



Case Study 27

HR/OD Intervention Focus: Environmental Discipline in Weather Forecasting

Weather Forecasts and Bulletins for Remote Areas

Present-day weather forecasting is primarily done by gathering and analysing data on the earth's atmospheric conditions using state-of-the-art technology. To veer away from this method and use a retrospective approach to predict weather – applying what our ancestors did during their times such as observing changes in nature, in their environment, and in the behavior of animals – will surely raise doubts and generate skepticism. However, one weather

forecaster from the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) is not discouraged by this possibility.

Anselmo Almazan, an Australia Awards scholar who took up Master of Science in Environmental Science at the University of Sydney in July 2012, strongly believes that the entirely new discipline he studied and learned could significantly contribute to the field of weather forecasting and benefit those in the remotest areas of the country – where weather bulletins are practically unheard of. As he notes, “I was thinking that there are millions of marginalised Filipinos, particularly the poorest of the poor, the farmers and fisher folk who have no knowledge of the weather systems. It is unfortunate that they do not have access to weather bulletins during typhoons.” He was determined to use the opportunity given to him and the new learnings from the scholarship to benefit himself, his organisation, and PAGASA's clients, particularly those staying in the country's remote areas.

Initially, Almazan expected to be part of the next intake of scholars but because a scholar from an earlier batch fell ill, he was asked to fill the vacated slot. This initially resulted in complications, challenges and confusion. He acknowledges that the assistance and support he received from PAHRODF and the other Filipino scholars helped him during his adjustment period. He also credits his supervisor in PAGASA, Dr. Cynthia Celebre, for her online support and his professors at the University for motivating and inspiring him to pursue a new discipline that can potentially benefit marginalised sectors in the Philippines. The experience and the challenges strengthened his resolve to make things work.

Total revision of REAP

The study on environmental science in weather forecasting took him to numerous field trips. The long, almost six-hour trips turned out to be an eye opener for Almazan. It was during these trips to the mountains, while observing the behavior of animals and interacting with nature, that he gained a totally new perspective. One particular field trip changed Almazan's mindset. He was introduced by his professor to what is called the Indigenous Knowledge System (IKS). Learning that this system can be applied to weather forecasting, he immediately saw the benefits that can be derived from it. It was likewise encouraging for him to know that the Bureau of Meteorology in Australia acknowledges the use of IKS. Thus, his mind was set to revise his initial REAP. Drawing inspiration from these learnings and convinced that this can address PAGASA's concerns with regard to weather forecasting and weather bulletin dissemination in the remote parts of the country, Almazan completely changed his REAP. When asked if there was a difference in his REAP before and after the scholarship, he emphasises, "...a hundred percent difference because my initial REAP was the Dvorak System of Intensity Analysis of a Tropical Cyclone. That is atmospheric discipline. After I finished my degree, I changed it to the Indigenous Knowledge System in Weather Forecasting. That is linked to the environmental field."

Almazan explains, "IKS is a body of knowledge that is passed on from one generation to another." He further expounds, "Such knowledge was acquired by our ancestors through their intimate relationship with the environment." With this new knowledge, one can expect Almazan to be talking about the changes in animal behavior and the environment in a particular area when there is impending rain, low pressure, tropical cyclone or even drought.

He talks about scientifically proven occurrences like leaves from acacia or ipil-ipil trees falling even with no wind to mean that there will be drought ahead, or frogs being noisy at night to mean that rainfall is expected, or birds flying low to signal low pressure, or ants hoarding food or caves howling to warn the community of an impending storm, and many others.

What drove Anselmo to overhaul his REAP was the realisation that millions of marginalised Filipinos have no access to weather bulletins because of the absence of electricity, telecommunication lines and other communication infrastructure. As he notes, "It is very unfortunate for them especially during the occurrence of tropical cyclones. Wala silang information from PAGASA. (They have no information from PAGASA.)" He then justifies, "Knowing that there are locals who know how to forecast the weather using indigenous knowledge, I believe that I can use this for their local prediction in that area."

