School Hydrological Information Network (SHINe) Activity Program in the Municipality of Hagonoy, Province of Bulacan

Background:

Tropical Cyclones “Pedring” and “Quiel” were two of the major weather-related events that affected a big part of Luzon Island last year, 2011. Record high of flood levels were observed within the Pampanga River Basin (PRB) as a result of these events. The towns of Calumpit and Hagonoy were two of the most devastated towns in the province of Bulacan being situated at the downstream end of the Main Pampanga River before emptying to Manila Bay.

With the growing concern on Global Warming and its adverse impacts to the environment due to an extreme change in climate such as stronger tropical cyclones or drier summers, it is but timely that schools, particularly the secondary level, get seriously involved in this issue in order to be able to understand what situations are likely to come and in response possibly formulate doable mitigating means or adaptable ways, in their own level and capacity, to address these issues posed by a changing climate.

The School Hydrological Information Network or SHINe, which was conceptualized by the Pampanga River Flood Forecasting & Warning Center (PRFFWC), is one simple program aimed at addressing the issues on effects of climate change, particularly focusing on awareness to hydrometeorological-related disasters. The activity is another way of supporting the Department of Education’s (DepEd) thrust in its program on the “climate change” enhanced curriculum. This is also consistent with the underlying principle that disaster awareness begins in schools. SHINe was chosen in 2010 by OXFAM International as one good practice in Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) in the Philippines with the program implementation originating in the province of Bulacan.

SHINe program in Hagonoy:

The SHINe program in the town of Hagonoy was implemented through collaborative efforts of the town’s DRRMO and the PRFFWC. The activity is undertaken as a support to the Province of Bulacan’s disaster awareness and mitigation campaign being carried out by the PDRRMO-Bulacan based in Malolos City. The program aims to capacitate the town’s constituents by being resilient in times of disasters through timely hydrological observations and tropical cyclone monitoring. The Information dissemination is achieved through the secondary students and backed-up by the Barangay personnel, being the link to their friends and family, and eventually to the whole community.

SHINe is a school-based Hydrometeorological-related disaster monitoring system within a school and the community focusing on disaster awareness, mitigation and preparedness. Hydrological related observations of such elements as rainfall, water level, and tropical cyclone tracking are carried-out, mainly observations for early warning purposes and the database for research and development issues.

Five secondary level schools, namely Iba, Ramona S. Trillana, San Pedro, Sta. Monica, and St. Mary's Academy High Schools were targeted as area for SHINe activities within Hagonoy. A group of selected students from each school were provided with a 1 day activity of lectures/orientation on Climate Change and on Hydrometeorological hazards and a brief workshop on Tropical Cyclone tracking and rainfall observations. Manual rain gauges, provided by SMART Communications, will be installed by the Hagonoy MDRRMO at each school for their rainfall observation activities. Also, a Philippine Area of Responsibility (PAR) Map was provided by the Hagonoy MDRRMO for their tropical cyclone tracking.

School SHINe groups: Sta. Monica National High School (top left); Iba National High School (top right); San Pedro High School (left); St. Mary's Academy (bottom left); Ramona S. Trillana High School (bottom right).

SHINe empowers the school community to protect, prepare themselves and make them resilient against the disastrous effects of floods, in particular. Other than being aware and prepared, student's science inclination is further enhanced. Their social and moral responsibilities in terms of info dissemination, not only to the school but to the community as well, are further developed by engaging the group to be more pro-active in sharing their added knowledge from the orientation that they have received. The community, the LGU and the school are in the best position to undertake preparedness measures against disasters brought about by extreme weather effects such as heavy rains, etc .

