



POPULATION, HEALTH, AND ENVIRONMENT ISSUES IN THE PHILIPPINES

A Profile of Cagayan Valley (Region 2)

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Linking population, health, and environment (PHE) issues is becoming increasingly important for the Philippines, where natural resources and public health and well-being are often negatively affected by factors such as population pressures and poverty. Understanding these connections—including the economic and social context in which they occur—and addressing PHE issues in an integrated manner is critical for achieving sustainable development.

This regional PHE profile highlights key population, health, and environment indicators and important development challenges for the Cagayan Valley Region (Region 2). The profile is designed to help educators, policymakers, and community leaders identify key threats to sustainable development and explore possible approaches to addressing them. This profile is part of a series covering select regions of the Philippines, and is intended as a companion publication to the Population Reference Bureau's 2006 data sheet, *Making the Link in the Philippines: Population, Health, and the Environment*.¹

Overview of Cagayan Valley

Cagayan Valley is referred to as the “vast plain in northeastern Luzon” and has a vibrant agricultural economy, with corn and *palay* as the main crops.² The region also has a vast array of natural resources—from its rich soil, renowned rivers and lakes, and widespread forests to its marine and mineral resources. Largely rural, Cagayan Valley has a relatively small population size and its population growth rate of 2.3 percent per year is average when compared with the other regions (see Figure 1, page 2).

Region 2 is located at the northwestern tip of the Philippines and is surrounded by the mountain ranges of Cordillera to the west, Caraballo to the south, and Sierra Madre to the east. The region is skirted by the Pacific Ocean on the east coast and the Bashi Channel in the north. Cagayan Valley is



composed of the island group of Batanes, the valley provinces of Cagayan and Isabela, and the mountainous provinces of Nueva Vizcaya and Quirino. The capital of the region, Tuguegarao, is about 485 kilometers from Manila.

The region is faced with the challenge of preserving its natural resources as its agricultural and fishing industries expand. Development in these areas will require appropriate planning and policies to ensure that the region's environmental resources are preserved for future generations.

SOCIOECONOMIC CONTEXT

As of 2006, the gross regional domestic product (GRDP) per capita at constant 1985 prices is 8,098 pesos. This is well below the national average of 14,676 pesos.³ However, the region achieved the highest improvement in GRDP among all

Figure 1

PHE INDICATORS FOR REGION 2

Population (2005)	3,086,000 ^a
Population density (2000)	105 people per sq. km.
Percent urban (2000)	22%
Annual population growth rate (1995–2000)	2.3%
Lifetime births per woman (total fertility rate) (2003)	3.4
Married women ages 15–49 using contraception (2003)	52% (any method) 48% (modern methods) ^b
Unmet need for family planning (2003)	14%
Infant mortality rate (2006)	22 infant deaths per 1,000 live births ^c
Forest cover	59%
Number of threatened animal species (2004)	37
Protected areas (hectares)	1,005,062
Families that obtain water from a safe water source (2002)	83%
Families with sanitary toilet (2002)	96%

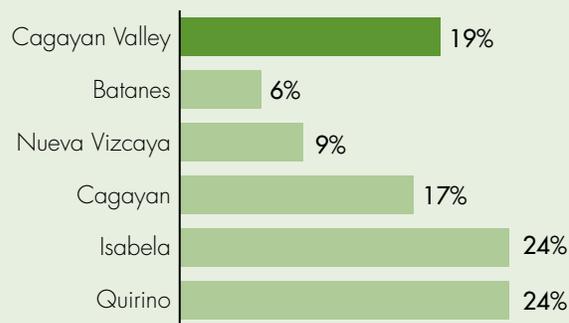
^a National Statistical Coordination Board, *Population Projections* (www.nscb.gov.ph/secstat/d_popnProj.asp, accessed Nov. 27, 2007).

^b National Statistics Office and ORC Macro, *Philippines National Demographic and Health Survey* (2003).

^c National Statistics Office, *2006 Family Planning Survey* (www.census.gov.ph/data/pressrelease/2007/pr0718tx.html, accessed Feb. 5, 2008).

SOURCE: Except where noted, data are taken from Population Reference Bureau, *Making the Link in the Philippines: Population, Health, and the Environment* (Washington, DC: Population Reference Bureau, 2006).

