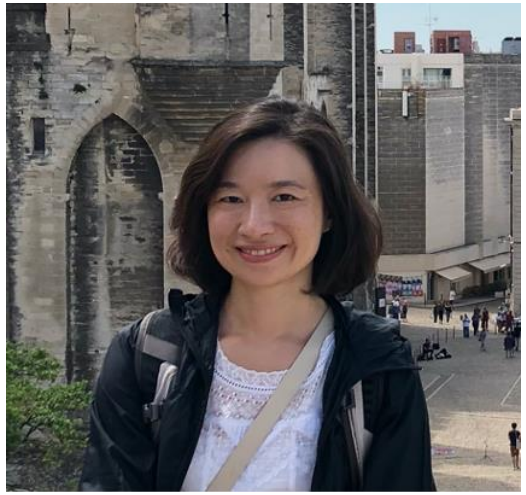
國立臺灣師範大學 NATIONAL TAIWAN NORMAL UNIVERSITY 開放學者平台 Researcher Portal

https://scholar.lib.ntnu.edu.tw/zh/persons/kuan-hui-elaine-lin/



林冠慧 副教授

UN SDG
17項永續發展目標相關的專業知識

- SDG 1 終結貧窮
- SDG 3 健康與福祉
- SDG 15 陸域生命
- SDG 16 和平、正義與強韌的制度
- SDG 13 氣候行動

過去五年中的合作和熱門研究領域

國家/地區層面的近期外部共同作業。按一下圓點深入探索詳細資料，或 從清單中選擇國家/地區

氣候與災難風險研究室

REACHES+dr Lab

Risk is determined by interactions among hazard, vulnerability, exposure and responses to risk.

Risk assessments span all three IPCC Working Groups (WGs)

Climate event or related trend (**WGI/ WGII**)

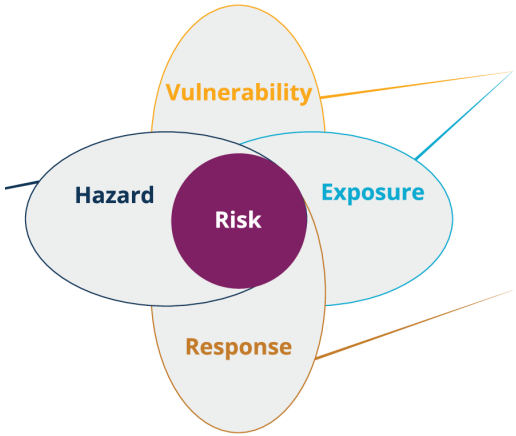
People, ecosystems, human systems and assets exposed and their propensity or predisposition to be adversely affected **(WGII)**

Risks from human adaptation and mitigation responses to climate change failing to achieve intended outcome or creating adverse outcomes elsewhere (**WGII/ WGIII**)

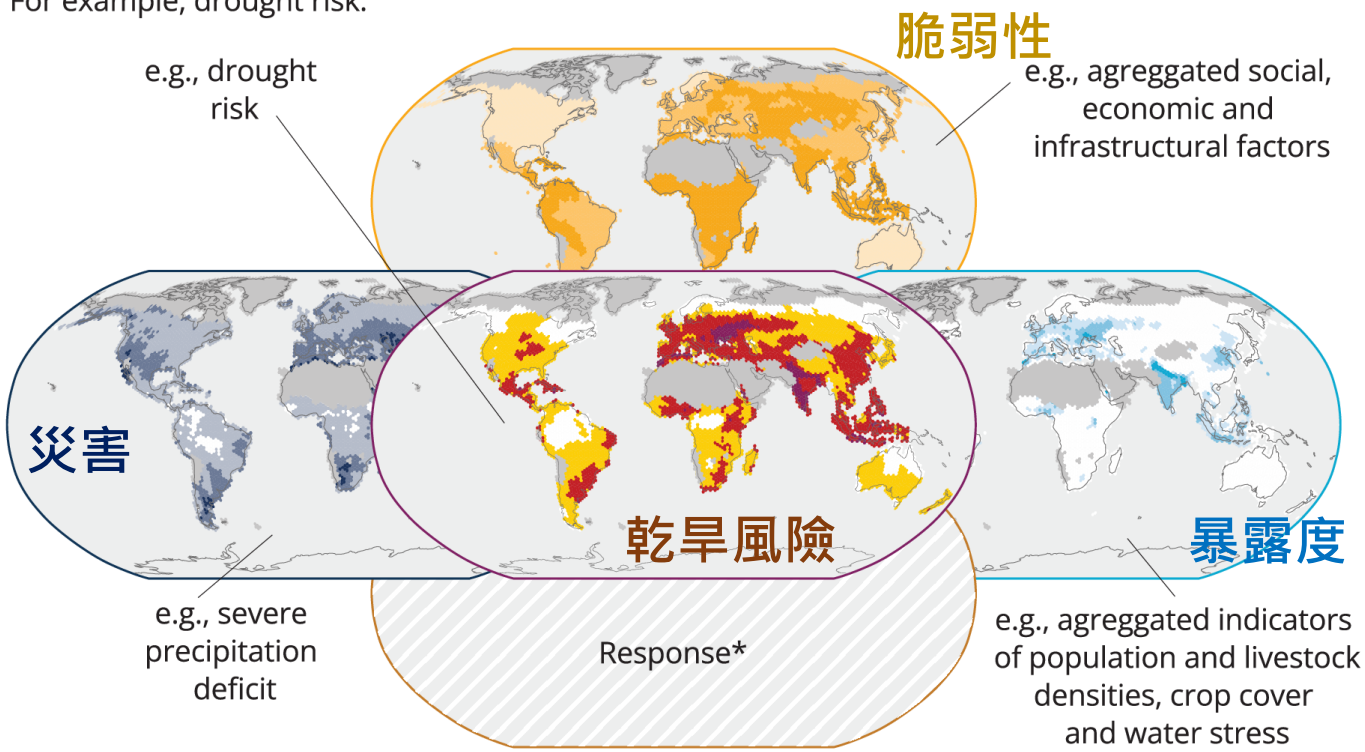
Alegría et al., 2024 in npj climate action

氣候與災難風險研究室

REACHES+dr Lab



b. Data on risk and its determinants is often available in distinct spatially explicit layers.
For example, drought risk.

