

出國報告

(出國類別：國際水資源週活動或其他水資源國際研討會議)

**參與「聯合國氣候變化綱要公約第 27 次
締約方大會 (UNFCCC COP27)」活動**

服務機關：經濟部水利署

姓名職稱：連上堯 局長

派赴國家：埃及

出國期間：111 年 11 月 05 日至 11 月 15 日

報告日期：112 年 1 月

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摘要

聯合國氣候變化綱要公約第 27 次締約方大會 (UNFCCC COP27)於 11 年 11 月 6 日至 18 日在埃及的夏姆錫克(Sharm El-Sheikh)舉行，主辦單位為聯合國設立的「政府間氣候變化綱要公約談判委員會(INC)」，主要目的係召集全球締約方/締約國(現有 197 國)討論如何共同應對氣候變遷，以及制定各國面對氣候變遷之行動與承諾。

上(26)屆會議之重要成果是制定全球氣候變遷調適目標，如各國著重規劃未來十年之減碳工作，訂定 2030 年中期減排目標，並於 2050 年達成「淨零碳排」等全球共識。本(27)屆大會旨在敦促各國表現出必要的政治意願，見證全球調適行動方案的執行，並進一步闡述「格拉斯哥公約」工作的內容。

一、目的與任務

- (一)參加聯合國氣候變化綱要公約第 27 次締約方大會(UNFCCC COP27)
- (二)配合行政院環境保護署籌組觀察團，團員來自行政院能源及減碳辦公室、國家科學及技術委員會、經濟部(能源局及本署)、交通部、國家發展委員會、農委會等各單位，共赴埃及以利掌握國際間氣候變遷調適工作發展、各國對於調適工作之需求及蒐集氣候變遷調適相關資料，可為我國進行氣候變遷相關工作之參考外，更可確認我國氣候變遷調適工作推動方向符合全球共識，進而尋求向外發展，建立國際合作之默契。
- (三)瞭解國際間氣候變遷調適工作於水資源相關領域之發展現況，作為水利署施政參考。

二、團員名單

序號	單位	中文名	英文名	職稱	電話
1	南區水資源局	連上堯	LIEN SHANG-YAO	局長	0921019189

三、行程

1.行程簡表

時間	11/5(六)	11/6(日)	11/7(一)	11/8(二)	11/9(三)	11/10(四)	11/11(五)	11/12(六)	11/13(日)	11/14(一)	11/15(二)
上午		中轉 伊斯坦堡	中轉 臺拉維夫 (07:55)	參與 COP27 會議	參與 COP27 會議	參與 COP27 會議	參與 COP27 會議	08:30 團務會議	市區瀏覽	返程 (11:20)	中轉 伊斯坦堡 (02:10)
下午			抵達 夏姆錫克 國際機場 (16:30)					參與 COP27 會議		中轉 臺拉維夫 (21:00)	抵臺 (17:35)
晚上	出發 (22:25)			前往飯店 check in							

2.大會行程表

	11/6	11/7	11/8	11/9	11/10	11/11	11/12	11/13	11/14	11/15	11/16	11/17
每日主題		WLS		金融	科學&青年	去碳	適應與農業	休息	水與性別	能源與專家	生物多樣性	解決方案
COP27 主席活動	正式開幕典禮	世界領導人峰會		金融	科學青年及未來世代	去碳	調適農業與糧食系統	休息	性別	專家	生物多樣性	解決方案
MP-GCA (全球氣候行動)		GCA 開幕		金融	彈性	業界	土地		水	能源	海洋和沿海地區	GCA 閉幕
									水	能源	運輸	

黃：加強復原力

綠：實現減排目標

藍：知識、包容性和行動推動力



圖 1 夏姆錫克地理位置

四、心得及建議

(一)「聯合國氣候變化綱要公約(the United Nations Framework Convention on Climate Change, UNFCCC)」簡介

氣候變化問題首次成為聯合國大會討論議題始於 1988 年，之後氣候變化問題越發引起國際社會的關注。聯合國氣候變化綱要公約聯合國大會 (UN General Assembly) 在 1990 年年會中通過設立「政府間氣候變化綱要公約談判委員會」(Intergovernmental Negotiating Committee for a Framework Convention on Climate Change, INC/FCCC)的決議，並授予起草公約條文及任何必要法律工具的權利。

INC/FCCC 於 1991 年 2 月 4 日至 14 日在華盛頓召開第一次會議，氣候變遷議題正式躍上聯合國舞台。到 1992 年 5 月歷經 5 次的會議，超過 150 個國家參與談判，於 1992 年 5 月 9 日在紐約的聯合國總部通過了「聯合國氣候變化綱要公約」(the United Nations Framework Convention on Climate Change, UNFCCC)。嗣在同年 6 月於里約熱內盧召開的「聯合國環境與發展高會議」中開放與會各國領袖簽署，公約於 1994 年 3 月 21 日生效，並獲全體聯合國會員批准。

這份公約期盼透過各締約方的共同努力，來減少溫室氣體的排放(greenhouse gas emission)，將大氣中溫室氣體的濃度穩定在防止氣候系統受到危險人為干擾(dangerous anthropogenic interference)的水平。這一水平應當在足以使生態系統能夠自然地適應氣候變化、確保糧食生產免受威脅並使經濟發展可持續地進行的時間範圍內實現。

公約原始條文雖然沒有對個別締約方具體課以需承擔的義務，但 1995 年以後每年召開的締約方會議(Conferences of the Parties, COP)，便陸續討論與制訂了具國際法性質的相關協議，使「溫室氣體減排」與「減緩升溫」等目標，成為已開發國家必須執行達成的義務。其中最著名的是 1997 年第 3 屆 COP 通過的「京都議定書」(Kyoto Protocol)與 2015 年第 21 屆 COP 通過的「巴黎協定」(Paris Agreement)。

(二)UNFCCC 內部機構與會議種類

UNFCCC 主要包含 COP、京都議定書大會(the Meeting of the Parties to the Kyoto Protocol, CMP)、附屬機構的會議和一系列研討會。

COP 是本公約的最高權力機構，下設兩個常設附屬機構：「附屬科學和技術諮詢」(科技諮詢機構：the Subsidiary Body for Scientific and Technological Advice, SBSTA)和「附屬履行機構」(履行機構：the Subsidiary Body for Implementation, SBI)。而 CMP 則是代表京都議定書的最高權力機構。此外，締約國會議亦成立兩個特設工作小組，一個是為了依據京都議定書的進一步承諾所設(the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol, AWG-KP)，另一則為在本公約長期合作的目標下，分別為 COP 與 CMP 設立的工作小組(the Ad Hoc Working Group on Long-term Cooperation under the Convention, AWG-LCA)。

