

第四屆台菲部長級科技會議



第四屆台菲部長級科技會議出國報告

服務機關: 科技部

姓名職稱: 張部長善政
錢次長宗良
陳司長于高
周司長倩
陳博士禹銘

出國期間: 103 年 08 月 18 日至 103 年 08 月 20 日

報告日期: 103 年 09 月 09 日

一、 目的

繼 100 年 10 月 26 日由前行政院國家科學委員會假台北主辦之第三屆台菲部長級科技會議後，原擬定第四屆會議將由菲律賓科技部(Department of Science and Technology - DOST)於 102 年間辦理。惟 102 年間除發生廣大興案導致台菲交流一度停擺及台菲雙邊關係緊張外，海燕颱風也於 102 年底重創菲律賓導致超過 5000 人死亡等事宜。故第四屆台菲部長級科技會議延至 103 年度辦理。

菲律賓科技部於本(103)年 6 月發邀請信擬定於本(103)年 8 月 19 日於馬尼拉辦理第四屆台菲部長級科技會議，相關行程資料如下：

- (一) 源由: 第四屆台菲部長級科技會議
- (二) 時間: 本(103)年 8 月 19 日
- (三) 地點: 馬尼拉萬豪酒店
- (四) 團員

科技部	隨行專家學者
張部長善政(團長)	台大周仲島教授
錢次長宗良	中央氣象局葉副局長天降
陳司長于高	颱風中心李主任清勝
周司長倩	中央大學許教授樹坤
陳博士禹銘(承辦人)	成大饒教授瑞鈞

- (五) 班機

08 月 18 日 (星期一)	長榮航空(BR 271) 0930 出發：台北(TPE) 台灣桃園國際機場 1140 抵達：馬尼拉(MNL) 馬尼拉尼諾伊國際機場
08 月 20 日 (星期三)	長榮航空(BR 272) 1245 出發：馬尼拉(MNL) 馬尼拉尼諾伊國際機場 1455 抵達：台北(TPE) 台灣桃園國際機場

二、 過程

(一) 8月18日

		
<p>8月18日中午抵達馬尼拉，駐菲律賓代表處王樂生(右)連同菲律賓科技部次長 Fortunato de la Pena(左)前往接機(圖: 馬尼拉機場貴賓室，等候通關)。</p>		
<p>菲律賓科技部次長 de la Pena 於 Resorts World Manila 舉行歡迎張部長午宴。</p>		
		
<p>8月18日下午張部長一行參訪科技部轄下之資通訊技術辦公室(Information and Communication Technology Office - ICTO) 由該辦公室副執行長 Denis F. Villoriente 等官員簡報該辦公室之功能及任務，其中包含介紹菲國針對防範天然災害使用 e 化資料情形。</p>		