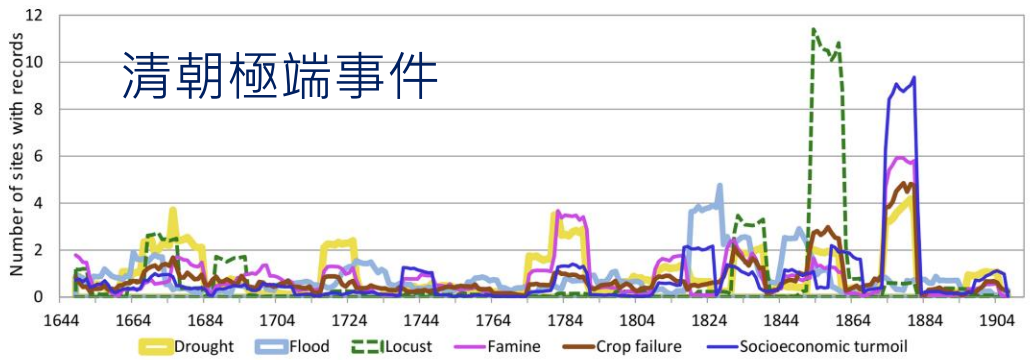


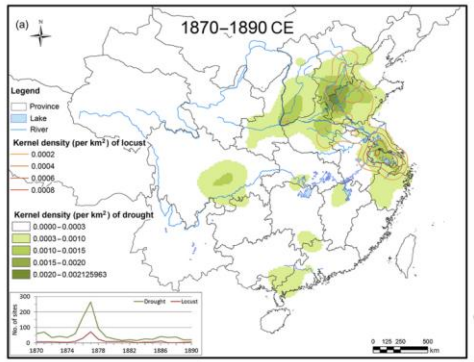
* Although limited availability of data hindered the inclusion of the response determinant in the risk framework for the IPCC sixth assessment, it remains an opportunity for the next assessment cycle.

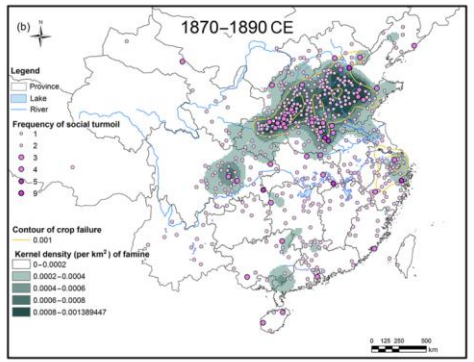
Alegría et al., 2024 in npj climate action

REACHES 東亞歷史氣候科學

K.-H. E. Lin et al.: Historical droughts in the Qing dynasty







乾旱分布

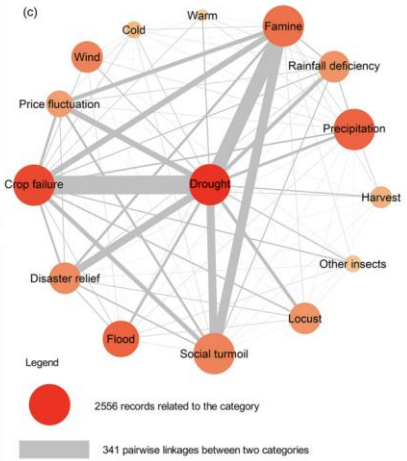
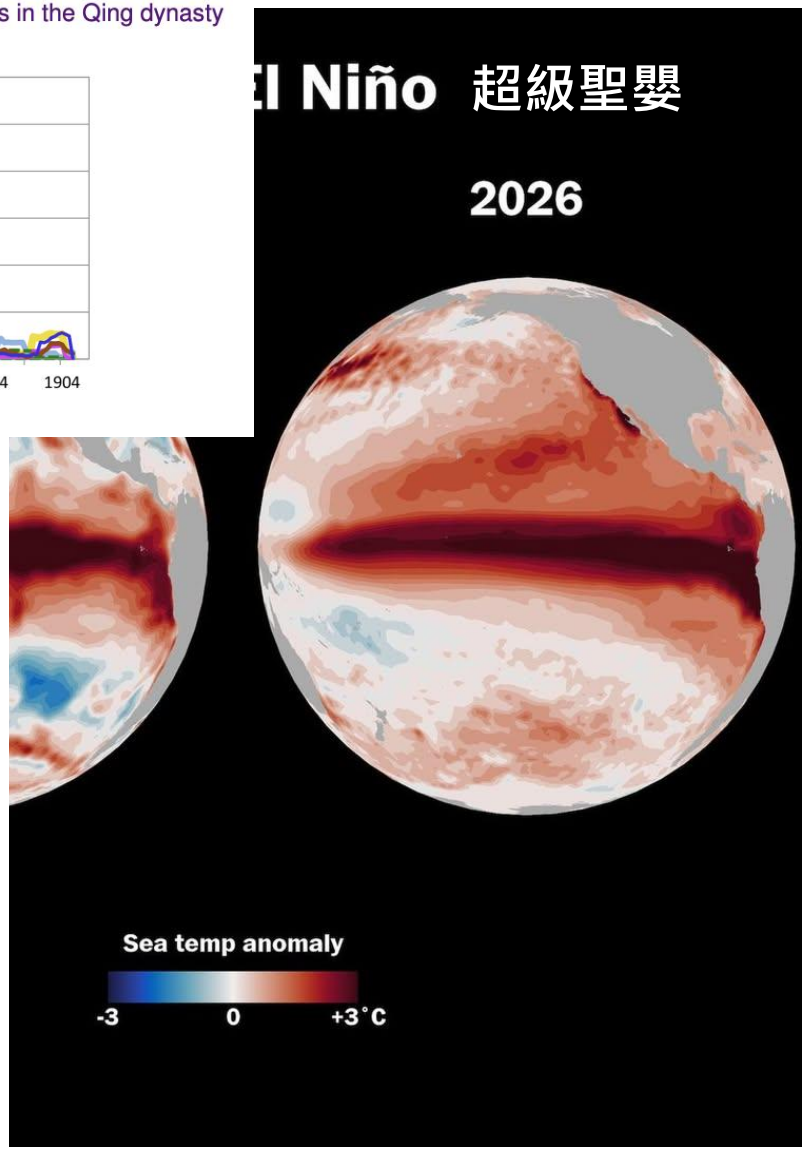