(三)COP27 觀察重點

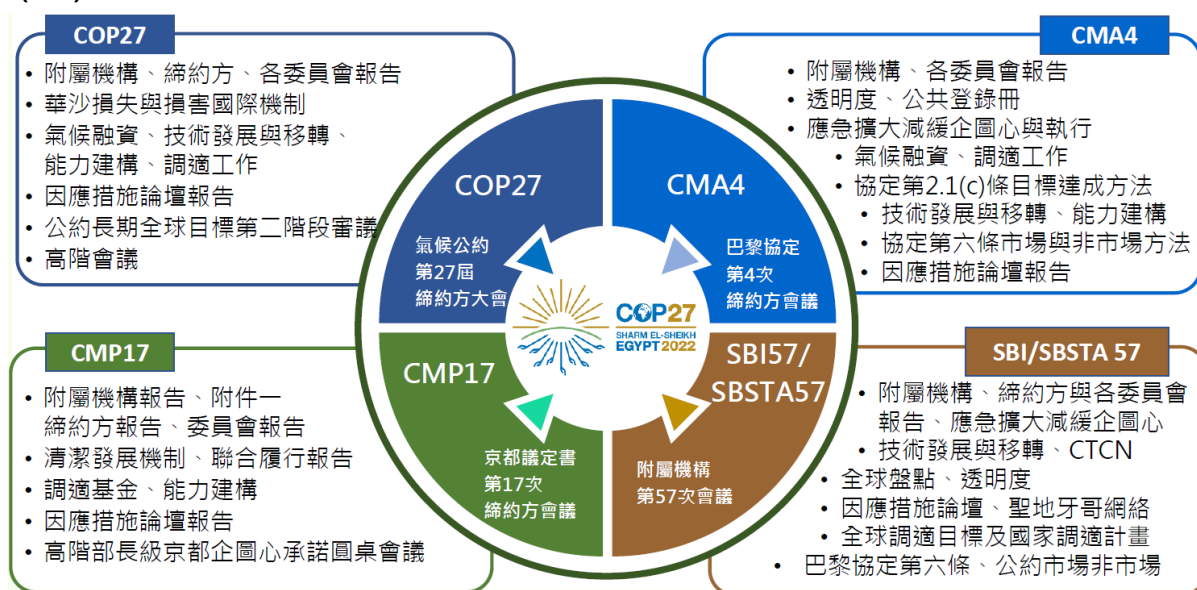


圖 2 COP27 大會重點議程

此次會議的核心課題主要為減緩工作方案(Mitigation Work Programme)、全球調適目標(Global Goal on Adaptation)及損失與損害財務機制(Loss & Damage Finance)。減碳是根源，全球調適是願景，而損失與損害則成為前述兩大問題能否解決的關鍵核心。三大問題互為因果，各國面臨的已不再是單純的國內減碳問題，而必須同時就其他兩大面向之發展所帶來的衝擊有所因應。

(四)減碳方案及損失與損害的創新融合

美國提出所謂的「能源轉型加速器」(Energy Transition Accelerator)計畫，建議由美國政府與企業合作，透過符合聯合國專家小組所制定高規格盤查標準之碳權抵換機制，來資助發展中國家加速去煤及發展再生能源。發展中國家則認為應先確認需求與現有資源之間落差，提供新的、額外且適當的財務資源，以及創設一個新的營運組織(operational entity)輔以系列的細節對話。工業國家則有主張繼續交由遵約委員會(SBI)組成工

作小組去討論並於 2024 年提出決議草稿，也有認為只須要求 SBI 進行細節討論即可。惟針對格拉斯哥對話之要求，工業國家則有較多元的回應，包括應先釐清現有損失與損害的分布狀況、如何讓新的相關機構能協助現有參與者的合作、界定落差之所在及因應之道，以及指出可能的經費來源等。針對多樣的需求，工業國家所強調的是，除了解問題的迫切性外，也「該是做對的事的時候」(time to get it right)，其中包括許多的繁文縟節，及年度報告等；也正是因為這些繁瑣的討論，一方面延宕了議程，另一方面也顯現出大家願意認真思考如何解決其問題的態度。

(五)調適議題被刻意稀釋

在會議的核心課題中，調適是相對被冷落而失去主題性的課題。原本埃及希望主辦的是一個以氣候韌性(resilience)為主題的大會，但之後改為施行(implementation)，而在原定的全球調適目標(the Global Goal on Adaptation)議題的討論上，則幾乎毫無進展，甚至期待 IPCC 作出一份調適報告的擬議亦付諸闕如。最大的問題還是缺錢。在相當抽象的決議文中，各方亦僅再次重複需求與資金供給間的缺口甚大、急迫的期許富裕國家儘速且實質的增加其資助。而唯一較具體的承諾，也只有針對 2025 年後倍增為 400 億美元的調適資金準備報告。有關調適需求的討論還是不脫需要資金，也因此調適議題被損失與損害議題稀釋了。目前較具體的僅有在 2025 年盤點出剩餘的京都額度後，有可能將之移作調適之用。

(六)反漂綠將成為未來綠色金融或市場機制的基礎

聯合國委由前加拿大環境部長 Catherine McKenna 帶領的專家小組，除直指國際石化企業在淨零承諾上的表現幾近詐欺(deception)，並導致 SBI 停止受理石化產業的淨零盤查驗證

外，更認為嚴格的認定標準應適用於所有的行業、城市及地區的淨零承諾。該工作小組初步認為，自 2025 年起，淨零計畫應包括每五年一期的內部減碳目標，而且應將範疇三，也就是產品最終使用的碳排係數納入。

(七)減煤或去煤面臨困境

此次大會約有 90 個國家聯署，要將格拉斯哥的減煤及去除無效率化石燃料納入決議，但並未位成功。在 2022 年聯合國奔向淨零(Race to Zero)報告中，即已明確指出減煤及去除無效率的化石燃料屬公正轉型之必要事項，也因此應積極禁止新煤礦的投資，但因現實的問題，加上有些格拉斯哥淨零金融聯盟(Glasgow Finance Alliance for Net Zero, GFANZ)的成員因對於聯盟所要求的標準寬嚴不一，再加上背後利益牽涉複雜，已有些成員打退堂鼓。

然而在此次會議中，身為化石燃料出口國的埃及，聯合全球的化石燃料業者，聚焦減碳倡議(Carbon Cutting Initiative)，並以他們既然是問題的源頭，自然也應該是解決方案的提供者自居，並強調以 CCS(二氧化碳捕獲與封存，Carbon Capture and Storage)作為主要的解方。但是 CCS 僅屬難以淨零之領域的最後解方，如今則被鼓吹為主要對策，業者的龐大與會代表及這種遊說訴求已經引起高度關切。其中最重要的問題被置於如何定義核給碳權(carbon credit)的「碳移除」(carbon removal)，目前化石業者主張從寬，這讓氣候行動者(Climate Actioner)認為將引致認定標準浮濫。惟目前市場機制從寬的趨勢似乎提供給 CCS 取得碳權額度的絕佳機會。

