



# Pampanga River Flood Forecasting & Warning Center (PRFFWC) Annual Report 2010 Programs, Activities and Accomplishments

## I. Introduction:

The Pampanga River Basin Flood Forecasting and Warning Center (PRFFWC) is an information service agency of the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) that provides timely flood warnings and related information to target communities within the Pampanga River Basin area. Among its functions, other than its 24/7 hydrological monitoring, operations and maintenance of its center facilities and equipment, includes doing hydrographic measurements at various river sections within the basin whenever possible; conduct information and dissemination of related info concerning hydrological issues particularly flood awareness and mitigation through presentations and lectures to the RDRRMC (Region 3), various PDRRMCs, MDRRMCs and Barangay councils, entities and other institutions, etc.; conduct hydrological analyses particularly on the improvement of flood forecasting and warning activities through enhancements of flood models and other related hydrological researches; carry-out special programs and activities pertaining to community and school in relation to hydrometeorological-related disasters awareness and preparedness; participate and interact with various entities, organizations and agencies in matters relating to flood awareness and mitigation, and other issues pertaining to other PAGASA-related functions.

A pilot flood forecasting and warning center in the Philippines, PRFFWC started its operations in 1973 and has since been the primary lead flood forecasting and warning center of the then Flood Forecasting Branch (FFB) and now the HydroMeteorological Division (HMD) of PAGASA with its original operations center being previously based in Diliman, Quezon City. The Center is now located in San Fernando City, Pampanga and has been the center of information mainly on floods by various target LGUs and communities when inclement weather affects the basin area.



The Pampanga River Flood Forecasting and Warning Center located in the Government Center, Bgy. Maimpis, San Fernando, Pampanga. (top left – view of the compound area, top right – the operations building)

## II. Annual Report: 2010 Programs, Activities and Accomplishments

Year 2010 was relatively a “quiet” year for the center. It was quiet in the sense that there were no major flood events that affected the basin during the year. The center issued only 3 flood bulletins (Pampanga River Basin) and 1 flood advisory (Guagua River Basin) for a minor flood event during the entire year. This was during the passage of Typhoon Juan (International name: Megi) which passed north of the basin last October 2010.

On the other hand, despite its limited resources – quite undermanned (4 personnel during the first 3 quarters of the year to only 3 on the last quarter doing 24/7 continuous operations) and with no service vehicle at the center, PRFFWC was able to work-out as many of the center’s regular functions particularly its operational activities and its public service and community relations activities during the year. A lot of the activities relating

to public information and presentations were provided by the center personnel to various entities, groups from both the public and private sectors within its area of concern and even outside the basin's coverage.

This annual report summarizes the various accomplishments, programs and activities that were undertaken by the center during its operational year 2010.

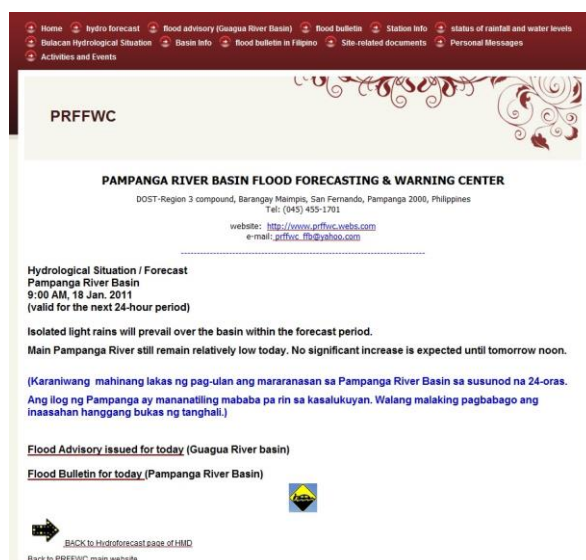
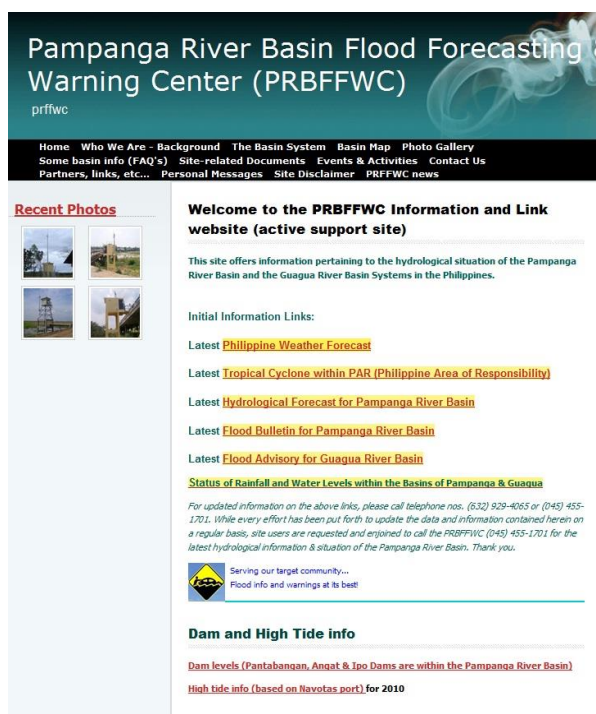
### III. Operational Activities

