

**PAMPANGA RIVER BASIN FLOOD  
FORECASTING AND WARNING CENTER  
(PRFFWC)**

**ANNUAL REPORT 2015**



prffwc (24 Dec 2015)



**Pampanga River Basin Flood Forecasting & Warning Center (PRFFWC)**  
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## PRFFWC year 2015

**The Pampanga River** had two major flood events for the year 2015, one from the effects of Typhoon Lando (Koppu) in October and the enhanced easterlies / front by Typhoon Nona (Melor) in December, respectively. This is considering that the year was a significant El Niño year. Typhoon Lando had record high flood levels at upstream sections of the main Pampanga River while the latter, though it nearly compared with Lando in flood levels at the mid and lower sections of the basin, registered higher event station rain totals.

The Pampanga River Basin Flood Forecasting & Warning Center had a fairly active year 2015. Programs and activity highlights for the year included as follows:

- Issued 21 flood advisories (FAs) and 36 flood bulletins (FBs) in 8 basin-related events;
- Uploaded rainfall (RR) / water level (WL) data and updated hydrological forecast in the PRFFWC website ([www.prffwc.webs.com](http://www.prffwc.webs.com) / [www.prffwc.synthasite.com](http://www.prffwc.synthasite.com)) for 365 days;
- Conducted on-site validation of river stages during flood events Typhoon Lando and effects of Typhoon Nona and,
- Conducted post-flood surveys for the above said flood events and produced an event report (*Related link: <http://prffwc.synthasite.com/site-related-documents.php>*)
- Resource speakers on topics relating to the basin and system (PRB & PRFFWC), weather issues / updates and hydrometeorological-related themes in about 61 occasions to more than 10,500 individuals representing various sectors – LGUs, NGAs, NGOs, School, Church, Civic Action entities, etc.;
- Live and / or prerecorded radio and television interviews in regional stations particularly during center flood watch operations; briefings and data provisions during flood events in the basin;
- Encoded some 142 station-months of various hydrological data, scanned more than 120 documents and reports as part of the on-going electronic filing system activity of the center;
- Participated in DRRM meetings at various levels (Regional, Provincial, City/Municipal & Barangay levels), and in other inter-agency related undertakings; active partner in several undertakings to various DRRMOs, NGOs, and NGAs within and outside the basin;
- Participated in several international events and activity collaborations within the basin.

While there were many enhancing program activities by the center during the year, there were also problems and issues that remained and still affect the center operations. One particular problem is the data transmission downtimes. Most telemetry stations had less than 30% downtimes except Mayapyap RR and WL station which was almost out for the whole year at about 80% downtime. With the exception of direct river stage validation field reconnaissance during typhoons “Lando” and “Nona” and a post-flood survey afterwards, no other streamgaging / hydrological measurements were carried-out by the center during the year. The center has yet to realize the upgrading of its outmoded and still un-calibrated current meters aside from lack of manpower.

Prior to the last quarter of the year, the center was, at last, provided with a vehicle (Model 2012 Mitsubishi Adventure) for its operational and field work-survey usages. The vehicle had been timely in the river stage validation during the basin’s last two flood events (Typhoons Lando and Nona) (see picture below of the center’s vehicle during one of its post-flood survey activities). Further, logistics provisions were also met for the center’s functional operations although at times there were some delays in the payment of its utilities as it is normally expected.



Considering the limitations in terms of hydrographic equipment and manpower, the center remains the lead FFWS of PAGASA and the other FFWS centers in the country in its operational flood forecasting and warning services. The center has also been continuously striving to improve its services; further strengthen its rapport and links with LGUs, communities, and with other entities within and outside the basin of concern.


## I. Operational Activities

### 1.1 Flood Monitoring and Warning Activities

There were 8 events covered by the center during the year 2015. The last 2 were major events for main Pampanga River. Typhoon Lando which affected the basin around mid-October had record high river stages at the upstream sections of main Pampanga River – at Sapang Buho, San Isidro (for the past 35 years of records) and most likely will remain for quite a long time for Peñaranda. This event was also followed by another major flood for the Pampanga River, the enhanced easterlies / front by Typhoon Nona.

The year 2015 is an El Niño year and was rated as one of the strongest on record (second strongest with a +1.7 °C ONI behind the 1997-98 event with +2.0 °C ONI; ONI or the Oceanic Niño Index is a running 3-month mean SST (Sea Surface Temperature) anomaly). The eight events during the year with the following total Flood Advisories (FAs) and Flood Bulletins (FBs) issued per event are as follows:

Event	Period	FA issued	FB issued
Typhoon Chedeng (Maysak)	April 04 - 05	2	
Typhoon Dodong (Noul)	May 09 - 10	3	
Typhoon Egay (Linfa) – Typhoon Falcon (Chan-hom) enhanced Southwest Monsoon	July 08 - 12	5	
Southwest Monsoon	July 17 - 19	3	
Typhoon Ineng (Goni) – Southwest Monsoon	August 22 - 25	4	
Tropical Storm Kabayan (Mujigae)	October 02 - 05	1	7
Typhoon Lando (Koppu)	October 16 - 24	2	15
Typhoon Nona (Melor) enhanced Easterlies / Frontal system	December 16 - 22	1	14
<b>Total</b>		<b>21</b>	<b>36</b>



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**PAMPANGA RIVER BASIN FLOOD FORECASTING & WARNING CENTER**  
DOST-3 compound, Bgy. Mainpitis, San Fernando, Pampanga 2000


GENERAL FLOOD ADVISORY No. 2 (TWO)  
PAMPANGA RIVER BASIN & ALLIED RIVERS  
ISSUED AT 7:00 AM, 17 OCTOBER 2015  
(VALID FOR THE NEXT 24 HOURS UNLESS AN INTERVENING ADVISORY OR AN INITIAL FLOOD BULLETIN WILL BE ISSUED)

AVERAGE BASIN RAINFALL AS OF 7:00 AM, TODAY  
PAST 24-HR RAINFALL: LESS THAN 5 millimeters  
FORECAST 24-HR RAINFALL: MORE THAN 60 millimeters

WATERCOURSES LIKELY TO BE AFFECTED:  
• TRIBUTARIES CORONEL, DIGMALA, PENARANDA, TALAVERA, RIO CHICO RIVERS AND OTHER STREAMS WITHIN NUEVA ECUIJA; UPPER MAIN PAMPANGA RIVER  
• MAASIM, SAN MIGUEL, BULU, AND ANGAT RIVERS (BULACAN)

AWARENESS INFORMATION / WARNING:  
RIVERS WITHIN THE BASIN ARE STILL RELATIVELY LOW, HOWEVER MODERATE TO OCCASIONALLY INTENSE RAINS ARE EXPECTED OVER THE BASIN BEGINNING TODAY; RESIDENTS AND LOCAL DISASTER RISK REDUCTION AND MANAGEMENT COUNCILS (DRRMCs) ADJACENT TO AND / OR ALONG THE ABOVE-MENTIONED WATERWAYS ARE ADVISED TO BE ALERT FOR POSSIBLE FLASH FLOODS AT THE RIVER UPSTREAM PORTIONS AND RIVER OVERFLOWING AT MID-STREAM SECTIONS; COMMUNITIES NEAR MOUNTAIN SLOPES ARE ADVISED TO BE ALERT FOR POSSIBLE LANDSLIDES.

