

# 使用程式對網路資料進行 收集與整理

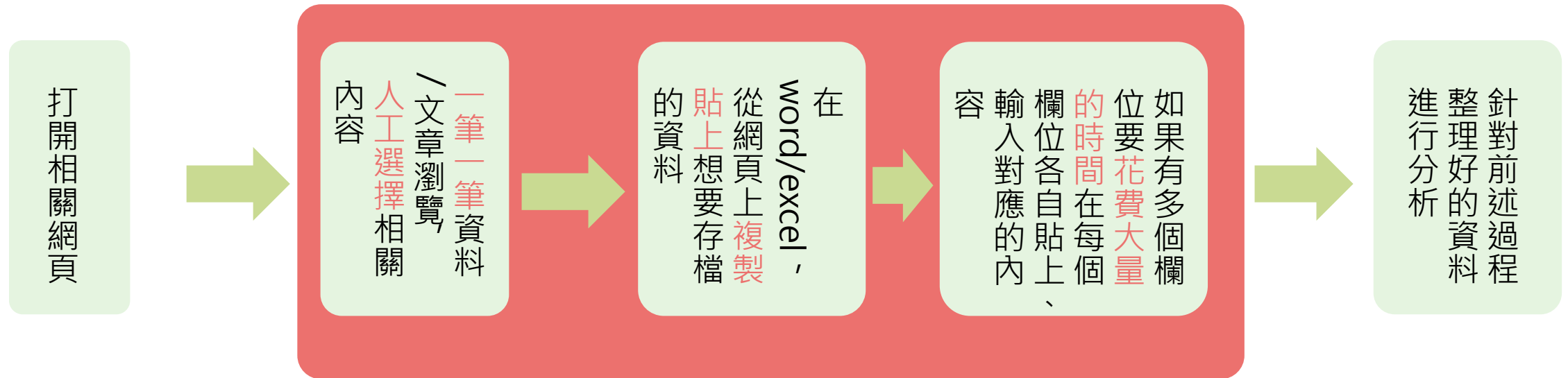
台大地理系 劉玟宜

# 動機、為何使用

- 了解國外目前的推動進度
- 資料分散在各個網頁，而且數量很多
- 希望能快速整理成容易閱讀的格式

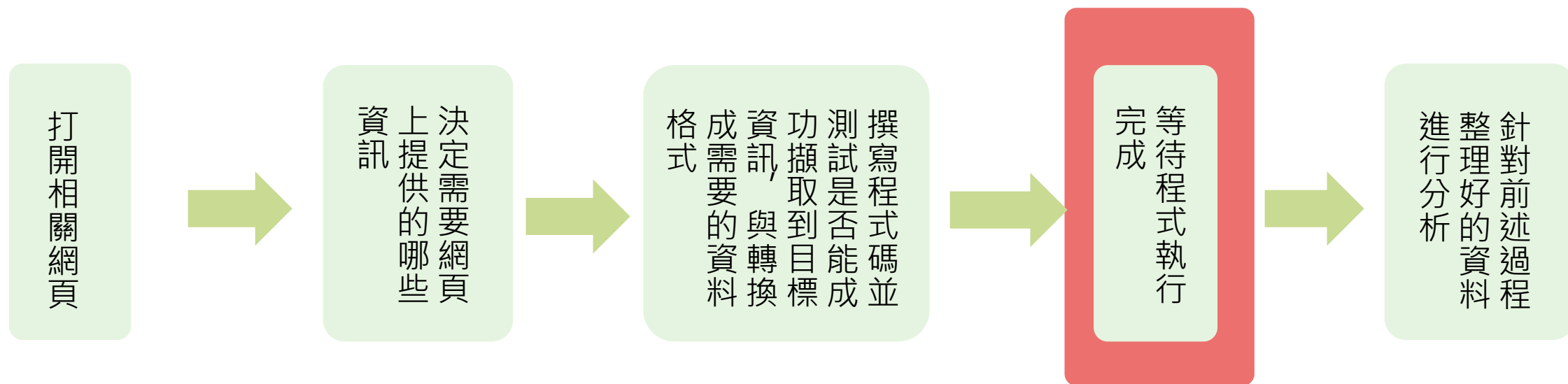
# 傳統收集網路資料的過程

重複作業而且耗時、費力，有時候遺漏了可能很難回頭重新檢視執行過程



# 利用程式收集網路資料的過程

取代原先人力蒐集重複作業的過程



# Raw Data

## Filters



### ▼ Collection

- ☐ Select all
- ☒ Projects
- ☐ Results Packs
- ☐ Research\*eu magazines
- ☒ Results in Brief
- ☐ News
- ☐ Events
- ☐ Interviews
- ☒ Report Summaries
- ☒ Project Deliverables
- ☒ Project Publications
- ☐ Exploitable Results

natural based solutions



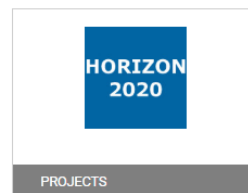
Edit query

8813 results for "natural based solutions"

Filtered by:

Collection:

✕ Clear all filters



### UNALAB Urban Nature Labs

ID: 730052

From: 1 June 2017 to 31 May 2022

UNaLab will develop, via co-creation with stakeholders and implementation of 'living lab' demonstration areas, a robust evidence base and European framework of innovative, replicable, and locally-attuned nature-based solutions to enhance the climate and water...

Coordinated in: **Finland**

Programme: [H2020-EU.3.5.2.1.](#) , [H2020-EU.3.5.2.3.](#) , [H2020-EU.3.5.1.2.](#) , [H2020-EU.3.5.1.3.](#) , [H2020-EU.3.5.2.2.](#)

Last update: 3 July 2020

 Add to my booklet



**RENATURE promoting Research Excellence in NAture-based soluTions for innovation, sUustainable economic GRowth and human wEll-being in Malta**