Figure 2

INCIDENCE OF POOR FAMILIES, 2003

SOURCE: National Statistical Coordination Board, *Poverty Statistics* (www.nscb.gov.ph/poverty/2004/table_1.asp, accessed Feb. 5, 2008).

regions—7.2 percent. This is a significant improvement from the 2005 level, a time when the economy of the region had the lowest growth (negative

4.3 percent) in the Philippines.⁴ The GRDP is erratic because more than half of the region's economy is based in agriculture, fishery, and forestry. The nature of these industries depends on climatic conditions. Frequent typhoons, flooding along the Cagayan River, and drought threaten the economic performance of these industries.

- The unemployment rate in the region is very low. At 3.7 percent, the region has the lowest level of unemployment in the Philippines.⁵ Agriculture accounts for nearly two-thirds (62 percent) of regional employment.
- The incidence of poor families in Cagayan Valley has decreased from 35 percent in 1994 to 19 percent in 2003 (see Figure 2). This compares favorably to the national incidence of 24 percent. The only regions with a lower poverty incidence are the National Capital Region, Central Luzon, and CALABARZON. Within Cagayan Valley, poverty incidence ranges from 6 percent in the province of Batanes to 24 percent in Isabela and Quirino.⁶
- The implementation of the Cagayan Special Economic Zone Act has been successful in creating employment in the recreation and tourism sector (resorts, recreational facilities, and interactive gaming facilities) within the region's designated ecozone.
- The Cagayan Valley Region has a net enrollment ratio in primary education of 86 percent.⁷ Simple literacy for the region (percent of the population 10 years old and older who can read and write) is about 93 percent.⁸
- Eighty-three percent of families in Region 2 obtain water from a safe water source, slightly higher than the national average of 80 percent. Most of the families in the region also have sanitary toilets (96 percent), which compares favorably to the national level of 86 percent.
- Cagayan Valley Department of Health reports that access to garbage disposal has increased from 70 percent of households in 1996 to 83 percent in 2005. Despite increased access, the National Statistics Office reports that 66 percent of households in the region continue to dispose of garbage through burning and 11 percent of households dispose of garbage in individual pits.

DEMOGRAPHIC AND HEALTH TRENDS

The total population for Cagayan Valley is small (3.1 million) compared with most other regions in the Philippines. The region also has one of the lowest population densities in the country—105 people per square kilometer. Region 2 is predominantly rural. Only 22 percent of the population lives in urban areas, compared with 48 percent for the Philippines overall.⁹

- With an annual growth rate of 2.3 percent, the population of the region will grow over the next several decades to approximately 4.8 million in 2040 (see Figure 3).
- For the last several years, total fertility rates in the region have been declining. Today, Cagayan women have 3.4 children on average, a decrease from the 1993 rate of 4.2. However, there is still a consistent gap between wanted and actual fertility. Desired family size is an average of 2.6 children.¹⁰
- More than half of married women in Cagayan Valley use some form of contraception, and almost half of married women in the region use modern contraception, versus 33 percent for the Philippines overall.
- Modern contraceptive prevalence for the region has increased over the years, from 32 percent in 1993 to its current level of 48 percent (see Figure 4). However, one in seven married women still has an unmet need for family planning, meaning they would like to stop having children (8.5 percent) or want to delay the next birth (5 percent) but are not using any contraceptive method.
- The infant mortality rate is a key indicator of a country's health status. As a sign of improved health status in the region, the infant mortality rate is declining. According to the 2006 *Family Planning Survey*, the region experiences 22 infant deaths per 1,000 live births.

NATURAL RESOURCES AND BIODIVERSITY ISSUES

Rich in biodiversity, the region is home to the Cagayan River Basin, the largest river basin in the Philippines. It also is traversed by four large rivers, numerous tributaries, and other inland bodies of water. These provide a sustainable resource for agriculture, aquaculture, recreation, tourism, and hydroenergy. The Cagayan Valley Region is an important supplier of water and power, particularly for the adjacent regions.¹¹

Environmental degradation is one of the major challenges in the region. Deforestation has reduced forest cover and disturbed watersheds, with some river tributaries drying up or becoming increasingly murky due to heavy siltation from soil erosion. Despite some environmental degradation in the region, however, Cagayan Valley has one of the largest areas (1,149,845 hectares) of forest cover intact (see Figure 5).

