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Staffing, Standards, and Connectivity for Local DRRM Data

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EXECUTIVE SUMMARY

Local government units (LGUs) carry much of the work of disaster risk reduction and management (DRRM) and climate change adaptation (CCA). That work runs on data: hazard maps, lists of families in danger zones, and damage reports. Many LGUs cannot collect, keep, or use this data well. The reasons are familiar to any Local DRRM Officer: positions in the Local DRRM Office (LDRRMO) that cannot be filled or kept, the cap on how much of the local budget may go to salaries, national rules that stop local funds from paying for items such as internet service, data recorded by different agencies in different formats, and staff with limited computer training. A study of how local DRRM data management might look in 2050 (Asuncion et al., 2025) found that these problems remain in most of the futures it describes. Technology improves; the people, rules, and internet connections that make it useful do not.

This brief sets out six actions that governors, mayors, and Local DRRM Officers can start now, each with a request to the national agency that holds the rule or the money: put permanent staff on data work, starting with duties for existing positions and shared units where new ones cannot be created; name a climate change focal person by office order; budget for internet, equipment, and backups in the Local DRRM Plan and inform DBM, DILG, COA, and OCD in writing the rules that impede implementation; agree on data formats and list all datasets before buying any system; train staff before buying equipment; and try new technologies only after they pass a short set of tests.

Keywords: *local DRRM, climate change adaptation, local government units, data management, foresight*

POINTERS FOR PRACTITIONERS AND POLICYMAKERS

- **Address staffing first.** In three of the four futures the study describes, the LDRRMO is still short of permanent staff, and most other problems follow from that.
- **Some fixes need national agencies.** National agencies set the salary cap, the CSC's required qualifications for positions, DBM salary rates, and the rules on what the DRRM fund may pay for. LGUs should document where these rules get in the way and request changes in writing.
- **Agree on data rules and fix the internet before buying systems.** Settle file formats, a short description of each dataset, and the office responsible for it. The urban–rural gap in internet access will persist, so plan for weak connections and staff with basic computer skills.

DISCLAIMER
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POLICY CONTEXT

Every disaster risk assessment, local plan, and early warning system depends on reliable data on hazards, exposure, and vulnerability, and LGUs have to produce much of it themselves. They prepare the Climate and Disaster Risk Assessment (CDRA), which examines hazards and the people and assets they affect, and feeds into the Comprehensive Land Use Plan (CLUP) and other local plans (Domingo & Manejar, 2018). However, many LGUs lack the resources and capacity to generate their own data (UNDP, 2022), and national monitoring of their risk assessments is weak.

ABOUT THE EVIDENCE

The study built its scenarios, or stories of possible futures, in five steps adapted from Schwartz (1996): setting 2050 as the horizon; scanning social, technological, economic, environmental, and political trends; ranking them by importance and uncertainty; writing one scenario for each of Dator's (2009) four types of future (growth, collapse, discipline, transformation); and setting goals and strategies. The scanning drew mainly on published studies, plus interviews with five officials and staff (two in Davao City, three in Tanauan, Leyte) and email interviews with 19 informants from LGUs, national agencies, consultancies, NGOs, academe, and the private sector.

The evidence has limits. It rests on interviews and documents rather than on measured data, and it comes from a small group of informants. The scenarios describe the country as a whole, not any one LGU. The study did not rank its five factors; the order of actions below reflects a judgment for this brief based on a small qualitative sample. The study has not yet tested the lead offices, timelines, and rough cost levels with LDRRMOs, and it collected no cost data.

KEY FINDINGS

Many LGUs cannot fill or keep LDRRMO positions.

Republic Act No. 10121 requires provinces, cities, and municipalities to set up a Local Disaster Risk Reduction and Management Office (LDRRMO) with permanent positions. Many cannot comply because of budget limits and difficulty finding qualified staff. A Commission on Audit report found nine LGUs with understaffed LDRRMOs and 54 that had not set one up (COA, 2022). The report does not say how many LGUs were audited, so these are examples, not national rates.

