of facilities for higher education
		25.3.1.2. Classrooms			
	25.3.2. PRIVATE Tertiary Schools and Classrooms	25.3.2.1. Schools			
		25.3.2.2. Classrooms			
25.4. Technical Vocational Education and Training (for cities only)	25.4.1. PUBLIC Technical Vocational Education and Training Schools	25.4.1.1. Schools		LGU Education Office, TESDA Regional Office.	-Indicate availability of facilities for Tech. Voc. education
		25.4.1.2. Classrooms			

	and Classrooms				
	25.4.2. PRIVATE Technical Vocational Education and Training Schools and Classrooms	25.4.2.1. Schools			
		25.4.2.2. Classrooms			

26. Health Infrastructure

The quality of the workforce, which is an important factor in productivity and competitiveness, is partly dependent on the availability of health and education services in the locality. The latter, in turn, depends on the manpower in these sectors as well the available related infrastructure. In the case of education, both the lack of teachers and schoolrooms have been the excuse for the deterioration in literacy rate. The importance of manpower in health and education has been addressed in the component on government efficiency in earlier sections (sub-factor on basic government services); the corresponding social infrastructure requirements are addressed in this sub-factor.

Table 26. Detailed Indicators for Health Infrastructure

Sub-Indicators		Measurement Type / Data Required	Source	Definition
26.1. Number of PUBLIC health facilities and	26.1.1. Clinics	Number/Actual count (O - "Zero " if	Engineer's Office, LGU Health Office,	-This indicator measures the availability of
	26.1.2. Total Clinic Beds			
	26.1.3. Laboratories and/or Diagnostics Centers			

corresponding bed capacities	26.1.4. Total No. of Beds of Laboratory and/or Diagnostics Centers	none, NDA for No Data Available)	Regional DOH	facilities for health maintenance and emergencies.
	26.1.5. Hospitals			
	26.1.6. Total Hospital Beds			
26.2. Number of PRIVATE health facilities and corresponding bed capacities	26.2.1. Clinics			
	26.2.2. Total Clinic Beds			
	26.2.3. Laboratories and/or Diagnostics Centers			
	26.2.4. Total No. of Beds of Laboratory and/or Diagnostics Centers			
	26.2.5. Hospitals			
	26.2.6. Total Hospital Beds			

27. LGU Investment in Infrastructure

Table 27. Detailed Indicators for LGU Investment in Infrastructure

Sub-Indicators	Measurement Type / Data Required	Source	Definition
27.1. Total Investment in Infrastructure of LGU	Philippine Peso (ex. 12000000.00)	Engineer's Office, C/MPDO, BLDG website	-Represents actual resources allocated by LGU for its infrastructure requirements. Measures the prioritization of LGU for infrastructure,
27.2. Total LGU Budget			
27.3 Percentage budget for the Investment Infrastructure over the total LGU Budget			

28. Accommodation Capacity

Table 28. Detailed Indicators for Accommodation Capacity

Sub-Indicators		Measurement Type / Data Required	Source	Definition
28.1. Number of DOT Accredited Hotels, Resorts, Apartelles, Mabuhay Accomodations, and Homestays	28.1.1. Hotels 28.1.2. Resorts 28.1.3. Apartelles 28.1.4. Mabuhay Accommodations 28.1.5. Homestays	Number/Actual count (O - "Zero " if none, NDA for No Data Available)	Engineer's Office, DOT (regional) - for data on accredited tourist establishments, C/MPDO	This indicator focuses on the available facilities in the LGU for accommodations based on the existing Department of Tourism accreditation standards and the corresponding number of rooms in each of the facilities. Mabuhay Accomodations refers to tourist inns, pension houses, motels, bed and breakfasts, guest houses, hostels, and other similar accommodation establishments.

28.2. Number of Rooms in DOT Accredited Hotels, Resorts, Apartelles, Mabuhay Accomodations, Homestays, and Others	28.2.1. Hotels 28.2.2. Resorts 28.2.3. Apartelles 28.2.4. Mabuhay Accommodations 28.2.5. Homestays	Number/Actual count (O - "Zero " if none, NDA for No Data Available)	Engineer's Office, C/MPDO and DOT (regional) - for data on accredited tourist establishments, C/MPDO	-Indicator of visitor capacity. -Number of rooms in DOT accredited Hotels, Resorts, Apartelles, Mabuhay Accommodations, Pension House.

29. Information Technology Capacity

In the current digital age, the use of technology can lead to increased productivity, greater efficiency, connectivity, and accessibility, which are factors that can enhance competitiveness of a locality. It is therefore important to get the information and communication technology (ICT) readiness of LGUs. The more households are connected, the broader is the market for potential investors. This can also lead to improvements in efficiency for services and product delivery.

Complementing the use of technology is the importance of greater mobility that facilitates travel and transport of goods and services. Hence, two indicators have been included in the competitiveness index to measure technological readiness/advancement and the level of mobility of LGUs – the number of internet and telephone providers – and the availability of public transport vehicles.

Table 29. Detailed Indicators for Information Technology Capacity

Sub-Indicators	Measurement Type / Data Required	Source	Definition
29.1. Number of cell sites in the locality	Actual Number (O - "Zero " if none, NDA for No Data Available)	All mobile services providers	This indicator provides the foundation of the sustainability of information technology activities which are now requiring basic internet speed for business, logistics, health and education

30. Financial Technology Capacity

As stated earlier, the number of financial institutions, which is a measure of financial deepening, is highly correlated with a robust local economy. It facilitates the mobilization of financial resources for use in the production of goods and services. The simplest measurement of financial development in an area would be the number of automated teller machines.

Table 2. Detailed Indicators for Financial Technology Capacity

Sub-Indicators	Measurement Type / Data Required	Source	Definition
30.1. Number of ATMs in locality	Number/Actual Count (O - "Zero " if none, NDA for No Data Available)	Engineer's Office, C/MPDO, Local Bank Branches, BSP, physical counting	This indicator represents both the ICT capacity and financial liquidity/development in the locality. ATMs also represent stable electronic connection in the LGU. The number of transactions of LGU using e-payment facilities approximates the use of fin-tech in the locality.
30.2 Number of LGU transactions using e-payment facilities			

D. Resilience

There are two definitions of resilience with a local level perspective. The first refers to the capacities of local units to function, so that the people living and working there–particularly the poor and vulnerable–survive and thrive no matter what stresses or shocks they encounter. (City Resilience Framework) The second refers to the ability of people, households, communities, countries and systems to mitigate, adapt to and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth. (USAID)

In the two definitions, the common link are the terms shocks and stresses. The key element is systems. In the broad sustainability frameworks previously discussed, they appear in all of the pillars of economic, social and environmental aspects of competitiveness. This means that they are cross-cutting issues that are inherent in any economic, social and environmental systems. The common responses to them are prevention, mitigation, coping, and adaptation.