Prepared by:  
PRFFWC – HTH / RPY / PTH / RFD

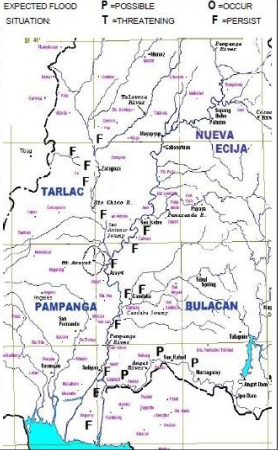


Department of Science and Technology  
PHILIPPINE ATMOSPHERIC, GEOPHYSICAL AND ASTRONOMICAL SERVICES ADMINISTRATION (PAGASA)  
Pampanga River Flood Forecasting and Warning Center, Hydro-Meteorology Division / NCR-PRSD  
Bgy. Mainpitis, San Fernando, Pampanga (Gov. Site) http://www.prffwc.webs.com

**FLOOD BULLETIN NO. SIX (6) – PAMPANGA RIVER BASIN AND ALLIED RIVER SYSTEM**  
ISSUED AT: 6:00 PM, 18 DECEMBER, 2015  
VALID UNTIL THE NEXT ISSUANCE AT 6:00 AM TOMORROW UNLESS THERE IS AN INTERMEDIATE BULLETIN  
BASIN RAINFALL AS OF 6:00 PM TODAY:  
PAST 24-HR = 1.55 MM  
FORECAST 24-HR = 5.10 TO 10 MM

WATER LEVEL STATION (WLS)	RIVER SWAMP WATER LEVEL (WL)	FLOOD SITUATION MESSAGE	PARTICULAR LOW-LYING AREAS
ZARAGOSA STN., RIO CHICO RIVER	NOW AT 4.42 M / SLOW RESSION IN PROGRESS TO REACH BELOW 2.50 M. ALARM WL LATE TOMORROW AFTERNOON	FLOODING TO PERSIST FOR A FEW DAYS	RIVERSIDE AREAS OF ZARAGOSA, ALIAGA, SAN ANTONIO (N.E.); LA PAZ (TARLAC)
SAN ISIDRO STN., PAMPANGA RIVER	NOW AT 3.16 M / CONTINUE TO RECEED FURTHER BELOW 3.00 M. ALERT WL	FLOODING TO PERSIST FOR A FEW DAYS (A FINAL MESSAGE)	JAEH, SAN ISIDRO, CABAJO
ARAYAT STN., PAMPANGA RIVER	NOW AT 9.76 M HAD LEVEL-OFF BELOW 10.0 M WL. VERY SLOW RESSION TO CONTINUE TO REACH BELOW 8.5 M CRITICAL WL TOMORROW AFTERNOON	FLOODING TO PERSIST FOR A FEW DAYS	RIVERSIDE AREAS OF ARAYAT, SAN LUIS, SAN SIMON
CANDABA STN., CANDABA SWAMP	NOW AT 8.55 M / SLOW FILLING-UP OF SWAMP ABOVE 5.0 M CRITICAL WL, TO LEVEL-OFF CLOSE TO 7.0 M WL TONIGHT	FLOODING TO PERSIST FOR SEVERAL DAYS	CANDABA (PAMPANGA); SAN MIGUEL & SAN LEBRONSO (BULACAN)
SULIPAN STN., PAMPANGA RIVER	NOW AT 3.55 M / SLOW INCREASE TO REACH 3.6 M ALERT WL TONIGHT	FLOODING TO PERSIST	APALIT, CALUMBIT, HAGONOV, PAOMBONG, MACABEBE, MASANTOL
ANGAT RIVER	SLOW INCREASE IS EXPECTED	POSSIBLE RIVERSIDE FLOODING	RIVERSIDE AREAS OF ANGAT, NORZAGARAY, BUSTOS, BALUAG, PULILAN, FLARIDEL, CALUMBIT HAGONOV, PAOMBONG, MACABEBE, MASANTOL

EXPECTED FLOOD SITUATION: P = POSSIBLE, T = THREATENING, O = OCCUR, F = PERSIST



POSSIBLE COASTAL FLOODING IN THE LOW-LYING SEASHORE AREAS

PEOPLE LIVING IN LOW-LYING RIVERSIDE AREAS ADJACENT TO THE ABOVE-MENTIONED WATERWAYS AND THE DISASTER RISK REDUCTION AND MANAGEMENT COUNCILS (DRRMC) CONCERNED ARE ADVISED TO CONTINUE TO TAKE APPROPRIATE ACTIONS.

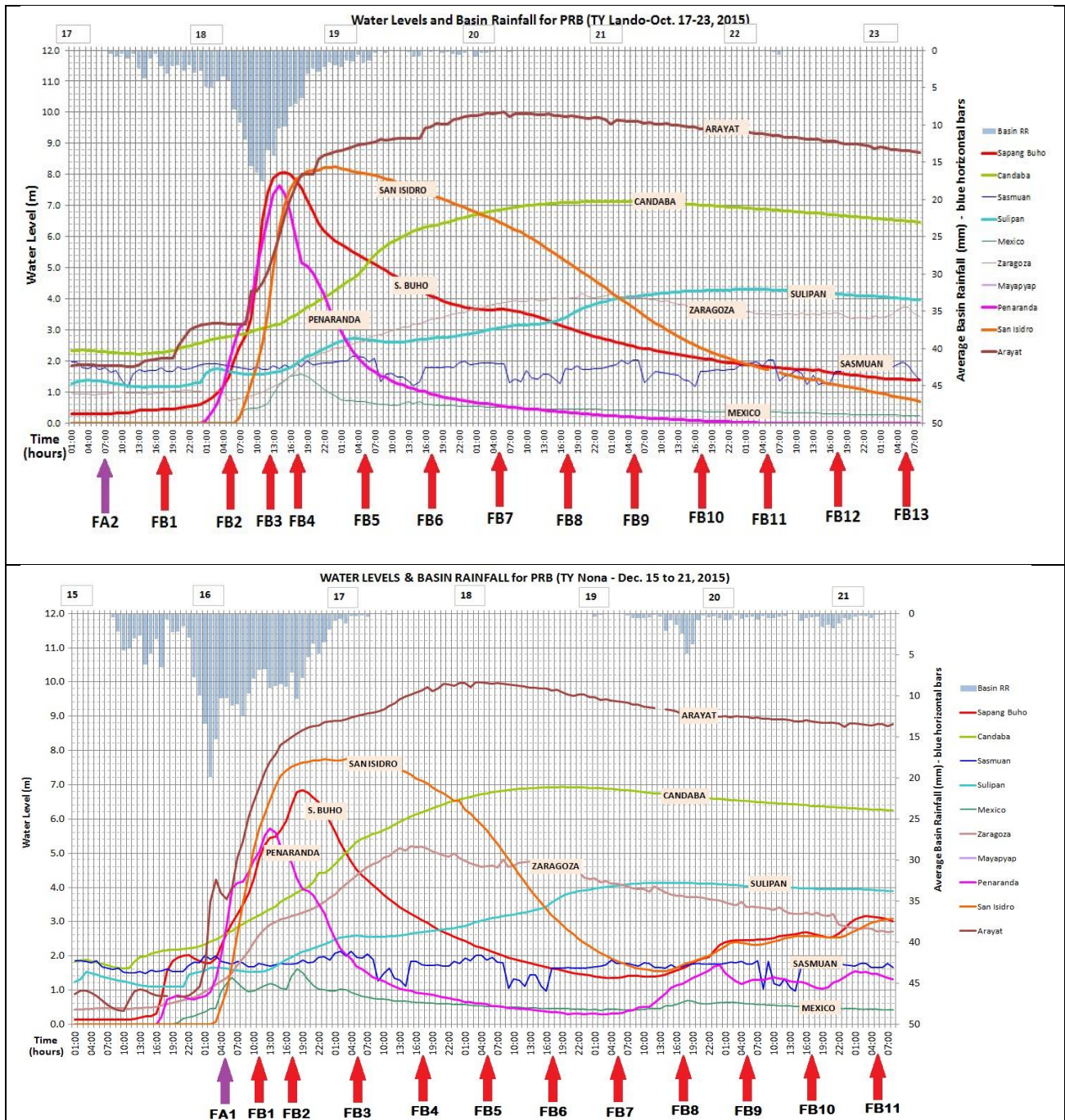
HTH / NBN / RPY / PTH / RFD

Above, a flood advisory (left) and flood bulletin (right) issued during the Typhoon “Lando” (October 16-24)

During event Typhoon Lando, the center was able to issue a 48-hour lead time flood warning through an initial Flood Advisory (FA) issued at 8 AM of Oct 16. Sapang Buho, the upstream most WL station of the system, reached its alert stage at around 8AM of Oct 18. However, during the effects of Typhoon Nona, flood information warning was by standard rather late with a lead time of only 3 to 4 hours with respect to the same station Sapang Buho. Similarly, During Tropical Storm Kabayan, the center issued a relatively late flood info, about an hour late to reaching alert level, again with respect to the same station. Typhoon Kabayan, however, was considered as a minor flood for the basin.

The center provides updated (issued every 6:00 AM) daily hydrological forecast including updates on the past 24-hour rainfall totals (ending 5:00 AM) and instantaneous water level readings (also at 5:00 AM) at all reporting telemetry stations within the basin during non-flood watch operations.