全團並參觀該辦公室所運作之 APEC Digital Opportunity Centre (ADOC)實驗室。



全體團員及駐菲律賓代表處同仁於菲律賓大學內合影

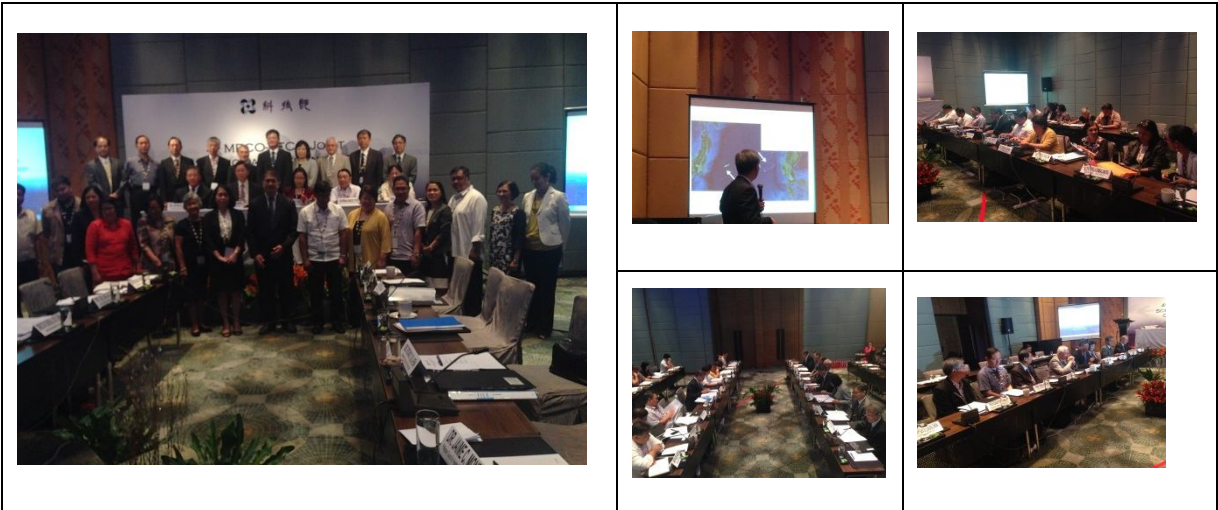


晚間全團出席駐菲律賓代表處王大使樂生所主持之歡迎晚宴。菲律賓科技部次長 de la Pena，馬尼拉經濟文化辦事處主席 Amadeo Perez，理事 Manuel Dimaculangan，菲律賓台商總會會長及台灣同鄉會會長亦出席。

(二) 8月19日



張部長善政於第4屆台菲部長級科技會議上開場致詞



第 4 屆台菲部長級科技會議中台菲雙邊科技部及相關出席人員合影



第 4 屆台菲部長級科技會議會議紀錄簽署儀式



19 日晚宴由菲律賓科技部宴請，結束後由張部長善政贈送禮品給菲國科技部及馬尼拉經濟文化辦事處代表。

(三) 8月20日: 搭機返國

三、 議程 - 第四屆台菲部長級科技會議

4TH MECO-TECO JOINT SCIENCE AND TECHNOLOGY COMMISSION (JSTC)
MEETING
19 August 2014
Manila Marriott Hotel, Philippines

PROGRAM

8:30 am – 09:00 am	Registration
9:00 am – 09:30 am	Opening Ceremony Welcome Remarks Chairman Amadeo Perez MECO Representative Opening Remarks Representative Raymond L.S. Wang TECO Representative Messages The Honorable Engr. Mario G. Montejo <i>Secretary, Department of Science and Technology</i> The Honorable Dr. San-Cheng Chang <i>Minister, Ministry of Science and Technology</i> Photo Session
09:30 am – 09:45 am	Coffee break
4th Joint S&T Commission Meeting	
09:45 am – 11:45 am	Introduction of the Members of Delegation
	I. 2013 MECO-TECO Joint Research Projects (JRP) II. Proposed Timelines for the Call for Proposals for 2015 JRP

	<p>III. Sandwich Scholarship Program</p> <p>IV. Presentation on the Training Project between Central Weather Bureau (CWB) and PAGASA</p> <p>Dr. Tien-Chiang Yeh Deputy Director Central Weather Bureau</p> <p>V. Report on the Status/Updates of the Basco Radar Project Proposal</p> <p>Dr. Vicente B. Malano Administrator Philippine Atmospheric, Geophysical and Astronomical Services Administration, PAGASA-DOST</p>
11:45 am – 12:00 am	Open Forum
12:00 am – 2:00 pm	Lunch
2:00 pm – 3:00 pm	<p>VI. Presentation on the Integrated Geodynamics Program involving Research Vessel OR5</p> <p>Professor Shu-kun Hsu National Central University, Taiwan</p>
	Open Forum
	<p>VII. Presentation on the Proposed Establishment of the Ocean, Earthquake and Typhoon (OET) Technical Working Group</p> <p>Dr. Ben Jong-Dao Jou Professor National Taiwan University</p>
	Open Forum
3:00 pm - 4:00 pm	Break/ Preparation of the 4 th JSTC Record of Discussion
4:00 pm – 5:00 pm	<p>Review and Signing of the Record of Discussion by</p> <p>Chairman Amadeo Perez MECO; and Representative Raymond L.S. Wang TECO</p> <p>To Witness Engr. Mario G. Montejo, DOST And Dr. San-Cheng Chang, MOST</p>