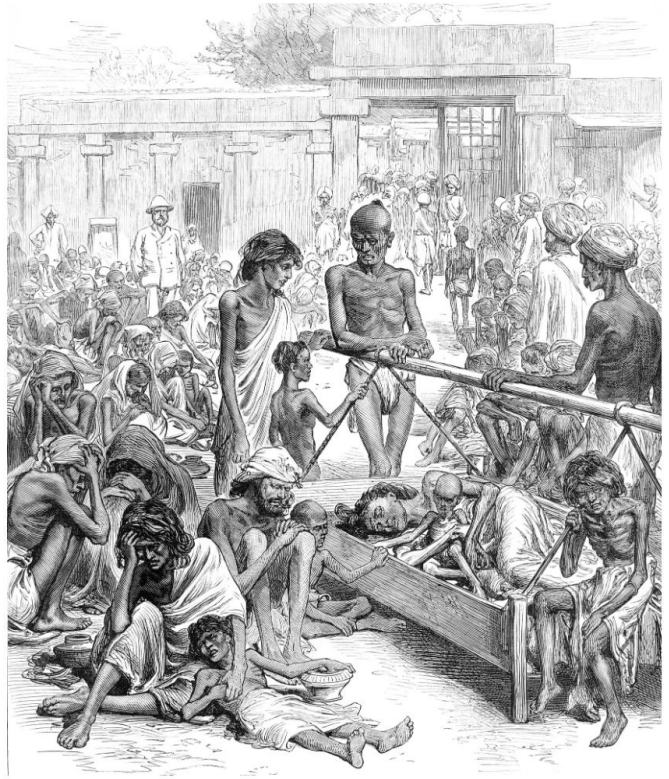
Figure 12. Spatial distribution of the kernel density function of drought and locust outbreaks **(a)** and social turmoil **(b)**, and the social network chart **(c)** in the drought period 1870–1890.



The New York Times

A Powerful El Niño Is Forming. If History Is a Guide, It Could Hit Hard.

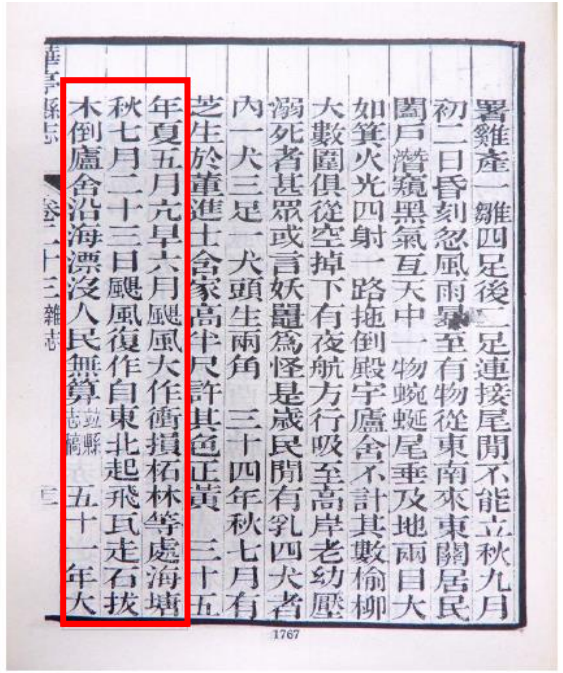
The biggest episodes of the past have altered the course of human events, according to researchers. An emerging one is drawing historic comparisons.