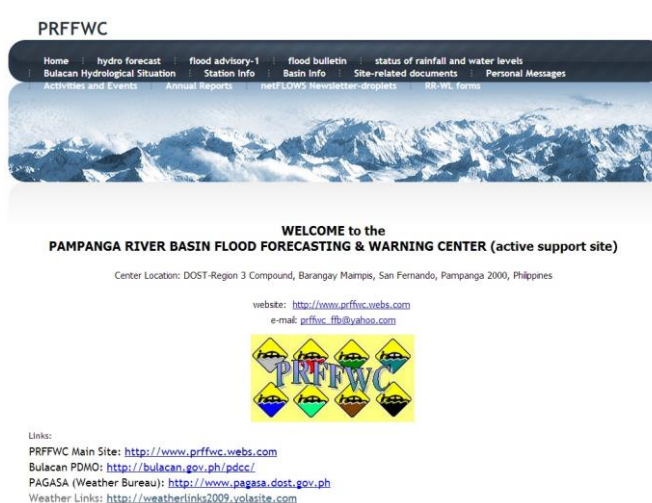
For flood watch operational activities, the center issues two forms of messages to its basin recipients – Flood Advisory (FA) and Flood Bulletin (FB). Flood Advisory is hydrological information generally used for raising flood awareness and preparedness for specific area/s within the basin. Initialized at anytime to start flood watch phase when the rivers and streams are likely to be affected after 12 to 24 hours by a relatively high stream flow or a possible flash flood and/or possible landslide as well. Flood Bulletin is more specific flood information indicating present and forecasted river behavior and the areas that are likely to be affected in case of river overflowing; it is issued whether or not it is being preceded by an FA. It can also be initialized anytime and issued normally at regular intervals (5 AM and 5 PM) or as need arises, thereafter until it is finalized when floodwaters have generally subsided or no significant increases in the present situation is expected further. FB is more detailed as to forecast of river level changes at monitoring points including areas (towns/cities) affected or yet to be affected. Intermediate or amended FB issuance are done when situations warrants it.



Above shows the various station hydrographs and basin hyetograph including a timeline issuance of FAs and FBs during the flood event Typhoon Lando (October 16-24) above and the enhanced easterlies / frontal by Typhoon Nona (December 16-22) below.

Flood information issued by the center are immediately relayed through various means (e.g. fax, e-mails, social media such as FB and Twitter, SMS, etc.) to identified immediate recipients such as the RDRRMC-3, OCD-3, HMD, PDRRMC/O,

etc. Upon requests by other entities and the regional television and radio stations. The center’s websites are also updated immediately after FA and FB issuance and can be accessed through the links as follows: “www.prffwc.webs.com” (left) and/or “www.prffwc.synthasite.com” (right)



### 1.2 PRB Dataset Status for the year (and some analysis)

The PRFFWC system is composed of 17 RR and 10 WL (individual / combinational) telemetry stations situated within the provinces of Nueva Ecija, Pampanga and Bulacan. A digital tipping bucket rain gauge is manually monitored through an LCD at the PRFFWC as an additional rainfall monitoring station.

Fifteen of the 17 stations had data downtimes of the about 25% while two stations, Mayapyap and Arayat, had around 80% and 37% downtimes, respectively. Mayapyap had a roughly four months of data transmission for the year as a result of station vandalism and theft. Arayat, on the other hand, was frequently affected by interferences as with the other stations as well. A summary of the station-hour rainfall and water level data totals received for each station and with the respective station-hour downtimes and its equivalent percentage downtimes are given below. Station maintenance is done every quarter by the HMTSS (Hydromet Telecom Services Section) of the HMD (Hydromet Division) and is supported by the center’s lone resident technician.

#### PRB RR telemetry stations

Station	Data Received (stn-hrs)	Downtimes (D/T) (stn-hrs)	% Downtimes for the year
Muñoz	6523	2237	25.54
Sapang Buho	6521	2239	25.56
Calaanan	6523	2237	25.56
Mayapyap	1741	7019	<b>80.13</b>
Gabaldon	6523	2237	25.54
Palali	6523	2237	25.54
Zaragoza	6517	2243	26.61
Peñaranda	6523	2237	25.54
San Isidro	6617	2143	24.46
Sibul Springs	6629	2131	24.33
Arayat	5542	3218	36.74
Candaba	6629	2131	24.33
Porac	6631	2129	24.30
Mexico	6631	2129	24.30
San Rafael	6629	2131	24.33
Sasmuan	6627	2133	24.35
Sulipan	6631	2129	24.30

#### PRB WL telemetry stations

Station	Data Received (stn-hrs)	Downtimes (stn-hrs)	% Downtimes for the year
Sapang Buho	6591	2169	24.76
Mayapyap	1741	7019	<b>80.13</b>
Zaragoza	6542	2218	25.32
Peñaranda	6220	2540	29.00
San Isidro	6650	2110	24.09
Arayat	5775	2985	34.08
Candaba	6651	2109	24.08
Mexico	6651	2109	24.08
Sasmuan	6650	2110	24.09
Sulipan	6651	2109	24.08

### 1.3 PRB Data Summary for the year

Summary stats for RR and WL stations within the basin based on available data received at the center are as follows:

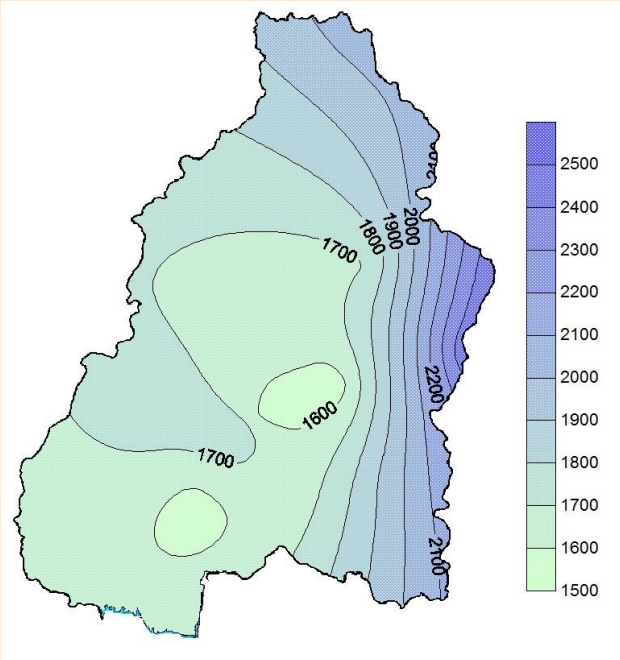
#### PRB Rainfall Stations

Station	Total RR for the year (mm)	Maximum 24-hr RR (mm) Met. day	Date of 24-hr Max RR (Met. day)	Number of RR days (Met. day)	Maximum 1-hr (fixed) RR (mm)
Muñoz	2102	223	15 Dec	99	59
Sapang Buho	2149	203	18 Oct	91	64
Gabaldon	3163	392	15 Dec	138	67
Zaragoza	1759	130	15 Dec	89	70
Mayapyap					
Peñaranda	2051	255	15 Dec	93	67
Calaanan	2331	255	18 Oct	98	57
Palali	2684	362	15 Dec	114	91
San Isidro	1706	168	18 Oct	90	59
Arayat	1649	138	17 Jul	87	62
Candaba	1541	106	22 Sept	88	60
Sibul Spring	2472	276	15 Dec	125	76
Sasmuan	1564	105	15 Dec	91	36
Sulipan	1614	111	15 Dec	98	40
Mexico	1578	144	16 Jul	88	52
Porac	1755	199	17 Jul	91	51
San Rafael	1913	114	01 Oct	115	48
PRFFWC (CSFP)	1793.1	180.3	17 Jul	107	
Baliuag University ++	1926.8	114	05 Dec	114	71.1