四、 心得與建議

第四屆台菲部長級科技會議是科技部從本(103)年 3 月 3 日轉型後第一次以科技部的名義參加的台菲部長級會議，台菲關係也繼廣大興案後由張部長善政率團訪菲開始活絡以往的雙邊合諧氣氛。美中不足的部分是第 4 屆部長級科技會議前 3 天菲律賓科技部長 Mario G. Montejo 之母親突然過世，使菲律賓科技部派兩位次長協助會議之進行，Montejo 部長也於 8 月 20 日其母喪禮告一段落後安排與張部長早餐會議，除親自表達歉意外，也針對台菲雙邊合作的議題交換意見。第四屆台菲部長級科技會議除我方新提出成立 VOTE TWG 之議題外，主要延續前第三屆台菲部長級會議之議題，結論精簡如下，完整會議記錄如附件。

(一) 2013 年的台菲雙邊計畫繼截止收件後共有 8 件計畫成立 (雙邊計畫資料如附件一)。國科會部分已針對 8 件計畫完成審查，菲律賓因廣大興案導致延誤審查及延誤辦理雙邊會議，直至 2014 年 2 月菲律賓科技部才透過次長來信告知通過 2 件計畫，為避免持續延誤雙邊已經先行辦理核定此兩件計畫並同意將執行起始日訂為 2014 年 4 月 1 日起，並於第 4 屆台菲部長級科技會議重申通過此兩件計畫。

- Development of Nano Anti-microorganism Agents Using Glycolipid Biosurfactants Derived from Macroalgal Feedstock Bioconversion
- Identification of the Molecular Productivity Markers and the Signs of Austronesian Migration Based on the Phylogeny Study between Taiwan and Philippine Native Pigs

(二) 另針對台菲雙邊科技合作公開徵求計畫書之規劃，繼 103 年廣大興案後一度停擺後，台菲於部長級會議中達成共識重啟合作，相關時程如下：

- | | |
|--------------|-------------------|
| • 公開徵求計畫書之日期 | 2014 年 09 月 01 日 |
| • 截止收件日期 | 2014 年 12 月 01 日 |
| • 計畫起始日期 | 2015 年 05 月 01 日起 |

並訂定台菲雙邊優先推動領域為：

- Genomics, Nanotechnology, and Biotechnology for Agriculture
- *Omics* for personalized medicine
- Volcanos, Ocean, Typhoon, and Earthquake
- Climate Change and Environment
- Use of sensors towards Smart Cities
 - Intelligent transport system
 - Smart buildings
- Road condition monitoring and digital health for senior citizens

(三) 有關台菲三明治計畫菲律賓科技部所推薦之 5 位碩士生及 2 位博士生，除其中一位博士生 Mr. John Christopher Sia 放棄台菲三明治計畫，另一位博士生因為台灣指導教授即將退休，故經本部審查評估後辦理補助 4 位菲籍碩士生來台研習。雙邊並同意繼續推動台菲三明治計畫。

(四) 有關巴丹島雷達計畫站乙案，繼菲律賓科技部長來信說明菲方將自購並設置雷達後，菲律賓氣象局表示：確認目前在菲方所規劃之雷達網連中將設置一顆雷達於巴丹島，經正常雷達採購程序約 18 個月及招標程序，從本(102)年 11 月開始陸續就會有零組網連件運抵菲律賓開始組裝設置，菲律賓氣象局表示巴丹島雷達的硬體已經完成建置，惟目前尚無法從巴丹島雷達將氣象數據傳至菲律賓氣象局，資料傳輸的問題目前正由工程師想辦法解決中，目前預估會在 2014 年 9 月 6 日解決這個問題，惟目前資料傳輸只限從巴丹島傳至菲律賓氣象局，至於透過網路傳至我國中央氣象局這一段，雙邊同意由兩國氣象局討論辦理方式後推動。

(五) 由我國提案並於會議中通過成立台菲 VOTE TWG (Volcanos, Ocean, Typhoon and Earthquake Technical Working Group)。此技術小組將群組化台菲間有關火山、地震、海洋及颱風之相關單位及專家學者，共同研議台菲間於防止天然災害應優先推動之計畫，共同抵制及防禦天然災害之侵襲。透過 VOTE TWG 之成立未來我國海洋船需駛入菲律賓海域內進

