An Exploratory Initiative on the Use of Non-Traditional Data Sources for Philippine SDG Indicator Monitoring

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OUTLINE

A. Background

B. Small Area Estimation using Nighttime Lights

C. Enabling the Use of Citizen Generated Data

D. Next Steps

SDG Indicators Focal Points (SDGFP)

plays a vital role in the **methodological developments** and in the efficient **updating of the SDG indicators**

PSA SDG Team

plays a vital role in the **methodological developments** and in the efficient **updating of the SDG indicators**

Establishment of Groups for SDG Monitoring, Coordination and Collaboration

Task Force on CGD for Official Monitoring

recommend **policies, standards and validation mechanisms** on the utilization of CGD for official reporting for the PSS in support of the SDGs.

Task Force on Big Data for Official Monitoring

recommend **policies, standards and validation mechanisms** on the utilization of Big Data for official statistics for the PSS in support of the SDGs.

Provincial Poverty Incidence
- 4.9 - 23
- 23.1 - 30
- 30.1 - 38
- 38.1 - 46
- 46.1 - 68.5
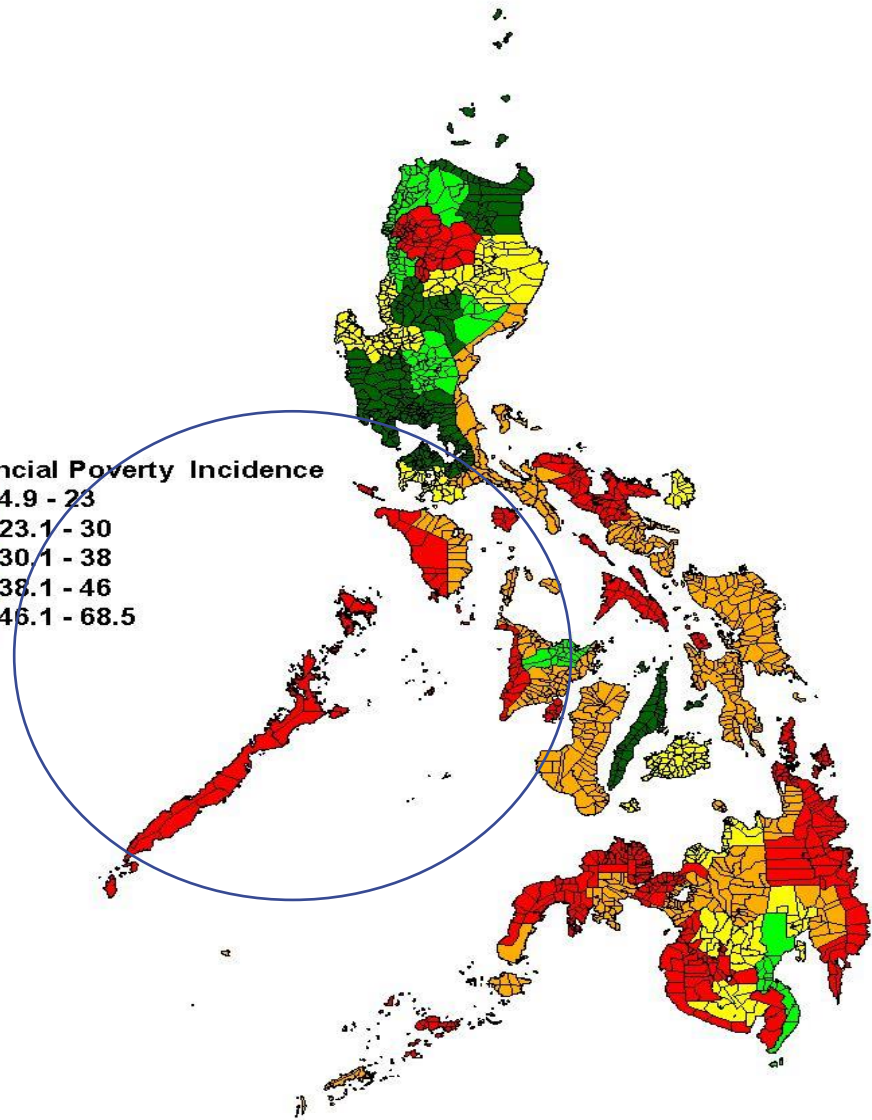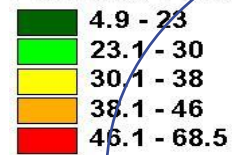
Municipal Poverty Incidence
- 1.5 - 18
- 18.1 - 32
- 32.1 - 46
- 46.1 - 60
- 60.1 - 97.5
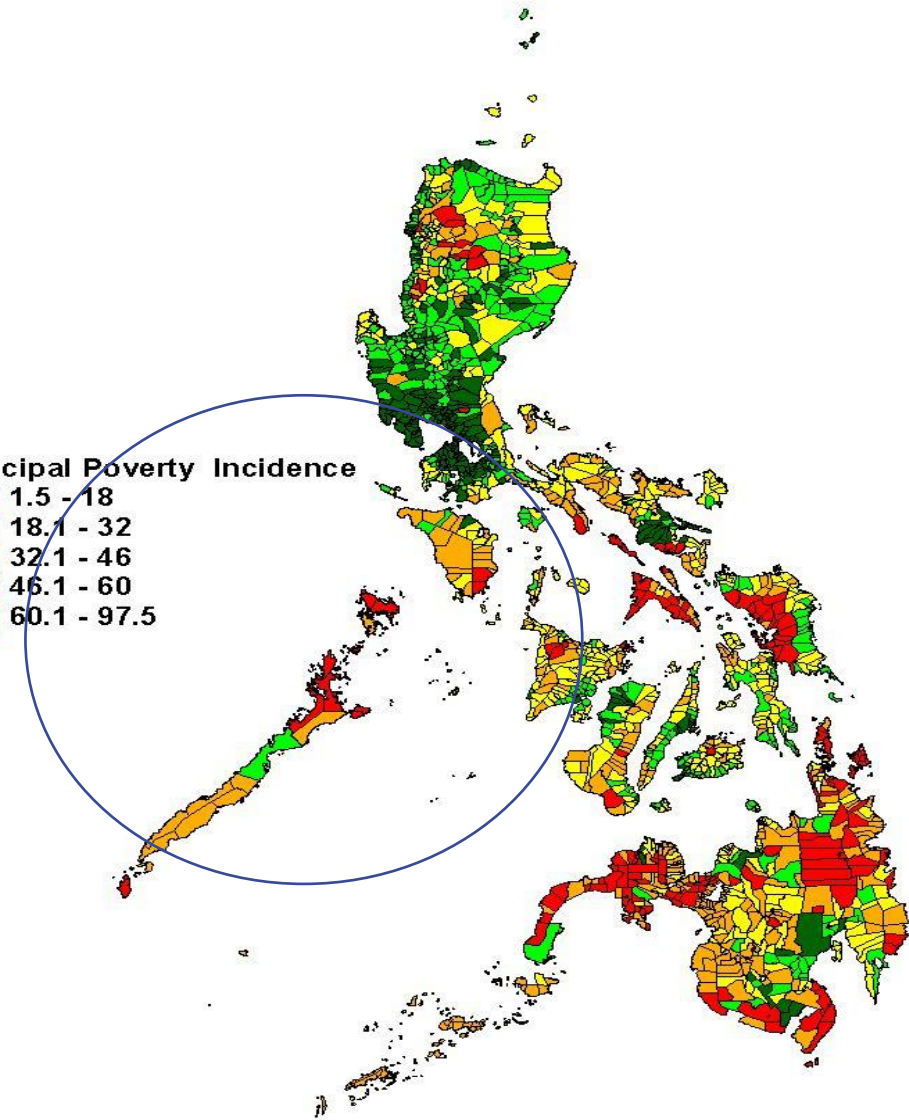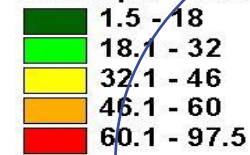
SAE Focusing n ELL Technique

- **Merge information from different types of data sources to produce small area estimates**

- **"Borrow strength" from the much more detailed coverage of the census data to supplement the direct measurements of the survey**

Criteria in Choosing the "Best" Predicting Model

- The relationship of the variables, whether positive or negative, on Y is **generally consistent** with earlier researches on poverty (e.g. education should have a positive effect on income).

