

馬雅文明古國—宏都拉斯

Home to Ancient Mayan Civilization—Honduras

2011年提出「運用遙測及地理資訊系統(RS/GIS)於宏都拉斯進行自然資源保護及災害監測合作計畫」，希望藉由衛星影像及遙測技術，以快速掌握環境變化之趨勢，以作為永續環境之依據。

The project Satellite Monitoring of Forest, Natural Resources and Mitigation of Natural Disasters in Honduras using GIS and RS was proposed in 2011. With the help of satellite and telemetry technology, the government was able to understand trends in environmental change and use that understanding as a basis for sustainable environmental development.

紅樹林監測 Mangroves Monitoring

隨著科技進步，遙感技術在紅樹林濕地被廣泛地應用，可以更充份精準瞭解紅樹林分佈面積、位置、健康狀況、組成結構及動態化等，有助於溼地保育的推動。

Following progress in science and technology, RS technology has been widely applied to the observation of mangrove wetlands. From it, one can learn the distribution, location, health condition, composition and dynamics of mangroves more accurately. This is favorable for wetland conservation.



森林野火監測 Forest Wild Fire Monitoring

透過衛星影像監測森林大火影響之面積，以掌握林地資源之變遷現況。

The government can use satellite images to monitor the affected areas and learn about changes in forest resources.



松樹蟲害監測 Pine Pests Monitoring

透過衛星影像協助宏都拉斯政府進行病蟲害判釋工作，能準確標示出受蟲害影響地區，透過長期監測紀錄亦能掌握蟲害蔓延方向，利於宏都拉斯進行後續工作，減緩蟲害疫情帶來之影響。

Taiwan has assisted Honduras in conducting satellite imagery interpretations and providing clear demarcations of the infested areas. Long-term monitoring also helps Honduras see the direction of the outbreak, which is helpful when the government formulates follow-up measures to mitigate the impact brought about by pest infestations.



..... 展覽時間

臺北場

107.06.26~107.08.05

國立臺灣科學教育館

7樓西側特展廳



臺中場

107.09.18~107.11.11

臺中市政府臺灣大道市政大樓

文心樓一樓中庭



高雄場

107.12.14~108.04.07

國立科學工藝博物館

2樓第三特展廳



科技援外成果展

Science & Technology in International Cooperation - An Exhibition of Achievements

- 主辦單位: 中華民國外交部 (Ministry of Foreign Affairs, Republic of China (Taiwan)), MOST 科技部 (Ministry of Science and Technology)
- 合辦單位: 教育部 (Ministry of Education), 臺中市政府 (Taichung City Government)
- 承辦單位: 國立科學工藝博物館 (National Science and Technology Museum)
- 協辦單位: CDF 財團法人國際合作發展基金會 (International Cooperation and Development Fund), NSPO 國家太空中心 (National Space Organization), 國立中央大學太空及遙測研究中心 (Center for Space and Remote Sensing Research, National Central University), 國立臺灣科學教育館 (National Taiwan Science Education Center), CATO 中美洲經貿辦事處 (Central America Trade Office)



愛的緣起

Motivated by Love

外交部與科技部合作辦理的科技援外成果展，緣起於我國自2009年起執行「中美洲地理資訊系統(GIS)應用能力提升計畫」，運用我福衛二號衛星系統及我先進的太空遙測技術，協助友邦尼加拉瓜、宏都拉斯與薩爾瓦多有效掌握土地利用及國土變遷情形，以及推動環境監測、森林保護、國土利用管理、緊急災害防治及監測，回應中美洲國家遭受全球暖化及氣候變遷的需求，並落實聯合國永續發展目標SDGs (Sustainable Development Goals) — 促進永續農業、居住安全、緊急因應環境變遷、維護森林與生物多樣性等發展目標，成為我國執行科技外交的良好典範。

今年，為彰顯科技援外的豐富成果，特規劃辦理本次特展，期讓國人透過有趣互動展覽體驗感受並支持我國「愛與智慧傳遞」的政策。

Scientific and Technological Aid to Foreign Countries Results Exhibition, an event co-organized by the Ministry of Foreign Affairs and the Ministry of Science and Technology, began in the project Capability Enhancement in Using Geographic Information Systems (GIS) in Central America, which commenced in 2009. The Ministry of Foreign Affairs used satellite images provided by Formosat-2 and remote telemetry technology to help Nicaragua, El Salvador and Honduras, Taiwan's Central American allies, to understand land use and land change. Taiwan also pushed for environmental monitoring, forest protection, land use management, disaster prevention and monitoring in response to calls from Central American countries suffering from the consequences of global warming and climate change. It was also an attempt to fulfill the 2030 Sustainable Development Goals (SDGs) proposed by the United Nations, namely, sustainable agriculture, safe living environment, response to environmental change, forest protection, and biodiversity. This project has become a good example of Taiwan's science and technology diplomacy.

This year, to demonstrate the many results of scientific and technological aid, the Ministry of Foreign Affairs has organized this special interactive exhibition in the hope that Taiwanese citizens can empathize with and support the policy of "Putting Love and Wisdom to Practical Use."