(八)對台灣水資源相關議題的啟示

- 1.氣候大會首次在國家展覽館區域設置 Water Pavilion，關注

主題包括：

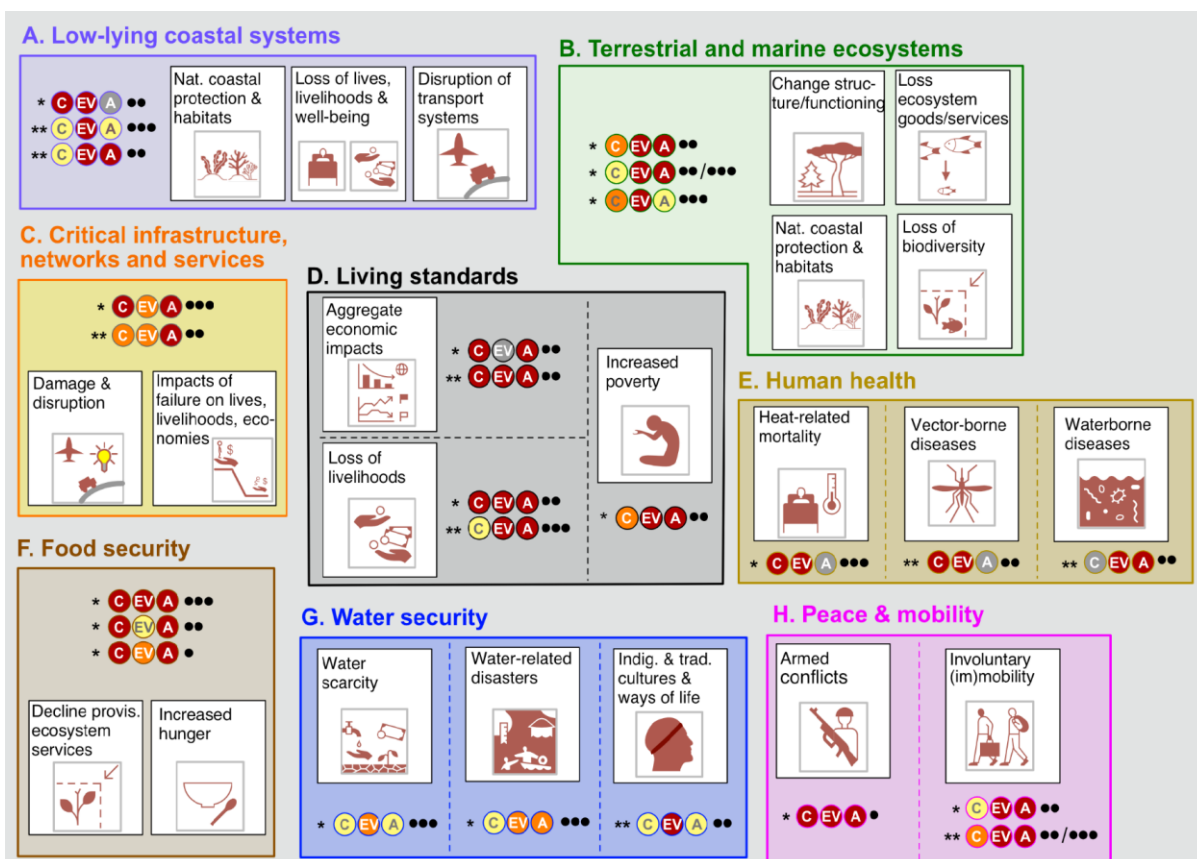
- A.水投資提升氣候韌性(Financing Climate Resilience through Investments in Water)
- B.氣候韌性與低碳措施(Climate Resilience and Low Carbon Approaches)
- C.減少災害風險與永續城市(DRR and Sustainable Cities for Improved Livelihoods)
- D.氣候智慧農業與糧食安全(Climate Smart Agriculture for Food Security)
- E.水與氣候：減緩、調適及合作(Water and Climate: Mitigation, Adaptation & Cooperation)
- F.水、能源與氣候聯結(Water, Energy, and Climate Nexus)
- G.水於生物多樣性與自然為本解決方案(Water for Biodiversity and Nature Based Solutions)
- H.包容性：加速青年、原住民及性別活動(Inclusion: Accelerating Youth, Indigenous and Gender action)
- I.氣候、水及衛生解決方案(Climate, Water and Sanitation Solutions)