The Personnel Services (PS) limit in the Local Government Code caps what an LGU may spend on salaries and other pay of regular personnel at 45% of its regular income for 1st- to 3rd-class LGUs and 55% for 4th- and 5th-class LGUs (Republic Act No. 7160, Sec. 325; LGUs have been classed 1st to 5th since Republic Act No. 11964, 2023). Facing this limit, LGUs hire casual, contractual, or job-order workers instead. Low pay and insecurity discourage applicants and raise turnover (Gabriel et al., 2021). One informant in Asuncion and colleagues' (2025) study described LDRRMO workers as job-order and contractual staff with no permanent positions, and volunteers without insurance or hazard pay.

Even a large city faces this. Davao City's disaster office became a separate unit only in 2016 and still depends on the City Planning Office for risk assessments and the Local DRRM Plan (LDRRMP). In Tanauan, only the office head has a regular appointment.

Climate change adaptation has an even weaker base. National policy does not require LGUs to create a climate change office or unit, so many have no focal person, the officer assigned to handle it (GIZ, 2020). This affects funding. In 2020, LGUs and civil society submitted 172 proposals to the People's Survival Fund, the national fund for local climate adaptation projects, and six were approved. Most of the rest failed the first screening because of incomplete documents or ineligible activities (DOF, 2020).

Internet costs and spending rules limit LGU data work.

Internet access is costly and uneven. A fixed broadband line costs over 11% of average income per person, and a mobile data plan about 2%, both higher than the ASEAN average (World Bank, 2024).

National policies also restrict how local funds may be used for DRR-CCA. One example is paying for internet service as a pre-disaster

(preparedness) activity. LGUs end up paying for it from the general fund instead. The study does not name the rules involved; the Local Disaster Risk Reduction and Management Fund (LDRRMF) guidelines are the likely place to look (Republic Act No. 10121, Sec. 21).

The same data sits in different places and formats.

A UNDP (2022) study found no single set of rules on who may access which data. Several online platforms show the same data, and agencies keep it in different formats. Informants described the effect on LGUs: several national agencies develop risk-assessment datasets, so LGUs receive conflicting guidance. One informant pointed to GeoRiskPH, the government's shared hazard-mapping platform led by PHIVOLCS, as the national effort to address this.

Standards also need to cover how data is used. Key informants said not every recommendation drawn from risk data is carried out, because actions such as moving people out of a hazard zone carry political, social, and financial costs. The study adds that national standards should guide local practice without overriding local autonomy.

The digital divide, the gap in internet access and skills, runs between and within LGUs.

Only the National Capital Region has more than 30% of households with fixed wired broadband. In two-thirds of provinces, where 36% of the population lives, its reach is below 10%, and rural gains in household internet use over the past decade were about a third of urban gains. Skills are a second gap: among youth and adults, only 2% can use basic Excel formulas, 6% can copy and paste in a document, and 7% can attach a file to an email (World Bank, 2024).

New technologies are moving faster than LGU capacity.

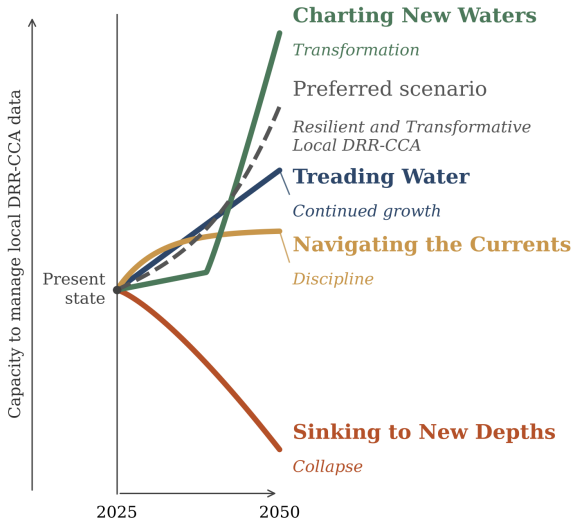
The study reviews blockchain (a shared record that is hard to tamper with) for safer data storage, artificial intelligence for faster damage assessment, and virtual-reality ("metaverse") applications for training and simulation. Their impact on DRR-CCA remains unclear. Their cost compared with what LGUs already use, the time needed to develop them, and each LGU's ability to run them will shape policy and practice over the next 10 to 15 years.