#### 1. Flood Monitoring and Warning Information:

Highlights of operational activities for the year include issuance of 3 Flood Bulletins (FB) for the Pampanga River Basin (PRB) and 1 Flood Advisory (FA) for Guagua River Basin at the height of Typhoon "Juan" (Megi), October 20 to 21. Both FB-1 and the single FA were issued in the morning (at 5:00am) of October 20. Final FB for PRB was issued on the morning of the following day. The effect of T. "Juan" did not cause any significant change to the hydrological situation of the basin during the period.

There were a total of 363 hydrological forecasts and 362 of 24-hour rainfall (RR) and instantaneous 8am water level uploaded, respectively, to the PRFFWC website. Likewise, high tide readings for the whole year 2010 were uploaded and included as a table in the website.

Recent innovations within the site include hydrological forecasts now made available in Filipino and also a number of downloadable related documents and file links. The PRFFWC information site can be viewed at [www.prffwc.webs.com](http://www.prffwc.webs.com) with links to other various related issues and sites of partner agencies and entities.



The PRFFWC main website (above left) and its information link page (above right)

The PRFFWC website has been a major information link to many of the LGUs and communities within the basin and as well as from outside the basin concern.

#### 2. Data maintenance and analysis:

The newly rehabilitated system for PRB has continuous 24/7 data back-up directed both in the center and WFFC operations computer systems. Unfortunately, the center (PRFFWC) has no electronic file access to said database inasmuch as systems passwords were not provided and computer USB connectivity disabled.

Nonetheless, as part of its continuing activity of updating its own retrievable electronic database, the center was able to work on the following activities on the observed rainfall (RR) and water level (WL) data:

1. Encoded about 119 station-months of RR data and 70 station-months of WL data from all the reporting telemetering stations within the PRB system
2. Encoded and processed 12 station-months of RR data for San Fernando Station; processed information from the encoded data include monthly RR, maximum 24-hour RR, day of occurrence of maximum 24-hour RR, and the number of RR days for each month.

The rainfall observation at the center (item no. 2 above) using a tipping-bucket type gauge which is digitally monitored had been made possible through the center's initiatives. This data is not available in the WFFC-HMD operations center.

### 3. Physical Hydrological Station and Telemetry Systems Maintenance:

Despite its limited personnel, the Center was able to participate in the regular maintenance of its telemetry system and has led in the physical maintenance of the telemetering stations and streamgaging sites within the basin.

One of the highlights of the maintenance for the year was the routine check-up and quarterly maintenance of telemetry stations that included restoration of Peñaranda water level gauge on the following dates: June 9 to 17; September 22 to 30; and December 6 to 15.

Physical maintenance of telemetering stations and streamgaging sites included the following activities and dates: Clearing of station surroundings, cleaning of staff gauges, painting of additional river gauges at most of the streamgaging sites within the basin, (July 26 to August 01); installation of staff gauges (SG) at the Apalit-NLEX Bridge, (February 9 to 15)

While this activity serves as a means of maintaining the system in its most efficient operation, there are some factors that somehow work against the system's high level of performance. One of the issues that plague the system's operation is the rampant vandalism of stations, in particular looting of station cables and equipment.

