



Photo by Karl Grobl

# PROOF FOR PLANNING: MAPPING OUT ROAD INVESTMENTS



*Coalitions for Change is a centerpiece program of the partnership between the Australian Embassy and The Asia Foundation in the Philippines. CfC encourages civil society, private sector, academe, and government to work together and bring about public policies that contribute to improving the lives of Filipinos and promoting their economic well-being.*

*CfC focuses on development concerns that are consistent with the Philippine government's agenda: promoting economic growth, reducing vulnerabilities, improving education outcomes, and advocating for effective governance.*

Local governments need accurate geospatial information of their area to support their local planning activities. Until recently, however, local governments at the barangay (village), municipal, city, and provincial level faced two challenges: access to information and the capacity to manage and use location data.

In April 2017, the Department of the Interior and Local Government (DILG) and the National Mapping and Resource Information Authority (NAMRIA) signed a memorandum of agreement to promote the use of and improve access of local governments to, high-quality satellite imagery.

This traces the story of the Coalition for Change's (CfC) Coordinating Roads and Infrastructure Investments for Development (CR+ID) project. CfC was able to transform local level initiatives into a national partnership - giving local governments greater access to reliable, detailed, and standardized base maps for local development planning.

# THE DEVELOPMENT CHALLENGE

In 2012, provincial governments and local business associations highlighted the lack of complete road network maps at both the local and national government level as a significant gap in the exploratory discussions with the CfC team. A consolidated road map is important for various reasons. An accurate road map helps decision-makers determine accessibility, which is important for planning transportation routes, areas for settlement, production, and trade, as well as routes for evacuation during disasters.

For CR+ID's aim to link public infrastructure investments with local development needs to get off the ground, baseline maps were needed. But there were many information gaps. NAMRIA had road network information, but not at a level that was useful for local planning. The Department of Public Works and Highways (DPWH) only had a database of national roads, while provincial governments naturally only kept a list of roads within their respective areas.

The ability to manage available information was also uneven: some local governments had the capacity to use Geographic Information System (GIS), which allowed them to maintain a sophisticated map of their road networks; others only possessed dated, rudimentary paper maps.

---

**“An accurate road map helps decision-makers determine accessibility, which is important for planning transportation routes, areas for settlement, production, and trade, as well as routes for evacuation during disasters.”**





# BUILDING LOCAL CAPACITY FOR MAPPING

CfC's emphasis on promoting connectivity led the team to explore how provincial governments could maximize local experts, available data, and technology to build a comprehensive road network map.

Under the CR+ID project, CfC built the local capacity of three provinces to use available technologies for mapping. This involved training and mentoring local government staff, mainly from the planning and engineering departments on the use of Global Positioning System (GPS) and GIS software. By 2014, two provinces, Bohol and Surigao del Norte, had completed their roads database.

Their success proved that it is possible for local governments to build their own road network maps. The CfC team then embarked on similar efforts in 10 other provinces in Central and Western Visayas, and Caraga (Northeastern Mindanao).

This province-by-province approach, however, took not only time but also significant financial resources. CfC realized that another, more sustainable approach was needed to address the information gap. Working with local government units to develop their roads database and maps was a success, but a national-level strategy was necessary to carry the reform forward.



“Working with local government units to develop their roads database and maps was a success, but a national-level strategy was necessary to carry the reform forward.”

# ELEVATING INITIATIVES TO THE NATIONAL LEVEL

Investigating the use of drone-generated orthoimages<sup>1</sup> for public land titling led the team to NAMRIA's Unified Mapping Program (UMP).<sup>2</sup> The team learned that UMP has the detailed geospatial information of the country, the result of a nationwide image acquisition of large to medium-scale topographic base maps. CfC recognized that the UMP program could support local government data needs and be an effective complement to the use of GPS under CR+ID's road mapping efforts.

Meanwhile, the DILG faced the challenge of meeting the requirements of the Conditional Matching Grant to Provinces (CMGP) Program. Formerly known as KALSADA, CMGP started in 2017 and is aimed to help local governments implement devolved infrastructure programs, such as roads, to improve basic services. To access the CMGP funds, local governments needed to have a complete and integrated road network map showing all roads, regardless of its administrative classification<sup>3</sup>, and reflect it in their respective Local Road Network Development Plan (LRNDP).

Because of this, DILG's Office of the Project Development Services (OPDS) was keen to find ways to better support local governments in fulfilling CMGP requirements.

Given the developments at NAMRIA, and the interests of DILG at the time, CfC understood that there was an opportunity to help both agencies realize their mandates and achieve their respective agendas. CfC highlighted NAMRIA's UMP with the DILG and its potential to help with its road network maps while allowing NAMRIA to maximize the utilization of their program.