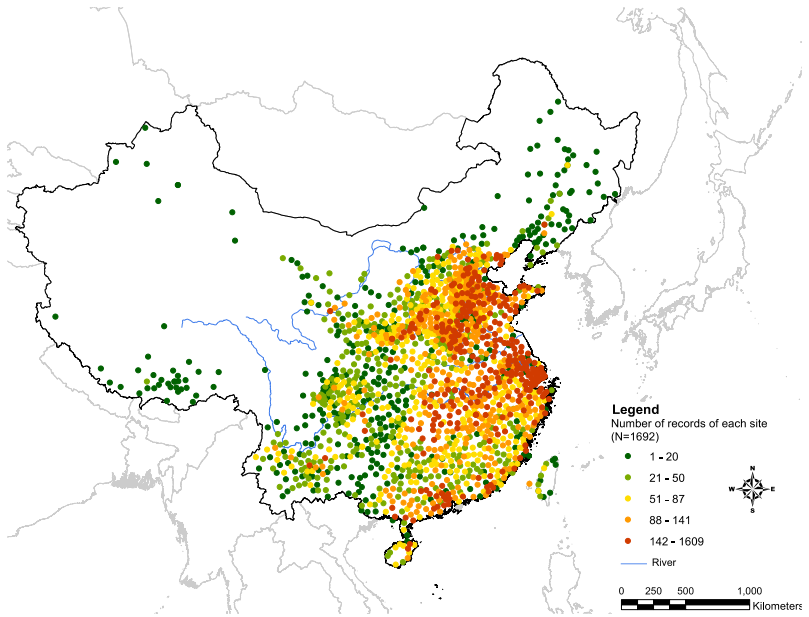
An 1877 illustration from a London newspaper showed people in Bangalore, southern India, seeking famine relief. Universal Images Group, via Getty Images

REACHES 東亞歷史氣候科學

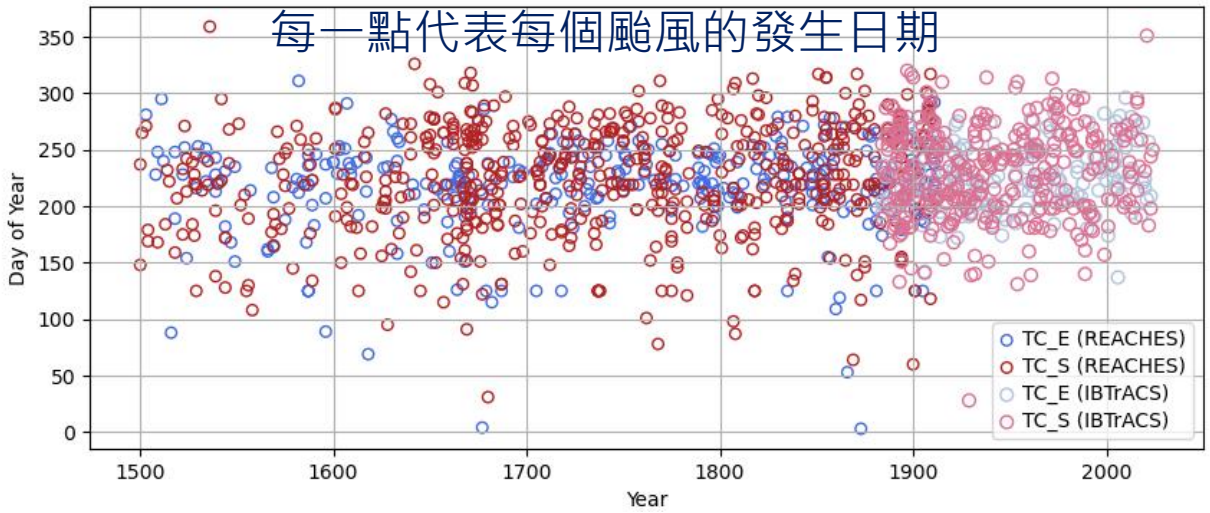
Wang et al., 2018, 2024 in Scientific Data