- The models should be **robust**, which means that small changes to the model do not greatly affect the significance or signs of the variables.

- Estimated regional poverty incidence **does not largely differ from the official regional poverty estimates** (within 2 standard error away from the official estimates). **Preserve the ~~ranking~~ clustering of the official provincial estimates within a region**.

- **'Good' statistical properties** of the model like acceptable model adequacy; significant regression coefficients; parsimony;

2018 Nighttime Lights Data of the Earth Observation Group (EOG) of the Colorado School of Mines

Nighttime Lights
≈
Economic Activity

Comparison of Final Set of Independent Variables with and without Mean Luminosity Variable

	With Mean Luminosity Variable	Without Mean Luminosity Variable
Significance level	Model and regression coefficients are significant at 5% level	
Adjusted R^2	55.52%	55.09%

Comparison of Final Set of Independent Variables with and without Mean Luminosity Variable

| Region/ Province/ HUC	2018 Official PovStat		2σ	With Mean Luminosity		Without Mean Luminosity	
	2018 Official	SE		2018 SAE	Difference (Official-SAE)	2018 SAE	Difference (Official-SAE)
Zamboanga Peninsula	32.7	1.3	2.6	30.9	1.8	30.0	2.7
Zamboanga Del Norte	45.4	3.0	6.0	44.4	1.0	42.7	2.7
Zamboanga Del Sur	23.7	1.7	3.4	22.3	1.4	21.9	1.8
Zamboanga Sibugay	35.4	2.6	5.2	32.5	2.9	31.7	3.7
City of Isabela	51.0	3.7	7.4	43.8	7.2	42.6	8.4
Zamboanga City	10.2	1.2	2.4	12.7	2.5	14.0	3.8

Comparison of Final Set of Independent Variables with and without Mean Luminosity Variable

Distribution of CVs

Grouping	With Mean Luminosity Variable	Without Mean Luminosity Variable
Less than 10	50	38
10 to 20	22	33
20 to 30	0	1
More than 30	0	0
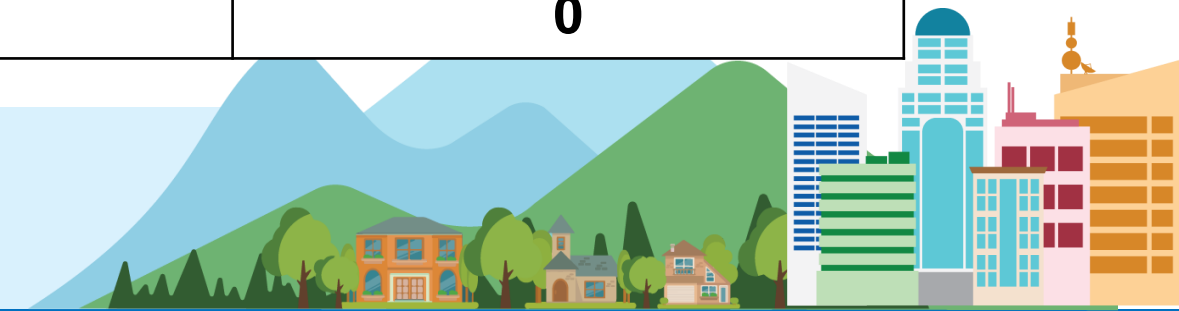
Comparison of Final Set of Independent Variables with and without Mean Luminosity Variable

Distribution of Municipal and City Level Poverty Incidences (in percentages)

Grouping	Range of Poverty incidence	With Mean Luminosity Variable	Without Mean Luminosity Variable
Level 1	0 – 20.0	4	4
Level 2	20.1 – 40.0	40	41
Level 3	40.1 – 60.0	27	26
Level 4	60.1 – 80.0	1	1

