

# Adapting to Climate Change: Strategies of Albay, Philippines

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Albay houses the famous "perfect-cone" volcano, Mt. Mayon.  
Photo from <http://tourism-philippines.com>

Albay, Philippines is a province located along the eastern coast of the country, facing the Philippine Sea and the Pacific Ocean. With a land area of 2, 552 square kilometres, it is considered the second largest in the Bicol Region.

Aside from being the second largest province in the region, Albay is also known as the "Vatican of Disasters" of the Philippines. Various natural phenomena such as typhoons, landslides, volcanic eruptions, and tsunamis have plagued the area. As a result, the people of Albay have been vulnerable to persistent poverty, low economic income, and climatic and geological hazards.

## **Albay's Adaptation Strategy**

Recognizing these various problems, the provincial government of Albay has come up with a strategy in response to the challenges. Focused on reducing the disaster risk and vulnerability of the province, Albay's adaptation strategy is guided by the United Nations' Millennium Development Goals (MDGs). By identifying the implications of climate change on the achievement of the MDGs, they were able to include the concerned societal sectors in carrying out the programs and projects.

The provincial government, along with the different City Councils in Albay, created

and ordained policies regarding Disaster Risk Reduction and Management (DRRM). Institutions, like the Center for Initiatives on Research and Climate Action (CIRCA), were established to handle matters of climate change adaptation and mitigation. To support their programs and projects further, partnerships with different institutions, such as the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) and the University of the Philippines Los Baños (UPLB), were nurtured.

## **Risk Reduction Practices**

As Albay's programs were based on the MDGs, an integrated approach to DRRM is being undertaken. Focus shifted from physical capital formation to human capital formation. The following are some of the risk reduction practices employed in the province.

### ***Land Use Plan, Zoning, and Risk Mapping***

As their first line of defense against disaster, Albay incorporated science-based adaptation practices in their strategy. A Comprehensive Land Use Plan (CLUP), which includes the use of SimCLIM, was created. SimCLIM, a computer modelling system customized for the province, helps in predicting the effects of climate change in the area. The CLUP integrated climate and disaster risks in Albay into zoning ordinances. Furthermore, risk mapping was conducted to show the projected geographical extent of hazards and risks, such as earthquakes, volcanic eruptions, typhoons, temperature increase, and rainfall increase.

### ***Geostrategic Interventions***

Based on the land use plan, zoning, and risk mapping done, Albay crafted geostrategic intervention strategy, which is the main disaster risk reduction strategy of the province. As the hazard-prone areas were identified, the government was able to redirect the centers of business and residential activities towards safer locations.



Also included in the said strategy is the relocation of more than 10,000 households in high-risk areas, the on-going building of an international airport, road networks, and a new government center. Different government institutions and non-government organizations provide financial support for the projects.

### **Engineering Interventions**

This aspect is considered to have the *biggest gap* in the CCA program. Projects that need to be done include: flood control for flood plains, watershed protection and reforestation, and irrigation rehabilitation.

A large source of funds for these engineering interventions comes from World Bank's country assistance program with its non-government counterpart.

### **Social Preparations**

Infrastructure and other technologies are not the only ones that need to be climate-, and disaster-proof. Preparedness of the people in Albay also needs to be ensured. With this, social preparation programs are being undertaken in the province. This includes continuous training and education on dealing with climate change and other different disasters.

Household, community, and local government unit (LGU) preparedness are targeted. Trainings in different areas, like evacuation and community kitchen management, mountain survival and compass reading, and community risk mapping and contingency planning, are periodically held for the citizens.

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Local broadcast media are also used for Education-on-Air programs on climate change. Aside from the trainings and seminars, community drills are also held. Through games and magic shows, children are taught of DRR and its importance.

In addition, the government also closely coordinates with agencies such as PAGASA. To aid with the detection of hazards, a well-equipped Regional Weather Bureau was established in Legazpi, Albay. Furthermore, community-based warning systems, which highlight rainfall monitoring, were set up in villages. The government also established a warning communications protocol wherein 15,750 SIM cards were distributed to village officials. An Infoboard for sending important messages and receiving distress calls from barangays was created as part of this communications protocol.

### **Capacity Build-up and Disaster Response**

The province has mobility assets, such as ambulances, rubber boats, passenger trucks, helicopters, and fire trucks that could evacuate 160,000 people per day if needed. The LGUs, provincial government, national agencies, and private organizations supplied these vehicles.

Albay's disaster response program targets pre-emptive evacuation—the province's key response mechanism to achieve its zero casualty goal. Based on the gravity and proximity of the risk, the government calls for evacuation of the citizens. Protocols for evacuation are

well established, and a ready budget for calamities is maintained.

Emergency evacuation centers were constructed as multi-purpose buildings. When there are no disasters, these buildings can operate as either classrooms or municipal activity centers in selected cities. For Mayon Volcano disaster areas, centers which could double as schools were put up. Furthermore, the schools in the area, which are also used as evacuation centers, underwent a validation survey in order to determine their structural safety (in terms of design), safety from hazards (in terms of location), and health safety. Seven hundred school buildings were further provided with water-sanitation facilities.

### **The Outcomes**

The risk reduction strategies and practices of Albay have been effective in securing the province's 'zero casualty' status for 16 years until the year 2011. Private investments surged, and the province was acknowledged to have the fastest growth among the other provinces in the same region. Furthermore, they were also able to accomplish the MDGs ahead of the target year, 2015.

In addition, two national laws on DRR and CCA, namely Republic Act (RA) 10121 or "The Philippine Disaster Risk Reduction and Management Act of 2010" and RA 9729 or "The Climate Change Act of 2009" were enacted based on the Albay model.

With other provinces challenged by the impacts of climate change, the different measures used by Albay in disaster risk management and climate change adaptation could be relevant when crafting their own adaptation plans.