One specific event was that Mayapyap station was looted and ransacked of its station's equipment and cables on March 10, 2010 at 2100 hrs. So far as of this writing, it has only been the rainfall observation that restored. Water level observation has yet to be made operational. Other problems include regular commercial power interruption for both the center and at the repeater stations either due to local repairs within the area or delays in power payment resulting to cutting-off of power. Back-up generators can only sustain power as per available diesel in its tank.

Except for the Mayapyap rainfall observation, there were no major downtimes in the operation of the system in general. (for views of stations: <http://prffwc.webs.com/apps/photos/>)



Above picture shows PRFFWC personnel painting a staff gauge at a boat pier landing in Apalit, Pampanga. The said gauge can be seen atop the NLEX bridge along Pampanga River in Apalit plying the northbound side at upstream, right bank of the river. (February 2010)



The staff gauge (above) at Bagbag River in Caniogan, Calumpit has event flood markers painted to enhance community awareness. A joint undertaking of the PRFFWC and PDRRMO-Bulacan in line with the latter's community-based flood mitigation and management program for the Province of Bulacan. (April 2010)

#### **4. Streamgaging and hydrological related activities:**

There were quite a number of streamgaging and other hydrological related activities such as installation of rain gauges and staff gauges undertaken during the year. On the other hand, streamgaging included river cross-sectioning, river velocity measurements and other hydrological related surveys. These activities are a basic part in the improvement and enhancement of flood forecasting and warning activities of the center, mainly for development of flood forecasting models.

The center has managed to do several streamgaging during the year including collaborative undertakings with other agencies.

1. River cross-sectioning and determination of elevation of "0" gage reading of SG at various stream gauging stations (Sapang Buho, Mayapyap, Peñaranda, Zaragoza, Arayat, San Isidro, Sulipan, Sasmuan, Mexico, and Candaba (elevation of "0" gage only)); and within the basin, including Pampanga River at Apalit-NLEX and the San Miguel River along the Cagayan Valley Road (February 9-15).
2. River Cross-sectioning along Angat River at selected forecasting points in coordination and collaboration with the Bulacan-PDRRMO (formerly PDMO). There were 9 river cross-sections taken along the Angat River. (April 26-30)
3. Ocular survey of Bgy. Bancal, Guagua for selection of possible sites for staff gauges and flood markers as part of their Barangay Level Flood Warning System (BLFWS); the program was in coordination with the MDCC-Guagua, BDCC-Bgy. Bancal, PDRN and PHUMP-DPWH entities. (August 09)
4. River cross-sectioning within the Sta. Maria River Basin system with assistance to Bulacan-PDRRMO (then PDMO) in the installation of staff gages at various stations within the said river basin system as part of the province-wide program of development of Community-based Flood Mitigation and Management Program CBFMMP in the said basin. (August 5-6)
5. Assist and supported Bgy. Bancal BDCC (Barangay Disaster Coordinating Council) in the installation of staff gauges and flood markers within Bgy. Bancal, Guagua as part of the establishment of the Barangay Local Flood Warning System. (August 23),
6. Assist the JICA expert (Mr. Kurauchi) in the selection of discharge sections along Pampanga River as part of rehabilitation program of PRB and FFWSDO. (August 19)
7. Assist and supported the JICA consultant in monitoring of the river velocity measurement activities of the river measurement contractors at Arayat streamgaging station. This program activity is part of the rehabilitation project of the FFWSDO.

#### **IV. Public Information, Data provision, Trainings and other related Center Functions**

##### **1. Presentations and lectures to various functions within and outside the basin area.**

The center has had many requests for presentations and lectures, as part of its information and dissemination activities, generally on the operations of the center, basin weather and hydrological situation, and mostly on flood disaster awareness and mitigation issues and related issues almost the whole year round.