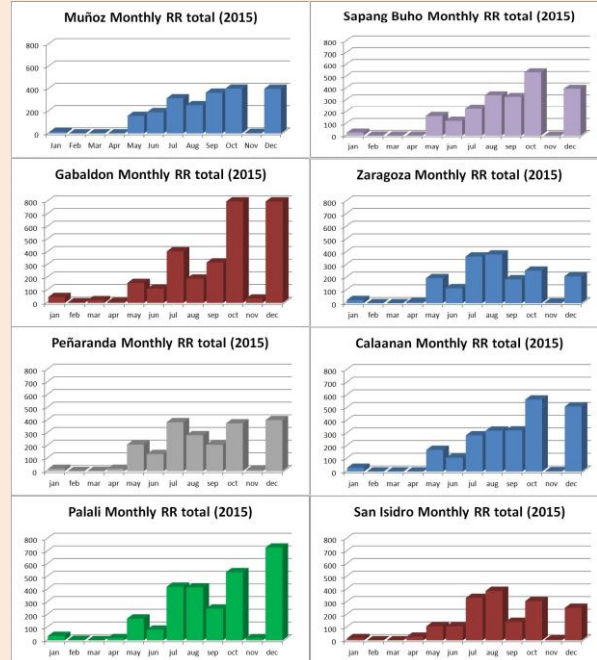
Legend: ++ - SHINE observation station

#### PRB Water Level Stations

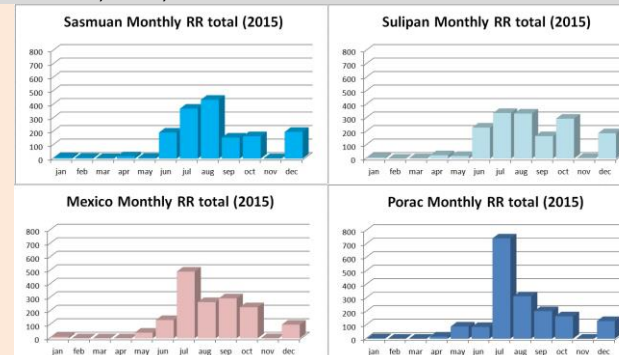
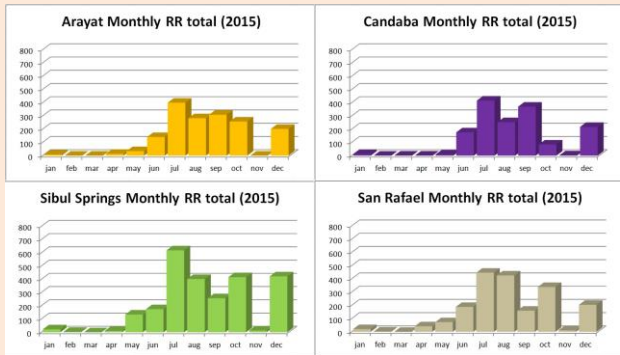
Station	Max WL for the year (meters)	Time / Day of Max WL	Remarks (event of maximum WL for the year)
Sapang Buho	8.08	1500H / 18 Oct	Typhoon Lando
Zaragoza	5.22	1500H / 17 Dec	Typhoon Nona
Mayapyap			
Peñaranda	7.63	1400H / 18 Oct	Typhoon Lando
San Isidro	8.24	0000H / 19 Oct	Typhoon Lando
Arayat	10.0	0600H / 20 Oct	Typhoon Lando
Candaba	7.13	2200H / 20 Oct	Typhoon Lando
Sasmuan	2.16	0300H / 19 Oct	Typhoon Lando
Sulipan	4.29	2300H / 21 Oct	Typhoon Lando
Mexico	3.03	0900H / 18 Jul	Southwest Monsoon



Pampanga River Basin 2015 Annual Rainfall Total Distribution Pattern



The monthly rainfall distribution for 2015 for the stations Munoz, Sapang Buho, Gabaldon, Zaragoza, Penaranda, Calanaan, Palali, and San Isidro.



The monthly rainfall distribution for 2015 for the following stations starting from top left to right: Arayat, Candaba, Sasmuan, Sulipan, Sibul Springs, San Rafael, Mexico, and Porac. (Take note of November totals for all stations)

The PRFFWC maintains the yearly processing of its dataset as to annual total, maximum 24-hr (meteorological day), date of maximum 24-hr RR, number of RR days, maximum 1-hour (fixed) RR, maximum observed water level for the year at each station, etc.

Data quality control, particularly filling-in data gaps and breaks, had also been a part of the center’s dataset management. As always, this is a task that requires a bit of a skill and quite an understanding of the rainfall and water level responses in the basin, other than being familiar with telemetry reporting and transmission in case of doubtful values. Further, data encoding and document (reports, papers, newsletters, etc.) scanning has been initiated as part of the electronic conversion or e-filling program of the center.

Below is a list of data management and e-filling tasks that were carried-out during the year 2015:

- Some 50 rainfall station-months and 30 water level station-months of data gaps for the PRB that was filled-in from November 2014 until March 2015.
- Encoded 12 RR station-months for PRFFWC station (the whole 2015)
- Encoded (and partly verified) 165 station-months from various stations
- Scanned 124 documents (reports and various papers, etc.)

### 1.4 Telemetry System and Station Physical Maintenance:

The PRFFWC system can be considered, in general, at good level condition with most stations having only a 25% downtime transmission, and Mayapyap telemetry station having only 4 months of operation throughout the whole year. The usual problems and issues of vandalism have affected the functionality of said station and remain to be down until this time. Another problem is the intermittent frequency interference which affects all the stations.

The HMTSS of the HMD maintains the PRFFWC system on an “irregular” quarterly basis. As always, the HMTSS seldom provides the center with its maintenance report. Below is a list of maintenance activities carried-out by the HMTSS and as supported by the center’s resident technician:

- Quarterly maintenance of all telemetry station (April 13-20)
- General cleaning (blower and vacuum) of all system’s PC (personal computers) and all telecommunication facilities, panels, and peripherals in the PRFFWC building (May 2015)
- Repair of San Rafael Repeater system through manual operations of supervisory console PC (July 21)
- Quarterly maintenance of all telemetry stations (July 23-29)
- Quarterly maintenance of all telemetry stations (November 08-14)

Physical maintenance of stations, which is supposed to be undertaken by the center, has been carried-out by the personnel of ETSD (Engineering and Technical Services Division). The primary maintenance activity undertaken was the repainting and cleaning of surroundings of all telemetry station. As for center improvements, procurement and construction of storage shelves were done inside the center’s generator room by the PRFFWC.



Above, the Sapang Buho RR-WL telemetry station before (L) and after (R) repainting and clearing activities.

Zaragoza RR-WL telemetry station before (L) & after (R) repainting

### 1.5 Streamgaging and hydrological related activities

There were not much activities for this area during the year inasmuch as the much awaited vehicle for the center was only realized on August 2015, after an unfavorable situation happened during the monitoring of a flood event and with the system being totally down that time did the immediate management realized the need for a service.

Most of the activities for this area (streamgaging) were carried-out (obviously) in the last quarter of the year particularly after the flood events of Typhoons Lando and Nona:

- Supported ICHARM group in their flood level validation during the coordination activities with Calumpit municipality in their program on Flood Risk Assessment of the said municipality (July 2015)
- Water level validation of some stations during the SW monsoon effects on the basin (August 2015)
- Conducted on-site river stage validation during the Typhoon Lando and effects of Typhoon Nona flood events in the basin (October and December)
- Post-flood survey of several streamgaging sites and various areas flooded, meetings with LDRRMOs after passage of Typhoon Lando (Dec. 7, 9 & 10)
- Post-flood survey of various areas affected by the enhanced easterlies / frontal system as induced by Typhoon Nona (December 28)

Streamgaging and hydrological activities are regular tasks and responsibilities of every river basin center. It includes river cross-sectioning, river discharge measurements, update of elevation of zero level of staff gauges, post-flood surveys, inundation extent mapping, etc. These are regular basic activities required in the improvement and the enhancement of flood forecasting and warning operational activities of a river center.





(L to R) ICHARM and Calumpit DRRMO personnel measure flood level in a barangay center in Calumpit as part of the Flood Risk assessment program in the area by ICHARM with PRFFWC support (July); water level validation in Candaba swamp area during the effects of SW monsoon in the basin (August); a flooded Cabiao floodway as seen from the viaduct in the river stage validation during Typhoon Lando event (October); and, a view of the Caniogan staff gauge in the on-site validation of river stages during the effects of Typhoon Nona flood event (December).

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

### 2.1 Presentations & lectures in events, various occasions and functions

As always, the PRFFWC has been a lead center in the IEC (Information, Education and Communication) on Hydromet-related issues in the PRB and in other areas within Region 3 and even outside of the region. It also occupies a big part of the center's year-long operational activities especially during pre-rainy season period and even during flood events in the basin. There were an aggregate total of 10,555 individuals that were provided presentations and orientations on Hydromet-related information in about 61 occasions within and outside the basin of concern.