2.本世紀末主要的風險幾乎皆難以脫離水範疇

以本世紀末前可能遭遇的風險來看，區分為氣候、暴露與脆弱度，及調適範疇。水資源與所有風險互有關聯，包括：

- A.低窪海岸系統
- B.陸域與海岸生態系統
- C.重要基礎建設、網絡與服務
- D.生活標準
- E.人類健康
- F.糧食安全
- G.水安全

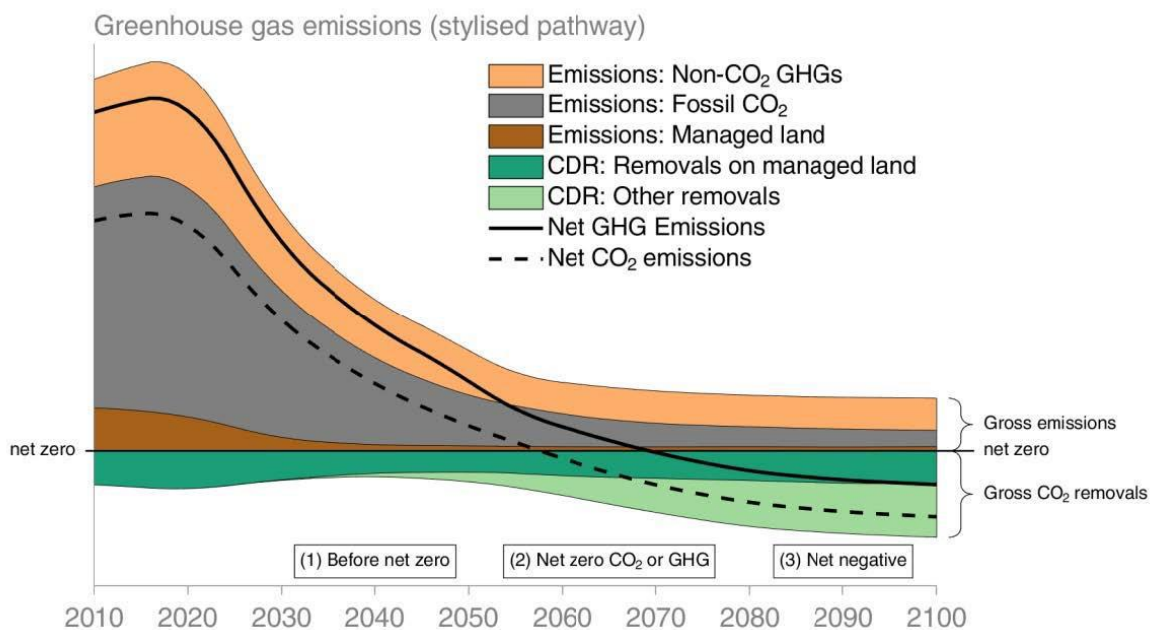
H.和平與遷徙力



3.氣候變遷溫升趨勢所致的情境影響皆與水有關

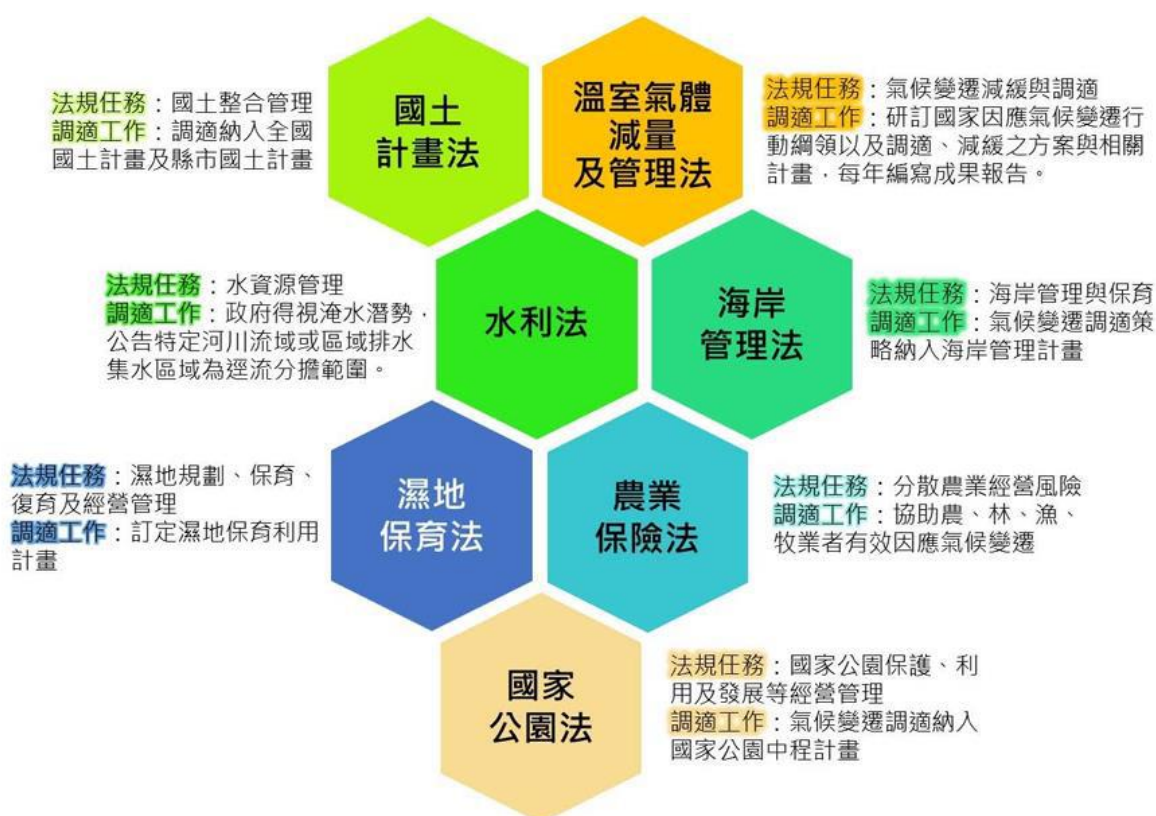
4.早期預警系統是重要的發展方向

5.如果水相關調適做不好，巴黎協定目標也將無法達成



6. 水資源的管理亟需結合不同國內法制進行治理

- A. 因應我國 2050 年淨零路徑的提出，調適和減緩措施除了提供主要目標的效益外，亦能提供有助於其他政策目標的額外效益。例如：減緩措施可以藉由降低氣候風險而有助於調適目標，反之亦然。
- B. 國家在能源轉型路徑上，再生能源與替代能源的使用將帶來使用行為的變革；例如：夜間多餘的再生能源可用於抽蓄發電用途；水資源的再利用更為關鍵。
- C. 依照未來溫升和降水情境，行政機關將需要就可能的氣候衝擊提前為相關因應措施預作準備。例如：及早規劃應急水井、伏流水儲備與規劃等，以因應可能的乾旱年。



7. 因應 2050 年淨零路徑發展，國內外皆將「自然為本解決方案」(NbS)視為重點解方，不管是農林業、濕地、農林的管理、保育，甚或相關產品的開發莫不與水資源息息相關，值得管理單位的重視跟及早因應。

8. 統合型的科技應用亦為重點，包括：預警系統、警示系統 APP 開發、IoT 與 AI 的應用俱為重點。
9. 科學觀測及數據的重要性：普設觀測點，**We can manage only what we can measure**。
10. 台灣有很強的水資源相關技術，如水資源調配、智慧灌溉... 可幫助很多國家。
11. 很多國家提出的東西我們早已使用，如天水線(氫氧同位素 天水線 = **The Isotopic Meteoric Water Line, MWL**)定年可知道地下水來源，我們在 20 年前就和中研院地科汪中和教授合作過。

參考資料

大會決議文

Advance unedited version

Decision -/CMA.4

Sharm el-Sheikh Implementation Plan

The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement,

Recalling Article 2 of the Paris Agreement,

Also recalling decisions 3/CMA.1, 4/CMA.1 and 1/CMA.2,

Noting decision -/CP.27,¹

Guided by science and principles,

Recalling Article 2, paragraph 1, of the Paris Agreement, which provides that the Agreement, in enhancing the implementation of the Convention, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty,

Also recalling Article 2, paragraph 2, of the Paris Agreement, which provides that the Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances,

Reaffirming the outcomes of all previous Conferences of the Parties, Conferences of the Parties serving as the meeting of the Parties to the Kyoto Protocol and Conferences of the Parties serving as the meeting of the Parties to the Paris Agreement, including decisions 1/CP.26, 1/CMP.17 and 1/CMA.3 (the Glasgow Climate Pact),

Also reaffirming the critical role of multilateralism based on United Nations values and principles, including in the context of the implementation of the Convention and the Paris Agreement, and the importance of international cooperation for addressing global issues, including climate change, in the context of sustainable development and efforts to eradicate poverty,

Noting the importance of transition to sustainable lifestyles and sustainable patterns of consumption and production for efforts to address climate change,

Also noting the importance of pursuing an approach to education that promotes a

¹ Draft decision entitled “Sharm el-Sheikh Implementation Plan” proposed under agenda item 2 of the Conference of the Parties at its twenty-seventh session.

shift in lifestyles while fostering patterns of development and sustainability based on care, community and cooperation,

Acknowledging that climate change is a common concern of humankind, Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to a clean, healthy and sustainable environment, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity,

Noting the importance of ensuring the integrity of all ecosystems, including in forests, the ocean and the cryosphere, and the protection of biodiversity, recognized by some cultures as Mother Earth, and also noting the importance of 'climate justice', when taking action to address climate change,

Emphasizing that enhanced effective climate action should be implemented in a manner that is just and inclusive while minimizing negative social or economic impacts that may arise from climate action,

Recognizing the fundamental priority of safeguarding food security and ending hunger, and the particular vulnerabilities of food production systems to the adverse impacts of climate change,

Also recognizing the critical role of protecting, conserving and restoring water systems and water-related ecosystems in delivering climate adaptation benefits and cobenefits, while ensuring social and environmental safeguards,

1. *Underlines* the urgent need to address, in a comprehensive and synergetic manner, the interlinked global crises of climate change and biodiversity loss in the broader context of achieving the Sustainable Development Goals, as well as the vital importance of protecting, conserving, restoring and sustainably using nature and ecosystems for effective and sustainable climate action,¹

2. *Acknowledges* that the impacts of climate change exacerbate the global energy and food crises, and vice versa, particularly in developing countries,

3. *Stresses* that the increasingly complex and challenging global geopolitical situation and its impact on the energy, food and economic situations, as well as the additional challenges associated with the socioeconomic recovery from the coronavirus pandemic, should not be used as a pretext for backtracking, backsliding or de-prioritizing climate action;

I. Science and urgency

4. *Welcomes* the contributions of Working Groups II² and III³ to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change;

5. *Recognizes* the importance of the best available science for effective climate action and policymaking;

6. *Takes note* of the 2022 adaptation gap⁴ and emissions gap⁵ reports of the United Nations Environment Programme, and recent global and regional reports of the World Meteorological Organization on the state of the climate;⁶

7. *Reaffirms* the Paris Agreement temperature goal of holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;

8. *Reiterates* that the impacts of climate change will be much lower at the temperature increase of 1.5 °C compared with 2 °C⁷ and *resolves* to pursue further efforts to limit the temperature increase to 1.5 °C;

9. *Recognizes* the impact of climate change on the cryosphere and the need for further understanding of these impacts, including of tipping points;

² Intergovernmental Panel on Climate Change. 2022. *Climate Change 2022: Impacts, Adaptation, and*

Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. H Pörtner, D Roberts, M Tignor, et al. (eds.). Cambridge, United Kingdom: Cambridge University Press. Available at <https://www.ipcc.ch/report/ar6/wg2/>.