As a highlight to this activity, more than 15,230 persons from various LGUs, schools, institutions, organizations, agencies and other entities were provided with the abovementioned topics. Some seven outside the basin presentations (in red print) were also conducted and also several television and newsprint interviews. The list of presentation and event are as follows:

1. Presentation on PRFFWC operational activities and programs to visiting Nueva Ecija University of Science and Technology (NEUST) IT Graduating Class on their field trip to the center. January 19 (280 students and 10 instructors)
2. Resource person on the topics "Weather outlook and Hazard/Vulnerability mapping" to the following Barangay Disaster Coordinating Council officers of the following towns as follows:
  - a. February 16 – Pulilan & Calumpit (300 persons)
  - b. February 23 – Malolos (330 persons)
  - c. February 26 – Norzagaray, DRT & Angat (230 persons)
3. Resource person on the topic "Hydrometeorological Hazards" in the Barangay Disaster Coordinating Council Orientation organized by the PDMU-Pampanga and PHUMP-Phase III to 10 barangay councils within the province of Pampanga. (March 2; Pampanga Provincial Capitol, 40 persons participated)

4. Resource person on the topic “Concepts on Climate Change” in the Orientation on Disaster Risk Reduction and Formation of BDCC organized by OXFAM and PDRN as follows
  - a. March 9; Bgy. Sta. Rosa 1, Marilao, Bulacan (30 members of the Barangay/Community organization)
  - b. March 11; Bgy. Banga 1<sup>st</sup>, Plaridel, Bulacan (25 members of the Barangay/Community organization)
5. Resource person on the topics “Weather outlook and Hazard/Vulnerability mapping” to the following Barangay Disaster Coordinating Council officers of the following towns of Bulacan organized by the PDMO-Bulacan as follows:
  - a. March 11 – San Ildefonso (240 persons)
  - b. March 12 – San Miguel (320 persons)
  - c. March 25 – San Rafael (220 persons)
  - d. April 8 - Bocaue and Marilao (200 persons)
6. Resource person during the Earth Day Celebration in the province of Pampanga on the topic “Climate Change”, (April 12; 80 persons and April 19; 190 persons)
7. Resource person on the topic “Local Flood Forecasting & Warning System” and “Hazard Vulnerability Map Preparation” for the Barangay Disaster Preparedness Capabilities Workshop-Seminar of Barangay Tambubong, San Rafael, Bulacan. (April 20-21; 40 persons)
8. Resource person on the topic “Weather outlook for the 2<sup>nd</sup> quarter” and attended and represented PRFFWC-PAGASA in the RDCC-Reg. 3 quarterly meeting (May 18; 150 persons in attendance)
9. Resource person on the topic “Weather Outlook for the coming quarter” to the Paombong Municipal and Barangay Disaster Coordinating Councils. (June 2; 100 persons in attendance)
10. Represented PAGASA as a resource person on the topic “Weather outlook for the next quarter” to the Pampanga Chamber of Commerce meeting on Pampanga Disaster Awareness and Mitigation Program (June 9; 50 persons in attendance)
11. Resource person on the topic “Weather Outlook/Update” to the administrative and management personnel of the United Pulp and Paper Company in Calumpit, Bulacan in their preparation for the rainy season. (June 22; 120 persons in attendance)
12. Resource person on the topic “Weather Outlook/Update” to the Marilao Disaster Management Council as part of their preparation for the incoming rainy season. (June 29; 60 persons in attendance)
13. Resource person on the topic “Typhoon and Flood Awareness and Mitigation” to NSTP students of Bulacan State University (July 17, 23 & 24; 7,774 students in total attendance for 3 days)
14. Resource person on the topic “Typhoon & Flood Awareness” to the administrative and management personnel, and shop owners of the SM Baliwag Branch. (July 05; 150 persons in attendance).
15. Resource person on the topic “Flood Disaster Awareness” to the Municipal and Barangay officials of Bustos, Bulacan. (July 21; 160 persons attended)
16. Resource person and guide to personnel of DHM, Nepal in connection with their learning visit on CBFMMP of Bulacan. (July 21; 2 DHM personnel)
17. Resource person on the topic “Typhoon and Flood Awareness and Mitigation” to NSTP students of Bulacan State University, campuses at SJDM, Bustos and Bulacan. (August 12-13; 2,000 students in total attendance for 2 days)
18. Resource person in the basic orientation on typhoon, flood and climate change to Grades IV, V, and VI including faculty of San Jose Matulid Elementary School, Mexico as part of the on-going program with PDRN, BDCC- San Jose Matulid, and PHUMP-DPWH on non-structural programs on flood disaster mitigation within the province of Pampanga. (August 17; 200 students and 15 teachers in attendance)



The selected student observers of San Jose Matulid Elementary School with their teacher advisers and barangay officials (left picture).