A chronological order of IEC conducted in various events and occasions within and outside the PRB for the year 2015:

Date	Topic / Presentation	Event / (Venue)	Remarks
January 06	Climate Outlook for January-March 2015	Coordination Conference for APEC 2015 / (OCD-3 Conference Room, CSFP)	35 persons from various agencies
January 16	Updates on Tropical Storm "Amang"	Pre-Disaster Risk Assessment (PDRA) meeting for the RDRRMC-3 / (OCD-3 Conference Room, CSFP)	10 persons from various RDRRMC-3 agencies
January 26	Pampanga River Basin & the PRFFWC-System	Orientation of Met Technician Training Course trainees field trip to PRFFWC	38 trainees, 1 instructor & 3 training personnel
February 20	PRFFWC Orientation	Gapan Elementary School field trip visit to PRFFWC	200 students & teachers of Gapan Elementary School
February 24	PRB, PRFFWC, and Calumpit flood situation	ICHARM Workshop on "Flood Contingency Planning with Evidence-based Simulation" / (Calumpit Town Hall, Bulacan)	40 municipal & barangay personnel of Calumpit
February 27	School Hydrological Information Network (SHINE)	Orientation of selected Region 8 science teachers / (Tacloban City)	32 teachers from various schools within Region 8
March 04	Understanding the Characteristics and Impacts of 2014 T.C. "Quennie", "Ruby" and "Seniang"	NetFLOWS Conference sponsored by GIZ and the Dumaguete CDRRMO / (Valencia, Negros Oriental)	47 DRRMOs and LFEWS operators from various LFEWS centers in the country
March 18	Updates on Tropical Cyclone "Betty"	PDRA meeting with RDRRMC-3 (OCD-3 Conference Room, CSFP)	10 persons from various RDRRMC-3 agencies attended
March 24	Climate Outlook for March to July 2015	first quarter Bulacan-PDRRMC Meeting / (Malolos, Bulacan)	35 PDRRMC members present
April 01	Updates on T.C. "Chedeng" (Maysak)	PDRA meeting with RDRRMC-3 / (OCD-3 Conference Room, CSFP)	15 persons from various RDRRMC-3 agencies attended



(L to R) Orientation of visiting students and teachers from the Gapan Elementary School (February 20); Participants in the NetFLOWS Conference in Valencia, Negros Oriental (March 04); Lecture of LDRRMOs in Bulacan on Practical River Hydrographic Measurements (April 28)

April 23	Center Orientation on PRB and FFW system	TOSP (Ten Outstanding Students of the Philippines) officers and student finalists for Region 3	20 students finalists and 12 TOSP officers
April 28	Practical River Hydrographic Measurements	Bulacan-PDRRMO Capacity development program for LDRRMOs / (Hiyas Convention Center, Malolos, Bulacan)	42 local and provincial DRRMOs participated
May 08	Updates on T. "Dodong"	PDRA meeting with RDRRMC-3 / (Hacienda Gracia Resort, Lubao, Pampanga)	about 30 RDRRMC members attended
May 12	Monthly Weather Outlook for June 2015	Emergency Preparedness Coordination Meeting on APEC 2015 in Bagac, Bataan / (OCD-3 Conference Room, CSFP)	50 persons from various Regional agencies and entities in attendance
June 02	Hydrometeorological Hazards	Orientation on Basic First Aid and Disaster Preparedness for PWD's, Solo parents, and Pag-asa youth association of Malolos City / (Malolos, Bulacan)	around 147 persons attended
June 03	Disaster Concept / Flood Concept and its impact, Climate Review and Outlook	Department of Agriculture's program US PL480 / (Otel Pampanga, CSFP)	43 different LGU participants attended
June 25	Climate Outlook and updates from PAGASA	Oplan Listo Program of Guagua Municipality / (St. Mary's Academy, Guagua, Pampanga)	160 participants from various sectors – church, barangay, school, etc.
June 22-25	Storm Surge Hazard Mapping for Ilocos Sur	READY project IEC / (Ilocos Sur)	510 persons in attendance
July 01	Flooding situation in the Pampanga River Basin	Multi-Hazard Briefing and Forum in Preparation for the incoming Disaster Season for the Pampanga Province / (Bren Guiao Convention Center, CSFP)	4,040 barangay, municipal and provincial officials attended



(L) Multi-Hazard Briefing and Forum for the Province of Pampanga (July 01); (R) Appreciation to Resource Speakers in the said Forum given by the Provincial Government of Pampanga headed by the Honorable Provincial Governor Lilia Pineda.

July 06	Climate Outlook: July-Dec. 2015 and other updates from PAGASA	National Disaster Consciousness Month Celebration for Region 3 / (SACOP, CSFP)	122 participants from various regional-provincial-local agencies, entities and other related organizations
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July 14	Pampanga River Basin and the PRFFWC	IEC on FFWSO for Pantabangan Dam for the province of Nueva Ecija / (Nueva Ecija)	35 participants from provincial, municipal and city DRRMOs
July 16	Hydromet Hazards Awareness and Mitigation	SM San Fernando downtown forum on DRRM for the private sector and the community of SM Supermalls as per their Green Retail Agenda 2015 / (SM downtown, CSFP)	40 participants from SM community downtown store
July 22-25	Storm Surge Hazard Mapping for Antique	READY project IEC / (San Jose, Antique)	535 persons attended
August 4-6	Hydrographic Surveys and Measurements	Coordination and Familiarization on Hydrographic Surveys for PAGASA personnel in connection with DEWS (DOST-GIA Project)	13 DEWS-connected personnel
September 03	Hydrometeorological Hazards and their effects to People and Environment	DRRM Orientation of the HR Department of Pepsi Cola Products Philippines, Inc. / (Pepsi Cola plant, CSFP)	25 Pepsi Cola plant employees attended
September 17	TC updates and the El Niño phenomenon	SHINE revisit 2015 program of the PDRRMO-Bulacan / (DRT High School, DRT, Bulacan)	40 students and 2 group advisers and principal
September 17	TC updates and the El Niño phenomenon	SHINE revisit 2015 program of the PDRRMO-Bulacan / (Binagbag High School, Angat, Bulacan)	40 students and 2 group advisers
September 17	TC updates and the El Niño phenomenon	SHINE revisit 2015 program of the PDRRMO-Bulacan / (Tibagan High School, Bustos, Bulacan)	40 students & 2 group advisers plus principal
September 22	TC updates and the El Niño phenomenon	SHINE revisit 2015 program of the PDRRMO-Bulacan / (Angat National High School, Angat, Bulacan)	40 students & 2 group advisers
September 22	TC updates and the El Niño phenomenon	SHINE revisit 2015 program of the PDRRMO-Bulacan / (Norzagaray National High School, Bulacan)	40 students & 2 group advisers
September 22	TC updates and the El Niño phenomenon	SHINE revisit 2015 program of the PDRRMO-Bulacan / (F. Halili National Agricultural School, Sta. Maria, Bulacan)	40 students & 2 group advisers



SHINE revisit 2015 program in some of the target schools in the province of Bulacan: (L to R) Akle High School, F. Halili National Agricultural School, and Norzagaray National High School.