³ Intergovernmental Panel on Climate Change. 2022. *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.* P Shukla, J Skea, R Slade, et al. (eds.). Cambridge and New York: Cambridge University Press. Available at <https://www.ipcc.ch/report/ar6/wg3/>.

⁴ See United Nations Environment Programme. 2022. *Adaptation Gap Report 2022: Too Little, Too Slow - Climate adaptation failure puts world at risk.* Nairobi: United Nations Environment Programme. Available at <https://www.unep.org/resources/adaptation-gap-report-2022>.

⁵ See United Nations Environment Programme. 2022. *Emissions Gap Report 2022: The Closing Window – Climate crisis calls for rapid transformation of societies.* Nairobi: United Nations Environment Programme. Available at <https://www.unep.org/resources/emissions-gap-report-2022>.

⁶ See, for example, World Meteorological Organization. 2022. *State of the Global Climate 2021.* Geneva: World Meteorological Organization. Available at <https://public.wmo.int/en/ourmandate/climate/wmo-statement-state-of-global-climate>.

⁷ Decision 1/CP.26, para. 16, and decision 1/CMA.3, para. 21.

II. **Enhancing ambition and implementation**

10. *Resolves* to implement ambitious, just, equitable and inclusive transitions to low-emission and climate-resilient development in line with the principles and objectives of the Convention, the Kyoto Protocol and the Paris Agreement, taking into account this decision, the Glasgow Climate Pact and other relevant decisions of the Conference of the Parties and the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement;

11. *Expresses appreciation* to the Heads of State and Government who participated in the Sharm el-Sheikh Climate Implementation Summit for their support in enhancing and accelerating the implementation of climate action;

III. **Energy**

12. *Emphasizes* the urgent need for immediate, deep, rapid and sustained reductions in global greenhouse gas emissions by Parties across all applicable sectors, including through increase in low-emission and renewable energy, just energy transition partnerships and other cooperative actions;

13. *Recognizes* that the unprecedented global energy crisis underlines the urgency to rapidly transform energy systems to be more secure, reliable, and resilient, including by accelerating clean and just transitions to renewable energy during this critical decade of action;

14. *Stresses* the importance of enhancing a clean energy mix, including low-emission and renewable energy, at all levels as part of diversifying energy mixes and systems, in line with national circumstances and recognizing the need for support towards just transitions;

IV. **Mitigation**

15. *Recognizes* that limiting global warming to 1.5 °C requires rapid, deep and sustained reductions in global greenhouse gas emissions of 43 per cent by 2030 relative to the 2019 level;

16. *Also recognizes* that this requires accelerated action in this critical decade, on the basis of equity and the best available scientific knowledge, reflecting common but

differentiated responsibilities and respective capabilities in the light of different national circumstances and in the context of sustainable development and efforts to eradicate poverty;

17. *Commends* efforts by Parties to communicate new or updated nationally determined contributions, long-term low greenhouse gas emission development strategies and other actions that demonstrate progress towards achieving the Paris Agreement temperature goal;

18. *Welcomes* the organization of, and *takes note* of the discussions at, the first annual high-level ministerial round table on pre-2030 ambition,⁸ held on 14 November 2022;

19. *Welcomes* the adoption of decision -/CMA.4⁹ on the mitigation work programme, which aims to urgently scale up mitigation ambition and implementation;

20. *Notes with serious concern* the finding in the latest synthesis report¹⁰ on nationally determined contributions that the total global greenhouse gas emission level in 2030, taking into account implementation of all latest nationally determined contributions, is estimated to be 0.3 per cent below the 2019 level, which is not in line with least-cost scenarios for keeping global temperature rise to 2 or 1.5 °C;

21. *Emphasizes* the urgent need for Parties to increase their efforts to collectively reduce emissions through accelerated action and implementation of domestic mitigation measures in accordance with Article 4, paragraph 2, of the Paris Agreement;

22. *Urges* Parties that have not yet communicated new or updated nationally determined contributions to do so as soon as possible in advance of the fifth session of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (November– December 2023);

23. *Recalls* Article 3 and Article 4, paragraphs 3, 4, 5 and 11, of the Paris Agreement and *requests* Parties that have not yet done so to revisit and strengthen the 2030 targets in their nationally determined contributions as necessary to align with the Paris Agreement temperature goal by the end of 2023, taking into account different national circumstances;

24. *Urges* Parties that have not yet done so to communicate, by the fifth session of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement,

⁸ Decision 1/CMA.3, para. 32.

⁹ Draft decision entitled “Matters relating to the work programme for urgently scaling up mitigation ambition and implementation referred to in paragraph 27 of decision 1/CMA.3” proposed under agenda item 4 of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement at its fourth session.

¹⁰ FCCC/PA/CMA/2022/4.

longterm low greenhouse gas emission development strategies referred to in Article 4, paragraph 19, of the Paris Agreement towards just transitions to net zero emissions by or around mid-century, taking into account different national circumstances;

25. *Reiterates*¹¹ its invitation to Parties to update the strategies referred to in paragraph 21 above regularly, as appropriate, in line with the best available science;

26. *Requests* the secretariat to prepare a synthesis report on long-term low greenhouse gas emission development strategies referred to in Article 4, paragraph 19, of the Paris Agreement for consideration by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement at its fifth session;

27. *Notes* the importance of aligning nationally determined contributions with long-term low greenhouse gas emission development strategies;

28. *Calls upon* Parties to accelerate the development, deployment and dissemination of technologies, and the adoption of policies, to transition towards low-emission energy systems, including by rapidly scaling up the deployment of clean power generation and energy efficiency measures, including accelerating efforts towards the phasedown of unabated coal power and phase-out of inefficient fossil fuel subsidies, while providing targeted support to the poorest and most vulnerable in line with national circumstances and recognizing the need for support towards a just transition;

29. *Reiterates*¹² its invitation to Parties to consider further actions to reduce by 2030 noncarbon dioxide greenhouse gas emissions, including methane;

30. *Emphasizes* the importance of protecting, conserving and restoring nature and ecosystems to achieve the Paris Agreement temperature goal, including through forests and other terrestrial and marine ecosystems acting as sinks and reservoirs of greenhouse gases and by protecting biodiversity, while ensuring social and environmental safeguards;

31. *Recognizes* the importance of maximizing the positive and minimizing the negative economic and social impacts of the implementation of response measures, and *welcomes* the adoption of decisions -/CP.27,¹³ -/CMP.27¹⁴ and -/CMA.4;¹⁵

¹¹ Decision 1/CMA.3, para. 33.