19. Resource person and trainer to selected 40 students, 15 teachers and 5 PTA officers of San Jose Matulid Elementary School on rainfall and water level observation, tropical cyclone tracking in relation to item 18 above. (August 19; held in PRFFWC Bldg)
20. Resource speaker in the "Orientation-Planning on CBFWS for Bgy. Bancal, Guagua" as part of the capacity building of flood-prone barangays within Pampanga. (August 24; 15 persons in attendance)
21. Resource speaker on "Typhoon and Flood Hazards Awareness and Mitigation" to PDCC-Occidental Mindoro, MDCC-Sablayan and BDCC-Bgy. Victoria as per request by the Regional Director of OCD Region IV-B. (Aug 26 to 28; 150 persons in attendance)
22. Interviewed by "Unang Hirit", GMA Channel 7 on the PRFFWC program of SHINE in the province of Bulacan as part of their featured news on the said TV program. (August 19) The feature was aired on TV on August 23. (link: <http://www.youtube.com/watch?v=7M3Oqcebrqs>)
23. Talk show Guest (one-on-one interview) in the program "Focus" on CLTV Channel 36 as part of the public information service of DOST-Region 3 as requested by the Regional Director of DOST-Region 3, August 31.
24. Resource person on the topic "Typhoon and Flood Awareness and Mitigation", "Climate Change" and "Observations of Rainfall, Water Level, and Flood Markers" to barangay officials and residents of Bgy. Bancal, Guagua Pampanga in coordination with MDCC of Guagua and PDRN. (September 16; 50 persons in attendance)
25. Resource person on the topic "Climate Outlook for the 4<sup>th</sup> Quarter of 2010" and "Brief on PRFFWC" to various barangay officials and leaders of the Municipality of DRT, Bulacan in connection with the Disaster Preparedness of DRT town and in coordination with PDMO-Bulacan. (September 17; more than 250 persons in attendance)
26. Attended and represented PRFFWC-PAGASA in the PDCC-Pampanga special meeting called for by Gov. Lilia Pineda in relation to the present status of the Pampanga River; Resource speaker on the topic "Climate Outlook for the 4<sup>th</sup> Quarter of 2010" to the PDCC members. (September 21; about 220 members from various provincial and regional agencies attended)
27. Interviewed by Sun Star daily and UNTV channel 37 on status of Pampanga River Basin. (September 02, 2010)
28. Resource person and participated in the video shoot of OXFAM for the program SHINE in the Province of Bulacan, being considered as one good practice in DRR-CCA. (Video documentation expected to be released by April 2011)
29. Resource speaker on "Climate Outlook for 4<sup>th</sup> Quarter of 2010" in the meeting called for by Regional Director of OCD 3 in Camp Olivas, SFDO, Pampanga. (September 29; about 200 members of RDCC in attendance)
30. Resource speaker on the topic "Flood Hazard Awareness and Mitigation" and "Background on CBFWS" to the Provincial and Municipal officials of Province of Negros Oriental in coordination with GTZ and FeNO; October 03-05; 40 persons in attendance, Dumaguete City, Negros Oriental.
31. Acted as a resource person on the refresher / reorientation training of secondary school students who are part of the Bulacan SHINE (School Hydrological Information Network) program as part of the PDRRMO-Bulacan initiatives in disaster awareness and preparedness for secondary schools.
  - a. Nov. 03 – Nozagaray and DRT High Schools, 80 students and 4 teachers
  - b. Nov. 04 - V.Santiago and J.J,Russell High Schools, 80 students and 4 teachers
  - c. Nov. 09 – Binagbag and Taboc High Schools, 80 students and 4 teachers
  - d. Nov. 15 – F.Halili and SJDM High Schools, 80 students and 4 teachers
  - e. Nov 17 - Akle High School, 40 students and 2 teachers

(right pic) SHINE group students having their 1-day refresher / reorientation training from PRFFWC personnel. SHINE program is a partnership activity between the PDRRMO-Bulacan, and the PRFFWC.