September 24	Storm Surge CBEWS	GMMA-READY IEC / (Noveleta, Cavite)	estimated participants - 50
September 28	Storm Surge CBEWS	GMMA-READY IEC / (Hagonoy, Bulacan)	estimated participants - 50
October 06	Storm Surge CBEWS	GMMA-READY IEC / (Manila)	65 persons participated
October 09	Climate Outlook	LCC-DRR forum organized by DILG-3 / (Travelers Hotel, Subic)	580 LGU personnel in Region 3
October 12	El Nino Updates and Climate Outlook	El Nino Summit organized by the Municipality of Guagua / (St. Mary's Academy, Guagua, Pampanga)	65 barangay officials and farmers attended
October 13	TC updates and the El Niño phenomenon	SHINE revisit 2015 program of the PDRRMO-Bulacan / (Akle High School, San Ildefonso, Bulacan)	40 students and 2 advisers
October 13	TC updates and the El Niño phenomenon	SHINE revisit 2015 program of the PDRRMO-Bulacan / (San Rafael National Trade School, San Rafael, Bulacan)	40 students, 2 advisers and principal

October 14	TC updates and the El Niño phenomenon	SHINe revisit 2015 program of the PDRRMO-Bulacan / (J. J. Russell High School, San Miguel, Bulacan)	40 students, 4 teachers / advisers and principal
October 14	TC updates and the El Niño phenomenon	SHINe revisit 2015 program of the PDRRMO-Bulacan / (R. Vedasto High School, San Miguel, Bulacan)	59 students, 3 teachers / advisers and principal
October 14	Update on T.S. "Lando" (Koppu)	PDRA meeting with RDRRMC-3 / (OCD-3 Conference Room)	20 persons from various regional offices attended
October 16	TC updates and the El Niño phenomenon	SHINe revisit 2015 program of the PDRRMO-Bulacan / (AFGB Trade School, Marilao, Bulacan)	40 students and 1 teacher / adviser
October 16	TC updates and the El Niño phenomenon	SHINe revisit 2015 program of the PDRRMO-Bulacan / (I. Mendoza Memorial High School, Bocaue, Bulacan)	40 students, 1 teacher / adviser
October 17	Update on T.S. "Lando" (Koppu)	PDRA meeting with RDRRMC-3 / (OCD-3 Conference Room)	15 persons from various regional offices attended
October 21	Storm Surge CBEWS	GMMA-READY IEC (Bulakan, Bulacan)	50 persons attended
October 28	Climate Change Hazards and Projections	DILG-3 program on LCCAP-LGU (1st Batch) / (Royal Hotel, Angeles City)	69 persons from various LGUs within Reg. 3 attended
October 28	weather forecast for the annual observance of All Saints Day	RDRRMC-3 / (OCD-3 Conference Room)	15 persons from various agencies in Reg. 3 attended
November 04	TC updates and the El Niño phenomenon	SHINe revisit 2015 program of the PDRRMO-Bulacan / (SJDM National High School, SJDM, Bulacan)	40 students, 2 teachers/advisers
November 04	TC updates and the El Niño phenomenon	SHINe revisit 2015 program of the PDRRMO-Bulacan / (Sto. Cristo National High School, SJDM, Bulacan)	40 students, 2 teachers/advisers
November 04	Pampanga River Basin flooding during Typhoon "Lando"	Post-Disaster Forum for Pampanga Province officials and Barangays located along Pampanga River / (Bren Guiao Convention Center, CSFP)	876 barangay officials of Pampanga Province attended



(L to R) Briefing RDRRMC-3 members in one of the Pre-Disaster Response Assessment (PDRA) meetings; Post-Disaster Forum for Pampanga Province and Barangay officials after passage of Typhoon Lando (Nov. 04)

November 05	TC updates and the El Niño phenomenon	SHINe revisit 2015 program of the PDRRMO-Bulacan / (Obando National High School, Obando, Bulacan)	40 students; 2 teachers / advisers and principal
November 06	TC updates and the El Niño phenomenon	SHINe revisit 2015 program of the PDRRMO-Bulacan / (Calumpit, Bulacan)	Calumpit schools – 3 elementary & 2 High Schools ; 50 students; 5 teachers & principal
November 06	TC updates and the El Niño phenomenon	SHINe revisit 2015 program of the PDRRMO-Bulacan / (Hagonoy, Bulacan)	Hagonoy schools – 3 elementary & 3 High Schools ; 60 students; 5 teachers & principal

November 09	Climate Change Hazards and Projections	DILG-3 program on LCCAP-LGU (2nd Batch) / (Royal Hotel, Angeles City)	72 persons from various LGUs within Reg. 3 attended
November 11	Climate Change Hazards and Projections	DILG-3 program on LCCAP-LGU (3rd Batch) / (Royal Hotel, Angeles City)	55 persons from various LGUs within Reg. 3 participated
November 13	PRB Post-Flood Report on T. "Lando"	Post Evaluation on Typhoon "Lando" and Awarding ceremony on T. "Lando" operations by OCD-3 / (Epatha Center, SACOP, CSFP)	85 persons from various regional and national agencies were present
November 23	Hydromet Hazards, Weather-Flood Forecasting & Warning System and Climate Outlook	Seminar for community leaders of NHA resettlement projects in Apalit, Minalin & Sto. Tomas Northville villages on DRRM activities in these areas. / (Epatha Center, SACOP, CSFP)	71 participants including several NHA personnel
December 08	El Nino Phenomenon	DRR / CCA Summit of the City of San Jose Del Monte / (Hotel Turista, CSJDM)	170 barangay and LGU officials in attendance
December 16	Updates on T. "Nona" and present condition of PRB	PDRA meeting with RDRRMC-3 / (OCD-3 Conference Room. CSFP)	25 persons from various regional agencies attended
December 18	Effects of Typhoon "Lando" to Pampanga Province and Update on Typhoon "Nona"	Pampanga-PDRRMC program on Disaster Capability Assessment for Barangays with simulation exercises	Around 988 barangay officials from the towns of areas along the Pampanga River
December 22	PRB & PRFFWC Orientation	Field trip visit of Maliwalo H.S., Tarlac City	150 students and 10 teachers

## 2.2 Public information and Briefings (Multi-media)

PRFFWC has been at the center, most of the time, when it comes to regional media-based (Television and Radio) public information and briefing on Hydromet-related issues particularly pertaining to the PRB. The center has been in constant rapport with regional TV and Radio stations especially during times of flood events within the basin. Provision of information to non-media entities such as personalities and other local and regional officials have also been a part of the center's information dissemination activities. There were quite a number of occasions during the year when it comes to info sharing to personalities and media reporting, interviews and briefings:

- Radio guest on the issues on "Climate Change" on the collaborative PIA-3-CLTV Radio program "Talakayan Ngayon" on the regional radio station DWRW 95.1 FM (February 24)
- Interviewed by regional TV CLTV-36 on updates on situations of Dams within the basin (February 26)
- Prerecorded interview on the topic "Weak El Nino in Progress" by the local Pampanga ABS-CBN (March 12)
- Prerecorded TV interview re: Dam status and projected conditions in PRB by CLTV-36 reporter Sarah Maniago (April 21)
- Live phone patch interviews by regional TV and radio programs (CLTV36 & DWRW 95. 1 FM) on dam status and other related information (May 2016)



Some of the live and pre-recorded interviews with regional TV networks: (L) with ABS-CBN Pampanga reporter Ms. Gel Siguig; (Middle and R) with CLTV36 reporter Ms. Sarah Maniago

- Live phone patch interview on the radio program "Alertong Kayanakan Radio Program" (DWRW 95.1 FM) on topics relating to climate change and flooding in the Pampanga province (June 20).
- Prerecorded TV interview re: status of Dams within the Basin by CLTV36 reporter Ms. Maniago for afternoon news reporting (June 30)

- PRESSCON on National Disaster Consciousness Month Celebration covered by various news agencies: CLTV36; ABS-CBN, Pampanga; CNN-Philippines, Pampanga; UNTV (July 06)
- Prerecorded interviews by CLTV36 and ABS-CBN, Pampanga (July 06)
- Accommodated live phone patch interview by CLTV36 re: Pampanga river status in connection with the enhanced SW monsoon over the basin (July 08, 09 and 10)
- Live radio interview during the program “Talakayan Ngayon” in DWRW 95.1 FM on issues relating to the new PSWS and tropical cyclone categories. (July 22)
- Live phone patch interviews during the event Typhoon Lando from Oct 18 to 22: CLTV-36, GVAM 792, DWRW 95.1, Solar News; Pre-recorded interview with DWBL 1242 khz radio station on updates on El Nino and Typhoon Lando
- Briefed and provided information by phone to the following personalities during the event Typhoon Lando: PRC Chairman Dick Gordon, Bulacan Governor Willy Alvarado, DILG Usec. Panadero, NOAH’s Majar Lagmay, Pampanga Governor Lilia Pineda thru PDRRMO-Pampanga Angie Blanco, PDRRMO-Bulacan Liz Mungcal, Calumpit MDRRMO, Hagonoy thru linkages with Rodolfo Santos; OCD-3 ARD Nigel Lontok and its staff.
- Live phone patch interview on regional Radio program Brigada News at 92.7 Mhz on the issues of event Typhoon Lando flooding in the province of Pampanga. (Nov. 05)



Live radio interviews over the radio program “Talakayan Ngayon” at station DWRW 95.1 FM (February 24 and July 22, respectively)



Prerecorded interview by CLTV36 on Basin and Dam Status (June 30) and PRESSCON during the National Disaster Consciousness Month celebration (July 06)



Prerecorded interviews with various reporters of CLTV36 and ABS-CBN on updates and situations during the events Typhoon Lando and effects of Typhoon Nona in the PRB (October and December)

**III. Participation in various events, occasions & other undertakings (meetings, seminars, workshops, conferences, etc.)**

The center maintained its active involvement in many undertakings related primarily to hydrological situations, monitoring, including Hydromet-related information sharing and operational activities of the PRFFWC; in extra-curricular activities considering the limited logistical resources and manpower. There were participations in local, regional, national and even international undertakings, meetings and other similar gatherings which remain as a

major social commitment of the center; providing its technical expertise has benefitted also quite a number of entities who have been, in one way or another, a partner of the center in joint programs and project undertakings.

