Data Science Campus
ONS Mentoring

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Session overview

- ONS Mentoring
  - Background and purpose
- ONS FCDO Data Science Hub Mentoring
  - Background & Mentoring case studies
- ONS International Data Science Accelerator Programme
  - Background
  - Presentation from Department of Statistics, Jordan – case study
- Q & A

ONS Mentoring

ONS Mentoring Programmes - Background

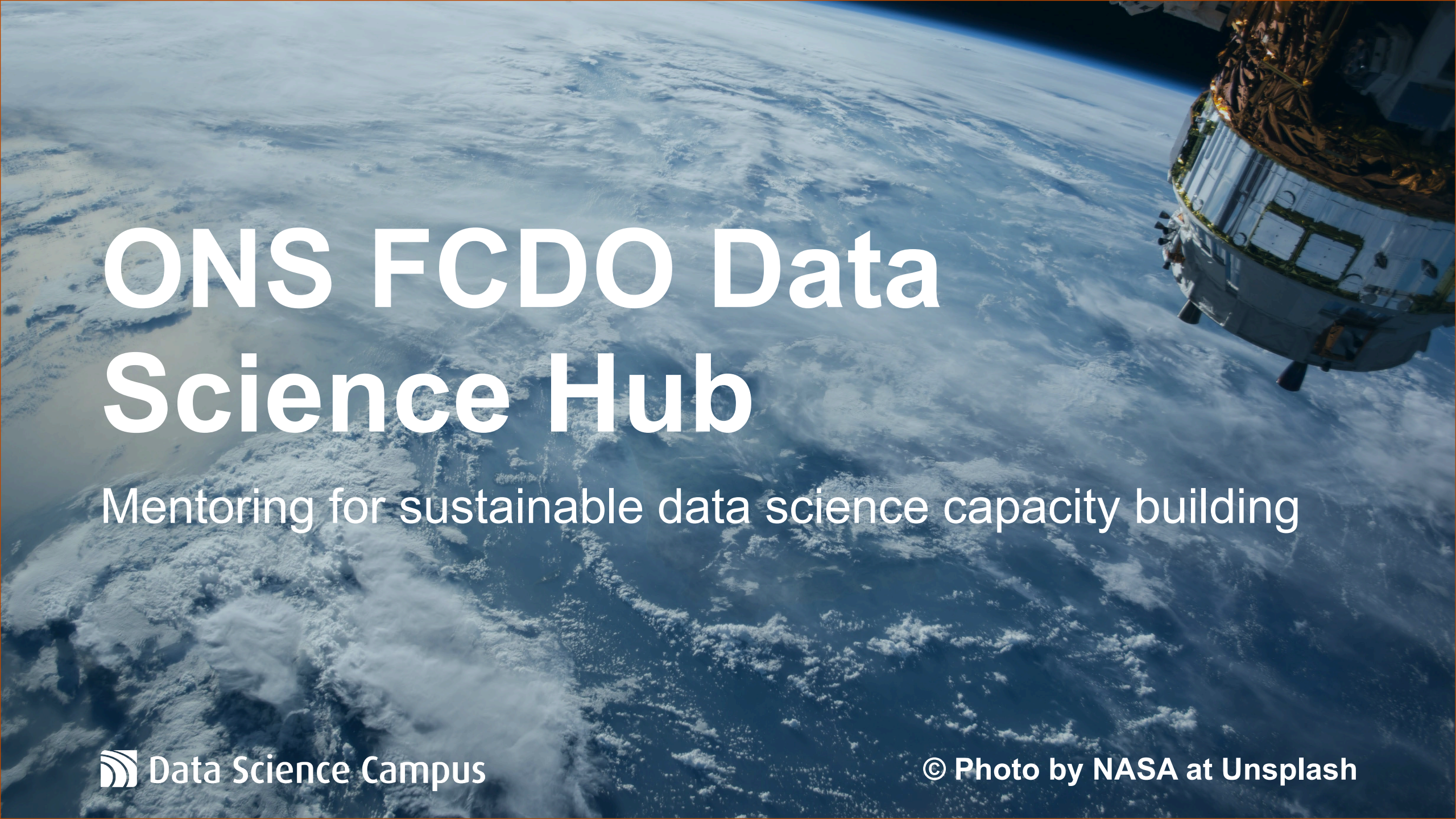
- ONS FCDO Hub Mentoring
  - Official Development Assisted (ODA) countries
  - Mentoring is provided by Data Scientists at the FCDO Hub
  - Longer term engagements (3 – 6 months)