1368-1911 >10萬筆紀錄

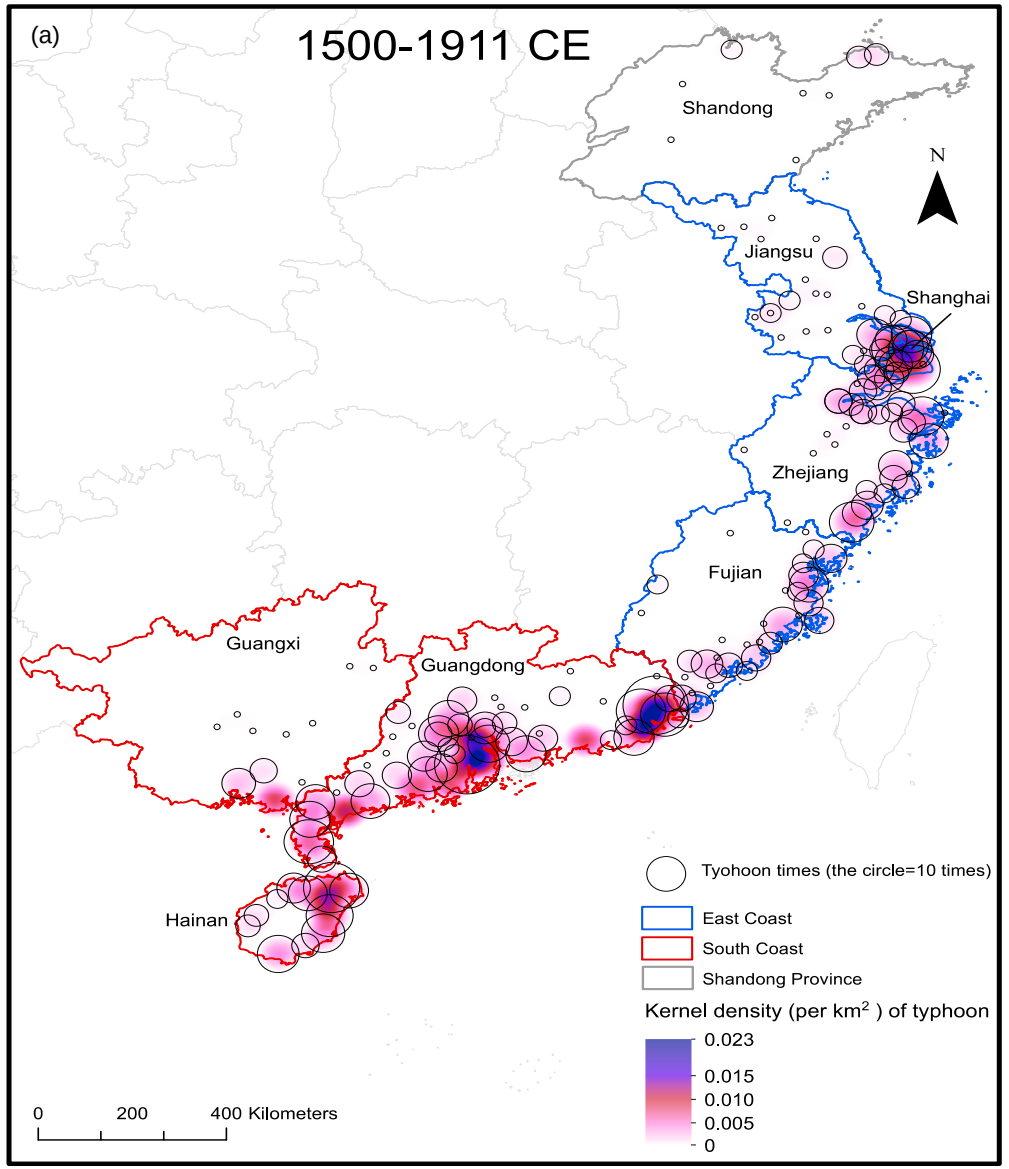


每一點代表每個颱風的發生日期



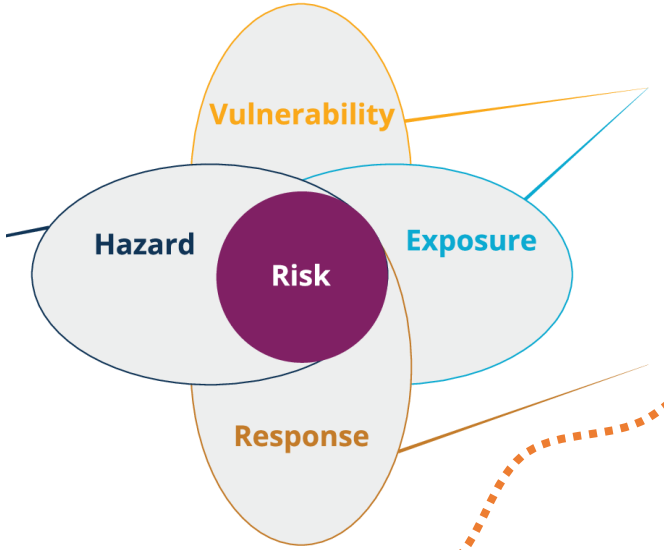
古颱風重建

Lin et al., 2025 in PNAS



REACHES+dr 氣候與災難風險

ipcc
INTERGOVERNMENTAL PANEL ON climate change
WMO UNEP



TCFD | TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