# Download from Database

cordis-h2020projects [受保護の檢視] - Excel

受保護の檢視 小心，來自於網際網路的檔案可能有病毒。除非您需要編輯，否則停留在 [受保護的檢視] 中較為安全。 啟用編輯(E)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	rcn	id	acronym	status	programme	topics	frameworkPro	title	startDate	endDate	projectUrl	objective	totalCost	ecMaxContrib	call	fundingScheme	code
2		229267	894593	ICARUS	SIGNED	H2020-EU.3.4.7.	SESAR-ER4	H2020	INTEGRATED	2020-05-01	2022-07-31	ICARUS	1385286.25	1144587.5	H2020-SESAR	SESAR-RIA	E-C
3		229284	897004	ISLand	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	Isolation and	2020-11-01	2023-10-31	The	253052.16	253052.16	H2020-MSCA	MSCA-IF-GF	UN
4		229281	896300	STRETCH	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	Smart Textiles	2020-09-01	2022-08-31	This project ai	183473.28	183473.28	H2020-MSCA	MSCA-IF-EF	JR
5		229265	892890	RhythmicPred	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	Rhythmic prec	2021-01-01	2022-12-31	Speech has	191149.44	191149.44	H2020-MSCA	MSCA-IF-EF	UN
6		229235	886828	ASAP	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	Advanced Sol	2021-09-01	2023-08-31	The	187572.48	187572.48	H2020-MSCA	MSCA-IF-EF	NE
7		229236	886776	BIOBESTicide	SIGNED	H2020-EU.2.1.4.,H2020-EU.3.2.	BBI-2019-SO	H2020	BIO-Based pE	2020-05-01	2023-04-30	The	4402772.5	3069653	H2020-BBI-JT	BBI-IA-DEMO	BIC
8		229276	895426	DisMoBoH	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	Dissecting the	2021-09-01	2023-08-31	Numerous DN	191149.44	191149.44	H2020-MSCA	MSCA-IF-EF	EC
9		229288	898218	devUTRs	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	Uncovering th	2021-09-01	2023-08-31	Following fertil	191149.44	191149.44	H2020-MSCA	MSCA-IF-EF	UN
10		229261	893787	HOLYHOST	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	Welfare and F	2020-10-01	2022-09-30	Between the	196707.84	196707.84	H2020-MSCA	MSCA-IF-EF	UN
11		229282	896189	MICADO	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	Microbial cont	2021-01-04	2023-01-03	Continental we	196707.84	196707.84	H2020-MSCA	MSCA-IF-EF	CE
12		229249	891624	CuTAN	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	Copper-Cataly	2021-02-01	2023-01-31	The invention	212933.76	212933.76	H2020-MSCA	MSCA-IF-EF	TH
13		229239	887259	ALEHOOP	SIGNED	H2020-EU.2.1.4.,H2020-EU.3.2.	BBI-2019-SO	H2020	Biorefineries	2020-06-01	2024-05-31	ALEHOOP	6718370	5140274.41	H2020-BBI-JT	BBI-IA-DEMO	CO
14		229258	892834	DENVPOC	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	qPCR Microfl	2020-05-18	2022-05-17	As a result of	196707.84	196707.84	H2020-MSCA	MSCA-IF-EF	BF
15		229280	895716	DoMiCoP	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	The Diffusion	2021-03-01	2023-02-28	DoMiCoP dev	163673.28	163673.28	H2020-MSCA	MSCA-IF-EF	EUI
16		229297	954782	MiniLLock	SIGNED	H2020-EU.3.,H2020-EU.2.3.,H20	EIC-SMEInst	H2020	Mini Launch L	2020-05-01	2022-04-30	Space	2413543.75	1689480.63	H2020-EIC-SI	SME-2b	NIM
17		229299	101003374	NOPHOS	SIGNED	H2020-EU.4.	WF-02-2019	H2020	Unravelling pri	2020-07-01	2022-06-30	Currently, we	147815.04	147815.04	H2020-WF-02	MSCA-IF-EF	UN
18		229220	883121	PRODIGI	SIGNED	H2020-EU.1.1.	ERC-2019-AC	H2020	Problem Defin	2021-01-01	2025-12-31	'How does an	2483765	2483765	ERC-2019-AC	ERC-ADG	UN