The absolute ban of logging in the early 1990s helped reduce the detrimental impact of rapid deforestation and helped maintain the integrity of forest resources. Second-growth forest is slowly returning to previously forested areas.¹² Furthermore, the region also has some of the few remaining virgin forests in the country, especially important for large endangered species such as the Philippine eagle.

Figure 3

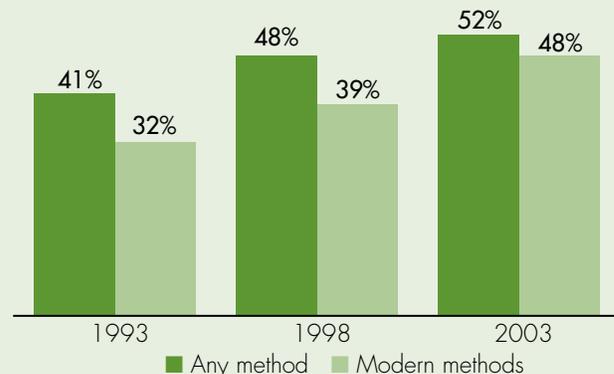
PROJECTED POPULATION OF REGION 2, 2005–2040



SOURCE: National Statistical Coordination Board, *Population Projections* www.nscb.gov.ph/secstat/d_popnProj.asp, accessed Nov. 27, 2007.

Figure 4

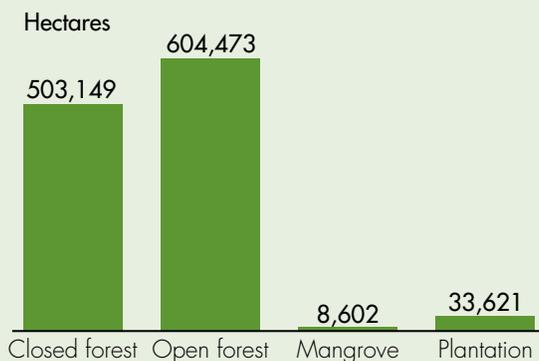
MARRIED WOMEN AGES 15–49 USING CONTRACEPTION, 1993, 1998, AND 2003



SOURCE: National Statistics Office and ORC Macro, *Philippines National Demographic and Health Surveys* (1993, 1998, and 2003).

Figure 5

CAGAYAN VALLEY FOREST COVER, 2003



NOTE: “Closed” forest refers to a dense tree cover forest, “open” forest refers to less dense managed and unmanaged forest.

SOURCE: Forest Management Bureau, *Philippine Forest Cover by Region* (www.denr.gov.ph/section-facts-figures, accessed Nov. 15, 2007).

- The 8,600 hectares of mangrove forest provide habitat for crabs and young fish and serve as communal fishing grounds. The region’s forests serve as a natural protective barrier from destructive typhoons because they predominantly run north and south along the eastern coast.
- According to the Department of Environment and Natural Resources (DENR), as of 2004 there are eight protected areas in the region totaling 1,005,062 hectares. These protected areas include one natural park, five protected seascapes and landscapes, one natural monument/landmark, and one marine reserve.¹³ These protected areas help ensure the survival of rare species and maintain ecosystem services, although they are threatened by unregulated settlements in these areas.
- As of 2004, there were a total of 37 threatened animal species in the region. Those most threatened are considered endangered species, such as the Philippine eagle (*Pithecoplaga jefferyi*), rafflesia (*Rafflesia manillana*), white-winged flying fox (*Pteropus leucopterus*) and jade vine (*Stronglydon macrobotrys*). Rafflesia is considered the largest flower in the world.¹⁴

The landscape of the region is characterized by a variety of wetlands, which serve as primary agricultural areas and therefore are crucial to local



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The vast plain is an important agricultural asset, shown here in Isabela, Philippines.

livelihoods. Drier areas on the fringes of the flood plains of the Cagayan River are used as pasture. DENR data show five watershed forest reserves in the region, totaling 119,261 hectares.

Drainage for irrigation and agricultural reclamation are two major threats to most freshwater wetland ecosystems in the Philippines. This is also true for the Cagayan Valley Region where a large portion of the original flood plain has been converted to rice fields.

Currently, none of the wetlands in the region are protected by the national government, although the local government has initiated the process to protect the Malasi Lakes and its water birds in Cabagan, Isabela. Local government action to write and adopt separate conservation and natural resource management laws is possible because of the decentralization of legislative powers in the Philippines.¹⁵ Such initiative shows that local people can and will contribute significantly to the conservation of natural resources and habitats, especially when healthy environments are crucial for the sustainability of local livelihoods.