- Participated in the PAGASA FY 2015 Annual PRA and Planning Conference (January 22; Amihan Conference Room, Science Garden, Q.C.)
- Coordination meeting with ICHARM representatives and Calumpit Municipality officials in the planning of the a workshop on Flood Risk assessment of Calumpit Municipality (January 27; Calumpit, Bulacan)
- Participated in the Competency-Based HR System (February 04 to 06; Amihan Conference Room, Science Garden, Q.C.)
- Participated in the international event entitled **“Expert Forum on DRR in a Changing Climate: Lessons Learned on Lessons Learned”** organized by USAID, WMO, GFDRR, Consortium for Capacity Building, NOAA, and Turkish State Meteorological Service (February 10 to 13; Antalya, Turkey)

(Related link: <http://www.ccb-boulder.org/>)



“Expert Forum on DRR in a Changing Climate: Lessons Learned on Lessons Learned” (February 10 to 13)

Workshop on Flood Contingency Planning with Evidence-based Simulation (February 24)

- Attended the launching of DILG-3 event program entitled **“Oplan Listo”** (February 25; CSFP)
- Assisted and supported ICHARM group in their data/info gathering, survey of target areas particularly Calumpit and Candaba areas as per their researches on Flood Risk Assessment in Calumpit area and Risk-Benefit Assessment for Integrated Flood Management supporting sustainable livelihood in Candaba area. (February 23 to 27; Calumpit and Candaba areas and various national, regional and provincial agencies in NCR and in Region 3)
- Participated in the Annual General Assembly of NRCP (March 11; PICC)
- Participated in the DM Government Center Unified Flag Raising Ceremony led by Region-3 agencies DILG, PNP, NAPOLCOM, BJMP, BFP and PPSC (March 16; NEDA-3 grounds)
- PRFFWC celebration of World Meteorological Organization (WMO) day (March 23; CSFP) – see picture below



- Attended the NWRB-KOICA 2nd Progress Report Meeting on the establishment of the Integrated 3D GIS-based WRM info system for Bulacan and Pampanga Provinces (April 08; Luxent Hotel, Q.C.)
- Participated as regional screening committee member for Region 3 nominees in the Ten Outstanding Students in the Philippines (TOSP) (April 08; CHED-3 Conference Room, CSFP)

- Meeting with Bulacan-PDRRMO on proposed river cross-sectioning at critical bridge crossings within the province of Bulacan, including proposed technical training on hydrographic measurements. (April 13; Malolos, Bulacan)
- Participated, upon invitation request by GIZ on the conduct of program evaluation, as key informant on some line activities of their Environment and Rural Development (EnRD) Programs. (April 15; Makati)
- Participated in the 1st regular meeting of the Regional Development Council-3 (RDC-3) regarding the DM Government Center management committee activities in which PRFFWC is a member and being situated in DMGC. (April 21; NEDA-3 Conference Room, CSFP)
- Assisted PDRRMO-Bulacan in the site survey for possible locations of CCTV cameras for their community-based flood mitigation & management program within the PRB. (May 06)
- Attended the DMGC Unified Flag Raising Ceremony of government agencies led by chairman (May 18; DOLE-3 grounds, CSFP)
- Participated (by one center personnel) in the finals of the DOST Agency-wide Bowling tournament for 2014 (May 27; Starmall, Alabang); PAGASA Men’s Bowling Team won its 4<sup>th</sup> consecutive championship award.
- Participated in the RDRRMC-3 Prevention & Mitigation Thematic Meeting called for by its chairman (May 29; OCD-3 Conference Room, CSFP)

- Participated in the RDRRMC-3 thematic meeting on Recovery and Rehabilitation. (June 17; OCD-3 Conference Room)
- Attended the meeting-presentation of Malolos City LGU on the Potential Measures to Reduce Fluvial and Tidal Floods in the Pampanga Delta as presented by the Malolos City Mayor Natividad (June 19; Club Royale, Malolos City)
- Orientation and tour of the Center to visiting GIZ personnel in connection with their LFEWS program in Vietnam (June 27; 4 GIZ personnel)
- Assisted ICHARM in data / info extraction / collection through focus group discussions with barangay representatives of Bgys. Sta. Lucia and Bulusan in Calumpit, Bulacan; provided inputs in the conduct of their project study “Flood Contingency Planning with evidence-based Simulation” (July 01-02; Calumpit, Bulacan)
- Participated in the ribbon cutting and blessing ceremonies, as per invitation by the MDRRMO officials, of the new MDRRMO Center of Guagua; provided a brief message to guests and participants (July 03; Guagua, Pampanga)



Inauguration of Guagua MDRRMO Center with the Municipal Mayor, OCD-3 Regional Director & the town's MDRRMO staff (July 03)



ICHARM-PAGASA-PRFFWC focused group discussions with Barangay representatives in the Flood Contingency Planning with Evidence-based Simulation (July 01)



Observer and critic in the Earthquake Drill of Bgy. Pulungmasle BDRRMO and Pukungmasle High School (September 11)

- Participated in the kick-off ceremonies of the National Disaster Consciousness Month Celebration for Region 3 and Joint RDRRMC-3 and LDRRMC Full Council Meeting (July 06; SACOP, Pampanga)
- Participated in the DMGC Unified Flag Raising Ceremony hosted by OCD-3 and Philippine National Red Cross Reg. 3 Chapter (July 20; NEDA-3 covered court)
- Participated in the conduct of the CY 2015 Nationwide Simultaneous Earthquake Drill (NSED) within PRFFWC grounds (July 22)
- Attended the DMGC agencies meeting called for by NEDA-3 regarding the Fiber Optic Cable plans of ICTO (July 24; NEDA-3)
- Participated as an observer and critic in the conduct of an Earthquake Drill as an assimilation activity for Bgy. Pulungmasle BDRRMO and Pulungmasle High School, Municipality of Guagua, Pampanga. Event participation was as per invitation by the School Principal and the Local government of Guagua headed by its Mayor and the MDRRMC officials. (September 11; Pulungmasle H.S.; 900 students, teachers, barangay officials and municipal DRRMO officials)
- GMMA-READY activities participated by 1 center personnel in the Writeshop on Technical Reports (September 08-11)
- Attended the DILG-3 meeting on DRR and CCA mainstreaming into local development planning for formation of regional composite team (September 23; Bliss Hotel, CSFP)
- Participated in the meeting regarding preparation for the “LCC-DRR forum” called for by DILG-3 (October 01; DILG-3 office)
- Participated in the NCR-PRSD CMO conference (October 26-27; Amihan conference Room, Science Garden)
- Speaker in the APEC Climate Change Symposium 2015, organized by APCC and hosted by PAGASA (October 02 to 04; Crowne Hotel; 120 persons from various local & international entities attended the event)  
(Related link: <http://www.apcc21.org/ic/apsinfo.do?lang=en&menuId=symposium>)



- Attended the DMGC Mancom and assembly meeting called for by NEDA-3 (November 16; NEDA bldg.)
- Participated in the 6th SHINE Conference hosted by Provincial Government of Bulacan through the PDRRMO; Resource speaker on “SHINE updates” and lead initiator in one area of the school dynamics during the event (November 20; 8 Waves Resort, San Rafael, Bulacan; 360 students, teachers and guests in attendance) *(Related link: <http://bulacanshine.yolasite.com/6th-shine-conf-2015.php>)*
- Participated in the final output presentation of the KOICA-NWRB project “Establishment of an Integrated 3D-GIS based Water Resources Management Information System in the Provinces of Bulacan and Pampanga (December 02; Microtel, UP Technohub)