31. Organization and Coordination: Land Use Plan

Table 31. Detailed Indicators for Organization and Coordination: Land Use Plan

Sub-Indicators	Data Required	Source	Definition
31.1. Presence of the CLUP	INPUT: YES or NO	Planning and Development Office , Engineer's office of the LGU	Observation of the presence of the following: a) actual comprehensive land use plan; b) physical office; c) staff d) executive order of the mayor or resolution of the Sanggunian; e) year of last update (Attach copy of Actual CLUP and EO; Pictures of Physical Office and Staff)
31.2. Presence of local executive order or ordinance that mandates the implementation of the CLUP (usuallly the Planning and Development Office)			
31.3. Presence of an office and staff that implements the CLUP	INPUT: Year		
31.4. Year of Last Update			

32. Organization and Coordination: Disaster Risk Reduction and Management Plan (DRRMP)

Table 32. Detailed Indicators for Organization and Coordination: DRRMP

Sub-Indicators	Data Required	Source	Definition

32.1. Presence of the DRRMP	INPUT: YES or NO	Planning and Development Office of LGU	-This validates LGU compliance to RA 10121 on having a DRRMC Plan. (Attach pictures of Physical Office and Staff; Copy of EO or actual resolution and actual DRRM Plan to be validated by the Focal Person/academe)
32.2. Presence of local executive order or ordinance that mandates the implementation of the DRRMP			
32.3. Presence of office and staff that implements the DRRMP			
32.4. Year of Last Update			

33. Organization and Coordination: Annual Disaster Drill

Table 33. Detailed Indicators for Organization and Coordination: Annual Disaster Drill

Sub-Indicators	Data Required	Source	Definition
33.1. Conduct of LGU-wide disaster drill	INPUT: YES or NO	LGU data	Physical Record of the conduct of disaster drill in the LGU
33.2. Number of LGU Initiated and coordinated disaster drill conducted	Number/Actual Count (O - "Zero " if none, NDA for No Data Available)		

34. Organization and Coordination: Early Warning System

Table 34. Detailed Indicators for Organization and Coordination: Presence of an Early Warning System That Integrates Professional Responders and Grassroots Organizations

Sub-Indicators	Data Required	Source	Definition
34.1. Presence of early warning system that integrates professional responders and grassroots organization	INPUT: YES or NO	LGU data	Presence of early warning system in the LGU (with proof)
34.2. Number of Early Warning System	Number/Actual Count (O - "Zero " if none, NDA for No Data Available)		

35. Resiliency Financing: Budget for DRRMP

Table 35. Detailed Indicators for Resiliency Financing: Budget for DRRMP

Sub-Indicators	Data Required	Source	Definition
35.1.1. Total Budget for DRRMP	Philippine Peso (PhP) (ex. 12000000.00)	Planning and Development Office of LGU	Contingency fund for disaster as % of total LGU budget (from Governance Pillar) (One of the Key Provisions of the Local Disaster Risk Reduction and Management Fund (LDRRMF) is to allocate a minimum of 5% budget for DRRMP over the total LGU budget)
35.1.2. Total LGU Budget			
35.1.3 Percentage of budget for DRRMP to total LGU budget	Percentage (Maximum of 100%)		

36. Resilience Reports: Local Risk Assessments

Table 36. Detailed Indicators for Resilience Reports: Local Risk Assessments

Sub-Indicators	Data Required	Source	Definition
36.1. Availability of local Geohazard Maps from DENR	INPUT: YES or NO	DENR, DRRMO	Availability of local Geohazard Maps
36.2. Availability of LGU Risk Profile from Local DRRMO			Availability of LGU Risk Profile

37. Resilience Infrastructure: Emergency Infrastructure

Table 37. Detailed Indicators for Resilience Infrastructure: Emergency Infrastructure

Sub-Indicators		Data Required	Source	Definition
37.1. Ambulance	37.1.1. Public Ambulance	Number/Actual count (O - "Zero " if none, NDA for No Data Available)	Public and Private Hopsitals for data on Ambulance; Bureau of Fire Protection (BFP) for data on Firetrucks; Philippine Coast Guard for data on Public Rubber Boats; LGU data	=Actual number of designated Emergency Vehicle available in the LGU -This indicator represents the capacity to extend service by providing Emergency Vehicle during disaster. The indicator on infrastructure also counts evacuation/isolation
	37.1.2. Private Ambulance			
37.2. Firetrucks	37.2.1. Public Firetruck			
	37.2.2. Private Firetruck			
37.3. Clearing Equipment	37.3.1. Public Clearing Equipment			
	37.3.2. Private Clearing Equipment			
37.4. Boats	37.4.1. Public Rubber Boat			
	37.4.2. Private Rubber Boat			

	37.4.3. Other Boats Used for Rescue			and emergency facilities during disasters and health emergencies.
37.5. Infrastructure for multi-purpose use: evacuation/isolation	37.5.1. Public Infrastructure for evacuation			
	37.5.2. Private Infrastructure for evacuation			
37.6. Presence of drainage systems in LGU Center		INPUT: YES or NO		

38. Resilience Infrastructure: Utilities

Table 38. Detailed Indicators for Resilience Infrastructure: Utilities

Sub-indicator		Data Required	Source	Definition
38.1. Water Source	38.1.1. Presence of Water Source in the LGU	INPUT: YES or NO	Engineers Office, C/MPDO,Utility service provider in the locality to include LGU-owned service provider; LGU data	Availability of Natural water sources (rivers and streams), dams, deep well, water catchment, rainwater collection system,
	38.1.2. Distance of Water Source to LGU Municipal Hall/City Hall	Kilometers e.g. 25km, Final Input: 25 ; 2000m, Final Input: 2		This indicator provides guidance on how near the center of government to available water sources during disasters

38.2. Power Source	38.2.1. Presence of Power Source in the LGU	INPUT: YES or NO		Availability of Power Source (Proof Required)
	38.2.2. Distance of Power Source to LGU Municipal Hall/City Hall	Kilometers e.g. 25km, Final Input: 25 ; 2000m, Final Input: 2		This indicator provides guidance on how near the center of government to available power sources during disasters
38.3. Generator Set	38.3.1. Presence of Generator Sets in the LGU	INPUT: YES or NO		Availability of Generator Set
38.4. Redundancy	38.4.1. Power	Number/Actual count (O - "Zero " if none, NDA for No Data Available)	LGU data	Observation if there are more than one source power (coal, gas, solar, geothermal, biomass), water (rivers and streams), dams, deep well, water catchment, rainwater collection system), telecom (Radio, UHF, VHF, Satellite Phones), road, fuel (diesel, charcoal, firewood, bioethanol, biogas).
	38.4.2. Water			
	38.4.3. Telecom			
	38.4.4. Alternate Route			
	38.4.5. Fuel			

39. Resilience of System: Employed Population

Table 39. Detailed Indicators for Resilience of System: Employed Population

Sub-indicator	Data Required	Source	Definition
39.1. Number of Trained Responders	Number/Actual count (O - "Zero " if none, NDA for No Data Available)	LGU data, NDRRMC	Number of Trained Responders in the locality listed in the NDRRMC