The program has been chosen by OXFAM-DILG as one good practice in DRR-CCA.



32. Attended the pre-conference meeting and as a resource speaker on the standardization of data reports which served as main planner in the proposed organizational networking of local flood

warning systems in the Philippines held in Ormoc, Leyte. Nov. 10-12; 40 participants from the various LGUs and LFWS operations center within Region 8.



(Left picture) Participants in the pre-conference meeting for the “National Conference on Empowering Partners and Practitioners in Flood Early Warning System” held in Ormoc City, November 2010. The PRFFWC has had an active participation in said pre-conf and conference events.

33. Attended and represented PRFFWC-PAGASA, as a resource speaker on the topic “Sustaining a CBFWS” in the National Conference on Empowering Partners and Practitioners in Flood Early Warning System held in Lancaster Hotel, Mandaluyong City. Nov. 25 - 27; 120 participants from various agencies and LGUs in the Philippines



Delegates coming from Region 3 together with GTZ (now GIZ) people and PRFFWC representative share a pose during the National Conference on Empowering Partners and Practitioners in Flood Early Warning System. (picture above)

34. Resource speaker on the topic “Flood Hazard Awareness and Mitigation” in the conduct of Information and Education Campaign Training for DRRM key players and Stakeholders of DRRM Program of Ormoc City. (Dec 02; 100 participants from various schools in Ormoc City)
35. Resource speaker on the training of school teachers and students for the Project Rain Gauge of Smart Communications aimed at increasing disaster preparedness in hazard-prone areas within Negros Oriental. (Dec. 07 to 09; about 80 teachers and students participated)
36. Resource speaker / lecturer on the MDRRMC Orientation Workshop for the Municipality of Dulag, Leyte held in Virac, Catanduanes. (Dec. 14 to 16; 40 participants)
37. Resource speaker in the 1st Bulacan School Hydrological Information Network (SHINE) Conference held in Hiyas Convention Center, Malolos, Bulacan as organized and sponsored by the Provincial Government of Bulacan through the PDRRMO-Bulacan (Dec 06, 120 teachers and students participated from 9 secondary schools within Bulacan)

Related site: <http://bulacanshine.yolasite.com/1st-shine-conference.php>  
<http://bulacanshine.webs.com>



Delegates from the 9 Secondary schools that comprised the SHINE program in Bulacan pose with the organizers and members of the PDRRMO-Bulacan, DepEd official, Division of Bulacan, and PRFFWC personnel in the 1st SHINE Conference held last Dec. 2010 in Malolos City.

38. Attended and represented PRFFWC as a resource speaker for the topic "Latest Weather Outlook" in the Bulacan Provincial Disaster, Risk Reduction and Management Council Meeting held in Hiyas Convention Center. (Dec. 13; 60 persons from various provincial LGUs and agencies attended)

## **2. Meetings and participation in national, regional and local undertakings; special and other activities**

As a support to its continued center hydrological monitoring and operational program, the center was able to support a whole lot of various activities involving meetings regarding basin situations, official and management functions, participation in some various national, regional and/or local program undertakings, including special field visits. Aside from its active participation in these said activities, the center was also responsible for sharing and providing data and information to various requesting entities as part of the center's special functional activities.