Participants in the APEC Climate Change Symposium 2015 held at Crowne Hotel (Top left) and a representative of PRFFWC presented a topic entitled “Sharing experiences in the Provision of Weather and Climate-related information to Regional and Local DRRMC’s in the Philippines” in the said event (October 02-04)



The 6<sup>th</sup> SHINE (School Hydrological Information Network) conference is a brainchild of the PRFFWC and initiated by the Provincial Government of Bulacan (November 29)

PRFFWC, PAGASA was awarded a Plaque of Recognition during the DILG-3 Regional Congress (December 03)

- Participated actively as resource persons (3 center personnel) in the meeting organized by the “Alyansa ng Baybay Dagat sa Bulacan at Pampanga” led by the City Mayor of Malolos, Bulacan regarding flood mitigation activities for Bulacan and Pampanga coastal areas (Dec. 03; Macabebe town hall)
- Attended the DILG Regional Congress and accepted a plaque of recognition for the agency (PAGASA), or the center in particular, in its
- unwavering support in the DILG’s programs especially on environment protection, climate change adaptation and disaster resiliency activities. (December 03; Holiday Inn, Clark)

#### IV. Trainings

There were several trainings and enrichment programs that were granted to center personnel during the year:

- Hands-on Training and Technical Assistance for the Interpretation, Preparation or Implementation of Synergized Standard Operating Procedures (SSOP) for Coastal Multi-Hazards Early Warning System (January 29-30 & February 02; Amihan Conference Room, Science Garden, Q.C.)
- Short Course on Urban and Regional Planning (SCURP) sponsored by NEDA-3 (March 16 to 20; UP, Diliman)
- GAD (Gender and Development) Sensitivity Training (November 04, Amihan Conference Room, Science Garden, Q.C.)
- Participated in the Overseas Regional Training Program on Capacity Development for Immediate Access and Effective Utilization of Satellite Information for Disaster Management (September 27 to October 10; Jakarta, Indonesia)
- Participated in the training on “Rainfall-Runoff-Inundation Model” and 1-day Dam Operation Discussion with NIA & NPC. (Nov. 24-27; NIA-UPRIIS, Cabanatuan City)



Short Course on Urban and Regional Planning (SCURP) held in UP-Diliman. (March 16 to 20)



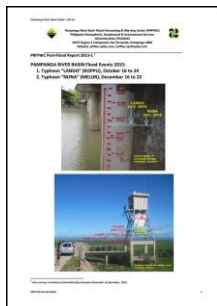
Training Program on Capacity Development for Immediate Access and Effective Utilization of Satellite Information for Disaster Management (September 27 to October 10)

The center has also been a host and a training area for On-the-Job (OJT) trainees from various universities and colleges within the region and even JO (Job Order) items of PAGASA. The training includes understanding and handling of data / information for university / college students, and hydrographic measurements for JO trainees of PAGASA. There were 8 student-OJT for the year, 6 from International School for Technology & Skills Development (ISTSD) and 2 from the St. Nicolas College of Business & Technology; a video presentation for the PRB and PRFFWC was created by the OJTs of ISTSD during their almost 2-months stint in the center. There were 13 project-related JO personnel of PAGASA for the latter training on hydrographic measurements.



(Far left) 13 Job Order trainees of PAGASA for the project DEWS (Deployment of Early Warning Systems) on their first day of training at the PRFFWC on hydrographic measurements. (Left) ISTSD students and on-the-job trainees in the center during their participation in the celebration of WMO day at the PRFFWC (March 23).

**V. Published Reports (In-house), features and other hydrological-related materials**



- Post-Flood Report 2015 on effects of Typhoon Lando and Nona (picture at far left) (<http://prffwc.synthasite.com/resources/PRB%20flood-2015-Lando-Nona.pdf>)
- Proceedings on the 6th School Hydrological Information Network (SHINe) Conference (<http://bulacanshine.yolasite.com/resources/6th%20SHINe%20Conference-Nov2015.pdf>)

**VI. 2015 Recognitions**

Several Certificates of recognitions / appreciations for its uncommitted service to its target communities and participation in DRR activities were received and are as follows:

- Certificate of Appreciation given by Municipality of Calumpit & ICHARM as Resource Speaker in the Workshop on Flood Contingency Planning with Evidence-based Simulation (February 24; Calumpit, Bulacan)
- Certificate of Appreciation given by RFM Foundation in partnership with CHED-3, PIA-3, Jose Tiburcio Canlas Accounting Office and TOSP-3 Alumni Community of Heroes for selflessly sharing time, expertise and integrity as Regional Screening Committee Member for the 2015 Search for Ten Outstanding Students of the Philippines (April 8; CHED-3 office, DMGC, CSFP)
- Certificate of Appreciation by the City Social Welfare & Development Office and in partnership with the City Administrator’s Office of the City of Malolos, Bulacan for active participation in the conduct of Basic Orientation & Disaster Preparedness (June 02; Malolos Sports & Convention Center)
- Certificate of Appreciation by Municipality of Guagua for sharing Insights and Information on Disaster Preparedness (June 25; St. Mary’s Academy Auditorium, Guagua, Pampanga)

- Certificate of Appreciation given by Provincial Government of Pampanga through its PDRRMC for sharing expertise and imparting knowledge in the Multi-Hazard Briefing and Forum in the Preparation for the Incoming Disaster Season with the theme *“Kalamidad ay Malalabanan ng Isang Probinsyang may Kahandaan: Sa bawat tao at bawat bayan, and Kaalaman ay Kaligtasan”* (July 01; Aquino Hall, Capitol Compound, CSFP)
- Certificate of Appreciation given by SM City San Fernando Downtown for sharing expertise during the Green Retail Agenda forum entitled *“Building Corporate Resiliency: Utilizing Current Technology in DRRM”* (July 16; SM City San Fernando Downtown, CSFP)
- Certificate of Appreciation given by Pulungmasle High School for serving as an observer in the School’s Earthquake Drill (Septemebr 11; Pulungmasle High School grounds, Guagua, Pampanga)
- Certificate of Appreciation given by DILG-3 for sharing invaluable expertise during the conduct of the Regional Forum on Mainstreaming Climate Change Adaptation & DRR in Local Development Planning (October 09; Subic Bay Travelers Hotel, Subic Freeport Zone)
- Certificate of Appreciation given by DILG-3 for invaluable support as part of the Regional Composite Team in the conduct of the Regional Forum on Mainstreaming Climate Change Adaptation & DRR in Local Development Planning (October 15; Subic Bay Travelers Hotel, Subic Freeport Zone)
- Certificate of Appreciations given by DILG-3 on 3 occasions for sharing invaluable expertise during the conduct of the Seminar Workshop on the Formulation of Local Climate Change Action Plan (LCCAP) for Local Government Units (October 30, November 11 & 13; Royal Hotel, Angeles City)
- Certificate of Appreciation given by Provincial Government of Bulacan through its PDRRMC for unwavering involvement in the conduct of the 6<sup>th</sup> SHIne Conference 2015 (November 20; 8 Waves Water Park & Hotel, San Rafael, Bulacan)
- Bakas Parangal ng Kabayanihan *“Bayaning Likas”* given by RDRRMC-3 for exemplary contribution during the effects of Typhoon Lando and for continuously supporting the rise and rehabilitation of areas devastated by the said Tropical Cyclone (November 13; Epatha Center, SACOP, CSFP)
- Plaque of *“Thank You”* given by DILG-3 during its regional Congress for the Agency’s unwavering support as an active development partner in the pursuit of Business Friendly and Competitive, Environment Protective, Climate Change Adaptive & Disaster Resilient, Socially Protective and Safe as well as Transparent, Accountable, Participative and Effective (B.E.S.T.) Local Government Units (December 03; Holiday Inn, Clark, Angeles, Pampanga)
- Certificate of Appreciation given by Office of the City Mayor and the CDRRMO of City of San Jose del Monte for sharing precious time, effort, knowledge and technical expertise in the conduct of Disaster Risk Reduction and Climate Change Adaptation (DRRM-CCA) Summit 2015 with the theme *“Kinabukasang Maunlad sa Handang Kumunidad”* (December 08; Hotel Turista, CSJDM, Bulacan)





PRFFWC production 2015-16

Previous annual reports available at the following link:  
<http://prffwc.synthasite.com/annual-reports.php>

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