- ONS International Data Science Accelerator Programme
  - Not just ODA countries, aimed at every NSO
  - Mentors come from a wider pool
  - Is time bound – start and finish dates – smaller project

ONS Mentoring - Purpose

- Training courses are great, but if learning is not applied it is lost
- Need project work for immediate application of new skills
- Some may need support and guidance to embed new skills into real life work

✓ Builds sustainable impact



ONS FCDO Data Science Hub

Mentoring for sustainable data science capacity building

Data Science Campus

© Photo by NASA at Unsplash

ONS FCDO Hub Mentoring - Background

- Offer data science mentoring for 3 – 6 month projects - flexible
- Aimed at developing *sustainable* data science in ODA countries
- Select a specific project that supports the NSO's Data Strategy
- An holistic approach is taken to:
  - Work on a project that the supported partner country wants to work on, and
  - Ensure the partner country has the required skills, capacity and infrastructure to maintain the project

ONS FCDO Hub Mentoring - Background

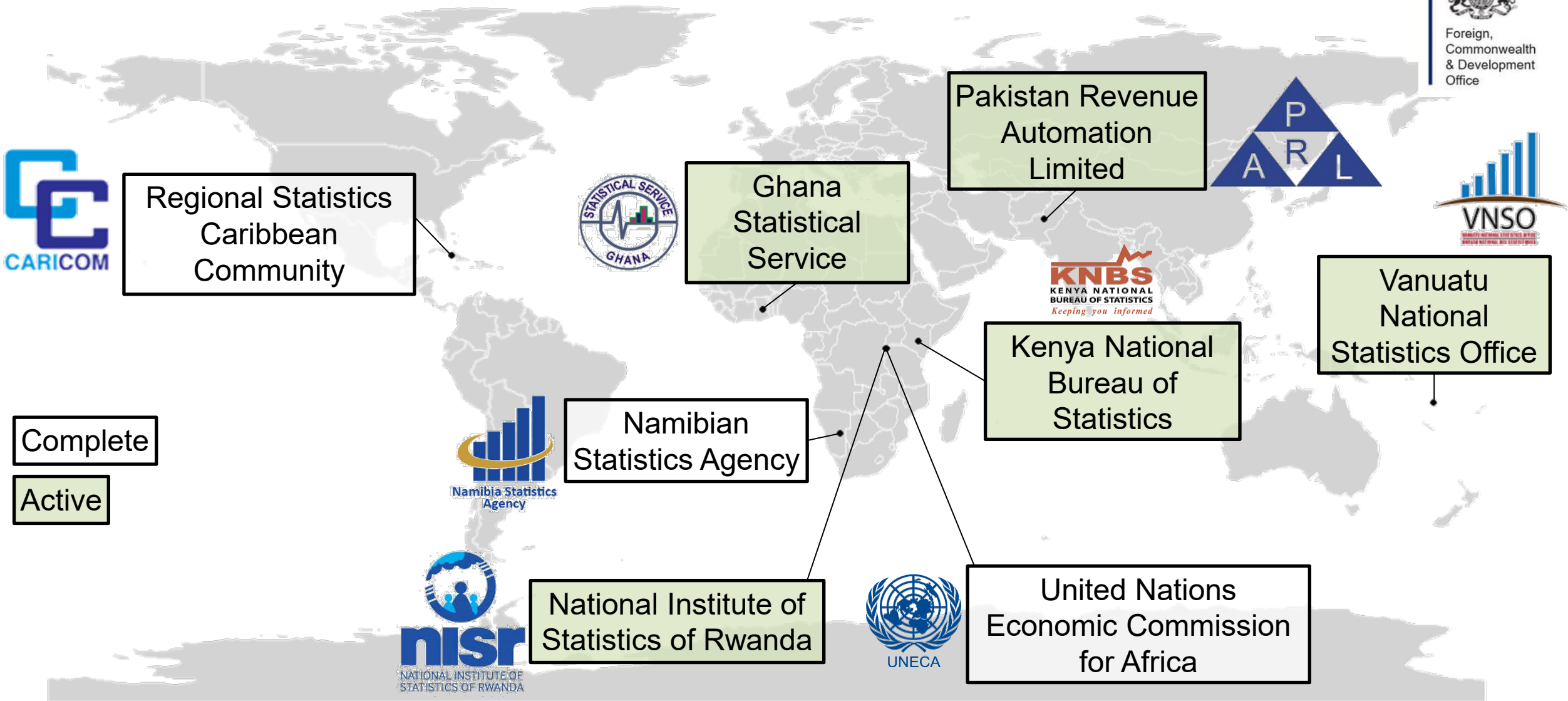
Foreign, Commonwealth & Development Office