B. SAE
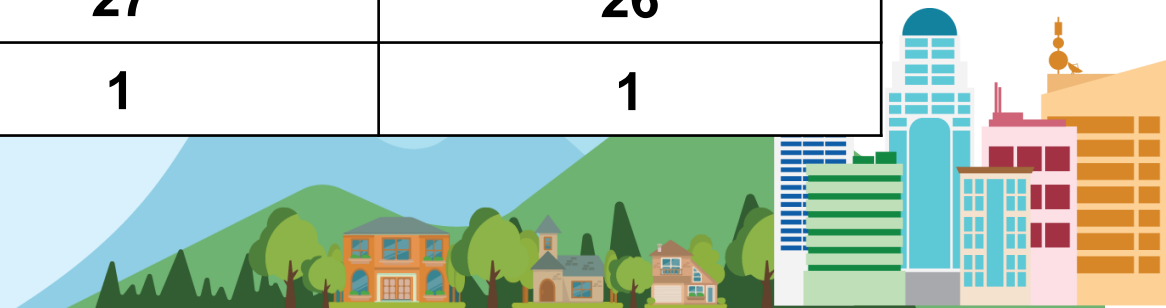
2018 Zamboanga Peninsula Municipal and City Level Poverty Estimates*
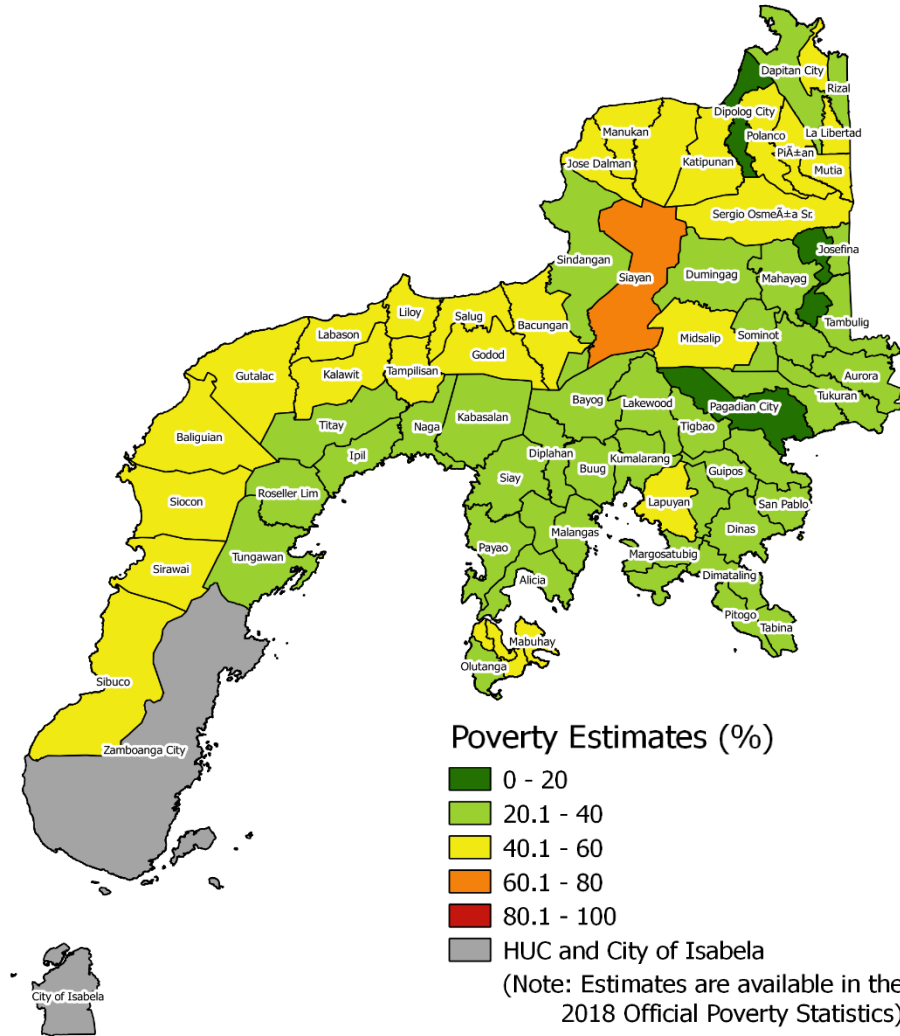
*Note: Need to further scrutinize the effects of the nighttime lights in generation of city and municipal poverty estimates