40. Resilience of System: Sanitary System

Table 40. Detailed Indicators for Resilience of System: Sanitary System

Sub-indicator	Data Required	Source	Definition
40.1. Access to Sanitary Landfill	INPUT: Yes or No	Environment office	Access of an LGU to Sanitary Landfill- maintained/controlled sanitary lanfill or solid waste disposal and treatment area within or outside the locality.
40.2. Frequency of Garbage Collection per Month	Number/Item count (O "Zero" for None and NDA for No Data Available)		-Average number of Garbage Collection in the locality per Month.
40.3. Practice of Waste Segregation	INPUT: Yes or No		-Presence of a waste segregation system in the LGU'
40.4. Access to Recycling/ Material Recovery Facility	INPUT: Yes or No		LGU Access or Existence of Recycling/ Material Recovery Facility

E. Innovation

Innovation Pillar, was conceptualized given that LGUs are now finding various ways to use new technologies in addressing issues in economy and efficiency regarding business registrations, getting permits, bills payment, and productivity. It is included in the data gathering for this year but the indicators for this pillar were not yet included in the scoring and ranking, as they are still being assessed and analyzed in terms of relevance to the LGUs' performance and contribution to the overall improvement on the state of competitiveness given the set of indicators in the said pillar.

41. Information and Communication Technologies (ICT) Plan

Table 41. Detailed Indicators for Cost of Freight

Sub-indicator	Data Required	Source	Definition
41.1 Presence of LGU ICT Plan	INPUT: Yes or No; NDA if No Data Available	Engineer's Office, C/MPDO	A document which outlines how your organization's ICT will support your overall corporate objectives and strategy over a defined period
41.2. Presence of Active and up to date LGU website		Internet validation by DTI. Website must be updated as of end 2021.	The LGU's foundational understanding of innovation begins with its own use of the internet platform as a way to showcase the locality with updated information. Website is a set of related web pages located under a single domain name, typically produced by a single person or organization. The LGU website will definitely allow easy and more convenient access to LGU information thereby saving the

			time of the public from going to and queuing in the municipal hall and also the time of public officials from attending to its constituents just to provide the "usual" information or data.
41.3 Presence of Active and Up to date LGU Social Media account		Internet validation by DTI. Social Media account regardless of number	Social Media refers to websites and applications that enable users to create and share content or to participate in social networking. Examples are Facebook, Instagram, Twitter, LinkedIn, YouTube.

42. Innovation Financing: R&D Expenditures Allotment

Table 42. Detailed Indicators for Innovation Facilities

Sub-indicator		Data Required	Source	Definition
42.1. R&D Expenditures	42.1.1. Total LGU Budget for R&D	Philippine Peso (PhP) (ex. 12000000.00)	Engineer's Office, C/MPDO, BLDG website	Represents actual resources allocated by LGU for its Research and Development requirements. Measures the prioritization of LGU for R&D, particularly focused on STEM sector.
	42.1.2. Total LGU Budget			
	42.1.3. Percentage of LGU Budget for R&D over Total LGU Budget			
	42.1.4 Total LGU Expenditure for R&D			
	42.1.5. Total LGU Expenditure			
	42.1.6. Percentage of R&D Expenditure over Total Expenditure			

43. ICT Use: E-BPLS Software

Table 43. Detailed Indicators for STEAM Graduates

Sub-indicator		Data Required	Source	Definition
43.1. E-BPLS Software	43.1.1. Adoption of E-BPLS Software	INPUT: Yes or No	City or Municipal Business Permits and Licensing Office, DICT	This indicator measures the speed and effectiveness of LGUs' business registration processes as well as their Compliance to Business One-Stop-Shop and Online e-BPLS Standards set by DICT from registration, payment and release, on the issuance of Mayor's Permits.
	43.1.2. DICT E-BPLS Software			

44. Online Payment Facilities

Table 44. Detailed Indicators for Innovation Financing: R&D Expenditures Allotment

Sub-indicator	Data Required	Source	Definition
44.1. Presence of Online Payment Facilities provided by LGU	INPUT: Yes or No	City or Municipal Business Permits and Licensing Office, C/MPDO	This indicator measures the speed and effectiveness of LGUs' to any of the transactional processes to its client by providing online payment facilities.

45. STEM Graduates

Table 45. Detailed Indicators for IPOPHL Registration

Sub-indicator		Data Required	Source	Definition
45.1 Number of Tertiary STEM Graduates	45.1.1. Graduates of Science	Number/ actual count (NDA for No Data Available)	Engineer's Office, LGU Education Office, CHED Regional Office. Tertiary schools	Number of Graduates for Science, Technology, Engineering, Mathematics (STEM) coming from private or public tertiary school. STEM focuses explicitly on the hard scientific, technological, engineering or mathematical skills to drive progress or create a new concept.
	45.1.2. Graduates of Technology			
	45.1.3. Graduates of Engineering			
	45.1.4. Graduates of Mathematics			

46. Intellectual Property (IP) Registration

Table 46. Detailed Indicators for ICT Use: E-BPLS Software

Sub-indicator			Data Required	Source	Definition
46.1. Number of IP Registration	46.1.1. Patents	46.1.1.1. Filed	Number/ actual count (NDA for No Data Available)	Intelectual Property Office of the Philippines	Intellectual Property (IP) serves as the foundation of innovation in our economy and it can be protected through Intellectual Property Rights that are registered or filed under IPOPHIL. Registered refers to the number of issued patents, utility model, industrial design, trademark and copyright. For Patents, it is the signing of the certificates that the registration/issuance dates will be generated. While copyright is vested from the moment of creation, they can still be registered for various reasons. On the other hand, filed means the IP applications received by IPOPHL at a given period. A patent is an exclusive right that allows the inventor to exclude others from making, using, or selling the product of his invention during the life of the patent. Patent owners may also give permission to, or license, other parties to use their inventions on mutually agreed terms. Owners may also sell their invention rights to someone else, who then becomes the new owner of the patent.
		46.1.1.2. Registered			
	46.1.2. Trademarks	46.1.2.1. Filed			A trademark protects a business' brand identity in the marketplace. Registration of it gives the owner the exclusive rights to prevent others from using or exploiting the mark in any way. A trademark is a word, a group of words, sign, symbol, logo or a combination thereof that identifies and differentiates the source of the goods or services of one entity from those of others. Aside from being a source-identifier,
		47.1.2.2. Registered			

					differentiator, quality indicator, and an advertising device, a protective mark may also bring another stream of income to the owner through licensing or franchising.
	46.1.3. Copyrights	46.1.3.1. Filed			Copyright is the legal protection extended to the owner of the rights in an original work. “Original work” refers to every production in the literary, scientific and artistic domain.
		46.1.3.2. Registered			
	46.1.4 Utility Model	46.1.4.1. Filed			Utility Model (UM) allows the right holder to prevent others from commercially using the registered UM without his authorization, provided that the UM is new based on the Registrability Report.
		46.1.4.2. Registered			
	46.1.5 Industrial Design	46.1.5.1. Filed			An industrial design is the ornamental or aesthetic aspect of an article. Design, in this sense, may be three-dimensional features (shape or surface of an article), or the two-dimensional features (patterns or lines of color). Handicrafts, jewelry, vehicles, appliances – the subject of industrial designs range from fashion to industrial goods.
		46.1.5.2. Registered			