19		229237	887115	CAFIPLA	SIGNED	H2020-EU.2.1.4.,H2020-EU.3.2.	BBI-2019-SO	H2020	Combining ca	2020-06-01	2023-05-31	The 3-year	4904532.5	4532952.31	H2020-BBI-JT	BBI-RIA	FUI
20		229274	894725	xICE	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	Exploring inter	2020-09-01	2022-08-31	The ice giant	184707.84	184707.84	H2020-MSCA	MSCA-IF-EF	EC
21		229234	885593	COBEX	SIGNED	H2020-EU.1.1.	ERC-2019-AC	H2020	COupling data	2020-10-01	2025-09-30	Exoplanetolo	2495266	2495266	ERC-2019-AC	ERC-ADG	CE
22		229252	887501	MPowerBIO	SIGNED	H2020-EU.2.1.4.,H2020-EU.3.2.	BBI-2019-SO	H2020	eM-POWERin	2020-05-01	2022-10-31	The	1578908.13	1499962.38	H2020-BBI-JT	BBI-CSA	AG
23		229245	886567	BIZENTE	SIGNED	H2020-EU.2.1.4.,H2020-EU.3.2.	BBI-2019-SO	H2020	Apply ligninas	2020-05-01	2024-04-30	BIZENTE	3185071.25	2509342.3	H2020-BBI-JT	BBI-RIA	FUI
24		229266	894412	CORALCARE	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	CRISPR gene	2020-09-01	2023-08-31	The CORALC	281827.2	281827.2	H2020-MSCA	MSCA-IF-GF	INS
25		229270	894326	TECNO	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	Templated Ele	2020-10-01	2022-09-30	The overall	191149.44	191149.44	H2020-MSCA	MSCA-IF-EF	IBM
26		229259	892957	HippoFronTha	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	Role of midline	2020-10-01	2023-09-30	Emotional	235191.36	235191.36	H2020-MSCA	MSCA-IF-GF	INS
27		229210	869300	FutureMARES	SIGNED	H2020-EU.3.5.1.,H2020-EU.3.5.2.	LC-CLA-06-2	H2020	Climate Chang	2020-09-01	2024-08-31	Marine and tra	8555905	8555905	H2020-LC-CL	RIA	UN
28		229208	869429	HUB-IN	SIGNED	H2020-EU.3.5.6.	SC5-20-2019	H2020	Hubs of Innov	2020-09-01	2024-08-31	Hubs of	8135105.12	7998797.5	H2020-SC5-2	IA	LIS
29		229256	892584	TransIT	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	Many Diaspor	2021-01-01	2022-12-31	TransIT is	189099.84	189099.84	H2020-MSCA	MSCA-IF-GF	CA
30		229205	869383	ECOTIP	SIGNED	H2020-EU.3.5.1.	LC-CLA-07-2	H2020	Arctic biodiver	2020-06-01	2024-05-31	The Arctic ma	6361535.75	6361535.75	H2020-LC-CL	RIA	DA
31		229225	884778	ImpulsiveFlow	SIGNED	H2020-EU.1.1.	ERC-2019-AC	H2020	Impulsive Flow	2020-12-01	2025-11-30	My goal is to	2499567.5	2499567.5	ERC-2019-AC	ERC-ADG	TE
32		229241	885632	FLEXINGPLE	SIGNED	H2020-EU.1.1.	ERC-2019-AC	H2020	A structure-fu	2020-09-01	2025-08-31	During the	2083825	2083825	ERC-2019-AC	ERC-ADG	TH
33		229253	886416	ELIOT	SIGNED	H2020-EU.3.4.5.4.	JTI-CS2-2019	H2020	End of Life (E	2020-07-01	2023-02-28	ELIOT aims	349697.5	349697.5	H2020-CS2-C	CS2-RIA	AIM
34		229293	899770	MOBILISE	SIGNED	H2020-EU.1.1.	ERC-2019-PC	H2020	Monoamine o	2020-09-01	2022-02-28	Although the number of anti-	150000	150000	ERC-2019-Po	ERC-POC-LS	UN
35		229291	898354	RaSeCoL	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	RaSeCoL: Rai	2021-04-01	2023-03-31	The	183473.28	183473.28	H2020-MSCA	MSCA-IF-EF	UN
36		229244	891535	InterPlay	SIGNED	H2020-EU.1.3.2.	MSCA-IF-201	H2020	A Part to Play	2020-07-01	2022-06-30	Infants learn a	184590.72	184590.72	H2020-MSCA	MSCA-IF-EF	TH
37		229223	879956	ALPS INN3	SIGNED	H2020-EU.2.3.2.2.	H2020-EEN-S	H2020	EEN Innovatio	2020-01-01	2021-12-31	The project,	267912.5	267912.5	H2020-EEN-S	H2020-EEN-S	CA