SCENARIOS TO 2050

The five factors defined four scenarios, each based on one of Dator's (2009) types of future: *Treading Water* (continued growth), *Sinking to New Depths* (collapse), *Navigating the Currents* (discipline), and *Charting New Waters* (transformation). Figure 1 shows each scenario's direction and the preferred scenario; Table 1 summarizes how each scenario treats each factor; the shading marks where the problem persists.

Figure 1

Four Scenarios for Local DRR-CCA Data Management to 2050, by Dator's Types of Future



Note. Adapted from Dator's (2009) four generic images of the future and the scenario narratives in Asuncion et al. (2025). All five curves start from one point, the present state of local DRR-CCA data management, and run to 2050. The vertical axis shows LGUs' capacity to collect, store, and use DRR-CCA data; it has no scale, and the curves show direction and shape, not measured values. Each curve follows its scenario narrative: steady improvement with persistent gaps (*Treading Water*), decline (*Sinking to New Depths*), early gains that level off under tight national rules (*Navigating the Currents*), and a late, steep rise once advanced tools spread (*Charting New Waters*). The dashed line is the preferred scenario, which combines elements of the four.

Table 1

How Each 2050 Scenario Treats the Five Factors

Factor	Treading Water (continued growth)	Sinking to New Depths (collapse)	Navigating the Currents (discipline)	Charting New Waters (transformation)
Institutional Capacity	Generally improved, but attracting qualified specialists remains a major challenge	Inadequate organizational and human resource capabilities	Qualification standards relaxed and salaries enhanced; regular training required	More people skilled in AI and blockchain, but government cannot match private-sector hiring
Spread of digital technology	Urban and high-income LGUs invest; rural and low-income LGUs struggle	Severe budget constraints block investment in ICT	Excessive control and regulation limit technological growth	Rapid adoption of advanced technology becomes inevitable
Data Management Standards	Unstandardized and unpredictable	Data fragmented and idiosyncratic; national databases unreliable and outdated	Highly centralized and closely regulated by the national government	Lack of standardization produces "constructive chaos"
Digital Divide	Urban–rural gap in internet penetration, digitalization, and literacy remains	Access and literacy gap has widened substantially	Remains; rural and low-income areas struggle to meet regulations	Gap narrowed, but significant urban–rural disparity remains
Emerging Technologies	Integrated into capacity-building, but limited to small-scale prototypes and tests	Application remains overly academic and far-fetched	Stringent regulation adopted in response to unintended consequences	Many agencies and LGUs use advanced tools; use varies with institutional capacity

Note. Condensed from the scenario narratives in Asuncion et al. (2025). Shading: darker = the problem persists or worsens; lighter = mixed; blue-grey = eased

The digital divide persists in all four scenarios.

Table 1 shows that the urban–rural digital divide persists in every scenario, even in the transformation scenario where technology adoption is rapid. Weak staffing and the absence of common data rules persist in three of the four. The exception is *Navigating the Currents*, where standards are set, and staffing rules relaxed, but only under tight national control. Whichever future arrives, LGUs must still deal with staffing, standards, and connectivity.

What the preferred scenario describes

The authors combined the strengths of the four scenarios into one preferred scenario, *Resilient and Transformative Local DRR-CCA*. In 2050, every LGU is part of a shared data system built around residents' needs. DRR-CCA offices are staffed by professionals, all LGUs follow the same data rules, systems are protected against hacking, and households, schools, and small businesses can use digital services. It also includes automatic sensors such as river-level gauges, satellite links, and next-generation mobile networks (6G).