47. Internet Capability

Table 47. Detailed Indicators for Internet Capability

Sub-indicator	Data Required	Source	Definition
47.1. No. of Towers, Cell Sites, and/or Repeaters in Locality	Number/ actual count (NDA for No Data Available)	C/MPDO;Telephone, Cable and Internet Companies/Providers; NTC	This indicator reflects the internet-readiness and -access of a locality, which is measured by the number of towers, cell sites, and or repeaters in that locality; as well as provision of wi-fi access to public while in either the Municipal/CIty Hall or a public/commercial facilities in the locality. Tower refers to all types of towers including but not limited to (1) a three-legged or four-legged tower structure used for telecommunications, power, transmission service or of similar nature or (ii) poles, or (iii) telecom masts, or (iv) a similar infrastructure or civil wors. A cell site is defined as the entire set of equipment needed to receive and transmit radio signals for cellular voice and data transmission; typically includes transmitters, receivers, power amplifiers, combiners, filters, a digital signal processor, a power supply and network interface modules. A repeater is an electronic device that receives a signal and retransmits it. Repeaters are used to extend transmissions so that the signal can cover longer distances or be received on the other side of an obstruction.
47.2. Free Wifi Access Available to Public	INPUT: Yes or No		Wifi (wireless fidelity) is a facility allowing computers, smartphones, or other devices to connect to the

			internet or communicate with one another wirelessly within a particular area.

48. Availability of Basic Internet Service

Table 48. Detailed Indicators for Availability of Basic Internet Service

Sub-indicator	Data Required	Source	Definition
48.1. Number of Household with Post-paid Internet Service Subscription	Number/Actual NDA if No Data Available	Engineers Office, C/MPDO,internet service provider in the locality to include LGU-owned service provider, PSA and BPLO	Business environment needs consistency of and regularity of internet services. - Data of total households with Internet Service Subscription in locality vis-a-vis data of total number of households per LGU from PSA
48.2. Percentage of Household with Internet Service Subscription	Percentage (Maximum of 100%)		
48.3. Number of Businesses with Post-paid Internet Service Subscription	Number/Actual NDA if No Data Available		
48.4. Percentage of Businesses with Internet Service Subscription	Percentage (Maximum of 100%)		

49. Start Up and Innovation Facilities

Table 49. Detailed Indicators for Green Innovation Project

Sub-indicator	Data Required	Source	Definition
49.1. Number Start Up Registered in the locality (LGU, DTI, SEC, or DOST)	Number/ actual count (NDA for No Data Available)	Government Agencies and Universities that supports Innovation	STARTUP refers to any person or registered entity in the Philippines, which aims to develop an innovative product, process, or business model. A technology startup is a company whose purpose is to bring technology products or services to market. These companies deliver new technology products or services or deliver existing technology products or services in new ways.
49.2 Number of higher education institutes in locality offering STEM courses		CHED regional office	The number of higher education institutions providing STEM courses is the foundation of human resource production for innovation in the locality
49.3 Number of research and development centers in the locality		CHED regional office, BPLO, DOST Regional Office	Conducting research is another foundation element for innovation. By counting the R&D Centers in each tertiary institution, public and private research centers provide a venue for innovative development

50. New Technology

Table 50. Detailed Indicators for Online Payment Facilities

Sub-indicator	Data Required	Source	Definition
50.1. Number of New Technology in the locality (e.g. adoption of Artificial Intelligence (AI), Industry 4.0-readiness such as Robotic Process Automation (RPA), Internet of Things (IoT), Intelligent Apps., 5G, Machine Learning, Blockchain, Cognitive Computing)	Number/Actual count NDA if No Data Available	LGU, DTI, DICT	New Technology means any invention, discovery, improvement, or innovation, that was not available, whether or not patentable, including, but not limited to, new processes, emerging technology, machines, and improvements to, or new applications of, existing processes, machines, manufactures and software. Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving. Samples of AI are in the form of virtual assistants such as Google Assistant, Siri, Cortana, and Alexa. Robotic Process Automation (RPA) is another popular and trending technology that allows us to automate business processes. RPA neither requires coding for development nor direct access to the database. It has a list of commands executed by bots under some standard set of business rules. Sample use of RPA: automated report generation, emulates human actions, audits and validates information, quality assurance. Internet of Things (IoT) is a system of interrelated computing devices, objects, digital machines, animals, or people that have unique identifiers (UIDs), and this technology can transfer data over a network without human-to-human or human-to-computer interactions. Sample uses of IoT technology are in the development of smart homes, smartwatches, smart cities, connected cars, digital

			health. Intelligent Apps are applications that make use of historical and real-time data from user interactions and many other sources to make predictions and suggestions. Different AI components, such as Machine Learning, robotics, general intelligence, expert systems, and NLP, are used in developing Intelligent Apps. Some of the Intelligent Apps we are using in our daily lives are Alexa, Siri, Google assistant, Ada Health, Netflix, Seeing AI, and ELSA. 5G is the Fifth Generation mobile broadband, beyond Long-term Evolution (LTE) mobile networks. It is a game-changer and a trending technology, that improves our network connections. Through this, we will get faster, stable, and secure connections. Hence, shortly, we will have 5G mobiles in our hands. Machine Learning (ML) is a set of algorithms that find and apply patterns to data. ML is a trending technology that discovers rules causing a problem by using the data and finds a solution to that problem. Blockchain technology is an entirely new way of documenting data on the Internet. Sometimes, it is also referred to as the distributed ledger technology (DLT). The information recorded on Blockchain is distributed but not copied, and it can be in any form, such as ownership of something, someone's identity, a transaction, etc. Cognitive Computing technology integrates with certain concepts in Artificial Intelligence (AI), such as natural language processing (NLP), Machine Learning (ML), reasoning, speech recognition, etc., that help in improving human decision-making. Source: https://intellipaat.com/blog/top-trending-technologies/#no1

F. Additional Data

51. Cost of Freight (for Cities and Municipalities Outside Metro Manila)

Table 51. Detailed Indicators for Cost of Freight

Indicators		Definition/Description	Measurement Type/Data Required	Source
Cost of freight (for cities and municipalities outside Metro Manila)	Air freight Land freight Sea freight	- The cost of freight for one balikbayan box. - Transportation cost basis is from local starting point to Manila	Amount in peso/ kilogram (NDA for No Data Available, N/A – If the data required is not applicable to your LGU. Ex. For landlocked areas, kindly put "N/A" for Water Transportation vehicles)	Local Port Authorities, Local Airlines, Freight Forwarders

52. Number of Public Transport Terminals

Table 52. Detailed Indicators for Number of Public Transport Terminals

Indicators		Definition/ Description	Measurement Type/Data Required	Source
Number of public transport terminals	Buses Passenger vans Jeepneys Tricycles	Actual number of Transport Terminals per vehicle type available in the LGU	Number/Actual Count (0 – "Zero " if none, NDA for No Data Available)	Survey, LGU data