Poverty Estimates (%)
- 0 - 20
- 20.1 - 40
- 40.1 - 60
- 60.1 - 80
- 80.1 - 100
- HUC and City of Isabela

(Note: Estimates are available in the 2018 Official Poverty Statistics)
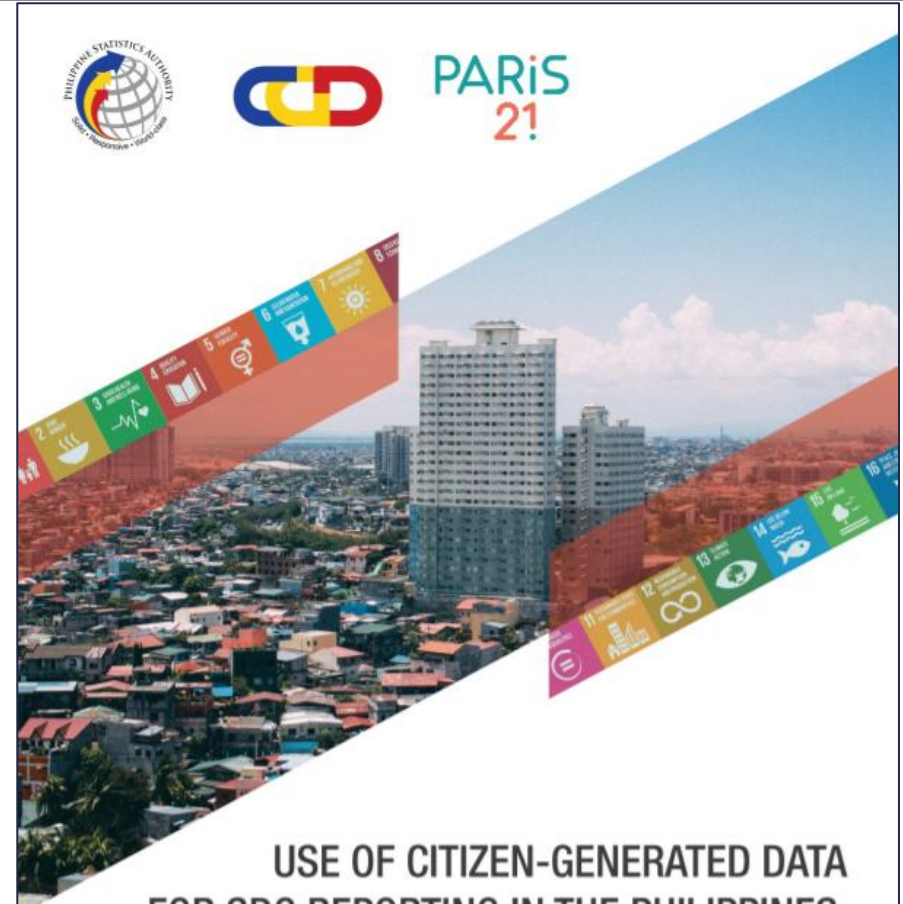
Operationalizing CGD definition

Who?

State

CSOs and NGOs

Non-state

Citizens as "active" respondents

Active

Non-statistical

Passive

Statistical

What?

How?

monitoring, tracking interventions and/or project reporting

PSS Definition *(for project purposes):* CGD are data produced by **CSOs and NGOs** in the Philippines **sourced from citizens as respondents** primarily for **non-statistical purposes, such as monitoring, tracking interventions and/or project reporting**.

