



Climate Change Adaptation,
Dispossession, and Displacement
(CiCADD) Project



Research Institute for
Mindanao Culture
(RIMCU)

More Than a Siren: How Cagayan de Oro Turns Early Warnings into Community Action

By Conan Patrick B. Tan¹



A photo showing Ms. Moahna Sheryl Sagrado
© Chona Echavez.

On July 29, 2026, the Third Community Advisory Committee (CAC) meeting of the **Climate Change Adaptation, Dispossession, and Displacement (CiCADD+) Project** brought together community representatives, researchers, and local stakeholders at the Research Institute for Mindanao Culture (RIMCU).

One presentation came from **Ms. Moahna Sheryl Sagrado**, Disaster Coordinator Unit Chief of the Cagayan de Oro City Disaster Risk Reduction and Management Office (CDRRMO). Drawing from 11 years of experience, including work during major weather events such as Vinta, Odette, and Basyang, she gave participants a closer look at how the city's early warning system works.

Her presentation showed that disaster preparedness in Cagayan de Oro involves much more than waiting

for a siren. Behind every warning is a wider system of monitoring, technology, coordination, communication, and community action.

Looking Beyond the Rain in the City

One important point Sagrado raised was that flooding in Cagayan de Oro cannot be understood by looking only at rainfall within the city.

Several rivers and tributaries influence the city, including the Iponan, Cagayan de Oro, Bigaan, Cugman, Umalag, Agusan, and Alae Rivers. Water coming from surrounding areas can eventually make its way toward Cagayan de Oro.

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This means that the city must look well beyond its administrative boundaries when monitoring possible flooding. Its monitoring network extends into municipalities and cities in nearby provinces, particularly areas in Bukidnon and Lanao.

This watershed perspective changes how we think about early warning. A clear sky in the city does not necessarily mean that communities are free from flood risk. Heavy rainfall upstream may eventually affect downstream areas.

For residents, this may help explain why warnings sometimes come even when local weather does not appear threatening. For disaster managers, it reinforces the need to understand the river basin as one connected system.

Technology Behind the Warning

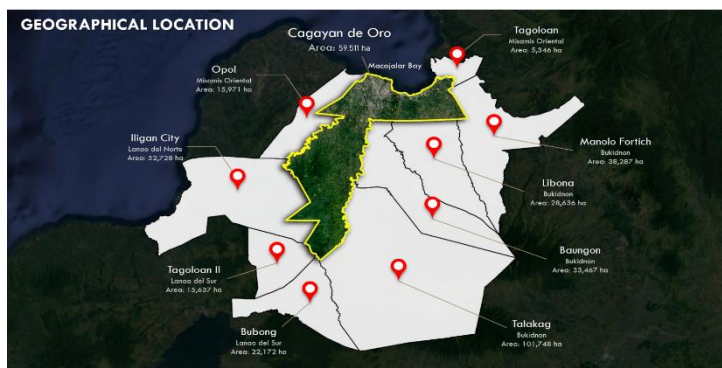
Cagayan de Oro's early warning system is supported by monitoring equipment located in the city and in upstream areas.

Sagrado discussed assistance from the Japan International Cooperation Agency (JICA), which goes beyond the Megadike and includes equipment to monitor rainfall and water levels. The system includes rain gauges, water-level indicators, and X-band radars located at strategic points, including areas in Bukidnon.

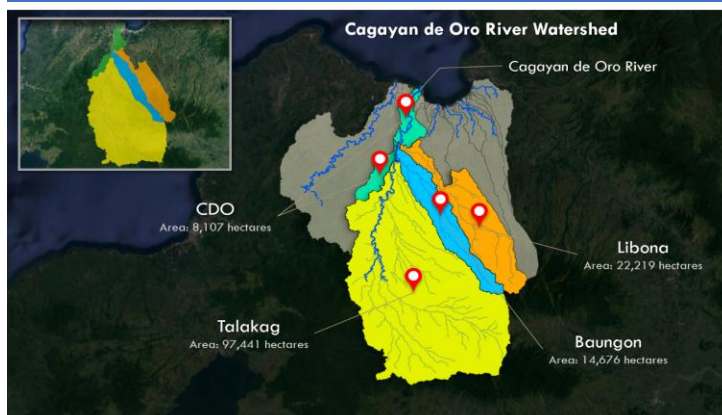
Some equipment is installed far from the city because upstream rainfall can eventually affect the Cagayan de Oro River.

The monitoring system is also designed to continue operating during severe weather conditions. This is especially important because disaster information is most valuable when normal communication and infrastructure may already be under pressure.

Technology, however, is only the beginning. Data from gauges and radar still have to be interpreted, communicated, and translated into decisions.