The preferred future is a guide for planning, not a shopping list. Advanced technologies will work only where staffing, common data rules, and basic computer skills are already in place, and those are what LGUs can work on today.

POLICY RECOMMENDATIONS

The study's five goals and strategies (Asuncion et al., 2025) translate into six actions governors, mayors, and LDRRMOs can start now, each with a matching request to national agencies. Table 2 lists who leads each action and through what instrument; Table 3 shows which actions hold up in each possible future and when to go further. These assignments are proposals of this brief, not of the study.

What will make these actions acceptable

A mayor or governor weighs the recurring cost of regular positions against the ease of job-order hires. So, staffing starts with duties for existing posts and offers a shared unit for LGUs that cannot add positions. Requests to national agencies work better as short notes than as

complaints: name the rule, what it prevents, what it costs the LGU, and the change asked for. Provinces and LGU leagues can send such notes together.

Build a permanent core of staff for local DRRM data work.

Local chief executives, with the Sanggunian and the Human Resource Management Office, should first add data and risk assessment duties to the LDRRMO's existing positions and fill vacant regular positions (plantilla items). A 2014 joint circular of the NDRRMC, DILG, DBM, and CSC already provides for a Local DRRM Officer and three staff in every province, city, and municipality (NDRRMC et al., 2014). Each LGU should first count its own filled and vacant items against this minimum. LGUs should also put in writing which tasks belong to the LDRRMO and which to the planning office, so that risk assessment is not left to an office without the mandate, as in Davao City. Where an LGU cannot create new items within its PS limit, the province or a group of neighboring LGUs can host a shared data unit under a memorandum of agreement (Republic Act No. 7160, Sec. 33, which allows LGUs to pool resources for a common purpose), with each LGU naming a counterpart officer by executive order. This is one way to carry out the study's call for "asymmetrical configurations," or different set-ups for LGUs of different capacity. The study also proposes reviewing the CSC's required qualifications for LDRRMO positions and DBM salary rates, since low pay and the lack of regular positions drive turnover (Gabriel et al., 2021).

Designate a climate change focal person.

Because no climate change office is required, the local chief executive can name a focal person through an office order. This person coordinates climate programs, such as the Local Climate Change Action Plan (LCCAP), and keeps the checklist of requirements for funding proposals. Only six of 172 People's Survival Fund proposals passed in 2020, mostly because of screening failures, so a named person who keeps the checklist is a low-cost fix. The Climate Change Commission, which manages the fund, can help.

Budget for connectivity and data equipment.

LDRRMOs should list internet service, computers, software maintenance, and data backup as costed items in the LDRRMP and the Annual Investment Program (AIP). Where national rules limit spending on these items, LGUs should document each case and seek written guidance from DBM, DILG, COA, and the Office of Civil Defense. The LDRRMF rules (Republic Act No. 10121, Sec. 21) are the first place to check.

Set common data standards before buying systems.

Before buying any system, the LDRRMO, the planning office, and the LGU's IT staff should make an inventory of the LGU's datasets and record, for each one, the office responsible, the file format, a short description of its contents and source (its metadata), and how often it is updated. Where national standards exist, as with GeoRiskPH, follow them. The study adds protection against hacking and data loss (firewalls, encryption, secure networks) and training on using the data for decision-making. Backups and ways to keep working when power and internet are down belong on the same list because disasters can damage computer systems. Barangay-level data from the BDRRMCs belongs in the inventory. Datasets with personal information, such as lists of evacuees or vulnerable households, fall under the Data Privacy Act of 2012 (Republic Act No. 10173), so the local data rules should state who may see and share them. LGUs should ask DILG and DICT for data standards that leave room for local planning.

Train staff before buying equipment or software.