Space technology is a demonstration of a country's strength. It improves not only a country's competitiveness but also its citizens' wellbeing. Over years of hard work, FORMOSA-5 and FORMOSA-7 will continue their tasks in 2017. Taiwan has built a solid base of technologies and experience in developing systems and infrastructure for space technology. "Steadfast diplomacy" and "mutual assistance for mutual benefits" are currently the core diplomatic strategies of Taiwan. Following the economic progress and the technological advancement of Taiwan, the content and the tools of international cooperation programs have become diverse and professionalized. Taiwan has striven to integrate the outstanding technological advantages and successful experiences in the technology industry to carry out a "science and technology diplomacy" where international cooperative development plans are customized according to the needs of developing countries.

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地理資訊系統GIS

Geographic Information System

地理資訊系統(Geographic Information System), 簡稱GIS, 是協助人們處理複雜地表事物的方法, 透過電腦科技增加處理的速度和效能, 也提升我們分析地表事物的能力。針對緊急性天然災害, 諸如颶風、水災、旱災、森林火災、火山爆發、湖嘯及地震, 我國皆可於第一時間提供相關區域即時衛星影像及衛星圖片資料, 以評估受災範圍及採取合適救災措施。

The Geographic Information System (GIS) is a system that helps people handle complicated ground-based matters. It enhances processing speed and efficiency through computer technologies and improves analytical abilities. With respect to pressing natural disasters, such as floods, droughts, forest fires, volcanic eruptions and earthquakes, Taiwan can immediately provide satellite pictures and images of the impacted areas for the affected countries to assess the affected scope and take proper relief measures.



衛星科技強力後盾

A Strong Backing in Satellite Technology

太空科技是國力象徵的展現, 不僅提升國家競爭力, 並增進民生福祉。歷經多年的努力, 我國已成功執行「福爾摩沙衛星一號」(福衛一號)、「福爾摩沙衛星二號」(福衛二號)及「福爾摩沙衛星三號」(福衛三號)等3項衛星計畫, 「福爾摩沙衛星五號」(福衛五號)及「福爾摩沙衛星七號」(福衛七號)於2017年起, 亦將分別接續福衛二號和福衛三號的任務。我國太空科技發展體系及基礎設施已累積紮實的技術與經驗, 「踏實外交, 互惠互助」則是我國當前外交的核心策略, 隨著時代變遷及臺灣經濟發展與科技進步, 執行國際合作計畫的內容與工具也日趨專業多元, 致力於針對不同開發中國家需求, 量身打造不同的國際合作發展計畫落實「科技外交」願景。



火山與湖之國—尼加拉瓜

A Country of Volcanoes and Lakes—Nicaragua

2009年開始推動執行「運用地理資訊系統(GIS)加強尼加拉瓜環境永續合作計畫」視為GIS 科技外交之先鋒計畫。

In 2009, the Ministry of Foreign Affairs initiated the project Using Geographic Information Systems to Enhance Environmental Sustainable Development in Nicaragua (GIS).



火山監測 Volcano Monitoring

利用衛星影像具有大範圍、週期性與多波段等觀測特性, 協助尼加拉瓜政府進行火山溫度監測工作, 除節省工作所耗費的成本外, 更能提升專業人員赴現地調查的安全性。

The introduction of satellite imagery, featuring a wide range of coverage, periodical monitoring, and multiple bands, allows the governmental departments in Nicaragua to obtain the ground temperature distribution map of a volcanic area. In addition to saving on costs, satellite imagery can even improve safety for volcano experts during on-site investigation.



水質監測 Water Quality Monitoring



經由衛星監測水色變化, 來判斷水體水質是否受污染並加以分析, 建立模型推估湖水表面水質參數濃度, 進而推算優養化程度, 便可提供尼加拉瓜政府整體性的環境規劃與建議。

Telemetry technology can determine whether water is contaminated and establish parameters through modeling that can estimate water quality. Using these, scientists can then calculate the degree of eutrophication and provide an overall proposal and environmental plan to the Nicaraguan government.



執行GIS計畫遙測分析主要作物分布的情況, 尼加拉瓜政府便可藉此進行即時的作物乾旱預警機制, 並制定相關農業單位降低乾旱衝擊的方案。

The GIS project analyzes the distribution of major crops through telemetry measurements. The Nicaraguan government can use real-time early warning mechanisms and provide plans for the agricultural units to lower the impact of drought.

作物監測 Crop Monitoring



火山之國—薩爾瓦多

A Country of Volcanoes—El Salvador

2012年提出「遙測及地理資訊系統(GIS/RS)於薩爾瓦多之應用合作計畫」概念書, 期以RS/GIS 之技術優勢強化薩爾瓦多圖資製作技術與國土資源管理能力。

In 2012, the concept project Application of GIS/RS in El Salvador was proposed in hope of enhancing the mapping techniques and the land resource management ability in El Salvador.



衛星遙測具有全面性、即時性及週期性蒐集資訊之優點, 對於薩爾瓦多國家土地政策規劃, 更能有效掌握環境資源變化, 主動偵測的方式更受好評。

Data collection by satellite telemetry is comprehensive, instant, and periodic, and thus is suitable for the observation of environmental change. It can effectively capture changes in environmental resources for land policy making in El Salvador. This method of active detection has been widely acclaimed.

土地監測 Land Monitoring



2016年薩爾瓦多發生瑪德蓮娜(La Magdalena)工廠發生糖蜜外洩事件與東北部松樹病蟲害事件, 薩爾瓦多政府可依衛星影像即時評估受災情況以制定有效的應對手段。

In 2016, El Salvador suffered from both the molasses leak of La Magdalena and the prevalence of pine pests in northeastern El Salvador. The government of El Salvador instantly formulated effective measures based on satellite images.