¹² Decision 1/CMA.3, para. 37.

¹³ Draft decision entitled “Report of the forum on the impact of the implementation of response measures” proposed under agenda item 12 of the Conference of the Parties at its twenty-seventh session.

¹⁴ Draft decision entitled “Report of the forum on the impact of the implementation of response measures” proposed under agenda item 9 of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol at its seventeenth session.

32. *Emphasizes* Article 4, paragraph 5, of the Paris Agreement which provides that support shall be provided to developing country Parties for the implementation of Article 4 of the Paris Agreement, in accordance with Articles 9–11, and *recognizes* that enhanced support for developing country Parties will allow for higher ambition in their actions;

v. Adaptation

33. *Notes with serious concern* the existing gap between current levels of adaptation and levels needed to respond to the adverse effect of climate change in line with findings from the contribution of Working Group II to the Intergovernmental Panel on Climate Change Sixth Assessment Report;

34. *Urges* Parties to adopt a transformational approach to enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change;

35. *Also urges* developed country Parties to urgently and significantly scale up their provision of climate finance, technology transfer and capacity-building for adaptation so as to respond to the needs of developing country Parties as part of a global effort, including for the formulation and implementation of national adaptation plans and adaptation communications;

36. *Recognizes* the importance of the global goal on adaptation for the effective implementation of the Paris Agreement and *recalls* decision 7/CMA.3, whereby the Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation was established and launched;

37. *Welcomes* the progress made in the first year of the two-year Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation outlined in the report on the workshops held under the work programme,¹⁶ *looks forward* to the conclusion of the work programme at the fifth session of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement and *welcomes* the robust programme of work for 2023 set out in decision -/CMA.4;¹⁷

¹⁵ Draft decision entitled “Report of the forum on the impact of the implementation of response measures” proposed under agenda item 12 of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement at its fourth session.

¹⁶ FCCC/SB/2022/INF.2.

¹⁷ Draft decision entitled “Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation” referred to in decision 7/CMA.3” proposed under agenda item 6(c) of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement at its fourth session.

38. *Stresses* the urgency of fulfilling the mandate of having a clear framework for the global goal on adaptation to guide the effective implementation of Article 7 of the Paris Agreement;

39. *Recognizes* that the global goal on adaptation will contribute to reducing the risk of climate change impacts in the context of the long-term temperature goal set out in Article 2, paragraph 1(a), of the Paris Agreement in line with different national circumstances, needs and priorities and in the context of sustainable development and poverty eradication;

40. *Also recognizes* the centrality of the role of the Adaptation Fund in the climate finance architecture, *welcomes* the new pledges made at this session, *urges* all contributors to fulfil their pledges in a timely manner and *invites* the contributors to ensure the sustainability of the resources of the Fund;

41. *Highlights* the role of the Least Developed Countries Fund and the Special Climate Change Fund in supporting actions by developing countries to address climate change, *welcomes* the pledges made to the two Funds and *invites* developed countries to further contribute to the two Funds;

42. *Requests* the Standing Committee on Finance to prepare a report on the doubling of adaptation finance, in line with paragraph 18 of decision 1/CMA.3 for consideration by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement at its fifth session;

43. *Emphasizes* the importance of protecting, conserving and restoring water and waterrelated ecosystems, including river basins, aquifers and lakes, and *urges* Parties to further integrate water into adaptation efforts;

VI. Loss and damage

44. *Notes with grave concern*, according to information in the contributions of Working Groups II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, the growing gravity, scope and frequency in all regions of loss and damage associated with the adverse effects of climate change, resulting in devastating economic and non-economic losses, including forced displacement and impacts on cultural heritage, human mobility and the lives and livelihoods of local communities, and *underlines* the importance of an adequate and effective response to loss and damage;

45. *Expresses deep concern* regarding the significant financial costs associated with loss and damage for developing countries, resulting in a growing debt burden and impairing the realization of the Sustainable Development Goals;

46. *Welcomes* the consideration, for the first time, of matters relating to funding arrangements responding to loss and damage associated with the adverse effects of climate change, including a focus on addressing loss and damage, under the Conference of the Parties and the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement and *also welcomes* the adoption of decisions -/CP.27¹⁸ and -/CMA.4,¹⁹ on matters relating to funding arrangements responding to loss and damage associated with the adverse effects of climate change;

47. *Further welcomes* the adoption of decisions -/CP.27²⁰ and -/CMA.4,²¹ establishing the institutional arrangements of the Santiago network for averting, minimizing and addressing loss and damage associated with the adverse effects of climate change to enable its full operationalization, including supporting its mandated role in catalysing technical assistance for the implementation of the relevant approaches at the local, national and regional level in developing countries that are particularly vulnerable to the adverse effects of climate change, and *affirms* its determination to select the host of the secretariat of the Santiago network by 2023 through a selection process conducted in an open, transparent, fair and neutral manner in accordance with the process outlined in paragraphs 17–18 of decisions -/CMA.4²² and /CP.27;²³

¹⁸ Draft decision entitled “Funding arrangements for responding to loss and damage associated with the adverse effects of climate change, including a focus on addressing loss and damage” proposed under agenda item 8(f) of the Conference of the Parties at its twenty-seventh session.

¹⁹ Draft decision entitled “Funding arrangements for responding to loss and damage associated with the adverse effects of climate change, including a focus on addressing loss and damage” proposed under agenda item 8(f) of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement at its fourth session.

²⁰ Draft decision entitled “Santiago network for averting, minimizing and addressing loss and damage under the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts” proposed under agenda item 7 of the Conference of the Parties at its twenty-seventh session.

²¹ Draft decision entitled “Santiago network for averting, minimizing and addressing loss and damage under the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts” proposed under agenda item 7 of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement at its fourth session.

²² Draft decision entitled “Santiago network for averting, minimizing and addressing loss and damage

VII. Early warning and systematic observation

48. *Emphasizes* the need to address existing gaps in the global climate observing system, particularly in developing countries, and *recognizes* that one third of the world, including sixty per cent of Africa, does not have access to early warning and climate information services, as well as the need to enhance coordination of activities by the systematic observation community and the ability to provide useful and actionable climate information for mitigation, adaptation and early warning systems, as well as information to enable understanding of adaptation limits and of attribution of extreme events;

49. *Welcomes* and *reiterates* the United Nations Secretary-General's call made on World Meteorological Day on 23 March 2022 to protect everyone on Earth through universal coverage of early warning systems against extreme weather and climate change within the next five years and *invites* development partners, international financial institutions and the operating entities of the Financial Mechanism to provide support for implementation of the Early Warnings for All initiative;

VIII. Implementation – pathways to just transition

50. *Affirms* that sustainable and just solutions to the climate crisis must be founded on meaningful and effective social dialogue and participation of all stakeholders and *notes* that the global transition to low emissions provides opportunities and challenges for sustainable economic development and poverty eradication;

51. *Emphasizes* that just and equitable transition encompasses pathways that include energy, socioeconomic, workforce and other dimensions, all of which must be based on nationally defined development priorities and include social protection so as to mitigate potential impacts associated with the transition, and *highlights* the important

under the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts” proposed under agenda item 7 of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement at its fourth session at its fourth session.