project

就緒

100%

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2020/7/9

# Summraized from Programming

H2020_project_Nbs - Excel														
檔案 常用 插入 繪圖 版面配置 公式 資料 校閱 檢視 說明 告訴我您想做什麼 共用														
剪貼簿 字型 對齊方式 數值 樣式 儲存格 編輯														
G1														
	A	B	C	D	E	F	H	I	J	K	L	M	N	
1	rcn	id	acronym	status	programme	topics	framework	title	startDate	endDate	length		projectUrl	objective
2	205046	735012	MobileRecycle	CLOSED	H2020-EU.3.5.1	SMEInst-11-2016-2017	H2020	Green mobile recycling technology for	2016-08-0	2017-01-3	183	0.50137	http://www.leitnertechnologies.sk/	The plastic w
3	206413	730468	Nature4Cities	SIGNED	H2020-EU.3.5.4	SCC-03-2016	H2020	Nature Based Solutions for re-naturin	2016-11-0	2020-10-3	1460	4	http://nature4cities.eu/	Based on a de
4	206400	730243	NATURVATION	SIGNED	H2020-EU.3.5.4	SCC-03-2016	H2020	Nature Based Urban Innovation	2016-11-0	2020-10-3	1460	4	http://www.naturvation.eu	Nature-Based
5	206223	730338	ThinkNature	SIGNED	H2020-EU.3.5.1	SC5-10-2016	H2020	Development of a multi-stakeholder c	2016-12-0	2019-11-3	1094	2.99726	https://www.think-nature.eu/	Nature-based
6	210521	730426	URBAN GreenUP	SIGNED	H2020-EU.3.5.2	SCC-02-2016-2017	H2020	New Strategy for Re-Naturing Cities	2017-06-0	2022-05-3	1825	5	http://www.urbangreenup.eu/	Urban Greenl
7	210510	730052	UNALAB	SIGNED	H2020-EU.3.5.2	SCC-02-2016-2017	H2020	Urban Nature Labs	2017-06-0	2022-05-3	1825	5	https://www.unalab.eu	UNaLab will
8	210514	730283	GROW GREEN	SIGNED	H2020-EU.3.5.2	SCC-02-2016-2017	H2020	Green Cities for Climate and Water I	2017-06-0	2022-05-3	1825	5	http://growgreenproject.eu/	The frontrunn
9	210512	730222	CONNECTING Nature	SIGNED	H2020-EU.3.5.2	SCC-02-2016-2017	H2020	COproductionN with NaturE for City	2017-06-0	2022-05-3	1825	5	http://www.connectingnature.eu	The overarchi
10	211158	769003	NBS2017	SIGNED	H2020-EU.3.5.	SC5-23-2016-2017	H2020	Nature-based Solutions: From Innova	2017-06-0	2018-02-2	272	0.745205	http://www.nbs2017.eu	The Estonian
11	217465	776681	Phusicos	SIGNED	H2020-EU.3.5.1	SC5-08-2017	H2020	PHUSICOS: 'According to nature' - s	2018-05-0	2022-04-3	1460	4	https://phusicos.eu/	PHUSICOS,
12	216086	776783	URBiNAT	SIGNED	H2020-EU.3.5.2	SCC-02-2016-2017	H2020	URBiNAT - Healthy corridors as dri	2018-06-0	2023-05-3	1825	5		URBiNAT fo