SHINE's program components / strategies:

- Schools (Secondary level), particularly the science-inclined curriculum (more preferred but not necessary), are selected focusing on science club officers / members / advisers, and science teachers.
- An initial group composed of 10 students from each year level (1st year to 3rd year) are chosen by the school's responsible representative to form the SHINE group / club. The reason for at least 30 students is that 1 student per day for observational purposes.
- A 1-day orientation / workshop on the SHINE program is carried-out that shall include topics on weather-related disasters in the country, flood awareness and mitigation, tropical cyclone (TC) tracking and simple TC forecasting, rainfall observation, among others. Also discussions on the different public storm warning signals, understanding the information included therein and develop possible reactionary activities in the school from that information.
- The group is provided with a working map to track and plot the tropical cyclone's location and shall be placed on an information board that shall be located at a strategic area within the school for students to view and be informed of the current situation. The info board shall be the school's counterpart responsibility The info board shall also served as an area of presentation for SHINE group activities, rainfall observation results, etc. and possibly for the school's administration announcement for possible suspension of classes during times of inclement weather conditions. (All activities shall be distributed within the group – observers, TC trackers, info board responsibilities, etc.)
- The school is provided with a manual rain gage and the group is taught on how to observe and record hydrological elements, to relate to a disaster, disaster preparedness and other issues (climate change, etc.).
- Another activity is to engage the group to make prototype rain gauges (using indigenous materials) and relate observations to the actual rain gage and possibly make use of it as

an alternative rain gauge that can be used by each member of the group for an additional observation point in their respective homes.

- For sustainability purposes, after say about 3 to 4 months from the start of SHINE in a school, a comeback visit is made to the school to check on their observations. It will be the SHINE group who will do the presentation during the visit. Presentations focusing on their observations and other activities. It is also one way of checking on the group, noting their issues and concerns, problems encountered, etc.
- The group is also encouraged to make presentations to their parents during a PTA meeting, focusing on hydromet-related disaster awareness and mitigation and their SHINE group activity. They can also do presentations to their community or transfer of knowledge / experiences to other secondary schools (even primary levels) within their area.
- Engaged the school to provide data, as a support to the local flood warning system of the community, the municipality and the province as a whole.

Monitoring and evaluation of the program:

- Comeback visits for the presentation of observations by the SHINE group; Another point, is after an event (tropical cyclone passage or a flood event) to check on data observed during that period and do event-related experiences presentations for discussions particularly on the group's tracking of TC, announcement of class suspension (if made), disaster preparedness activities, possible enhancement of related activities, etc.
- Submission of monthly observations to the PDRRMO, MDRRMO and PRFFWC either by e-mail or handing-over the observation forms to develop a database set for research and other related purposes.
- Enjoin the SHINE group to create a simple webpage to post their observations and related activities and also a possible SHINE newsletter on a municipal level circulation.

Program sustainability:

- The creation of a SHINE group / club with a set of officers and members and an adviser. Eventually, there will be a network of schools with SHINE groups / clubs within a community that will share data and work together on community-level activities.
- Organize regular meetings / presentations / comeback visits on how the group has been working along with the program and possible enhancements (Presentation of observations for each school at least once a year).

- An annual SHINE conference on a municipal, provincial or regional-wide basis (if ever) for inter-school dynamic activities such as essay writing contest, researches, sharing experience, etc.
- Institutionalizing the program within the school as part of their extra-curricular, in-house programs. For continuity, the present SHINE group members shall train selected incoming freshman students (at least 10 students) every school year to be part of the SHINE group observation team,

Presently, the next activity of SHINe program in Hagonoy is the installation of rain gauges at each school by 2nd to 3rd week of April 2012 by the MDRRMO and to refresh SHINe groups at each school on their daily rainfall observations. MDRRMO will also prepare a schedule for the revisit (comeback) presentations at each school for the coming school year 2012-2013.

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<tr><td>Various activities undertaken during the SHINe orientation activities included: Classroom type presentations on Hydromet hazards (above); proper rainfall observations (top right); Tropical Cyclone tracking (right and below left); and Barangay personnel participation in the orientation program and activities (below right).</td><td>  </td></tr>
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