行研究時，菲律賓科技部及馬尼拉經濟文化辦事處將協調菲律賓內部協助獲得通關許可，加強台菲兩國因地緣關係所延伸出來的國際合作關係。

五、 附件: 會議記錄



**4TH MECO-TECO JOINT SCIENCE AND TECHNOLOGY
COMMISSION (JSTC) MEETING**

19 August 2014

Manila Marriott Hotel, Philippines

SUMMARY RECORD OF DISCUSSION

The 4th MECO-TECO Joint Science and Technology Commission Meeting was held on 19 August 2014 at the Manila Marriott Hotel, Philippines. It was jointly presided by the Philippines' Department of Science and Technology (DOST) and represented by Undersecretary Amelia P. Guevara and Taiwan's Ministry of Science and Technology (MOST) Minister San-Cheng Chang. The list of Delegations of the Philippines and Taiwan is attached as Annexes 1 and 2, respectively.

Opening Ceremony

Chairman Amadeo R. Perez Jr., MECO, delivered the Welcome Remarks underscoring the on-going projects that serve to strengthen the relations between the Taiwanese and Filipino scientists such as the Joint Research Program, Sandwich Program, Integrated Geodynamics Program, Basco Radar Project and the new initiative on the establishment of Ocean, Earthquake and Typhoon Working Group.

TECO Representative Raymond L.S. Wang delivered his Opening Remarks expressing satisfaction on the continuing strong cooperation between the two sides that yield mutually beneficial results citing the DOTSTAR Project, Sandwich Scholarship Program among others. As he is leaving the Philippines for another diplomatic tour of duty in September, he commended the good working experience he had with the Philippine Government.

In his Opening Remarks, MECO Representative Antonio I. Basilio noted that this is the first meeting of the JSTC after the elevation of the NSC to MOST which indicates the recognition of the people of Taiwan on the role of S&T in improving their lives. He mentioned the different joint efforts of both sides under the JSTC framework that produced high-quality joint projects, donation of equipment, capacity building and scholarship

programs including disaster preparedness through the proposed establishment of the OET Technical Working Group. He emphasized the significance of JSTC not only in Science and Technology but as an affirmation of the existing good relations between both sides that transcends political dimension.

DOST Secretary Mario G. Montejo, who was not able to attend was represented by Undersecretary Amelia P. Guevara who read the Secretary's message. In her speech, she highlighted the fact that while the Philippines and Taiwan have a long standing friendship and cooperation, there are still other avenues to explore and other modes of cooperation such as exchange of experts in fields of mutual interest, the holding of joint conferences and lectures as a means of sharing of information and exchanging of views among experts in their fields. As parting words, Secretary Montejo encouraged the body to find commonalities of interests and jointly find science-based solutions for the benefit of our people.

MOST Minister San-Cheng Chang acknowledged the efforts of all the Parties in the joint cooperation and assured the Body of the support from MOST. He stressed however, that Philippines and Taiwan have many features in common not only in S&T but also in social and human studies and encouraged the Body to come up with more topics for cooperation.

Adoption of the Agenda

The Agenda was adopted by the Commission without revision.

Agenda Item 1- 2013 MECO-TECO Joint Research Projects (JRP)

From the total of eight (8) proposals received by both Sides for the 2013 Call for MECO-TECO Joint Research Projects, two (2) were jointly approved by DOST and MOST. Funding for the following approved projects started this April 2014:

1. *Identification of the Molecular Productivity Markers and the Signs of Austronesian Migration based on the Phylogeny Study between Taiwan and Philippine Native Pigs* (UP Los Baños and National Taiwan University); and,

Dr. Rita Laude of UP Los Baños gave updates on the three-year project which started in April 2014. The project focuses on the three (3) native genetic groups based on phenotype from Quezon, Marinduque and Kalinga. Molecular markers shall be identified for two (2) productivity traits, namely: litter size born alive and meat quality. DNA extracted using the protocol will be further validated using the 15 out of 19 microsatellite markers found by the National Taiwan University counterpart to show polymorphism. Collection of sample tissue has been started in Kalinga and Quezon Province.