Every equipment or software purchase should include a budget for training and maintenance. LGUs should assess the computer skills of LDRRMO staff and Barangay DRRM Committee (BDRRMC) members, partner with schools and universities for training, and choose tools that staff with basic skills can use.

Try new technologies only after they pass clear tests.

Before adopting artificial intelligence, blockchain, or similar tools, LGUs should ask four questions. The study's three considerations are cost

compared with existing options, the time needed to develop and use the tool, and whether local staff can adopt and maintain it. A fourth question follows from the findings on standards: does the tool work with the LGU's own data formats? LGUs are better off joining trial projects (pilots) run with universities or private firms than funding them alone and should be ready to say no.

Table 2

Six Actions for LGUs and the Matching Requests to National Agencies

Action (study goal)	Lead office; request to national agencies	Instrument	Sign of Progress
Build a permanent core of staff for local DRRM data work (Goal 1)	Local chief executive, Sanggunian, HRMO, LDRRMO; province or neighbors for a shared unit. Ask DBM, CSC, DILG to review qualification standards and salaries.	Regular positions (plantilla items); appropriation ordinance; shared-unit agreement; request for rule review.	Data and risk assessment posts in the staffing pattern; turnover tracked.
Designate a climate change focal person (Goal 1)	Local chief executive. Ask the Climate Change Commission to help prepare funding proposals.	Office order naming the focal person.	A named focal person; proposals pass first screening.
Budget for connectivity and data equipment (Goal 2)	LDRRMO and local budget office. Ask DBM, DILG, COA, and OCD for written guidance on allowable spending, and DICT for broadband in low-coverage areas.	LDRRMP and Annual Investment Program; written request.	Costed lines in the LDRRMP and AIP; written replies received.
Set common data standards before buying systems (Goal 3)	LDRRMO with the planning office and IT staff. Ask DILG, DICT, and the GeoRiskPH agencies for standards LGUs can adopt.	Data inventory; local data rules issued by executive order.	Inventory showing the responsible office and format of each dataset; test backup and offline procedures.
Train staff before buying equipment or software (Goal 4)	Human Resource Management Office and LDRRMO, with schools and universities. Ask national agencies to bring DRR-CCA into the education system.	Training plan; training and maintenance written into procurement.	Training in every system contract; skills assessed again after training.
Try new technologies only after they pass clear tests (Goal 5)	Local chief executive and LDRRMO, with universities and private partners.	Agreement for each trial project; checklist of four questions.	Written answers to the four questions before any purchase; an end date for each trial.

Note. DBM = Department of Budget and Management; CSC = Civil Service Commission; DILG = Department of the Interior and Local Government; COA = Commission on Audit; OCD = Office of Civil Defense; DICT = Department of Information and Communications Technology; HRMO = Human Resource Management Office; LDRRMP = Local DRRM Plan; AIP = Annual Investment Program.

Table 3

Which Actions Hold Up in Each Possible Future, and When to Go Further

Action	Still needed in these futures	When to go further
Permanent data staff	All four; most urgent where staffing stays weak (three of four)	A data post is still vacant or filled by job order after two budget cycles: propose a shared unit with the province or neighbors.
Climate change focal person	All four	A funding proposal fails first screening: the focal person and the Climate Change Commission review the checklist before resubmitting.
Connectivity and equipment budget	All four; protect these lines first if budgets tighten (*Sinking to New Depths*)	A written reply confirms that a national rule blocks an item: bring a costed case to the province or league of LGUs.

Action	Still needed in these futures	When to go further
Common data standards	All four; in *Navigating the Currents*, it means following rules set nationally	Inventory is complete: agree formats with neighboring LGUs and adopt national standards as they appear.
Training before purchase	All four; essential where advanced tools spread (*Charting New Waters*)	A skills check shows staff cannot use current tools: hold new purchases until training is done.
Trials that pass the tests	Mainly *Treading Water* and *Charting New Waters*; defer in *Sinking to New Depths*; check new regulation in *Navigating the Currents*	Inventory done, staff trained, and internet funded: run one trial that passes the four tests, with an end date.