▲ 氣候相關風險

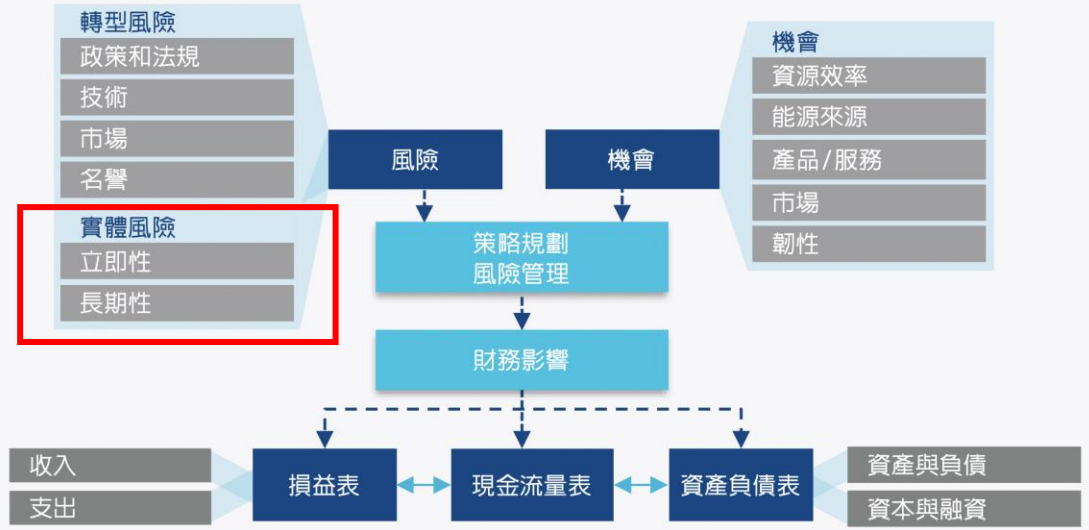
TCFD 工作小組將氣候相關風險劃分為兩大類：

（1）與氣候變遷影響相關的實體風險和

（2）與低碳經濟相關的轉型風險。

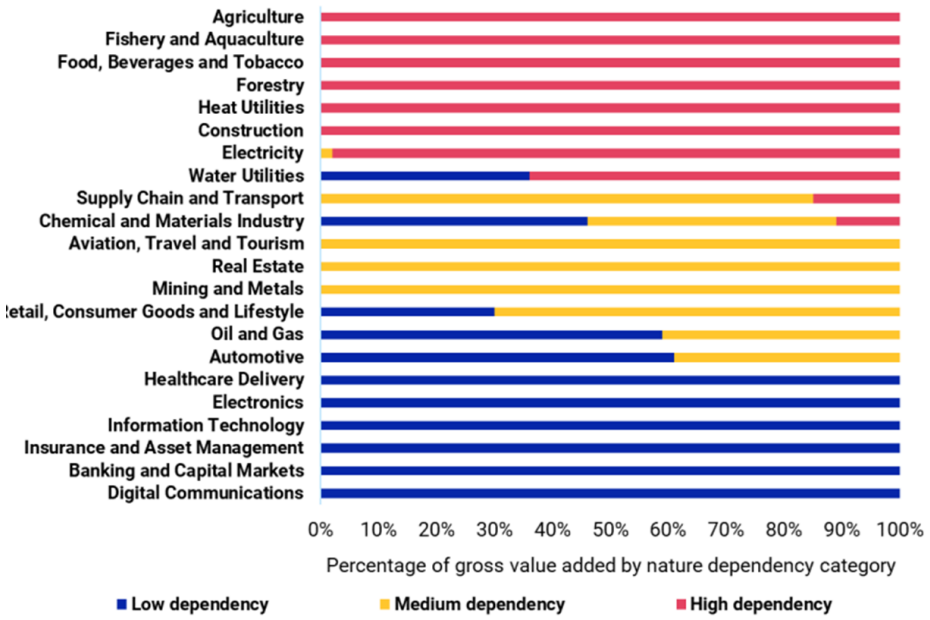
Figure 1

氣候相關風險、機會和財務影響



REACHES+dr 從氣候到自然風險

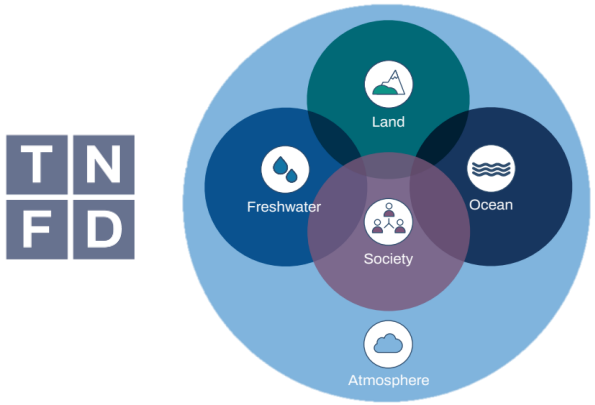
全球50 %的 GDP 依賴自然資本(Klug et al., 2023).