	Taxis				
	Ferries	Ship			
		Fast craft			
	Passenger bancas				
	Others	Motorized vehicles			
		Non-motorized vehicles			

53. Frequency of Trips per Day

Table 53. Detailed Indicators for Frequency of Trips per Day

Indicators			Definition/ Description	Measurement Type/Data Required	Source
Frequency of trips per day	Buses		Actual number of Trips per vehicle type available in the LGU	Number/Actual Count (0 – "Zero " if none, NDA for No Data Available)	Survey, LGU data
	Passenger vans				
	Ferries	Ship			
		Fast craft			
	Passenger bancas				
	Others	Motorized vehicles			

		Non-motorized vehicles			

54. Number of Retail Companies

Table 54. Detailed Indicators for Number of Retail Companies

Indicators			Definition/Description	Measurement Type/Data Required	Source
Number of retail companies	Number of gas stations	Shell	Measures investment confidence and economic activity	Number/actual count (0 – "Zero" for None and NDA for No Data Available)	Engineer's Office, C/MPDO, BPLO
		Petron			
		Total Gas			
		Caltex			
		Seaoil			
		Flying V			
		Other gas stations			
	Number of fast-food chains	Jollibee			
		McDonald's			
		Other fast-food chains			
		7-Eleven			

	Number of convenience stores	Ministop			
		Family Mart			
		Other convenience stores			
	Number of supermarkets	SM Supermarket/Hypermarket			
		Robinsons Supermarket			
		Gaisano			
		Waltermart			
		Puregold			
		Savemore			
		City Supermarket, Inc.			
		LCC Supermarket			
		Other supermarkets			
	Number of drugstores	Mercury Drugstore			
		Watsons Drugstore			
		South Star Drugstore			
		Rose Pharmacy			
		The Generics Pharmacy			

		Other drugstores			

55. Capacity of School Services: Net Enrollment Ratio (Secondary Level)

Table 55. Detailed Indicators for Capacity of School Services

Indicators	Definition/Description	Measurement Type/Data Required	Source
Capacity of school services: net enrollment ratio (secondary level)	The ratio of the enrolment for the age group corresponding to the official school age in the secondary level to the population of the same age group in a given year.	Ratio enrolment/school age population (e.g., 200/1000) (NDA for No Data Available)	Philippine Statistics Authority, Regional and Division Office of the Department of Education

56. Population of Locality

Table 56. Detailed Indicators for Capacity of School Services

Indicators	Definition/Description	Measurement Type/Data Required	Source
Population of Locality		Number/Actual count (O "Zero" for None and NDA for No Data Available)	Philippine Statistics Authority, Regional and Division Office of the Department of Education

57. Total Number of Household of Locality

Table 57. Detailed Indicators for Total Number of Household of Locality

Indicators	Definition/Description	Measurement Type/Data Required	Source
Total Number of Household of Locality		Number/Actual count (O "Zero" for None and NDA for No Data Available)	Philippine Statistics Authority, Regional and Division Office of the Department of Education

IV. Computing the Competitiveness Index

A. Description

The data gathered to form the index are unique and depend on its nature and type. In order to compute the index and rank the different sub-indicators, there is a need to understand the weighting of each pillar and the manner of computing each indicator.

B. Weights

Similar to other indexes, the competitiveness index ranking has a total index value of 100 representing a fully competitive local unit. The index is composed of five (5) pillars thereby making each pillar represent about 20% of index value, to wit:

a. Economic Dynamism = 20%
b. Governance Efficiency = 20%
c. Infrastructure = 20%
d. Resiliency = 20%
e. Innovation = 20%

There are ten (10) indicators for each of the five (5) pillars of the index, with each indicator having an equal weight of 2%. Weight assignment differs at the sub-indicator level. Weights at this level can be achieved by dividing the weight of an indicator (i.e. 2%) into the number of a sub-indicator under it.

To exemplify, if an indicator has 3 sub-indicators, each sub-indicator will have a weight of 0.667% (or 2%/3) each. Such is the case for the Information and Communications Technology (ICT) Plan indicator under the Innovation pillar, which has three (3) sub-indicators under it – 1) Presence of LGU ICT Plan, 2) Presence of Active and Up-to-date LGU website, and 3) Presence of Active and Up to date LGU Social Media account. Each of the sub-indicators will have a weight of 0.667%.

Another example. Let us take a look at Capacity of Health Services indicator in the Government Efficiency pillar. This indicator has two (2) sub-indicators, i.e. Capacity of Public Health Services and Capacity of Private Health Services; and these two (2) sub-indicators still has four (4) sub-sub indicators under it, i.e. Doctors, Nurses, Midwives, and Medical Technologists. To compute for the score of these four (4) sub-sub indicators under a sub-indicator, we divide the 2% first by 2, given that there are two (2) sub-indicators – i.e 2%/2 = 1%. Please find below the computation of the weight of sub-sub-indicator.

Given:

- weight of 1 indicator is 2%
- this 1 indicator has 2 sub-indicators
- each of the sub-indicator has 4 sub-sub indicators each

Computation:

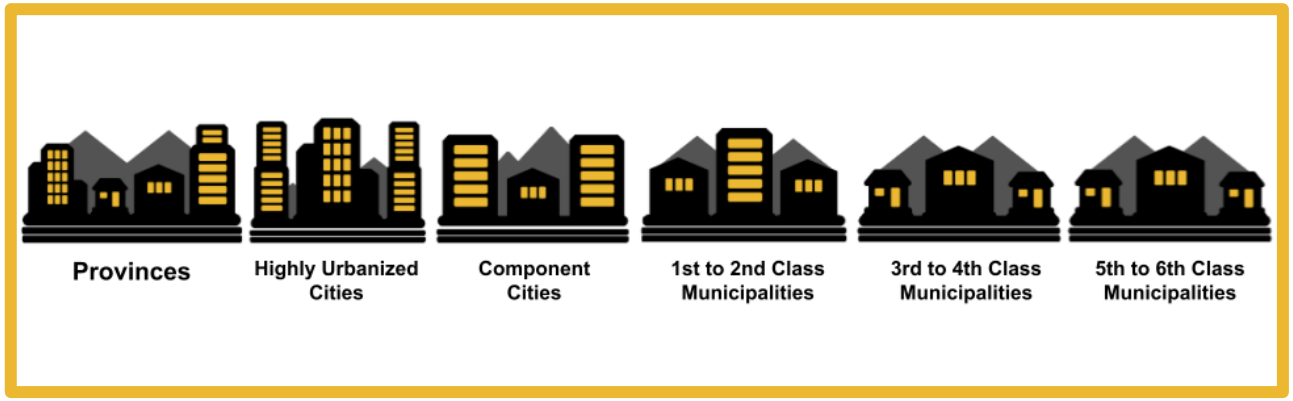
Weigh of a sub-sub indicator = (2%/2) / 4 = 0.25% each.

indicator	sub indicator	sub- sub-indicator
Capacity of Health 1Services (2%)	Capacity of Public Health Services (1%)	Doctors (0.25%)
		Nurses (0.25%)
		Midwives (0.25%)
		Medical Technologists (0.25%)
	Capacity of Private Health Services (1%)	Doctors (0.25%)
		Nurses (0.25%)
		Midwives (0.25%)
		Medical Technologists (0.25%)

Competitiveness Ranking Categories

To ensure that CMCI rankings of different LGUs are with respect to comparable peers, standardization of indicators and ranking proper will be conducted in six (6) competitiveness ranking categories. Figure 3 presents these different categories, encompassing 5th and 6th Class Municipalities, 3rd and 4th Class Municipalities, 1st to 2nd Class Municipalities, Component Cities, Highly Urbanized Cities, and Provinces.