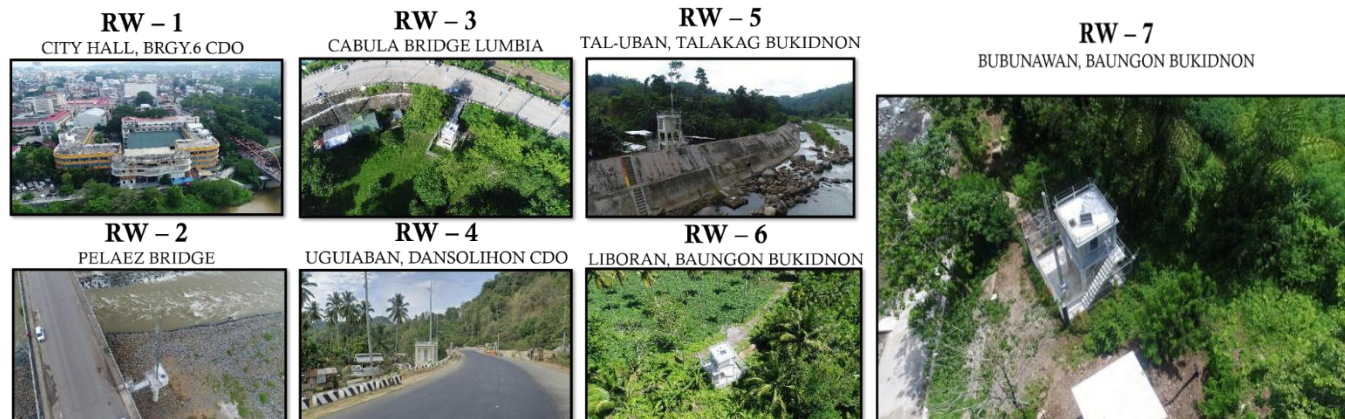


A screenshot of a slide showing the municipalities covered by the early warning systems available in the CDRMO, which covers about 150km away from the City of Cagayan de Oro. © Moahna Sheryl Sagrado.



A screenshot showing the diagram of the seven rivers and tributaries, with the direction the water is going in color; all are running toward the Cagayan de Oro River, especially from Bukidnon. The green covers roughly the FRIMP-CDOR infrastructure ©Moahna Sheryl Sagrado..

RAIN GAUGE AND WATER LEVEL



RW-1 through RW-4 are in Cagayan de Oro, while RW-5 through RW-7 are in Bukidnon, and so are R-8 through R-13 and XR1 and XR2. © Moahna Sheryl Sagrado.

Getting the Right Information to Communities

Another important part of the presentation focused on where disaster information comes from.

For major weather-related hazards, official information comes from **DOST-PAGASA** and is communicated through the City Disaster Office. For earthquakes, volcanic activity, and related hazards, PHIVOLCS and other responsible government agencies provide information.

This matters at a time when information can spread quickly through social media. Sagrado cautioned against relying on Facebook pages or other sources that may appear official but provide incomplete or conflicting information.

The challenge, then, is not simply getting information quickly. It is making sure that people receive information that is accurate, understandable, and useful enough for them to act.

Preparing Before the Disaster Arrives

Sagrado also discussed the city's use of **Pre-Disaster Risk Assessment (PDRA)**. This allows disaster managers to assess possible risks even before a storm enters the Philippine Area of Responsibility.

Yellow, orange, and red warning protocols help communicate the level of concern associated with hydrometeorological hazards. Information may then be shared through different channels depending on the communities at risk.

Text blasts are one option, but Sagrado explained that these are targeted rather than unlimited. Messages may be directed particularly toward people living in flood-prone areas.

Other approaches remain important. The *rekorida*, barangay information officers, social media, telephone calls, and direct coordination with barangay officials all form part of the communication system.

This reflects a simple reality: **sending information is not the same as communicating it.**

A warning becomes useful when it reaches the right people, is understood, and leads to appropriate action.

When Communities Complete the Warning System

One of the most interesting parts of the CAC discussion came from the communities themselves.

Dr. Chona R. Echavez asked how warnings are shared at the barangay level. Kagawad Jeffrey “Jie-jie” Aisa of Consolacion described what happens among residents living near the Megadike. When people hear the sirens, many already know what to do and move toward the structure.

Representatives from other barangays also shared their experiences during Basyang and previous storms. Their accounts showed that formal warning systems work alongside local practices, relationships, and knowledge built through years of living with flood risk.

Flood drills are another part of this preparation. Sagrado noted, for example, that communities around the Iponan River have repeatedly conducted drills, particularly because the area lacks the same flood-control infrastructure found elsewhere.

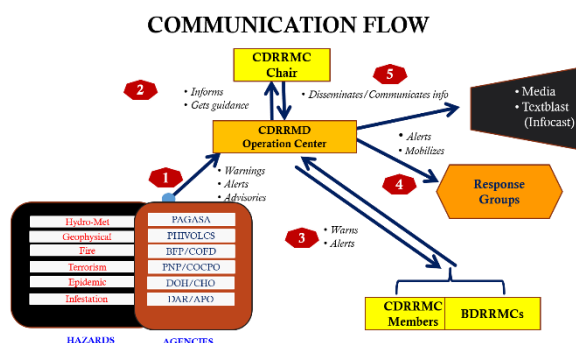
These experiences remind us that preparedness is not created by technology alone. Equipment can detect rainfall. Radar can track weather. Government offices can issue warnings. But communities still have to understand what those warnings mean and know what to do next.



Grab from the presentation of Ms. © Moahna Sheryl Sagrado.



Cagayan de Oro City Disaster Risk Reduction and Management Department



Grab from the presentation of Ms. © Moahna Sagrado.



More Than a Siren

Cagayan de Oro continues to strengthen its disaster risk reduction system, including plans for a more unified operations center. At the same time, Sagrado acknowledged the importance of the partnerships already in place with barangay disaster risk reduction focal persons and information officers.

This combination of technology and local coordination may be one of the more useful lessons from the presentation.

Early warning does not begin when a siren sounds. It starts much earlier—with rainfall monitored upstream, rivers watched, information verified, risks assessed, and local officials alerted.

And it does not end when the warning is issued.



Grab from the presentation of Ms. © Moahna Sheryl Sagrado.

Its real value is seen when people understand the message, trust where it comes from, and know how to respond.

For CiCADD, these conversations also offer a useful lens for climate adaptation. Infrastructure, monitoring technology, and warning systems matter, but so do communication, local knowledge, relationships, and community participation.

A siren can tell people that danger may be approaching.

What turns that warning into protection is everything that happens **before, around, and after the sound.**

Layout Artist: Michael Lou U. Montejo