

**IN-KIND CONTRIBUTION
FROM TYPHOON COMMITTEE MEMBERS**

(Item 16 of Provisional Agenda – In-kind Contribution)

(Submitted by Typhoon Committee Secretariat)

ACTION REQUIRED:

The Committee is invited:

To take note of the In-kind contributions from the Members

APPENDICES:

- 1) DRAFT TEXT FOR INCLUSION AT SESSION REPORT
- 2) SUMMARY AND LIST OF IN-KIND CONTRIBUTION FROM TYPHOON COMMITTEE MEMBERS

APPENDIX A:

DRAFT TEXT FOR INCLUSION IN THE SESSION REPORT

REPORT OF TYPHOON COMMITTEE SECRETARIAT

16.2.1 The Committee expressed appreciation for the in-kind contributions from some Members, namely China; Hong Kong, China; Japan; the Philippines; Republic of Korea; Thailand and USA. The Committee also invited the other Members to report their in-kind contributions, quantifying the corresponding unit of Man-months that have consumed in actions related to TCTF projects. **(Appendix xxx).**

16.2.2 The Committee also expressed the importance of having in-kind contributions with correspondence values.

(Additional text to be added in the light of discussion on this item)

APPENDIX B:

IN-KIND CONTRIBUTION FROM TYPHOON COMMITTEE MEMBERS FOR 2021

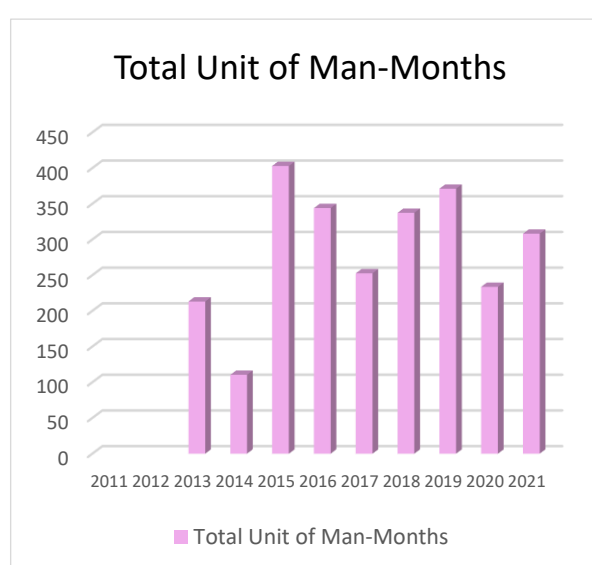
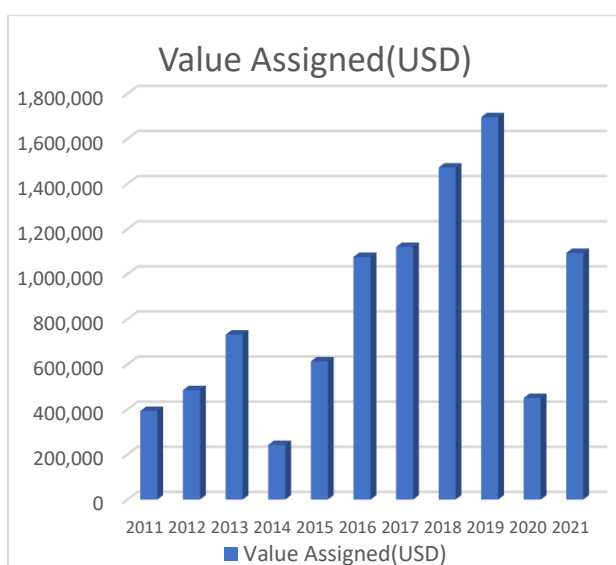
Total In-Kind Contributions for 2021

Total Value Assigned (USD): 1,093,595.00

Total Unit of Man-Months: 308.13

Member	Unit of Man-Months	Value Assigned(USD)	Remarks
China	143.80	340,825.00	
Hong Kong, China	2.45	-	
Japan	39.33	20,000.00	
Philippines	0.59	180.00	
Republic of Korea	101.25	732,590.00	
Thailand	20.00	-	
USA	0.71	-	
Total :	308.13	1,093,595.00	