13	217473	776848	OPERANDUM	SIGNED	H2020-EU.3.5.1	SC5-08-2017	H2020	OPEn-air laboRatories for Nature ba	2018-07-0	2022-06-3	1460	4	https://www.operandum-project.eu/	Severe hydro
14	216357	809988	RENATURE	SIGNED	H2020-EU.4.b.	WIDESPREAD-05-2017	H2020	promoting Research Excellence in N	2018-09-0	2021-08-3	1095	3		The RENATI
15	216089	776866	RECONNECT	SIGNED	H2020-EU.3.5.1	SC5-08-2017	H2020	RECONNECT - Regenerating ECOsys	2018-09-0	2023-08-3	1825	5		RECONNECT
16	214828	786566	Mind4Stormwater	SIGNED	H2020-EU.1.3.2	MSCA-IF-2017	H2020	Innovative stormwater asset manager	2018-09-0	2021-08-3	1095	3		Mind4Stormv
17	219525	821303	EU-VNP-Net	SIGNED	H2020-EU.3.5.2	SC5-18-2018	H2020	EU Valuing Nature Programme and	2018-11-0	2021-10-3	1095	3		The overall ol
18	220371	824711	MICS	SIGNED	H2020-EU.5.c.	SwafS-15-2018-2019	H2020	Developing metrics and instruments t	2019-01-0	2021-12-3	1095	3		THE MICS p
19	223596	821016	REGREEN	SIGNED	H2020-EU.3.5.4	SC5-13-2018-2019	H2020	Fostering nature-based solutions for s	2019-09-0	2023-08-3	1460	4		Urban systerr
20	227003	852633	Niche4Nbs	SIGNED	H2020-EU.1.1.	ERC-2019-STG	H2020	Beyond assuming co-benefits in Natu	2020-04-0	2025-03-3	1825	5		Urbanization
21	228786	873964	METABUILDING	SIGNED	H2020-EU.2.3.2	INNOSUP-01-2018-2020	H2020	METAclustering for cross-sectoral ar	2020-05-0	2023-04-3	1094	2.99726		The EU const
22	229002	869710	MaCoBioS	SIGNED	H2020-EU.3.5.1	LC-CLA-06-2019	H2020	Marine Coastal Ecosystems Biodiver	2020-06-0	2024-05-3	1460	4		The EU 2020
23	228632	887396	NetworkNature	SIGNED	H2020-EU.3.5.2	SC5-23-2019	H2020	NetworkNature - Advancing nature-t	2020-06-0	2023-07-3	1155	3.164384		NetworkNatu
24	227621	896651	Nature-In	SIGNED	H2020-EU.1.3.2	MSCA-IF-2019	H2020	New sustainable Nature-inclusive arc	2020-08-0	2023-07-3	1094	2.99726		Nature-In is a
25	229210	869300	FutureMARES	SIGNED	H2020-EU.3.5.1	LC-CLA-06-2019	H2020	Climate Change and Future Marine E	2020-09-0	2024-08-3	1460	4		Marine and tr
26	229209	867564	CONEXUS	SIGNED	H2020-EU.3.5.4	SC5-13-2018-2019	H2020	CO-producing Nature-based solution	2020-09-0	2024-08-3	1460	4		Cities and reg
27														
28														
29														
30														
31														