2. *Development of Nano Anti-microorganism Agents Using Glycolipid Biosurfactants Derived from Macroalgal Feedstock Conversion* (University of San Carlos and Fu-Jen Catholic University);

Discussion was held with delegates from the Fu-Jen Catholic University last June 2014 to finalize experimental procedures and the signing of the MOA including patent ownership. Three (3) glycolipid extracts are currently being characterized and soon be clinically evaluated. These strains will be molecularly identified and mass-produced for further analyses.

There is one project which was approved in 2012 and carried over in 2013 which is the *“Ecological, Biological and Social Surveillance of Natural Bodies of Water and Man-made Containers for Aedes Mosquitoes, Vector of Dengue Hemorrhagic Fever between a Highly Urban City and Rural Province in the Philippines”*.

Agenda Item 2 – Proposed Timelines for the Call for Proposals for 2015 Joint Research Projects

Both Sides agreed on the new timelines for the Call for Proposals for 2015 as follows:

Call for Proposals: 01 September 2014

Application Deadline: 01 December 2014 (last day for submitting proposal)

Review of proposal: should be completed by 31 March 2015

Project Implementation: 01 May 2015

Both sides agreed on the following priority areas for research, to wit: (1) Genomics, Nanotechnology, and Biotechnology for Agriculture, (2) *Omic*s for Personalized Medicine, (3) Volcano, Ocean, Typhoon, and Earthquake, (4) Climate Change and Environment, and (5) Use of Sensors towards Smart Cities (intelligent transport system, smart buildings, road condition monitoring and digital health for senior citizens)

Agenda Item 3 – MECO-TECO Sandwich Scholarship Program (SSP)

The DOST updated the MOST that out of seven (7) approved scholars, only four (4) scholars will push through with the grant, namely: Krisan M. Luis (MS Chemistry), Ian Niel B. Dela Cruz (MS Biology), Leocris S. Batucan, Jr. (MS Biology) and Janronel C. Pomicpic (MS Biomedical Engineering). Mr. Luis is already starting his research in Taiwan since January 2014 while the others are expected to depart during the third or fourth quarter of this year. The two (2) PhD scholars, Ms. Petronio and Mr. Sia, withdrew their scholarship grant due to academic reasons and another one (1) was not approved because the supposed host professor is retiring.

As agreed during the 3rd JSTC Meeting, NSC (now MOST) will allot a total of 20 slots per year for DOST. The call to be made twice a year, however, if all the 20 slots are filled in at the first call, the second call will no longer be initiated. The NSC (now MOST) will consider applications from the field of Engineering and Biological Sciences in addition to the Natural Sciences.

For the funding mechanism, the **DOST** will provide (1) one-time economy class round trip airfare (Manila – Taipei, vice versa) and health insurance for the duration of the Sandwich Program while the **MOST** will provide (1) NT\$15,000/month stipend for Masters Program, (2) NT\$25,000/month stipend for PhD Program and (3) academic adviser to provide accident insurance and assistance in looking for a suitable accommodation for the student (usually within the university dormitory)

It was raised by DOST that the monthly stipend being provided to the scholars include accommodation and laboratory expenses. It was clarified by MOST, that currently, laboratory expenses are not included in the monthly allowance both for Masters and PhD scholars. Applicants shall undertake to look for their host professor in Taiwan. They will be asked to write a short proposal with contact details and research interest

Concerns were raised by the Philippines Side on the problems encountered by some Filipino scholars in terms of visa (TECO does not issue student visa, hence the tourist visa will have to be renewed every three months), finding of suitable accommodation, and in some instances the proposed research topic is being changed by the host professor. It was agreed that the Taiwan Side shall retain the 20 scholarship slots allotment and will look into their other international programs to check the amount of stipend being provided for foreign scholars. It also agreed to look into the issue of visa issuance for foreign students.