Figure 3. CMCI Competitiveness Ranking Categories



The relevant categories for municipalities and cities as standardization and scoring procedures discussed in the next subsection will be conducted among LGUs only *within* their relevant competitiveness ranking categories. Scoring for provinces, by comparison, will undertake a different procedure which will be discussed in a separate subsection.

C. Standardizing and Scoring for Cities and Municipalities

1. To standardize the computations, we follow the process of computing the components of the United Nation Development Program's Human Development Index (HDI)[6] using a standard formula or **Formula 1A**, if higher values indicate higher ranks (e.g. number of public schools)**:**

$$\frac{\text{Actual value (x) - Minimum Value (x)}}{\text{Maximum value (x) - Minimum value (x)}}$$

However, if the lowest values indicate higher ranks (e.g. Cost of Electricity of Commercial), use **Formula 1B:**

$$\frac{\text{Actual value (x) - Maximum value (x)}}{\text{Minimum value (x) - Maximum value (x)}}$$

To implement this standardization for indicators, we follow the following steps:

STEP 1 – *Arrange* the values of the indicators per year from Minimum to Maximum Value.

STEP 2 – *Identify* the Minimum and Maximum Value per indicator.

STEP 3 – *Compute* values per indicator using either **Formula 1A** or **Formula 1B**, depending on the direction of greater/lower ranking of values.

STEP 4 – *Multiply* the values per indicator with the identified weights per indicator.

STEP 5 – *Add* the weighted values to get index per pillar.

STEP 6 – *Add* the indexes per pillar to get Competitive Index.

[6] *Based on http://hdn.org.ph/computing-for-hdi/*

2. For indicators that only feature a “Yes” or “No” answer (e.g. “Presence of the Local Investment Incentives Code”, “Presence of the DRRMP”), a special scoring scheme is adopted. Namely, “Yes” values are converted to a numerical value of one (1), and “No” values are converted to a numerical value of zero (0). STEP 4 to STEP 6 of the steps identified in C.1. are thereafter undertaken.

3. Specifically for the sub-indicators related to the “Growth of the Local Economy” indicators, the formula for computing the sub-indicators is **the simple growth formula**:

$$\frac{\text{Present Value (x) - Past Value (x)}}{\text{Past Value (x)}}$$

Computed growth rates for sub-indicators will thereafter be standardized in line with **Formulas 1A** or **1B**.

Sample Procedure:

Below is an example of using the steps above for some sub-indicators for Economic Dynamism:

0. Indicator computation sample: Size of the economy

This indicator has two (2) sub-indicators for the Size of the Economy indicator: gross sales or registered firms, and total capitalization of new businesses. The period to be covered for ranking 2022 are relevant figures for 2021. Since there are 2 sub-indicators, the index weight for the Size of the Economy indicator of 2% (20% for Economic Dynamism divided by ten indicators) is further divided by two (2) giving each sub-indicator a weight of 1.%.

In this example, we are particularly interested in standardizing and scoring the relevant indicators for Bauang, a 1st-class municipality in La Union, Ilocos Region. For this purpose, we also look at the respective values for (a) Gross Sales, and (b) Capitalization for the rest of the 507 other 1st-class municipalities, including those with the maximum and minimum values for each sub-indicator.

Table 3 shows the computation for Gross Sales and Table 4 for Capitalization. Table 5 shows the scoring for the combined Size of Local Economy Indicator.

Table 3. Computations for Gross Sales Sub-indicator: Bauang and Other 1st-Class Municipalities, 2021

LGU	DATA	Index Value *(Resulting Value Using HDI Formula)*	Sub Indicator Index Score *(Index value * Weight per Sub-Indicator)*
Cainta (max value)	181,188,518,312.52	1.0000	1.2500
La Trinidad (BU)	92,990,886,169.68	0.5132	0.6415
Guiguinto	80,455,165,849.60	0.4440	0.5550
Bauang	**2,179,628,509.88**	**0.0120**	**0.0150**
Jolo (min value)	659,000.00	0.000	0.000
Trento (no data)	NDA	-	-

Note: Figures shown in the table are for illustration purposes only and does not reflect the real datasets of the LGUs.

Table 4. Computations for Capitalization Sub-indicator: Trento and Other 1st-Class Municipalities, 2016

LGU	DATA	Index Value *(Resulting Value Using HDI Formula)*	Sub Indicator Index Score *(Index value * Weight per Sub-Indicator)*
Manapla (max value)	3,668,485,236.00	1.0000	1.2500
Mauban	3,363,642,925.99	0.9169	1.1461
Villanueva	1,740,580,664.93	0.4745	0.5931
Trento	**22,660,331.00**	**0.0062**	**0.0077**
Jolo (min value)	3,200.00	0.0000	0.0000
Aguinaldo (no data)	NDA	-	-

Note: Figures shown in the table are for illustration purposes only and does not reflect the real datasets of the LGUs.

Table 5. Computations for Size of Local Economy Indicator: Trento and Other 1st-Class Municipalities, 2016

LGU	Gross Sales	Capital	INDICATOR SCORE	RANK
Mauban	0.1765	1.1461	1.3227	1
Limay	1.2500	0.0068	1.2568	2
Manapla	0.0043	1.2500	1.2543	3
Cainta	0.5550	0.1907	0.7457	4
Guiguinto (BU)	0.6415	0.1025	0.7440	5
Hagonoy (BU)	0.0229	0.0000	0.0229	196
Trento	**0.0150**	**0.0077**	**0.0228**	**197**
Roxas (PN)	0.0001	-	0.0001	465
Tineg	-	0.0000	0.0000	466
Aguinaldo	-	-	-	467

Note: Figures shown in the table are for illustration purposes only and does not reflect the real datasets of the LGUs.

For both sub-indicators, we undertake the following steps for standardization and scoring:

1. *Arrange the values for the sub-indicator from highest to lowest. Municipalities with no data available (NDA) are not included in the computation*

For gross sales, the municipality with the highest reported sales is Limay, Bataan, while the lowest is Tineg, Abra.

For capitalization, the municipality with the highest reported capitalization is Manapla, Negros Occidental, while the lowest is Murcia, Negros Occidental.

2. *Use **Formula 1A** to standardize the values of the municipalities included.*

As for harboring maximum values, the respective values of Limay and Manapla are standardized to 1.000; while those of Tineg and Murcia are standardized to 0.0000 as the minimum values among the observations.