1. Attended and represented PAGASA in the RDCC-3 meeting for the preparation for the meeting with the NDCC chairman in Region 3 in connection with priority concerns on Disaster Risk Management. (January 13; 60 members from various agencies and LGU's within the Region)
2. Meeting with PDCC-Pampanga officers on their planned procurement and installation of AWS in their operations center in SFDO. (January 25; meeting with 4 PDCC-Pampanga personnel)
3. Meeting with PDMO-Bulacan with regards to preparations for Disaster Risk Management activities for the Barangay level within the province. (January 07; meeting with 3 personnel from PDMO-Bulacan)
4. Attended and represented PAGASA in the Joint-Steering Committee & TWG meeting of the JICA-NWRB project for the "Study on IWRM for poverty alleviation & economic development in PRB"
  - a. February 3; Sulo Hotel, Quezon City (50 members from various agencies and LGU's within the Basin)
  - b. February 24; La Parilla Hotel, Cabanatuan (50 members from various agencies and LGU's within the Basin)
5. Participated in the "1-day Synchronized Clean-up Day" within the Govt. Center, San Fernando, Pampanga (February 04; 47 regional government agencies participated)
6. Participated in the Nationwide Earthquake Drill as part of the undertakings by the RDCC-3 within the region. (February 17, Government Center, SFDO)
7. Joint final inspection (PRFFWC personnel, Consultants, Contractors) of various Telemetry facilities within the basin in connection with the strengthening of the Pampanga River FFWS. (March 14 to 19)
8. Joint meeting with Bgy. Bancal, Guagua and Guagua municipal personnel on the request to assist in the establishment of community-based flood warning system for the said barangay. (March 19; 10 persons in all from Bgy. Bancal, Municipality of Guagua and PRFFWC personnel)
9. Attended and represented PAGASA in the Technical Working Group meeting of the JICA-NWRB project for the "Study on IWRM for poverty alleviation & economic development in PRB"
  - a. March 11; Century Resort Hotel, Angeles City (50 members from various agencies and LGU's concerned)
  - b. March 26; Epatha Center, SACOP, San Fernando City (50 members from various agencies and LGU's concerned)
10. Attended and represented PAGASA in the Joint RDCC-CDCC (Region 3) Special Meeting held at OCD-RDMC-3, San Fernando, Pampanga (March 26; 150 members of various regional and local councils / agencies within the region in attendance)
11. Attended the 2nd Joint Coordination Committee meeting for the JICA Grant-in-Aid Project on the Strengthening of FFWS for Pampanga and Agno-Phase 2. (May 28, 2010, about 100 persons in attendance)
12. Attended and represented PAGASA in the special meeting called for by RDCC-3 chairman on "Earthquake Simulation Exercise". (June 23; 50 persons in attendance)
13. Participated in the "writeshop" sponsored by OXFAM-DILG entitled "Documenting a Good Practice" inasmuch as the PRFFWC program of SHINE in Bulacan Province was selected as one good practice in DRR-CCA and for sharing and documentation purposes. (June 7 to 11; 40 persons in attendance, 1 PRFFWC personnel attended)
14. Participated in the RDCC-3 motorcade, as PAGASA representative, in Celebration of the National Disaster Consciousness Month (NDCM) in Region 3. (July 01; more than 30 vehicles joined in the motorcade in and around San Fernando City)