In November 2016, CfC facilitated a meeting between NAMRIA and DILG in which the two agencies discussed how they could work together to improve the local government planning process. By the end of that meeting, OPDS Director Rolyn Zambales and NAMRIA Director for Mapping and Geodesy Ruel de Belen agreed to collaborate and formalize their commitments through a memorandum of agreement.

<sup>1</sup>Orthoimages are high quality aerial images possessing spatial accuracy. Orthoimages transformed into maps make it possible for an area to be viewed "vertically above at an infinite distance" and to uniformly measure distance between two points (Source: en.wikipedia.org/wiki/Orthophoto).

<sup>2</sup> NAMRIA's UMP aims to provide accurate and detailed geospatial information for the national and local governments' use in planning and decision-making.

<sup>3</sup> Roads are classified as either a national or local road, the latter further classified as either provincial, municipal or city, or barangay road. The Department of Public Works and Highways (DPWH) maintains all national roads, while local roads are maintained by the local government level it falls under.



Among the concerns of the two agencies in crafting the policy instruments were the distribution of data and the compensation of NAMRIA's trainers. CfC helped broker discussions between DILG and NAMRIA to clarify concerns and address them through the policy.

On April 19, 2017, DILG Undersecretary for Local Government Austere Panadero and NAMRIA's Director of Mapping and Geodesy Ruel de Belen signed the final Memorandum of Agreement.

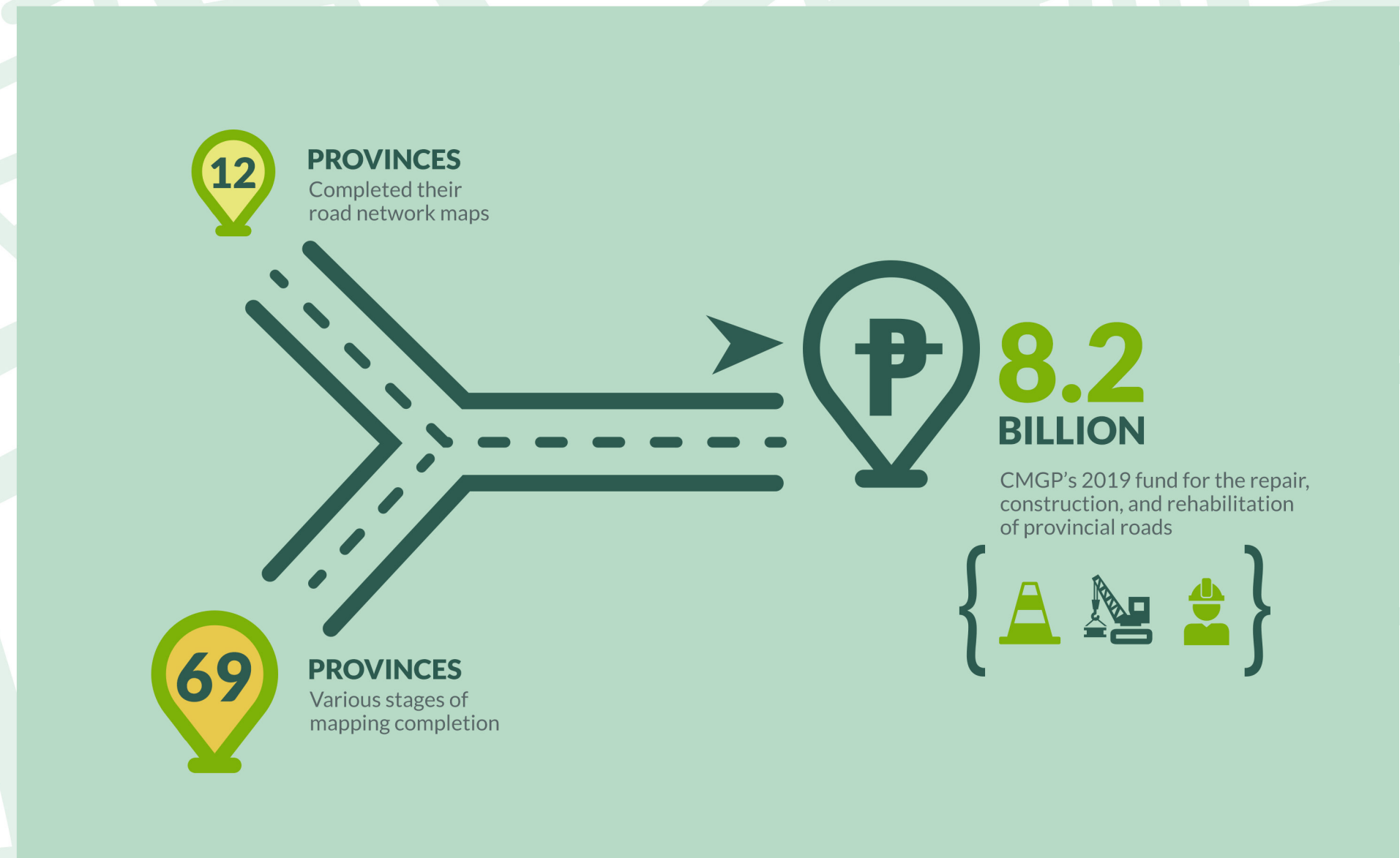
With the Memorandum, both agencies committed to increasing local government capacity to build and maintain local roads and other geospatial information. NAMRIA agreed to freely share its maps, as well as provide technical assistance and training through its GIS and mapping professionals. For its part, the DILG committed to providing resources to cover training costs, as well as facilitate the handover of data to all provincial governments.