Meanwhile, Trento's gross sales value is standardized to 0.0120, while its value for capitalization to 0.0062.

3. *Multiply the computed value with 1.25 to get the index value/score for each sub-indicator.*

As maximum values, the respective values for Limay and Manapla are scored at 1.25.

Multiplied to 1.25, the index value of Trento's gross sales value is scored at 0.0150, while that for capitalization at 0.0077.

4. *Add the index value of each sub-indicator to get the index value of LGU for the size of local economy.*

As shown in Table 5, to arrive at its total indicator score of 0.0228, Trento's sub-indicator scores of 0.0150 and 0.0077 are simply added. This would rank Trento in 197th place among 1st-Class Municipalities.

It is worth noting that municipalities without available data are automatically ranked lower. Aguinaldo, Ifugao, ranked 467th due to its not submitting data for either of the sub-indicators.

B. Indicator computation sample: Size of the economy

Table 6 below presents calculated scores for the ten (10) indicators of the Economic Dynamism Pillar, for which data pertaining to Trento and other 1st-Class Municipalities is once again presented.

Table 6. Calculated Scores for Ten (10) Indicators of the Economic Dynamism Pillar: Trento and Other 1st-Class Municipalities

LGU	Size of the Local Economy	Growth of the Local Economy	Structure of Local Economy	Safety Compliant Business	Increase in Employment	Cost of Living	Cost of Doing Business	Financial Deepening	Productivity	Presence of Business and Professional Organizations	Economic Dynamism Total	RANK
Cainta	0.7457	0.0045	1.3644	0.7415	0.4278	2.0946	1.7542	2.4242	0.2255	0.1913	9.9738	1
Taytay (RL)	0.3725	0.0053	0.8333	1.0902	0.9899	2.0946	1.8782	1.6162	0.0386	0.2300	9.1488	2
Santo Tomas (BS)	0.4971	1.2008	-	0.4675	2.1819	1.9595	1.9442	0.8081	0.0087	0.0430	9.1108	3
Carmona	0.7140	0.0040	0.2496	0.4631	1.6608	1.9257	2.0700	0.7828	0.0503	0.0408	7.9611	4
Kalibo	0.2363	0.0566	0.8043	0.6439	0.2556	2.0608	1.7851	2.0202	0.0328	0.0559	7.9514	5
Porac	0.0726	0.0241	-	0.2739	0.2160	1.7230	1.8827	0.3662	0.0077	0.0129	4.5790	196
Guiuan	0.0517	0.0109	0.0214	0.1072	0.0601	1.7568	1.8854	0.6692	0.0115	0.0043	4.5785	197
Trento	**0.0228**	**0.0046**	**0.0100**	**0.0694**	**0.0577**	**1.6216**	**2.2821**	**0.3914**	**0.0498**	**0.0645**	**4.5739**	**198**
Candaba	0.0198	0.0133	0.1332	0.0982	0.0419	1.7230	2.1303	0.3030	0.0114	0.0989	4.5730	199

Note: Figures shown in the table are for illustration purposes only and does not reflect the real datasets of the LGUs.

The overall score for Trento is 4.5739, which would lead it to be ranked in 198th place under the Economic Dynamism pillar. Note that the score for the Size of the Local Economy indicator is 0.0228, which was computed through the steps displayed in Tables 51, 52, and 53. Also, the final score of 4.5739 already reflects the weights for the ten individual indicators, which each amount to 2.5% of the final CMCI score.

C. Standardizing and Scoring for Provinces

In the CMCI, provinces are also ranked on the basis of data collected from cities and municipalities, and not only original data collected from provincial governments. Two qualifying criteria need to be met for province-level scores to be calculated and ranked:

1. 90% of the LGUs in the province of interest should have been covered by the CMCI for the year in question; and
2. 60% of the population of the province of interest should have been encompassed by the LGUs that have been covered by the CMCI for the year in question.

For provinces which qualify for scoring, the overall CMCI scores (not the pillar scores) of the individual component LGUs within the province of interest can be aggregated through **Formula 2,** which is presented in Figure 4. However, Highly Urbanized Cities within the province are excluded from the computation, given their disproportionately large populations and LGU incomes.

Figure 4. Provincial Scoring Formula

$$\sum_{i=1}^{N} w_i \,(\text{LGU score})_i \;,\; i = \text{all LGU scores in the province}$$

$$\text{where: } w = 0.5x + 0.5y \;,\quad x = \frac{\text{LGU Population}}{\text{Total Provincial Population}} \qquad y = \frac{\text{LGU Income}}{\text{Total Provincial Income}}$$

To arrive at the provincial score, **Formula 2** adds up all the weighted scores of the individual LGUs within the province. In this case, the weight is made up of two parts: firstly, the ratio of the individual LGU's population to the total provincial population and, secondly, the LGU's income (in terms of total local revenue) to total provincial income[7]. Both ratios are halved before being summed up to form the weight for the individual LGU. This weight is then multiplied to the individual LGU's overall score to get its weighted score.

[7] *Both total provincial population and total provincial income are arrived at by getting a simple sum of the populations or revenue of the individual LGUs in the province of interest (excluding HUCs).*

Sample Procedure:

Figure 5 below shows a sample computation for a province with only five (5) component municipalities/cities.

Figure 5. Sample Provincial Scoring

x + y = w x LGU Score

LGU	LGU Population	% to Total Population	Population weight (0.5)	LGU Revenue	% to Total Revenue	Revenue weight (0.5)	Total LGU Weight	LGU Overall Score	Provincial Score
LGU1	28,063	0.16	0.08	1,321,628	0.04	0.02	0.10	11.122440	1.1635
LGU2	19,393	0.11	0.06	1,506,319	0.05	0.03	0.08	27.020065	2.2259
LGU3	35,779	0.21	0.10	2,702,841	0.09	0.05	0.15	23.132299	3.4858
LGU4	20,669	0.12	0.06	2,008,968	0.07	0.03	0.09	16.122988	1.5263
LGU5	66,951	0.39	0.20	21,848,648	0.74	0.37	0.57	26.048935	14.7867
Total	**170,855**		**0.5**	**29,388,405**		**0.5**	**1.00**		**23.1883**

Σ(sum)

PROVINCIAL SCORE

To arrive at the final province score of 23.1883, the following steps are taken in Figure 5:

1. The population weights of each of the component LGUs within the province are derived by halving the ratio of the LGU population to the total provincial population;
2. The income weights of each of the component LGUs within the province are derived by halving the ratio of the LGU income/revenue to the total provincial income;
3. The total weight is derived by getting the sum of the population weight and income weight of each individual LGU;
4. The contribution of the individual LGU to the provincial score is derived by multiplying the overall score of the individual LGU by its total weight;
5. The provincial score is derived by adding up all the individual contributions to the provincial scores of the individual LGUs.