Agenda Item 4 – Presentation on the Training Project between Taipei’s Central Weather Bureau (CWB) and PAGASA - Summary of the Probabilistic Quantitative Precipitation Forecasting (PQPF) Training Course

Dr. Tien-Chiang Yeh, Deputy Director General of CWB, reported on the PQPF Training Course which was conducted in three (3) phases. Phase 1 is the Planning Workshop held last 16-21 March 2014 in PAGASA. The 2nd phase was the conduct of the 5-day training on PQPF Training Course held on 19-26 April 2014 in PAGASA and attended by twenty one (21) PAGASA personnel. The 3rd phase was the Follow-up of the Training Course conducted last 17-20 June 2014.

The Philippines agreed to host a Symposium jointly with MOST on Rainfall and Landslide Threshold Values.

Agenda Item 5 – Report on the Status/Updates of the Basco Radar Project Proposal of Taiwan

Dr. Vicente B. Malano of PAGASA gave updates on the Basco Radar, Dual Polarization C-Band Doppler Weather Radar (Co-axial Magnetron) Hydromet Class. He informed that the equipment was already installed but not fully operational due to lack of communication facility (V-SAT). The radar is already running but cannot transmit data to and from the PAGASA headquarters; hence, is being used only for issuing forecast within Basco. The communication facility (V-SAT) is expected to be installed by September 2014. Radar data transfer will commence by September 2014. If installed, the next issue will be the

transmission of data from Basco, Batanes – PAGASA, Manila to the CWB, Taiwan. It was agreed that the mechanics of the Memorandum of Understanding (MOU) for the transmission of data shall be discussed between CWB and PAGASA.

The possible coverage for the MOU: (1) Capacity building training on: system administration, database management system, data assimilation system, technical application through immersion at CWB, (2) Provision of Basco Radar Data to CWB in near real-time basis through a File Transfer Protocol services account to be provided by PAGASA-DOST to CWB, (3) Development and provision of a decoder for PAGASA-DOST in Basco, Aparri, Baguio and Baler and shall provide conversion to the Quantitative Precipitation Estimation and Segregation using Multiple Sensors (QPESUMS) format, in simple binary, for other uses of the radar information, and (4) Development of a Quality Control algorithm or system for the data from the four mentioned radar stations to come up with Quantitative Precipitation Estimation based on MOSAIC/OPESUMS format.

On the query raised whether the transmission of data include seismic data, PHIVOLCS responded that there is an existing collaboration through exchange of seismic data with Taiwan's Academia Sinica. Taiwan Side agreed to discuss the matter with Academia Sinica.

Agenda Item 6 –Presentation on the Integrated Geodynamics Program involving Research Vessel R/V OR5 (Prof. Shu-Kun Hsu, National Central University, Taiwan)

The Integrated Geodynamics Program under the MECO-TECO S&T Cooperation jointly implemented by the DOST and MOST conducted a Marine Geophysical Survey along Manila Trench Region aboard R/V Ocean Researcher 5 (R/V OR5) from June 23 to July 13, 2014. The data collected during the cruise will be crucial in identifying geologic hazards that may be related to the ongoing subduction along the Manila Trench. In the coming years, more cruises using Taiwanese research vessels and on-land geological and geophysical studies are necessary to be conducted in order to have a more comprehensive understanding of the geodynamic problems around the Philippine mobile belt, especially the subduction great earthquakes and tsunamis.

Agenda Item 7 – Presentation on the Proposed Cooperation with Ocean, Earthquake, and Typhoon Technical Working Groups (OET TWG) under Joint Science and Technology Commission (JSTC) Ministerial Meeting Framework (Dr. Ben Jong-Dao Jou, National Taiwan University)

The proposed Commission will serve as a platform for bilateral cooperation on ocean, earthquake and typhoon related areas of scientific research and development and capacity-building activities. During the Preparatory Meeting for the JSTC held last 22 July 2014, it was agreed that the term 'Commission' be replaced with "Technical Working Group" to avoid misinterpretation that the OET Commission is a separate commission from the JSTC.