RESPONDING TO CHALLENGES

Because the Cagayan Valley Region is a significant source of agricultural, water, forest, and marine natural resources, the key challenge for this region is balancing economic development interests with efforts to maintain and conserve natural assets. Decentralization, an important aspect of government structure in the Philippines, brings development closer to the community and can make service delivery—including, for example, domestic water supply and health services—more efficient and

effective. Thus, decentralization offers promising options for a more integrated approach to development in Region 2 and other regions in the country. Improved coordination among different agencies could encourage greater program integration and also capitalize on opportunities created by decentralization for closer ties between the government and nongovernmental agencies (NGOs).

Regional and local governments, along with smaller projects by the private sector and NGOs, designed and implemented programs to address the development challenges faced by the region. Highlighted below are two promising initiatives in the region.

The Regional Development Plan 2004–2010 and 2008–2010 (updated)

Cagayan Valley's Regional Development Plan outlines objectives and priorities for increasing employment opportunities; improving production and productivity in agriculture, tourism, and industry; and improving natural resource management and environmental protection. For example, the region is working to provide electricity to all *barangays*; improve irrigation and flood control; and complete four major interregional roads to link the region to the Cordillera Administrative Region, Ilocos Region, and Central Luzon Region. To cope with the growing demand for energy from increased economic activity and population growth, the plan also acknowledges the untapped potential of natural energy sources, such as solar, wind, water, and biogas.

The development plan also places emphasis on strengthening the supply and delivery of basic services to ease the effects of increasing fuel and commodity prices. Included is the development of three more sources of potable water by the Metro Tuguegarao Water District (MTWD) aimed to restrain the rise of water charges.

The plan was recently updated (RDP 2008–2010) to highlight the Super Region program, under which Cagayan Valley (Region 2) is linked with Ilocos (Region 1) and Cordillera Administrative Region (CAR) to form the North Luzon Agri-business Quadrangle. Also stressed in the updated plan are the new thrusts of the national government: job creation, education, health, housing, and hunger mitigation, as well as DENR's Green Philippines initiative—a national effort to



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Cagayan Valley supports tourism, such as this father's micro-business to bring visitors to the mouth of the famed Callao Caves.

plant 20 million trees throughout the country to bring about a state of environmental and ecological balance.

In addition, the Regional Development Council has approved the Cagayan Riverine Zone Development Plan (CRZDP 2005-2030) and the Cagayan Valley Flood Mitigation Master Plan (CVFMMP 2006-2030). These plans aim to harmonize the development and protection of the riverine zone along the Cagayan River and the Cagayan River Basin, famous for rich biodiversity and fishery resources. The plans acknowledge the potential of the river valley in supporting agriculture, fishery, navigation, tourism, and energy. Key issues include prolonged inundation and extensive flooding, limited water supply during the dry season, and deteriorating water quality in the face of a growing population.

Healthy Families, Healthy Forests Project by Conservation International-Philippines (CIP)

The Healthy Families, Healthy Forests Project is carried out in collaboration with a local NGO, Process Luzon, and the local government to implement reproductive health and family planning (RH/FP) campaigns among communities with local health workers, who also promote improved natural resource management and forest conservation practices. The project has helped strengthen RH/FP services by building the capacity of local health workers, improving delivery of RH/FP supplies and related services, and increasing the awareness and use of contraceptives. CIP also works with the local communities and other key

stakeholders in setting up a community-based monitoring and evaluation system for sustainable natural resources management and biodiversity protection of the project site.

In addition, the project has conducted successful awareness campaigns in partnership with local government and private organizations to increase understanding of the connections between population and environment at the community level. The project also continues to provide technical support for community planning, agroforestry, and ecotourism development.¹⁶

Raising awareness of the links between population, health, and environment among policymakers, development planners, and project implementers is essential for greater cross-sectoral collaboration in Cagayan Valley and throughout the Philippines. An increased understanding of PHE links will lay the foundation for more effective, participatory development efforts that increase human well-being and sustain healthy environments.

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- ¹¹ The Magat Dam is Asia's largest dam, located in the Isabela province. It provides irrigation to the province and produces electricity for

the entire region and other parts of the Philippines.

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