



On Watching Volcanoes, Strategically

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The Volcano Monitoring and Eruption Prediction Division (VMEPD) could be considered PHIVOLCS' core unit. When Mt. Hibok-Hibok erupted in 1951, the Commission on Volcanology was established. This later became PHIVOLCS with its eventual multidisciplinary mandate. I have been heading VMEPD for the past three years.

Here, we monitor eight active volcanoes in the country 24/7, operate volcanological observatories and stations, and conduct research on eruptive activities as well as geodetic surveys and geochemical monitoring. To gather data need to be analysed using complex physics in real time, we develop local networks with community-based observers who are able to notice even the minute changes on the ground.

There is so much to do given the many factors that can intervene with our work. With disasters, plans could suddenly become irrelevant. Our work is very demand-driven and this sometimes lead to burnout. When Pinatubo erupted in 1991, for example, we could not even go home because our findings were much anticipated and needed by the people. As the risk waned, so did the stress and the pressure. Then it was back to monitoring and highly transactional work, which could sometimes induce inertia.

I have been with PHIVOLCS for the past 20 years and have thus seen how the different management styles of the PHIVOLCS leaders have affected how the institute operates. Director Reynaldo Punongbayan, a visionary who practised a personalised leadership, came from an academic background. Our current head, Director Renato U. Solidum, Jr., is more concerned with organisational development, perhaps because he rose from the ranks and has a more corporate approach.

Before we formulated and adopted our Strategic Plan and the Results-Based Performance Management System (RBPMS), our work was more disorganised. We had no well-defined deliverables, no monitoring system in place, and so many unplanned collaborative projects with foreign partners. There was also a low rate on the delivery of work commitments and no guidance on how to turn this around. We had no clear line of sight from which to view our work. We could not see how our activities contribute to the project outputs, to the goals of our organisation, and to broader societal goals.

While there were efforts from the national government, we had concerns about the appropriateness of the civil service-mandated evaluation tool that PHIVOLCS was using at the time, the Technical Output Assessment and Review Panel (TOARP). This standard semi-annual rating of staff performance could not capture the nature and exigencies of work in a science institute engaged in a disaster-oriented field like PHIVOLCS. For instance, one can get an

unsatisfactory rating if a research project remained unfinished because responding to a disaster situation—with its consequent sleepless nights and inadequate food supply—had to be prioritised. PHIVOLCS should have more leeway to adopt performance metrics and should not be strictly bound by blanket bureaucratic standards.

With the 2012-2016 Strategic Plan in place, PHIVOLCS' framework became formulated and fleshed out. New systems were put in place or recast; standard operating procedures (SOPs) were set. Since I am a logical person, I appreciate these many necessary changes. Functions were systematised and strategised. From the smallest activities, one can now see and appreciate how the outputs contribute to the overall goal. Our vision and mission were internalised by the PHIVOLCS leadership as much as by the employees. We have fully embraced the fact that we are in public service and have a commitment to our stakeholders.

As a Division Chief, I could see that the PAHRODF interventions have had an enabling effect. Staff morale has remarkably improved; they now feel rejuvenated and empowered. A more positive perspective of oneself and one's work has pervaded PHIVOLCS. Whereas they were disinclined to put forward their suggestions before, now they are so full of ideas and initiative.

As a result, there has been an increase of operationality and effectiveness in our work from year to year. There have been more conscious efforts to increase expertise and efficiency among the personnel. For example, in the past, regularly doing volcano behaviour prediction was enough; if any equipment malfunctioned, troubleshooting SOPs were simply followed. But now, our field employees are more conscious about planning their work and measuring performance, about speedy and innovative resolution of problems encountered, and about improving the quality of data. In terms of community relations, there is now an improved perception of PHIVOLCS' capability. We likewise coordinate more closely with local government units and disaster risk reduction agencies.

In this age of the Internet and social media, data should be readily available. Among our pioneering innovations is the development of real-time physio-chemical monitoring networks in Mayon and Taal Volcanoes. The carbon dioxide sensor was adapted from the Free University of Brussels by one of our Division Engineers. PHIVOLCS also adopted the World Organization of Volcano Observatories database (WOVOdat) and even innovated web tools. All these have a big impact on our operations since they enable direct updating of information and more systematic use of even non-digital data. These initiatives contribute to PHIVOLCS' strategic goal, which is to be a globally recognised expert in this field.

I studied Geology at the University of the Philippines, obtained my MS Earth and Planetary Sciences degree at Hokkaido University, and have been specialising in Volcanology. I also used to work in the oil industry, but despite the lure of more financially rewarding options outside government service, I can see myself continuing my work as a public servant, pursuing my doctorate, and even retiring here, especially now that more change management initiatives are being instituted at PHIVOLCS.