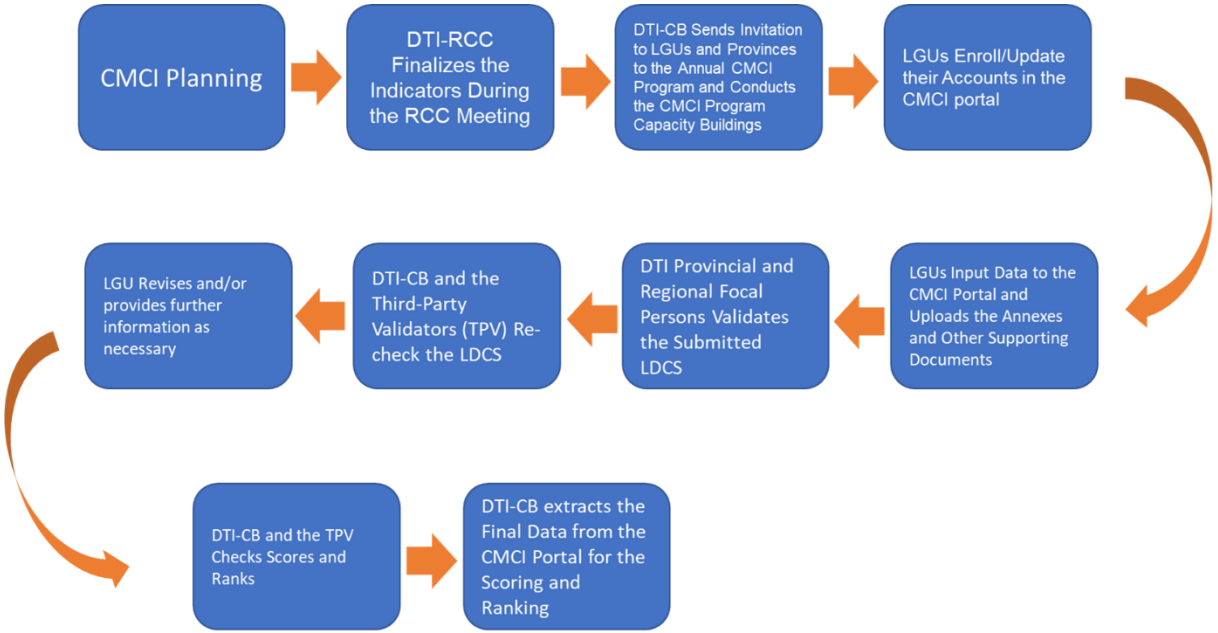
V. MECHANISMS FOR DATA GATHERING

The process of computing the competitiveness rankings, the institutional responsibilities and the timetable of activities are described in this chapter.

A. Process for Data Gathering

The key institutions that are critical for the data gathering and computation of the competitiveness rankings are the Competitiveness Bureau of the Department of Trade and Industry (DTI), the RCCs and third parties/research institutions.

Figure 6. Process for Data Gathering for the Competitiveness Ranking



B. Data Validation Process

The validation and consolidation of LCDSs at the regional level can involve a focal research or academic institutions to support the work of the RCCs. Should access to the back-end portal be needed, these focal persons from the academe are registered the same way as the LGU and the DTI are given access. At the same time, DTI will also engage a national-level focal third party to further validate local data submitted by the RCC, with both LDCSs as well as other national-level data. The key role of such focal third parties is to ensure the quality of the data gathered from the LGUs and RCCs. Once this national-level validation process has taken place, those with questionable entries in the LDCSs are to be returned concerned LGUs, through the RCCs, which upon final review and correction will be consolidated by the third party into a national data capture sheet (NCDS). The third party shall then do sample computation of scores on the NCDS in order to come up with national rankings, subject to DTI's review and finalization. Upon finalization and after conferment, the results will then be uploaded to the DTI's CMCI website. A summit and awarding ceremony will also be held to publicly present the results and recognize the best-performing provinces, cities and municipalities.

In general, pertinent attachments may be submitted by the LGUs to be used as proof for certain indicators. Moreover, to guide the validators at the provincial and regional level, the DTI provides a general guideline in the conduct of the validation for use by the DTI at the provincial and regional levels, and by the third party at the national level: 2023 CMCI Validation Guidelines-Final.pdf

In regard to the data entry in the automated system, those indicators representing ratio shall automatically be calculated by the system in the portal, as well as those same indicators from different pillar. This is to reduce unwanted error in the data encoding. Moreover, to further streamline the data encoding process, a data sanity checking feature is added to the platform wherein upon data entry, the data will be automatically checked and validated based on the general guideline or rules. Example, if an indicator requires a yes or no answer, the system will only accept responses as either yes, no, or not applicable. Should it violate at least one of the assigned rules, there will be a flag error and the submission of the Local Data Capture Sheet will not be fulfilled. The error must be addressed/corrected, in order for the submission to be accepted by the system. This way, data correction already takes place at the outset of the data gathering done by the LGU.

LIST OF ACRONYMS

ADB	Asian Development Bank
AIM	Asian Institute of Management
ATM	Automated Teller Machines
BPLO	Business Permits and Licensing Office
BPLS	Business Permits and Licensing System
BSP	Bangko Sentral ng Pilipinas
CBMS	Community Based Monitoring System
CC	Component City
CCED	City Cluster Economic Development
CDA	Cooperative Development Authority
CDP	Comprehensive Development Plan
CEDOS	Chief Economic Development Society
CLUP	Comprehensive Land Use Plan
CMCI	Cities and Municipalities Competitiveness Index
CPDO	City Planning and Development Office
DB	Doing Business
DEPED	Department of Education
DENR	Department of Environment and Natural Resources
DILG	Department of the Interior and Local Government
DOST	Department of Science and Technology
DOH	Department of Health
DOT	Department of Tourism
DPWH	Department of Public Works and Highways
DRRMC	Disaster Risk Reduction and Management Council
DRRMP	Disaster Risk Reduction Management Plan
DRRMO	Disaster Risk Reduction Management Office
DTI	Department of Trade and Industry
GCI	Global Competitiveness Index

GDP	Gross Domestic Product
HUC	Highly Urbanized City
ICT	Information and Communications Technology
IFC	International Finance Corporation
INVEST	Investment Enabling Environment Project
IMD	International Institute for Management Development
IPU	Investment Promotions Unit
JMC	Joint Memorandum Circular
LFS	Labor Force Survey
LCDS	Local Data Capture Sheet
LGPMS	Local Governance Performance Management System
LGSP-LED	Local Governance Support Program for Local Economic Development
LGU	Local Government Unit
LIIC	Local Investment Incentives Code
M/CTO	Municipal/City Treasurer's Office
MOA	Memorandum of Agreement
MPDO	Municipal Planning and Development Office
NCC	National Competitiveness Council
NCDS	National Data Capture Sheet
NTC	National Telecommunications Commission
OIDCI	Orient Integrated Development Consultants, Inc.
PCCR	Philippine Cities Competitiveness Ranking
PNP	Philippine National Police
PSA	Philippine Statistical Authority
RCC	Regional Competitiveness Committee
RCDS	Regional Data Capture Sheet
SGH	Seal of Good Housekeeping

SURGE	Strengthening Urban Resilience for Growth with Equity
USAID	United States Agency for International Development
WEF	World Economic Forum