The Body agreed to include 'Volcano' on the proposed OET Technical Working Group (TWG), hence now called Volcano, Ocean, Typhoon and Earthquake (VOTE) TWG. The

functions of the TWG include: (1) evaluate and prioritize scientific research and technology development within the scope of Volcano, Ocean, Earthquake and Typhoon between Taiwan and the Philippines; (2) cluster relevant institutes and organization in the field of VOTE; and, (3) serve as consultant/advisor to the MECO-TECO JSTC and raise areas of concern, provide recommendation, list priorities that need to be addressed within the scope of VOTE between the Parties.

The VOTE TWG members shall be composed of not more than six (6) nominated experts from each Side. The hosting of meetings as well as the designation of Chairs and Co-Chairs will be done alternately. For the funding concern, it was agreed that there will be no cross border funding, hence each Side will fund its own researchers.

The Joint S&T Commission Meeting approved the establishment of the VOTE Technical Working Group. DOST and MOST was designated as the Executive Agencies.

LIST OF DELEGATION

Philippine Delegation

1. Prof. Fortunato T. de la Peña
Undersecretary, Department of Science and Technology
2. Dr. Amelia P. Guevara
Undersecretary, Department of Science and Technology
3. Dr. Rowena Cristina L. Guevara
Director, PCIEERD-DOST
4. Dr. Vicente B. Malano
Administrator, PAGASA
5. Dr. Renato U. Solidum, Jr.
Director, PHIVOLCS
6. Dr. Carla B. Dimalanta
Professor, NIGS
7. Ms. Elenita M. Leus
ISRO IV, ITCU-DOST
8. Ms. Maridon O. Sahagun
Division Chief, SPD-DOST
9. Ma. Daisy A. Demoni
Supv. SRS, SEI-DOST
10. Dr. Flaviana D. Hilario
Acting Deputy Minister, PAGASA-DOST
11. Dr. Leah J. Buendia
Chief SRS, PCAARRD

12. Chairman Amadeo R. Perez Jr
Manila Economic and Cultural Office
13. Ambassador Antonio I. Basilio
Representative, Manila Economic and Cultural Office
14. Mr. Arthur A. Abiera Jr
Manila Economic and Cultural Office
15. Ms. Catrina L. Naguiat
Manila Economic and Cultural Office
16. Dr. Rita Laude
Project Proponent
17. Dr. Raul John Geraldino
Project Proponent

LIST OF DELEGATION

Taiwanese Delegation

1. San-Cheng Chang
Minister, Ministry of Science and Technology
2. Chung-Liang Chien
Deputy Minister, Ministry of Science and Technology
3. Chien Chou
Director General, Department of International Cooperation and Science Education
4. Yu-Kao Chen
Director General, Department of Natural Science and Sustainable Development
5. Ben Jong-Dao Jou
Professor, National Taiwan University
6. Shu-Kun Hsu
Professor, National Central University
7. Ruey-Juin Rau
Professor, National Cheng-Kung University
8. Cheng-Shang Lee
Director General, Taiwan Typhoon and Flood Research Institute (NARL)
9. Tien-Chiang Yeh
Deputy Director General, Central Weather Bureau
10. Louis Chen
Program Director, Ministry of Science and Technology
11. Ambassador Raymond Wang

Representative, Taipei Economic and Cultural Office

12. Robert Leng
Director, Taipei Economic and Cultural Office
13. Andrew Lin
Taipei Economic and Cultural Office
14. Josephine Hsun
Assistant to the Representative, TECO

Volcano, Ocean, Typhoon and Earthquake Technical Working Group (VOTE TWG)

under

The MECO-TECO Joint Science and Technology Framework

Terms of Reference

ACKNOWLEDGING the importance of Volcano, Ocean, Typhoon, and Earthquake related scientific research and technology development cooperation are the core values of both Taiwan and The Philippines;

DESIRING to promote further collaboration for cross-field research and activities, and enhance the capacity-building process for both Countries; and