His REAP will juxtapose environmental events with atmospheric science and will result in a guide or manual that will contain observations in the environment like the movement of clouds, positions of stars, behavior of animals that can be linked to weather changes. Each manual will be location-specific.

He started implementing his REAP in June 2014 and covered six barangays from the municipalities of Maria Aurora and Dipakulao in the provinces of Aurora and Quezon. As a start, Almazan gathered 300 respondents - fisher folk and farmers - mostly belonging to ethnic groups of Ilongots, the Dumagats, and the Egongots. The participants were oriented about the project, informed of its benefits, and given their respective roles. They were taught to use a logbook and to jot down their observations. Observations are to be made for three months, after which the data gathered will be correlated with data from PAGASA's weather station in

Baler, Quezon. The correlation will determine if there are patterns and relationships between the two data sets. This will be one way of validating the data gathered using the IKS. The whole process, which he summarises in three words – document-validate-link – is tedious and long, but Almazan hopes that the manual will be finished by December 2014.

REAP still in infant stage

Almazan had to address several challenges that confronted him during implementation. The delayed release of funds, for example, pushed back the start date of his REAP implementation. What almost discouraged him was the resistance he met with his proposal. Not only was he greeted with raised eyebrows and even laughter, but some colleagues in his organisation were also very skeptical and doubtful about the merits of the IKS, which they said was “too basic, non-technical and non-scientific.” However, Almazan strongly believes in his project and he is determined to prove his critics wrong. To counter the resistance, he explains and justifies, “The IKS is not a substitute for the scientific way of weather prediction in PAGASA. It will be an alternative tool that will be used by our local people.” He further explains that “the IKS will serve as a backup for PAGASA.” Fortunately, his supervisor listened to him and supported his REAP.

Getting the participants for the project was a problem at the start. He noticed that the locals in the pilot areas were very shy, hesitant and apprehensive to participate. He also had a hard time asking them to go to Barangay Centres to attend meetings, orientations and other activities. To address these, Almazan engaged and established rapport with them. He did this by going to the communities in the mountains and seeking the help of the local chieftains. During his trips, he would bring merienda (snack) food for them to share during the meetings and sessions. He

also acknowledges that the project would have not gained ground if not for the support given by the Municipal Mayors, the Municipal Disaster Risk Management Officers and the Barangay Captains who assisted him in collaborating with the indigenous people. Eventually, he gained the trust of the locals as they realised the merits of the project. Soon they overcame their shyness, looked forward to the meetings, and participated wholeheartedly in project activities.

Determined to succeed

Almazan assesses his REAP to still be in infancy but hopes to meet the target completion date. Once his REAP is completed, a guide manual for the pilot areas would have been developed and could then be used by the locals in their community. Almazan claims, “The local people will benefit greatly from the manual. I will share the output to them because it is a tool for their decision making and disaster preparedness. They can prepare early using the IKS.”

The manual that locals can use for disaster preparedness is not the only benefit to be gained by the community. Almazan observed positive developments in the outlook of the community. They gained a confidence and learned how to interact with outsiders. In the course of doing the manual, they were also introduced to knowledge and information that they never knew of. They learned about PAGASA and its significance to their lives. They saw for the first time how a weather bulletin is presented and became aware of the importance of weather forecasts.

The project does not stop there. The use and merits of the manual will be revalidated. The process would continue even after the manual is completed. He will still return to the pilot area to continue to interact with the people, gather new data and observations, and revalidate existing information. As a weather forecaster, Almazan used to be glued to his seat and his

computer but because of the nature of his project, he happily notes that he developed the confidence to interact and deal with local government officials and learned the basics of community organizing.

It is evident that the scholarship has had a positive impact not only on Almazan but on the respondents and the community he works with. Motivated and inspired, he is determined to continue what he started and cover other remote areas. He sees this as his way of paying forward and sharing the fruits of his learnings from the scholarship.

Anselmo Almazan finished his Master of Science in Environmental Science from the University of Sydney in 2012. His REAP focused on Indigenous Knowledge System in Weather Forecasting.