Located the related projects with the keyword "Natural Based Solutions".

# 兩者比較

## 傳統過程

## 程式執行

適合任務	資料來源格式多樣，且不易整理者。	資料來源格式相對整齊，且資料數目多者。 適合執行不斷重複的任務
執行時間	視資料數目而定	前期撰寫程式碼時需要較多時間抓錯，開始執行程式之後，時間視資料數目而定。執行程式過程，人可以處理其他事情
資料品質與執行過程	執行過程仰賴執行者自行記錄，若紀錄不完整不易重複執行。 資料品質則視整理者與作業要求而定	程式碼即為執行過程，之後要執行類似的作業也可輕易達到重複執行相同過程的要求。 資料品質則視整理者與作業要求而定



# 相關程式、工具推薦

程式語言	用途	相關Package
R	<ol style="list-style-type: none"><li>1. 統計、統計圖表繪製</li><li>2. 網路資料爬蟲</li><li>3. 地圖繪製、空間分析</li></ol>	<ol style="list-style-type: none"><li>1. dplyr ; ggplot ; pander</li><li>2. rvest ; magrittr</li><li>3. GISTools ; rgdal ; spatstat</li></ol>
Python	<ol style="list-style-type: none"><li>1. 統計、統計圖表繪製</li><li>2. 網路資料爬蟲</li><li>3. 地圖繪製、空間分析</li><li>4. 機器學習、深度學習</li><li>5. 自然語言處理</li></ol>	<ol style="list-style-type: none"><li>1. numpy ; matplotlib ; pandas</li><li>2. requests ; BeautifulSoup4</li><li>3. geopandas</li><li>4. keras ; scikit</li><li>5. nltk</li></ol>

這邊列舉常用的package，每個package其實不會只有特定用途，僅供參考

# 自學資源推薦

## 線上課程 (含互動式平台)

入門



<https://www.codecademy.com/>

推薦學習課程：Learn Python3, Learn HTML, Learn Java...