CGD Quality Assurance Framework

SCORE ALLOCATION MATRIX

QUALITY DIMENSIONS	2: With high potential for use in official SDG reporting	1: With some potential for use in official SDG reporting	0: Not acceptable
Relevance	directly measures or serves to monitor a specific SDG indicator	can serve as proxy indicator, or can serve as input, (e.g. as numerator or denominator) to the generation of the SDG indicator	could not be used as either input or direct measure of SDG indicator
Credibility	institution is affiliated with an international organization or the aforementioned activity (in gathering the data) is done in collaboration with an international organization or in partnership with another organization	institution has affiliation to another CSO or works with another organization within the country	not affiliated with another organization
Frequency	Has a defined periodicity, e.g. once every three years, yearly, quarterly, monthly, etc.	One - time activity	No definite time period

Note: Data are viable for further evaluation of the TF if score is at least 1.33; and if no 0 score in any quality dimension.

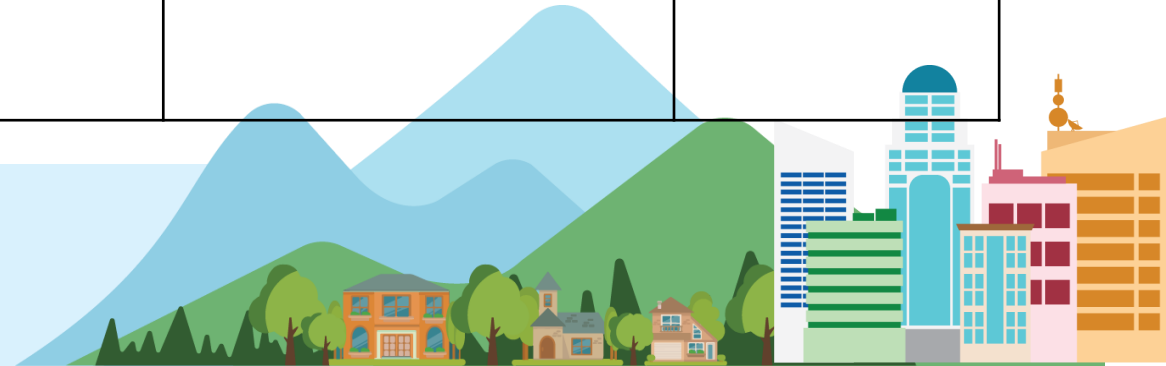# CGD Quality Assurance Framework

SCORE ALLOCATION MATRIX

QUALITY DIMENSIONS	2: With high potential for use in official SDG reporting	1: With some potential for use in official SDG reporting	0: Not acceptable
Timeliness	Data are available within the year of reference period	Data are available 1- year after reference period	Data are available 2-years after reference period
Documentation of Methods	Follows or adheres to an international or national standard or protocol in data collection (instrument/tool) and estimation; and has a documentation of methodology available	Method for data collection and/or estimation/computation procedure are available	No described procedure
Accessibility	Data are freely shared with anyone in print and/or online publication	Data are freely shared with anyone upon request/MOA/data sharing agreement	Data are for internal use only

Note: Data are viable for further evaluation of the TF if score is at least 1.33; and if no 0 score in any quality dimension.

Closest Citizen Generated Data Match to SDG Indicator

CGD/ CSO/NGO data holdings	SDG indicator	Available data disaggregation	CSO/NGO data source
Number of companies with sustainability reports	**12 RESPONSIBLE CONSUMPTION AND PRODUCTION** SDG 12.6.1 Number of companies publishing sustainability reports (Tier 3)	Location: Philippines	PBE PHILIPPINE BUSINESS FOR THE ENVIRONMENT

The Philippines towards achieving the 2030 Agenda

- **Continuous discussion of policy, standard and validation mechanism on the use of big data for official statistics and citizen generated data for official reporting for PSS in support to SDG monitoring**

- **Explore the usage of big data in generation of other SDG indicators**

- **Discussion of the integration of CGD in the data sources of the Philippine SDG Indicator Monitoring**

Maraming Salamat Po!
Thank You!

PSA-SDG Webpage: psa.gov.ph/sdg
PSA SDG Email: sdg@psa.gov.ph