²³ Draft decision entitled “Santiago network for averting, minimizing and addressing loss and damage under the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts” proposed under agenda item 7 of the Conference of the Parties at its twenty-seventh session.

role of the instruments related to social solidarity and protection in mitigating the impacts of applied measures;

52. *Decides* to establish a work programme on just transition for discussion of pathways to achieving the goals of the Paris Agreement outlined in Article 2, paragraph 1, in the context of Article 2, paragraph 2, and *requests* the Subsidiary Body for Implementation and the Subsidiary Body for Scientific and Technological Advice to recommend a draft decision on this matter for consideration and adoption by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement at its fifth session, with the work programme to be implemented in a manner that builds on and complements the relevant workstreams under the Convention and the Paris Agreement, including the work programme for urgently scaling up mitigation ambition and implementation;

53. *Decides* to convene, as part of the work programme on just transition, an annual highlevel ministerial round table on just transition, beginning at its fifth session;

IX. Finance

54. *Reiterates* Articles 2, 4 and 9 of the Paris Agreement and *highlights* that about USD 4 trillion per year needs to be invested in renewable energy up until 2030 to be able to reach net zero emissions by 2050,²⁴ and that, furthermore, a global transformation to a low-carbon economy is expected to require investment of at least USD 4–6 trillion per year;²⁵

55. *Also highlights* that delivering such funding will require a transformation of the financial system and its structures and processes, engaging governments, central banks, commercial banks, institutional investors and other financial actors;

56. *Notes with concern* the growing gap between the needs of developing country Parties, in particular those due to the increasing impacts of climate change and their increased indebtedness, and the support provided and mobilized for their efforts to implement their nationally determined contributions, highlighting that such needs are currently estimated at USD 5.8–5.9 trillion²⁶ for the pre-2030 period;

57. *Expresses serious concern* that the goal of developed country Parties to mobilize jointly USD 100 billion per year by 2020 in the context of meaningful mitigation action

²⁴ See <https://iea.blob.core.windows.net/assets/830fe099-5530-48f2-a7c111f35d510983/WorldEnergyOutlook2022.pdf>.

²⁵ As footnote 5 above.

²⁶ See <https://unfccc.int/topics/climate-finance/workstreams/needs-report>. ²⁷ See [J0156_UNFCCC](#)

[100BN 2022 Report Book v3.2.pdf](#).

and transparency on implementation has not yet been met and *urges* developed country Parties to meet the goal;²⁷

58. *Emphasizes* that accelerated financial support for developing countries from developed countries and other sources is critical to enhancing mitigation action and addressing inequities in access to finance, including its costs, terms and conditions, and economic vulnerability to climate change for developing countries,²⁷ and that scaled-up public grants for mitigation and adaptation for vulnerable regions, in particular sub-Saharan Africa, would be cost-effective and have high social returns in terms of access to basic energy;

59. *Notes* that global climate finance flows are small relative to the overall needs of developing countries, with such flows in 2019–2020 estimated to be USD 803 billion,²⁸ which is 31–32 per cent of the annual investment needed to keep the global temperature rise well below 2 °C or at 1.5 °C, and also below what would be expected in the light of the investment opportunities identified and the cost of failure to meet climate stabilization targets;

60. *Urges* developed country Parties to provide enhanced support, including through financial resources, technology transfer and capacity-building, to assist developing country Parties with respect to both mitigation and adaptation, in continuation of their existing obligations under the Convention, and *encourages* other Parties to provide or continue to provide such support voluntarily;

61. *Calls on* the shareholders of multilateral development banks and international financial institutions to reform multilateral development bank practices and priorities, align and scale up funding, ensure simplified access and mobilize climate finance from various sources and *encourages* multilateral development banks to define a new vision and commensurate operational model, channels and instruments that are fit for the purpose of adequately addressing the global climate emergency, including deploying a full suite of instruments, from grants to guarantees and non-debt instruments, taking into account debt burdens, and to address risk appetite, with a view to substantially increasing climate finance;

62. *Calls on* multilateral development banks to contribute to significantly increasing climate ambition using the breadth of their policy and financial instruments for greater

²⁷ Intergovernmental Panel on Climate Change. 2022. Summary for Policymakers. *In*: H Pörtner, D Roberts, M Tignor, et al. (eds.).

Climate Change 2022: Impacts, Adaptation, and Vulnerability.

Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.

Cambridge: Cambridge University Press. Available at <https://www.ipcc.ch/report/ar6/wg2/>.

²⁸ See document <https://unfccc.int/documents/619173>.

results, including on private capital mobilization, and to ensure higher financial efficiency and maximize use of existing concessional and risk capital vehicles to drive innovation and accelerate impact;

63. *Welcomes* the work in 2022 of the co-chairs of the ad hoc work programme on the new collective quantified goal on climate finance, the deliberations at the 2022 high-level ministerial dialogue on the new collective quantified goal and the report prepared by the President of the twenty-seventh session of the Conference of the Parties;

64. *Requests* the co-chairs of the ad hoc work programme to include in their annual report options for accelerating the achievement of the goal in Article 2 of the Paris Agreement of holding the increase in the global average temperature to well below 2 °C above preindustrial levels and pursuing efforts to limit the temperature to 1.5 °C above pre-industrial levels;

65. *Welcomes* the adoption of decision -/CMA.4,²⁹ on the new collective quantified goal on climate finance;

66. *Emphasizes* the ongoing challenges faced by many developing country Parties in accessing climate finance and *encourages* further efforts, including by the operating entities of the Financial Mechanism, to simplify access to such finance;

67. *Takes note* of the report on the determination of the needs of developing country Parties related to implementing the Convention and the Paris Agreement and in this context *urges* developed country Parties to provide resources for the second replenishment of the Green Climate Fund while demonstrating progression over previous replenishments and in line with the programming capacity of the Fund;

68. *Decides* to launch the Sharm el-Sheikh dialogue between Parties, relevant organizations and stakeholders to exchange views on and enhance understanding of the scope of Article 2, paragraph 1(c), of the Paris Agreement and its complementarity with Article 9 of the Paris Agreement and *requests* the secretariat, under the guidance of the Presidency of the twenty-seventh session of the Conference of the Parties, to organize two workshops in 2023 in this regard and to prepare a report to the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on the deliberations at these workshops;

²⁹ Draft decision entitled “New collective quantified goal on climate finance” proposed under agenda

X. Technology transfer and deployment

69. *Welcomes with appreciation* the first joint work programme of the Technology Executive Committee and the Climate Technology Centre and Network,³¹ for 2023–2027, which will facilitate the transformational change needed to achieve the goals of the Convention and the Paris Agreement, *invites* Parties and stakeholders to cooperate and engage with the Technology Executive Committee and the Climate Technology Centre and Network to support the implementation of the joint work programme activities, including on technology needs assessments, action plans and road maps, *acknowledges* the findings in the final report on the first periodic assessment of the effectiveness and adequacy of the support provided to the Technology Mechanism in supporting the implementation of the Paris Agreement³² and *decides* that the main challenges identified therein should be considered under the global stocktake;

70. *Highlights* the importance of cooperation on technology development and transfer and innovation in implementing the joint work programme activities;

XI. Capacity-building

71. *Notes* that capacity gaps and needs still exist in developing countries and *calls on* developed country Parties to increase support for long-term country-driven capacity-building interventions to enhance the effectiveness, success and sustainability of those interventions;

XII. Transparency

72. *Recalls* that Parties shall submit their first biennial transparency report and national inventory report, if submitted as a stand-alone report, at the latest by 31 December 2024 and *urges* Parties to swiftly make the necessary preparations for ensuring timely submission thereof;

item 8(e) of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement at its fourth session.