Note. The fit of each action to the futures and the points at which to go further are proposals of this brief, not findings of the study. Early signs of each future: deep budget cuts (*Sinking to New Depths*); new national data regulation (*Navigating the Currents*); fast adoption of advanced tools by neighboring LGUs and agencies (*Charting New Waters*).

CONCLUSION

Managing data for local DRRM and climate adaptation depends first on people, rules, and internet access, and only then on new technology. The first steps cost almost nothing: an office order naming a focal person, an inventory of the LGU's data, and a written request to national agencies. National agencies control lasting changes to staffing rules, allowable spending, data standards, and broadband, and they are more likely to act when LGUs show exactly where the rules get in the way.

REFERENCES

Asuncion, X. V. A., Suarez, G. M. C., Santos, L. V., & Ugaddan, R. G. (2025). Data management in local disaster risk reduction-climate change adaptation in the Philippines: Scenarios and strategies. *Philippine Journal of Public Administration, 69*.

Commission on Audit. (2022). *Consolidated report on the audit of the disaster risk reduction and management funds: For the year ended December 31, 2022*. https://www.coa.gov.ph/reports/disaster-risk-reduction-and-management-reports

Dator, J. (2009). Alternative futures at the Manoa School. *Journal of Futures Studies, 14*(2), 1–18. https://jfsdigital.org/articles-and-essays/2009-2/vol-14-no-2-november/articles/futuristsalternative-futures-at-the-manoa-school/

Department of Finance. (2020). *People's survival fund seeks to find solution to climate crisis*. https://www.dof.gov.ph/peoples-survival-fund-seeks-to-find-solution-to-climate-crisis/

Deutsche Gesellschaft für Internationale Zusammenarbeit. (2020). *Strengthening capacities for dealing with conflict-induced forced displacement in Mindanao, Philippines*. https://d-nb.info/121976065X/34

Domingo, S., & Manejar, A. J. (2018). *Disaster preparedness and local governance in the Philippines* (Discussion Paper Series No. 2018-52). Philippine Institute for Development Studies. https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps1852.pdf

Gabriel, A., Santiago, P. N., & Casimiro, R. (2021). Mainstreaming disaster risk reduction and climate change adaptation in comprehensive development planning of the cities in Nueva Ecija in the Philippines. *International Journal of Disaster Risk Science, 12*, 367–380. https://doi.org/10.1007/s13753-021-00351-9

National Disaster Risk Reduction and Management Council, Department of the Interior and Local Government, Department of Budget and Management, & Civil Service Commission. (2014). *Joint Memorandum Circular No. 2014-1*. https://www.dbm.gov.ph/wp-content/uploads/Issuances/2014/Joint%20Memorandum%20Circular/JMC2014-1%20_LDRRMOs.pdf

Republic Act No. 10121. (2010). *Philippine Disaster Risk Reduction and Management Act of 2010*.

Republic Act No. 10173. (2012). *Data Privacy Act of 2012*.

Republic Act No. 11964. (2023). *Automatic Income Classification of Local Government Units Act*.

Republic Act No. 7160. (1991). *Local Government Code of 1991*.

Schwartz, P. (1996). *The art of the long view: Planning for the future in an uncertain world*. Currency Doubleday.

United Nations Development Programme. (2022). *Data governance study for the Philippines: Climate change adaptation and disaster risk reduction*. https://www.undp.org/sites/g/files/zskgke326/files/2022-12/Data%20Governance%20Study_final%201.pdf

World Bank. (2024). *Better internet for all Filipinos: Reforms promoting competition and increasing investment in broadband infrastructure*. https://openknowledge.worldbank.org/entities/publication/81fa48e6-866b-49bc-8f0d-27e86dee5f88

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