**DataCamp**

<https://www.datacamp.com/>

推薦學習課程：Introduction to R, Data Analyst with R

## 程式碼參考、問題發問



**stackoverflow**

<https://stackoverflow.com/>

任何與程式執行的相關問題均可在此發問

## Python 其他相關課程

政治大學應數系 蔡炎龍老師的GitHub <https://github.com/yenlung>

# 自學資源推薦

## R 語言相關

A (very) short introduction to R

<https://cran.r-project.org/doc/contrib/Torfs+Brauer-Short-R-Intro.pdf>

R for Beginners

[https://cran.r-project.org/doc/contrib/Paradis-rdebuts\\_en.pdf](https://cran.r-project.org/doc/contrib/Paradis-rdebuts_en.pdf)

GIS and Spatial Analysis with R

<https://mgimond.github.io/MEGUG2016/Tutorial.html>

Learning statistics with R

<https://learningstatisticswithr.com/>

R 語言官方編寫的快速入門文章

R 語言入門書籍 (R 官方網頁提供)

R語言空間分析與GIS應用的課程文章  
來源：*Manny Gimond, Colby College*

R語言進行統計分析

電子書：<https://learningstatisticswithr.com/lsr-0.6.pdf>

# 線上平台分享

## Python 線上執行



<https://colab.research.google.com/notebooks/intro.ipynb#recent=true>

Google 免費提供GPU、12GB RAM與100GB的硬碟的虛擬機器，讓使用者進行python執行運算，多數常用的package已經預先裝好，不用額外安裝。可與google 雲端內部的檔案連結，將程式計算結果存在google雲端上

## 線上程式編譯環境



<https://repl.it/>

與個人的GitHub連動，可以將執行過程的程式碼存在GitHub的Repository當中，方便進行版本控制與後續使用  
主流的程式語言(R、Python...)均有支援  
不用額外安裝設定環境



<https://www.tutorialspoint.com/codingground.htm>

主流的程式語言(R、Python...)均有支援  
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# 程式語言下載位置與編譯器推薦

## Python

### 程式語言下載



<https://www.python.org/downloads/>

Python 官方



<https://www.anaconda.com/>

可以在電腦當中建立多個  
Python執行環境

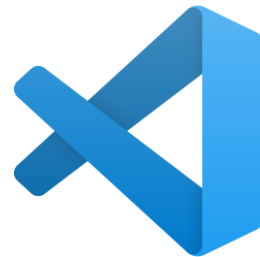
### 編譯器 (執行程式語言的環境)



執行與撰寫程式碼的畫面直覺，適合初學者

以Anaconda安裝python環境的時候會順便安裝。  
也可用指令下載安裝在電腦中

安裝指令：`pip install jupyter notebook`



Visual Studio Code

由微軟開發的編譯器，執行畫面比較簡單，  
但有很多方便的Extensions可以安裝使用，  
增加撰寫程式時候的方便性。

下載位置：<https://code.visualstudio.com/Download>



SPYDER

The Scientific Python Development Environment

適合專注於進行科學研究，非程式開發人員  
使用。

Anaconda 內可執行在主控台直接安裝 (建議)

下載位置：<https://www.spyder-ide.org/>

# 程式語言下載位置與編譯器推薦

R

程式語言下載



<https://cran.csie.ntu.edu.tw/>

編譯器 (執行程式語言的環境)



<https://rstudio.com/products/rstudio/download/>

# 資料庫分享

臺灣



<https://data.gov.tw/>

## 台灣政府資料開放平台

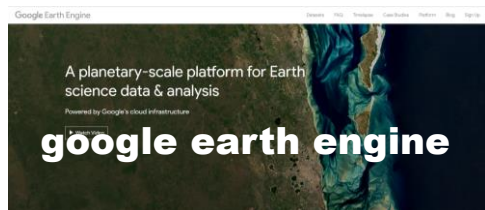
收錄台灣各個政府機關釋出的開放資料  
資料格式多樣，可用關鍵字或局處進行搜尋



[https://segis.moi.gov.tw/STAT/Web/Portal/STAT\\_PortalHome.aspx](https://segis.moi.gov.tw/STAT/Web/Portal/STAT_PortalHome.aspx)

## 內政部社會經濟資料庫

收錄內政部提供的人口、所得、勞動就業、  
醫療衛生等資料，同時亦提供GIS圖資。



## Google Earth Engine

收錄內政部提供的人口、所得、勞動就業、  
醫療衛生等資料，同時亦提供GIS圖資。





**THANKS**



**FOR LISTENING**