31 See <https://unfccc.int/tclear/tec/documents.html>.

32 FCCC/SBI/2022/13.

73. *Recognizes* the importance of the provision of increased support, in a timely, adequate and predictable manner, to developing countries for implementing the enhanced transparency framework under the Paris Agreement;

XIII. **Taking stock**

74. *Welcomes* the progress of the first global stocktake and *notes with appreciation* the balanced, comprehensive and inclusive nature of the technical dialogue of that stocktake;

75. *Emphasizes* that the outcome of the first global stocktake shall inform Parties in updating and enhancing, in a nationally determined manner, their actions and support in accordance with the relevant provisions of the Paris Agreement, as well as in enhancing international cooperation on climate action;

76. *Urges* all stakeholders involved in the first global stocktake to focus on achieving the outcome referred to in Article 14, paragraph 3, of the Paris Agreement;

77. *Welcomes* the invitation of the United Nations Secretary-General to convene a climate ambition summit in 2023 ahead of the conclusion of the first global stocktake at the twentyeighth session of the Conference of the Parties and the fifth session of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (November–December 2023);

XIV. **Article 6 of the Paris Agreement**

78. *Also welcomes* the adoption of decisions -/CMA.4,³⁰ -/CMA.4³¹ and -/CMA.4,³² on issues relating to Article 6 of the Paris Agreement;

³⁰ Draft decision entitled “Matters relating to cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement” proposed under agenda item 13 of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement at its fourth session.

³¹ Draft decision entitled “Guidance on the mechanism established by Article 6, paragraph 4, of the Paris Agreement” proposed under agenda item 14 of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement at its fourth session.

³² Draft decision entitled “Work programme under the framework for non-market approaches referred to in Article 6, paragraph 8, of the Paris Agreement” proposed under agenda item 15 of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement at its fourth session.

xv. Ocean

79. *Encourages* Parties to consider, as appropriate, ocean-based action in their national climate goals and in the implementation of these goals, including but not limited to nationally determined contributions, long-term strategies and adaptation communications;

xvi. Forest

80. *Recalls* Article 5, paragraph 2, of the Paris Agreement, whereby Parties are encouraged to take action to implement and support, including through results-based payments, the existing framework as set out in related guidance and decisions already agreed under the Convention³³ for: policy approaches and positive incentives for activities relating to reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries; and alternative policy approaches, such as joint mitigation and adaptation approaches for the integral and sustainable management of forests, while reaffirming the importance of incentivizing, as appropriate, non-carbon benefits associated with such approaches;

81. *Encourages* Parties to consider, as appropriate, nature-based solutions or ecosystem-based approaches, taking into consideration United Nations Environment Assembly resolution 5/5,³⁴ for their mitigation and adaptation action while ensuring relevant social and environmental safeguards;

xvii. Enhancing implementation: action by non-Party stakeholders

82. *Acknowledges* the engagement of non-Party stakeholders in climate action, which complements and broadens it, while recognizing the pivotal role of governments in action on climate change within the framework of the Convention, the Kyoto Protocol and the Paris Agreement;

³³ Including decisions 1/CP.16 and 9/CP.19.

³⁴ See

https://www.unep.org/environmentassembly/unea-5.2/proceedings-report-ministerial-declaration-resolutions-and-decisions-unea-5.2?%2Fproceedings-report-ministerial-declaration-resolutions-and-decisions-unea-5_2=.

83. *Recognizes* the important role of indigenous peoples, local communities, cities and civil society, including youth and children, in addressing and responding to climate change and *highlights* the urgent need for multilevel and cooperative action in this regard;
84. *Notes* the adoption of the action plan under the Glasgow work programme on Action for Climate Empowerment by decision -/CP.27;³⁵
85. *Encourages* Parties to increase the full, meaningful and equal participation of women in climate action and to ensure gender-responsive implementation and means of implementation, including by fully implementing the Lima work programme on gender and its gender action plan, to raise climate ambition and achieve climate goals;
86. *Invites* Parties to provide support to developing countries for undertaking genderrelated action and implementing the gender action plan;
87. *Recognizes* the role of children and youth as agents of change in addressing and responding to climate change and *encourages* Parties to include children and youth in their processes for designing and implementing climate policy and action, and, as appropriate, to consider including young representatives and negotiators into their national delegations, recognizing the importance of intergenerational equity and maintaining the stability of the climate system for future generations;
88. *Expresses its appreciation* to the Presidency of the twenty-seventh session of the Conference of the Parties for its leadership in promoting the full, meaningful and equal participation of children and youth, including by co-organizing the first youth-led climate forum (the Sharm el-Sheikh youth climate dialogue), hosting the first children and youth pavilion and appointing the first youth envoy of a Presidency of the Conference of the Parties and *encourages* future incoming Presidencies of the Conference of the Parties to consider doing the same;
89. *Expresses its appreciation* to the children and youth constituency for co-organizing the Sharm el-Sheikh youth climate dialogue with the Presidency of the twenty-seventh session of the Conference of the Parties and *notes* the outcomes of the seventeenth Conference of Youth, organized by the constituency and held in Sharm el-Sheikh, Egypt, in November 2022;

³⁵ Draft decision entitled “Action plan under the Glasgow work programme on Action for Climate

Empowerment” proposed under agenda item 3(b) of the Conference of the Parties at its twentyseventh session.

90. *Encourages* Parties and non-Party stakeholders to engage actively in the Marrakech Partnership for Global Climate Action;
91. *Welcomes* the leadership of the Presidency of the Conference of the Parties and of the high-level champions, in particular in the context of the Sharm el-Sheikh Adaptation Agenda and the Breakthrough Agenda, and the collaboration between Parties and non-Party stakeholders, and *emphasizes* the need for continued acceleration and collaboration;
92. *Welcomes* the recommendations of the High-Level Expert Group on the Net-Zero Emissions Commitments of Non-State Entities, launched by the United Nations SecretaryGeneral in March 2022, which are designed to enhance transparency and accountability related to, and progress in achieving, the climate pledges of businesses, investors, cities and regions;
93. *Invites* the secretariat to ensure greater accountability of voluntary initiatives through the Non-State Actor Zone for Climate Action platform;³⁶

Welcomes the convening of five regional forums led by the President of the twenty-seventh session of the Conference of the Parties and the high-level champions, in collaboration with the United Nations Regional Economic Commissions, on initiatives for financing climate action and the Sustainable Development Goals.

³⁶ <https://climateaction.unfccc.int/>.