Annually In-Kind Contributions



In-Kind Contributions for 2021

Member Name: China

Activities Supported	Unit of Man-Months	Value Assigned (USD)	Comments
Publication of Tropical Cyclone Research and Review (Shanghai Typhoon Institute)	24.00	45,600.00	Online submission system installation, printing and delivery expense for quarterly Journal
Tropical Cyclone Ensemble Forecast Information Website (Shanghai Typhoon Institute)	6.00	5,100.00	Replacement and maintenance of the server machine
AOP2 Tropical Cyclone Research (Guangzhou Institute of Tropical and Marine Meteorology)	12.00	-	Tropical cyclone research and numerical modelling
Construction and Maintenance of Tropical Cyclone forecast information website (Guangzhou Institute of Tropical and Marine Meteorology)	2.00	65,800.00	Expenses of website construction and web server replacement and maintenance
Verification of Tropical Cyclone operational forecasting model (Guangzhou Institute of Tropical and Marine Meteorology)	4.00	22,000.00	Objective verification of tropical cyclone operational forecasting model by a third party; developing a verification website for tropical cyclone operational forecasting model
Publication of Tropical Cyclone research and review (Guangzhou Institute of Tropical and Marine Meteorology)	12.00	18,400.00	Fees for online submission and publication of Journal articles and technical documents
Upgrading and Maintenance of Tropical Regional Atmosphere Model (TRAMS) (Guangzhou Institute of Tropical and Marine Meteorology)	12.00	100,000.00	Research and development of model techniques; Upgrading the Tropical Cyclone model; Rent of high performance computers; Maintenance of operational model
Support to attend other activities (Guangzhou Institute of Tropical and Marine Meteorology)	6.00	14,200.00	Reviews and technical reports of performance of Tropical Regional Atmosphere Model(CMA-TRAMS); Hosting a seminar on TC NWP model.
The Fifth International Training Course (virtual) on Tropical Cyclone Monitoring and Forecasting (WMO RTC-Beijing and National Meteorological Center)	6.00	3,850.00	Virtual conference online technical support and training platform technical support (96 participants)
International Training Activities (WMO RTC-Beijing)	25.00	28,425.00	In 2021, RTC-Beijing (WMC-Beijing) held 8 distance training courses in the fields of tropical cyclone monitoring and forecasting, meteorological satellite product application, nowcasting, meteorological observation and short-term climate prediction, trainees from 12 TC Members completed these courses.
International Training Activities (WMO RTC-Nanjing)	12.80	23,450.00	NUIST hosted 5 trainees from the Philippines, 24 from Thailand, 1 from Brunei, and 2 from Hong Kong in 2021 with its three training events with CMA Sponsorship, which covered expenses on registration & certificates, project management, lectures, facility use & maintenance (classroom, scanner, computer, Internet connection, video conference system management, and online learning system management)
WGH-AOP4-OSUFFIM project related activities	10.00	9,000.00	data collection and model buildup for Nanshui Reservoir, organization of the publication of a special issue on the Typhoon Commission Journal "Tropical Cyclone Research and Review (TCRR)"
WGH-AOP5-Impact Assessment of Climate Change on Water Resource Variability in TC Members	12.00	5,000.00	Development and Improvement of RCCC-WBM model and Host the international seminar of AOP5 with the participation of over 60 experts
Total :	143.80	340,825.00	

In-Kind Contributions for 2021

Member Name: Hong Kong, China

Activities Supported	Unit of Man-Months	Value Assigned (USD)	Comments
WGM - Collaborative Discussion (CoDi) Forum on TC Analysis and Forecast (POP2)	0.10		Collaborate with NMC/CMA to conduct trials, development and report progress of CoDi platform.
WGM - Verification of tropical cyclone operational forecast (POP5)	0.10		Provide support to prepare raw data of TC forecast tracks issued by the Hong Kong Observatory for verification
WGM - Radar nowcasting based on RaINS/SWIRLS (AOP4)	0.25		<ul style="list-style-type: none"> - Provide technical support on application of Community SWIRLS of the Hong Kong Observatory - Review progress on development of RaINS / SWIRLS in Malaysian Meteorological Department - Provide support on research development of new nowcasting techniques in RaINS / SWIRLS
WGM - Contribution for the Experiment on Typhoon Intensity Change in Coastal Area (EXOTICCA-II)	0.50		<ul style="list-style-type: none"> - Provide support on collecting aircraft observations and collaborative research projects. - Preparation and attendance of the WMO workshop / project meetings to review the development of EXOTICCA-II and UPDRAFT
WGDRR - Making Education Videos related to DRR (AOP6)	0.50		<ul style="list-style-type: none"> - Provide support on adding English subtitles and voice over on one of the Hong Kong Observatory educational videos "Cool Met Stuff" on the topic related of Fujiwhara Effect for sharing with Typhoon Committee Members to raise public awareness on typhoon disaster. The finalized video had been passed to Typhoon Committee for uploading to website as a WG DRR educational video in Q4 2021. - Provide support in preparing "clean" version of the video to Typhoon Committee Members to add subtitles and voice over in their languages
TRCG - Typhoon Committee Research Fellowship	1.00		<ul style="list-style-type: none"> - Provide support on planning of the project and related logistic matters with TCS - Render support to the awarded fellow from STI / CMA to conduct the research project remote and online review meetings in Q1 and Q2 /2021 - Review research results, study report and draft publication prepared by the fellow
Total :	2.45	-	