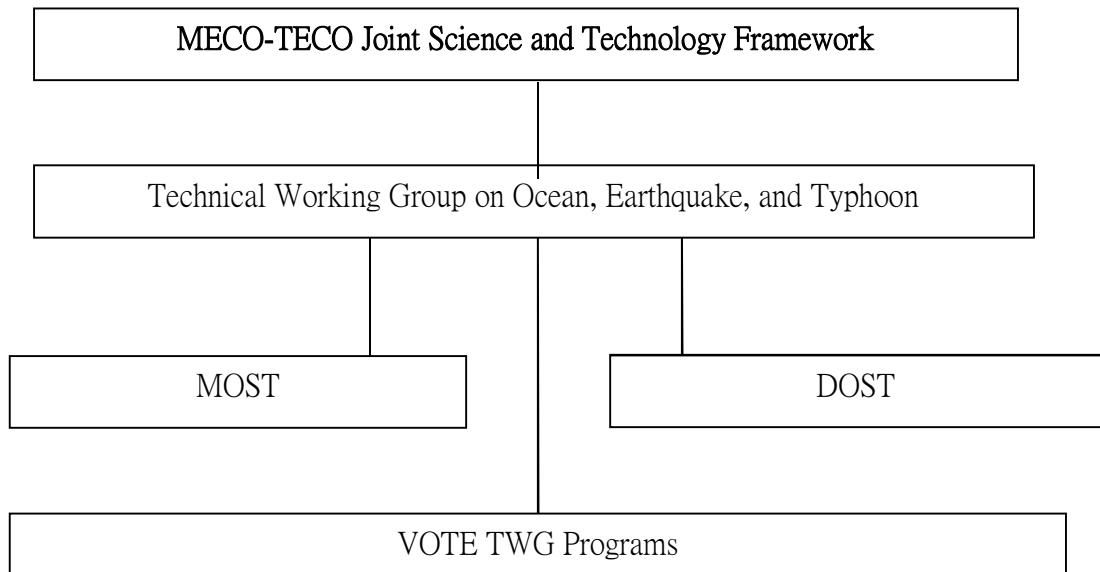
AGREEING to set up a cooperation framework for training, research development, information/data sharing and other related issues, in order to enhance closer communication and cooperation between both Countries.

Henceforth, both Taiwan and the Philippines agreed to set up a **Volcano, Ocean, Typhoon, and Earthquake Technical Working Group (VOTE TWG)** under the MECO-TECO Joint Science and Technology Framework.

1. The **VOTE TWG** shall include the following functions:
 - (1) Evaluate and prioritize scientific research and technology development within the scope of Volcano, Ocean, Typhoon and Earthquake fields between Taiwan and the Philippines.
 - (2) Cluster relevant institutes and organization in the field of Volcano, Ocean, Typhoon and Earthquake between the two countries to enhance institutional cooperation.
 - (3) Serve as consultant/advisor to the MECO-TECO Joint Science and Technology Framework and raise areas of concerns, provide recommendation, list priorities that need to be addressed within the scope of Volcano, Ocean, Typhoon and Earthquake (include geosciences/geohazards) fields, between the two countries.

2. The Volcano, Ocean, Typhoon and Earthquake Technical Working Group (**VOTE TWG**) shall have following structure:
 - (1) Working Group Member: the Technical Working Group shall compose of experts nominated by both the Department of Science and Technology (DOST) of the Philippines, and the Ministry of Science and Technology (MOST) of Taiwan. No more than 6 experts from each country;
 - (2) Executive Agency: One executive agency from each country shall be determined to serve as the main contact window for liaison and coordinating the VOTE TWG.

- (3) A chair (usually within the Executive Agency) among the nominated members from each country should be determined to serve as the coordinator for the VOTE TWG activity.
- (4) The VOTE TWG shall meet at least once a year (venue can be alternated between the Taiwan and the Philippines) to facilitate discussion, exchange ideas, identify areas of mutual concerns, identify prioritize project for execution etc.
- (5) The VOTE TWG should report findings and/or provide recommendation and present at the MECO-TECO Joint Science and Technology Meeting.



3. The Department of Science and Technology (DOST) and the Ministry of the Science and Technology (MOST) agree to finance the operation of the VOTE TWG, by means provide travelling funds of VOTE TWG members and/or hosting the VOTE TWG meeting (at least once per year).
4. The present Terms of Reference shall come into force upon approval in the 4th MECO-TECO Joint Science and Technology Meeting in Manila on the 19th of August 2014.