# PROMISING RESULTS

With timely assistance from CfC, local governments gained free access to quality maps that can inform their LRNDP. Before the Memorandum, a province would need about 11,000 sheets to have an accurate map of their area. At Php 6,000 (AUD 154) per sheet, the Memorandum collectively saved local governments millions worth of data expense and made mapping experts available.

The DILG and NAMRIA collaboration streamlines the exchange of road information between local and national government agencies, improves the quality of roads information, and paves the way for better local roads management. With the improved roads information, local governments and the DPWH could now have a better idea of the strategic local roads that may be linked to national roads and highways. The improved access to information also provides local governments the opportunity to engage government agencies with disaster-related mandates and expertise on the identification of no-build zones, safe settlements, and the like.

Since opening the UMP to local governments, the DILG reports 12 provinces that have successfully completed their road network maps. Sixty-nine other provinces are currently at various stages of mapping completion. All stand a chance of accessing CMGP's Php 8.2 billion (AUD 211 million) in 2019 fund for the repair, construction, and rehabilitation of provincial roads.



Source: Department of the Interior and Local Government (DILG)



A photograph of two men in white shirts looking at a smartphone outdoors. The man on the left is pointing at the screen, while the man on the right holds the phone. They are standing in front of some greenery.

# KEY INSIGHTS AND LESSONS

Looking back, Coalitions for Change's experience in infrastructure reform yields the following insights and lessons:

**1. THERE IS AN INCREASING RECOGNITION OF THE VALUE OF EVIDENCE-BASED PLANNING AT VARIOUS LEVELS OF GOVERNMENT.**

National government funding windows such as the CMGP have made maps one of its requirements to access financing. CR+ID's work for the initial 15 provinces served as a proof of concept for the use of data in planning and contributed to the favorable environment that made the DILG-NAMRIA partnership possible. Because of CR+ID, local governments now know that there are government-issued standard maps they can access, for free.

**2. THE CFC TEAM WAS PERCEPTIVE IN RECOGNIZING OPPORTUNITIES.**

An awareness of the different government agencies and their respective projects enabled the CfC team to identify the right opportunities, with the right agencies, at the right time. Despite early setbacks with NAMRIA in 2012, revisiting the agency in 2016 opened new opportunities to advance road management reform. As a result, CfC was able to highlight possible points of

convergence and devise a partnership that would be beneficial to both government branches.

**3. THE APPROACH MUST ADAPT TO CHANGING CONTEXT.**

When CR+ID began, a highly localized approach was appropriate and even necessary because there is a need to build local capacity and fill the gap in high-quality geospatial data. After five years, CfC's re-assessment determined that despite initial provincial success, long-term thinking on sustainability is imperative. Understanding the shifting environment and the willingness to change directions made it possible to transform the local CR+ID strategy into a national-level initiative.

In this story, CfC's role was to be an effective facilitator of the partnerships across government levels, with a pulse on local conditions and established relationships and networks.

Building on the initial success of CR+ID, CfC was able to make an important policy contribution: transforming the learnings of a local-level project into a national policy that will facilitate data and information sharing across government partners for the years to come.

*Local government staff from the Province of Capiz in Western Visayas tries their hand at mapping using a GPS device. Photo by Emar Montejo*

## For More Information

### **Development Section (Governance)**

The Australian Embassy – The Philippines

Tel: +63 (2) 757 8100

Email: [manilagovernance@dfat.gov.au](mailto:manilagovernance@dfat.gov.au)

Website: [www.philippines.embassy.gov.au](http://www.philippines.embassy.gov.au)

### **The Asia Foundation - Philippines**

Tel: +63 (2) 722 9999

Email: [country.philippines.pmt@asiafoundation.org](mailto:country.philippines.pmt@asiafoundation.org)

Website: [www.asiafoundation.org](http://www.asiafoundation.org)