15. Acted as a drill evaluator in the Typhoon & Flood Drill conducted in SM Baliwag Branch (July 07; 300 persons participated)
16. Participated in the Simultaneous Earthquake Drill within the Government Center, SFDO as part of the activities related to the celebration of the NDCM in the region. (July 14; 50 various area agencies and LGU's participated)
17. Attended and represented PAGASA in the special meeting called for by Pampanga Chamber of Commerce in connection with the programs on "Flood Awareness within the Province of Pampanga". (July 15; 50 persons attended)
18. Meeting with PDRN in connection with the proposed CBFWS for Bgy. Bancal, Guagua and school disaster awareness program for Bgy. San Jose Matulid Elementary School in Mexico. (July 19; 15 persons attended)
19. Provided basin data and info to FFWSDO consultant, Mr. Kurauchi.
20. Provided basin data and guided the DOST-balik Scientist program, Dr. Abrajano, to various stations within the basin (July 29).
21. Acted as a consultant in the repair and maintenance of the AWS installed at PDCC-Pampanga as part of their on-going PDCC rehabilitation in the Province (July 22)
22. Attended and represented PRFFWC-PAGASA in the Joint Steering Committee-TWG Meeting for the "Study on Integrated Water Resources Management for Poverty Alleviation and Economic Development in the Pampanga River Basin". (August 12; about 60 persons attended)
23. Provided basin data and info to FFWSDO consultant, Mr. Kurauchi, including available data on ARB and CRB
24. Simple flash flood monitoring technique by PRFFWC in Bataan province was picked-up and published by MetEd-UCAR in their Flash Flood Early Warning Reference Guide 2010. ([http://dl.dropbox.com/u/20462365/FF\\_EWS.pdf](http://dl.dropbox.com/u/20462365/FF_EWS.pdf) check-out chapter 5-17)
25. Attended and represented PRFFWC-PAGASA in the TWG Meeting for the "Study on Integrated Water Resources Management for Poverty Alleviation and Economic Development in the Pampanga River Basin". (September 29; about 50 persons attended)
26. Attended and represented PRFFWC-PAGASA in the Joint Meeting on the planned management and protocol on the Dam releases of Angat and Ipo Dams during times of inclement weather conditions. (September 01 and 08; about 15 and 8 persons attended, respectively)
27. Participated and represented PRFFWC-PAGASA in the wreath laying ceremonies on Diosdado Macapagal monument in commemoration of his 110th birth anniversary as per memo by lead agency of Government Center, which is NEDA, in SFDO.
28. Attended and represented PRFFWC-PAGASA in the TWG Meeting for the "Study on Integrated Water Resources Management for Poverty Alleviation and Economic Development in the Pampanga River Basin", focused on "Proposed Prioritization of Projects and Development Scenario of IWRM in PRB". ( October 7 and 27; about 50 persons attended)
29. Attended and represented PRFFWC-PAGASA in the meeting with the Governor of Bulacan regarding the planned management and protocol on the Dam releases of Angat and Ipo Dams during times of inclement weather conditions. (October 11; more than 30 persons from various local and national agencies attended the event)
30. Attended and represented PRFFWC-PAGASA, as TWG member, in the Stakeholders Consultation on IWRM Projects in PRB. (October 13; 150 participants from various local, national agencies and private institutions attended the event, Century Resort Hotel, Angeles, Pampanga)
31. Represented PRFFWC and participated in the Joint Steering Committee and Technical Working Group meeting for the JICA-NWRB led study on "Integrated Water Resources Management (IWRM) for Poverty Alleviation and Economic Development in the PRB" held at Imperial Palace, Q.C. (Dec. 01; 120 persons participated)
32. Represented PRFFWC and participated in the "Seminar on Exchanging IWRM Experience and Practices" in connection with the on-going JICA-assisted IWRM study within the PRB held in Clark Field, Pampanga (Dec. 03; 80 persons in attendance)
33. Attended and represented PRFFWC in the last quarter meeting of the Regional Disaster Risk Reduction and Management Council (RDRRMC), Region-3, called for by the Regional Director for Accomplishments reporting, and Plans-Activities for 2011. (Dec. 21; 60 persons from various regional LGU and agencies attended the event)

Note: "Study on Integrated Water Resources Management for Poverty Alleviation and Economic Development in the Pampanga River Basin" in which the PRFFWC has a very active participation can be seen through this related link: <http://nwrbd.denr.gov.ph/prb-iwrm/>

### 3. Personnel Trainings

There were some opportunity trainings and enrichment programs that some of the center personnel participated in considering its limited manpower. At one point a center personnel has even become the source of information or has practically led its co-trainees in the said training program. This is to plainly say that though quite undermanned, the center prides itself of its quality personnel.

1. Training on “Networking & Internet Maintenance” as part of the on-going program of the JICA Grant-in-Aid on the Strengthening of FFWS for Pampanga & Agno. (May 5 to 12; 1 personnel from the center attended)
2. Training on “Advance MS Excel” at Statistical Research & Training Center. (May 31 to June 4; 1 personnel attended)
3. Training on “Correlation & Regression Analysis” at Statistical Research & Training Center. (July 12 to 16; 1 PRFFWC personnel attended)
4. Attended and represented PRFFWC-PAGASA, as member of the TWG, in the Users training for the website development of the IWRM study for PRB. (October 12; 20 members of the TWG in attendance at UP Interactive learning center, UP, Diliman)
5. International Training on Measurement and Computation of River Discharge for RA V, hosted by RCWR and WMO in Bekasi and Bandung, Indonesia (October 17 to 23; 40 participants from various countries of RA V in attendance; 1 PRFFWC personnel attended)



Practical on-hand trainings in discharge measurements (DM) were carried out during the “International Trainings on Measurement and Computation of River Discharge for RA V”. (top left - direct current DM atop a boat, top right –trainees in groups doing various hydrographic measurements)

6. Training on Statistics for Forecasting and Risk Management managed by SRTC, NEDA. (October 25 to 29; about 35 participants from various government and private agencies. 1 PRFFWC personnel attended)

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