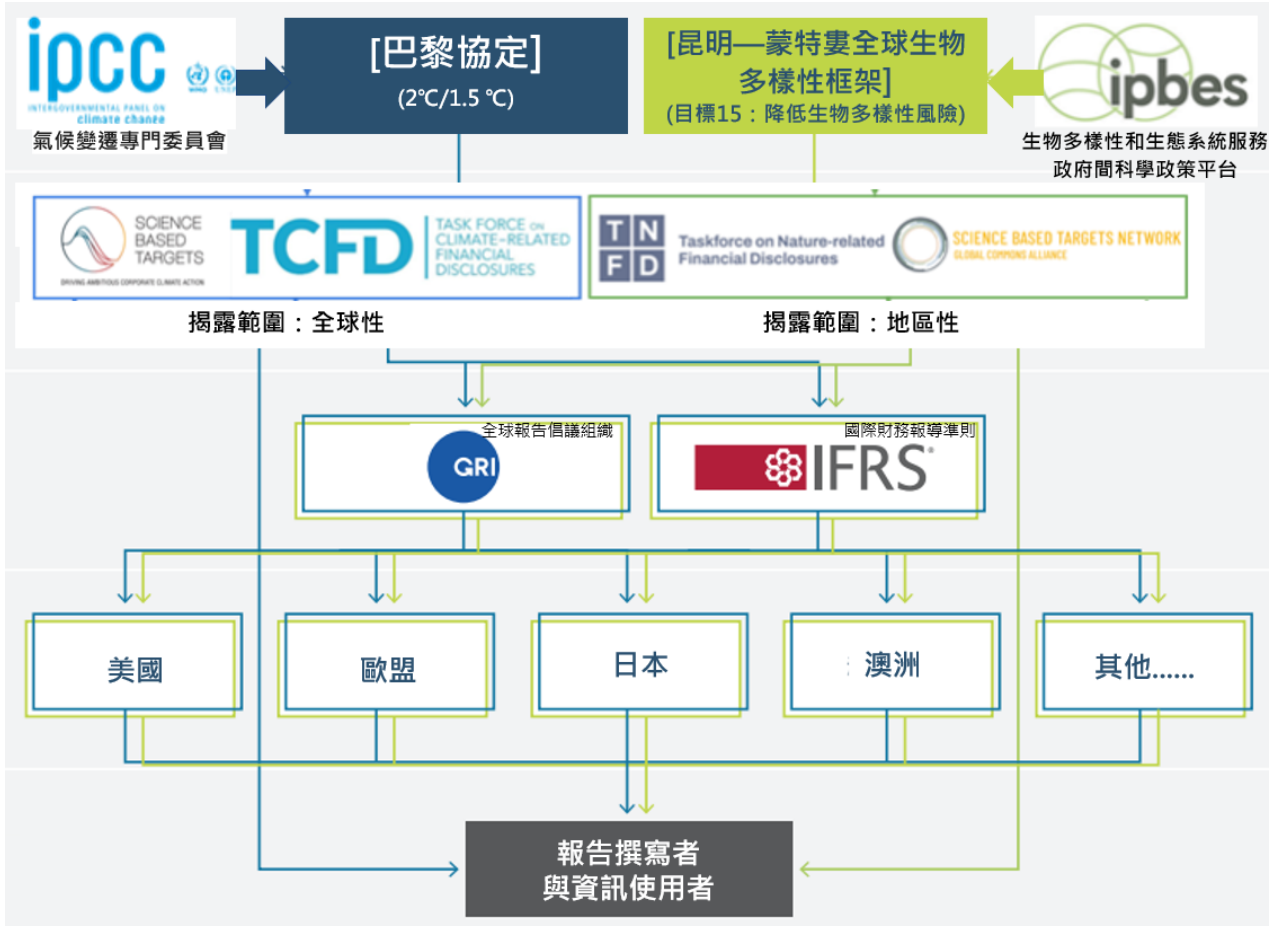


50%
of global GDP is dependent on nature

75%
of global food crops rely on animal pollination

50%
of crops at risk due to soil erosion





REACHES+dr 建立臺灣在地方法學

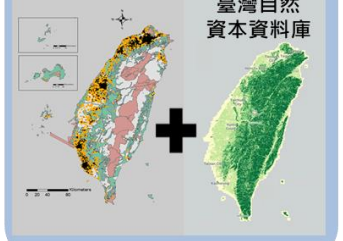
評估方法學 LEAP

Locate 定位 — **Evaluate 評估** — **Assess 評量** — **Prepare 準備**

自身營運與自然的交集

參考國際資源並整合在地環境圖資，利用GIS和InVest工具，分析自身營運點位

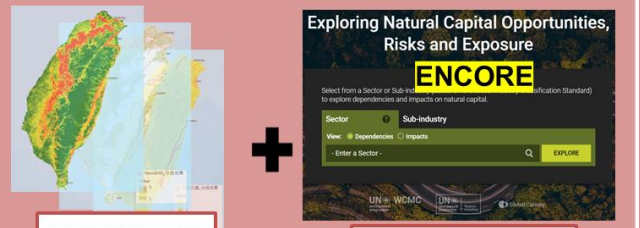
地理對位與定位 (TwNCD) 臺灣自然資本資料庫



以定位分析結果為基礎鑑別依賴與影響

深入分析自然相關依賴與影響，及其重大性

利用ENCORE資料庫為基礎，建立**台灣自然資本**資料庫，鑑別所有點位的依賴與影響的數值，針對各項指標，進行內部產業的分析，挑選出**重大性依賴影響議題**



定位分析分數 Location Score

重大性評分 Materiality rating

評估自然相關風險與機會

未來針對依賴影響重大性結果，鑑別適合自身的風險與機會。

TNFD情境分析

風險因子識別與鑑定

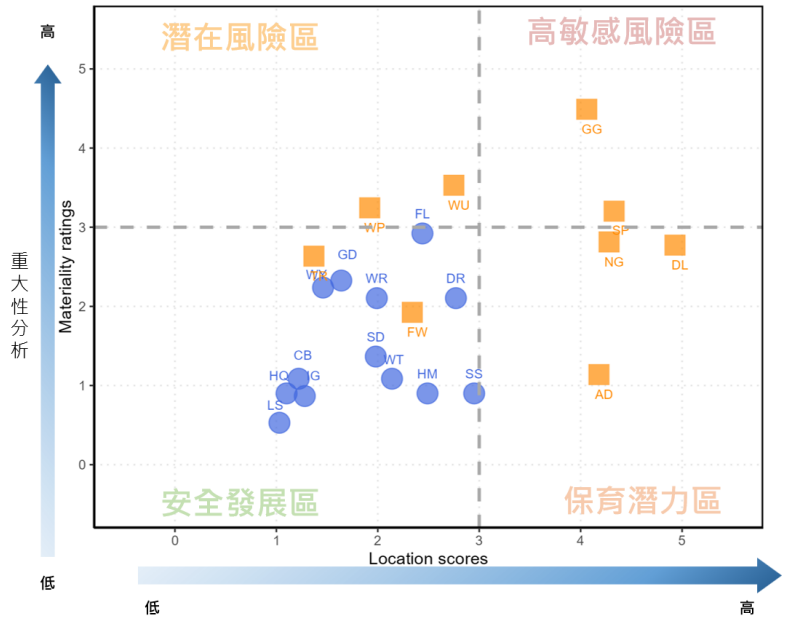
二象限情境分析設計

財務定量評估

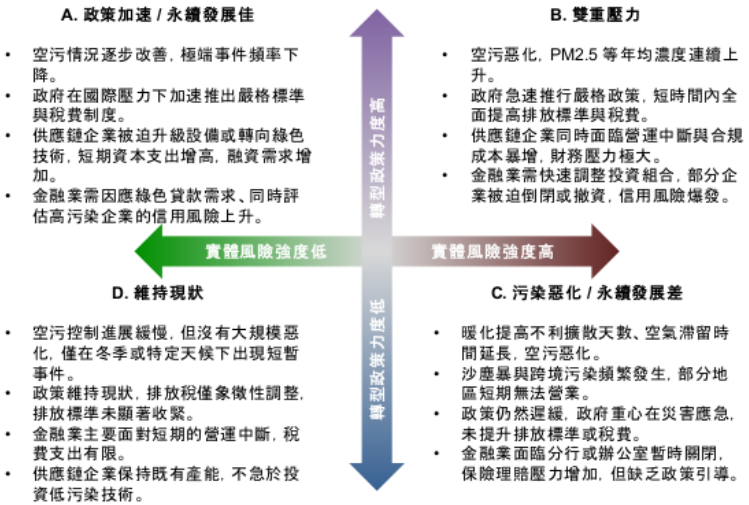
準備對應相關風險與機會的

扣回LEA階段及時減緩識別風險。
透過轉型識別未來機會。

產業-分析重大性矩陣圖



空氣汙染情境分析