In-Kind Contributions for 2021

Member Name: Japan

Activities Supported	Unit of Man-Months	Value Assigned (USD)	Comments
Maintaining the communication platform	1.00	1,300.00	Maintenance of the platform
ESCAP/WMO Typhoon Committee RSMC-Tokyo attachment online training course	2.00	-	RSMC attachment training 2021 RSMC attachment training 2022 (Preparation)
Publication of "Annual Report on the Activities of the RSMC Tokyo - Typhoon Center"	3.00	3,000.00	Edition, coordination and proofreading
Publication of "Technical Review"	2.00	200.00	Coordination and proofreading
Development and maintenance of the JMA Numerical Typhoon Prediction (NTP) website	5.00	-	Coordination, development and maintenance
Update of TOM	1.50	-	Coordination
Development of regional radar network	5.00	15,500.00	Making arrangements for a technical meeting hosted by Japan Lecturing the latest techniques on weather radar in Japan Coordinating the way forward to develop regional radar network Creating a sample regional radar composite map using new Members' domestic radar data Implementing experimental domestic radar composite data exchange
Use of tropical cyclone ensemble forecast in the North-west Pacific region	3.00	-	Development of products using ensemble forecast maintenance of web site.
Enhancement of disaster risk reduction against heavy rain in collaboration of AOP#7 of WGH	2.00	-	Coordination with ICHARM regarding data provision on longer-range forecast Contribution to the ICHARM International Flood Initiative (IFI) e-learning workshop
Enhancing Utilization of Himawari 8/9 Products	1.50	-	Joint development of Himawari-8/9 RDCA products Making arrangements for a technical meeting to be hosted by Japan
Development and maintenance of Storm Surge Watch Scheme	12.00	-	Development of a new storm surge model framework
Preparation & Operation for TCWGH (incl. test connections)	0.83	-	Personnel Expenses, Operation for Webex
Initiatives for AOP6	0.50	-	Personnel Expenses
Total :	39.33	20,000.00	

In-Kind Contributions for 2021

Member Name: Philippines

Activities Supported	Unit of Man-Months	Value Assigned (USD)	Comments
3rd DWAT Workshop (WMO)	0.09	21.00	Promoting new techniques shared by Experts
RA-II and RA-V Information and Consultation Meeting	0.09	20.00	Key decision introduced to Members and facilitate preparation to the Cg-Ext
Hydrological Assembly (WMO)	0.09	20.00	Support to Committee as venue for hydrological recommendations
Expert Mission Wrap-up for AOP 2 & 3 Virtual Meeting	0.14	79.00	Promoting new techniques shared by Experts
Water & Displacement Online Meeting (WMO)	0.09	20.00	Possible hosting of related project
Hydro SOS Meeting (WMO)	0.09	20.00	Possible hosting of related project
Total :	0.59	180.00	

In-Kind Contributions for 2021

Member Name: Republic of Korea

Activities Supported	Unit of Man-Months	Value Assigned (USD)	Comments
[KMA] Development of Typhoon Seasonal Prediction System	12.00	-	Operation and improvement for typhoon seasonal prediction
[NDMI] Hosting the 16th WGDRR Annual Meeting(VC)	3.00	2,800.00	Expenses for the lease of meeting room
[NDMI] Promote International Cooperation on DRR Project	70.25	715,790.00	Construction of Flash Flood Alert System (FFAS) and Automatic Rainfall Warning System (ARWS) in Lao PDR
[HRFCO] Development of the hydrological data quality control system in TC members : Phase II	6.00	5,000.00	Constructing the PC-version (stand-alone) computational system with computing engineers
[HRFCO] Finalization and publication of the technical report for the hydrological data quality control	4.00	4,000.00	Finalizing the context of the technical report with expenses for editing and narrative review by a native speaker
[HRFCO] Modification of the Extreme Flood Forecasting System modules	2.00	2,000.00	Modifying the system's module for application expansion with technical processing with a computing engineer
[HRFCO] Hosting the Virtual meeting of expert mission wrap-up	2.00	1,000.00	Expenses for utilizing a virtual meeting system
[HRFCO] A preliminary research to explore the next AOP projects for TC	2.00	2,000.00	Conducting a literature review, a current status survey and the members' demand analysis regarding WGH's activities
Total :	101.25	732,590.00	

In-Kind Contributions for 2021

Member Name: Thailand

Activities Supported	Unit of Man-Months	Value Assigned (USD)	Comments
TMD supported 6 staff to serve as experts team in Development of regional radar network (AOP3)	12.00		
RID supported staff to serve the information in Application of Hydrological Data Quality Control System in TC Members (AOP2)	4.00		
RID supported staff to serve the information in Enhancement of Flood Forecasting Reliability with Radar Rainfall Data and Stochastic Technique (AOP3)	4.00		
Total :	20.00	-	

* Thai Meteorological Department (TMD)

Royal Irrigation Department (RID)

In-Kind Contributions for 2021

Member Name: USA

Activities Supported	Unit of Man-Months	Value Assigned (USD)	Comments
Expert Team on MHEWS Technical Guidance	0.50	-	Participated on the ET-MTG which is tasked with developing a guide to promote WMO Members to establish their national DRR mechanisms/protocols.
2021 IWS Technical Presentation	0.10	-	Produced and delivered a Technical Presentation for the IWS, Dec 2021
JTT AP-TCRC	0.11	-	Participate in JTT meetings and reviewing / proofreading AP-TCRC agreement documents.
Total :	0.71	-	