REACHES+dr TNFD未來發展方向

在地資料庫擴充與建置

LTSER TAIWAN Feitsui
LTSER翡翠站
森林茶園生態系統長期觀測計畫

生物多樣性資料 – 被動聲學監測鳥音資料

野外排程錄音機

eBird

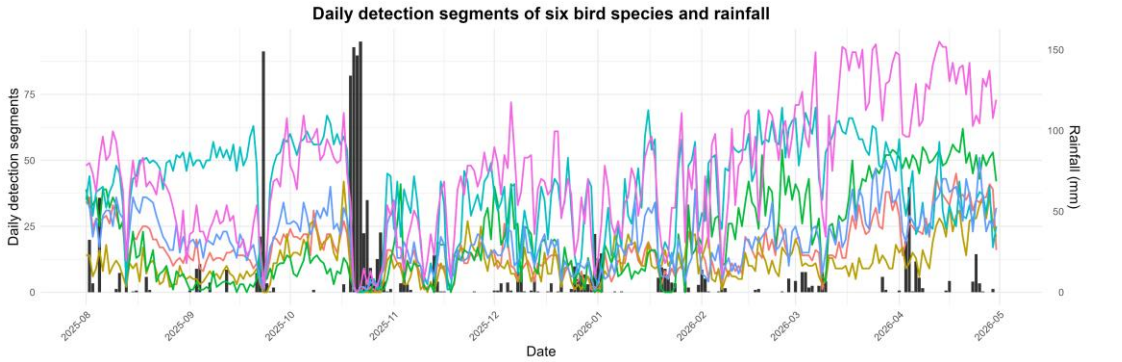
鳥音自動辨識軟體

資料上傳開放平台

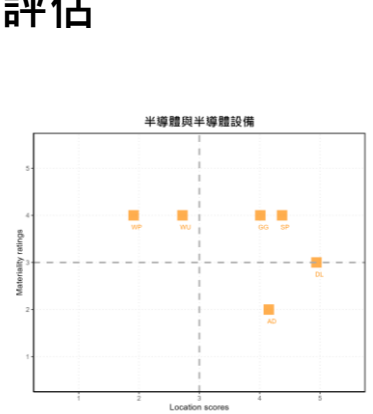
depositar 研究資料寄存所

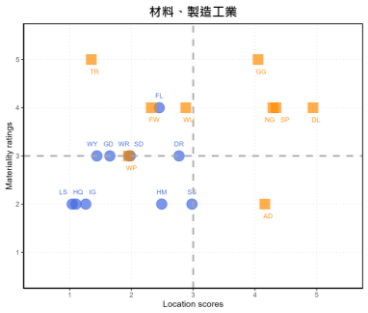
資料處理與分析

- 慣行 VS 有機茶園
- 環境 VS 人為干擾
- 日行性 VS 夜行性



- 不同產業TNFD評估、風險財務量化評估





- 在地化生態系統服務量化計算

① 生物多樣性、水資源等多種生態系統服務量化計算

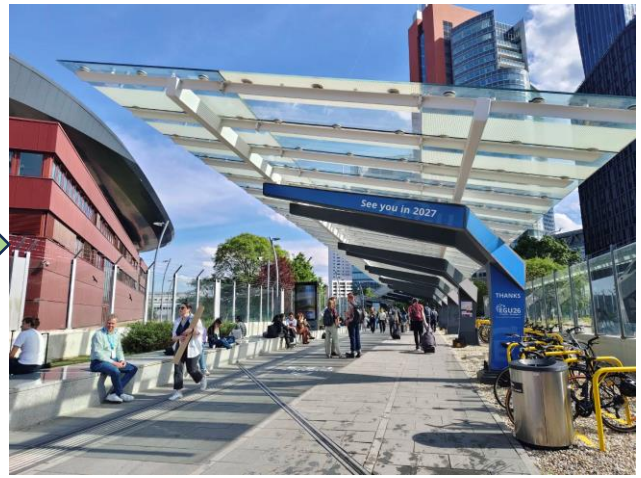
② 服務量化後與財務計算結合

- 合作單位

校內：生科院、資工系　　校外：農業部林業及自然保育署 Forestry And Nature Conservation Agency, Ministry Of Agriculture

REACHES+dr 國際交流

歐洲地球科學聯合會(EGU)



國際合作團隊

University of Bern, Switerland

自然地理學：Prof. Dr. Stefan Brönnimann

歷史學：Prof. Dr. Heli Huhtamaa

University of Stockholm, Sweden

自然地理學：Prof. Dr. Qiong Zhang

歷史學：Prof. Dr. Fredrik C. Ljungqvist

International PAGES 2K, hydroclimate 2K, and CRIAS

歡迎加入309B！