- Dedicated mentors provide:
  - Coaching, training, guidance to a selected group of mentees from the NSO
  - Learning that is directed to individual and project needs

- Requires commitment
  - From the analyst(s) involved
  - From the organisation (senior level) – time commitment

- Mentee drives the process forward – enthusiastic with right foundational skills

Mentoring projects around the world



Vanuatu National Statistics Office

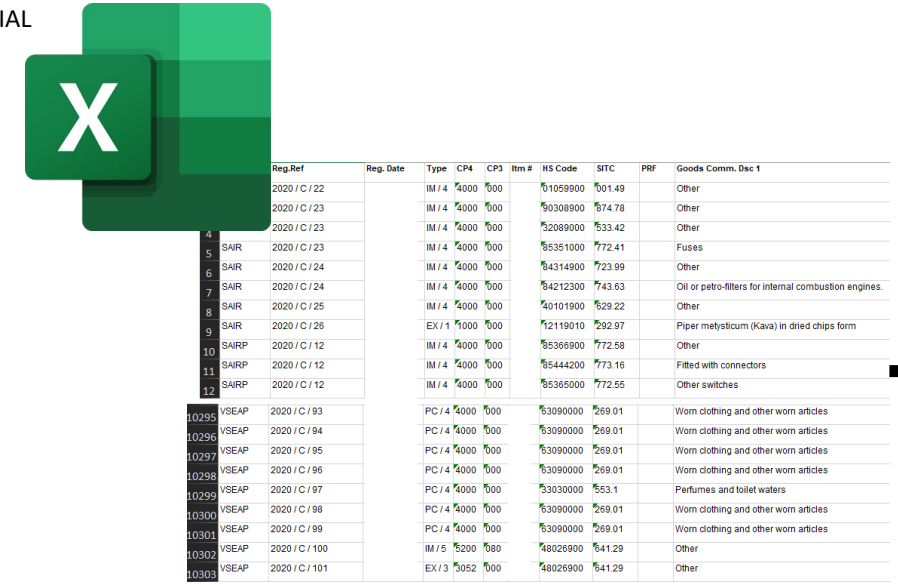
Building a reproducible analytical pipeline

VNSO
VANUATU NATIONAL STATISTICS OFFICE
BUREAU NATIONAL DES STATISTIQUES

LONG GOD YUMI STANAP

Foreign, Commonwealth & Development Office

- Build a monthly report for trade statistics
- Takes single analyst 6 weeks to complete
- Involves manual quality checking 1000s of records
- Manual statistics fed into 14 formatted excel tables
- Is a repeating process



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		2020 / C / 23		IM / 4	4000	000	90308900	874.78		Other
4		2020 / C / 23		IM / 4	4000	000	32089000	533.42		Other
5	SAIR	2020 / C / 23		IM / 4	4000	000	85351000	772.41		Fuses
6	SAIR	2020 / C / 24		IM / 4	4000	000	84314900	723.99		Other
7	SAIR	2020 / C / 24		IM / 4	4000	000	84212300	743.63		Oil or petro-filters for internal combustion engines.
8	SAIR	2020 / C / 25		IM / 4	4000	000	40101900	629.22		Other
9	SAIR	2020 / C / 26		EX / 1	1000	000	12119010	292.97		Piper metysticum (Kava) in dried chips form
10	SAIRP	2020 / C / 12		IM / 4	4000	000	85366900	772.58		Other
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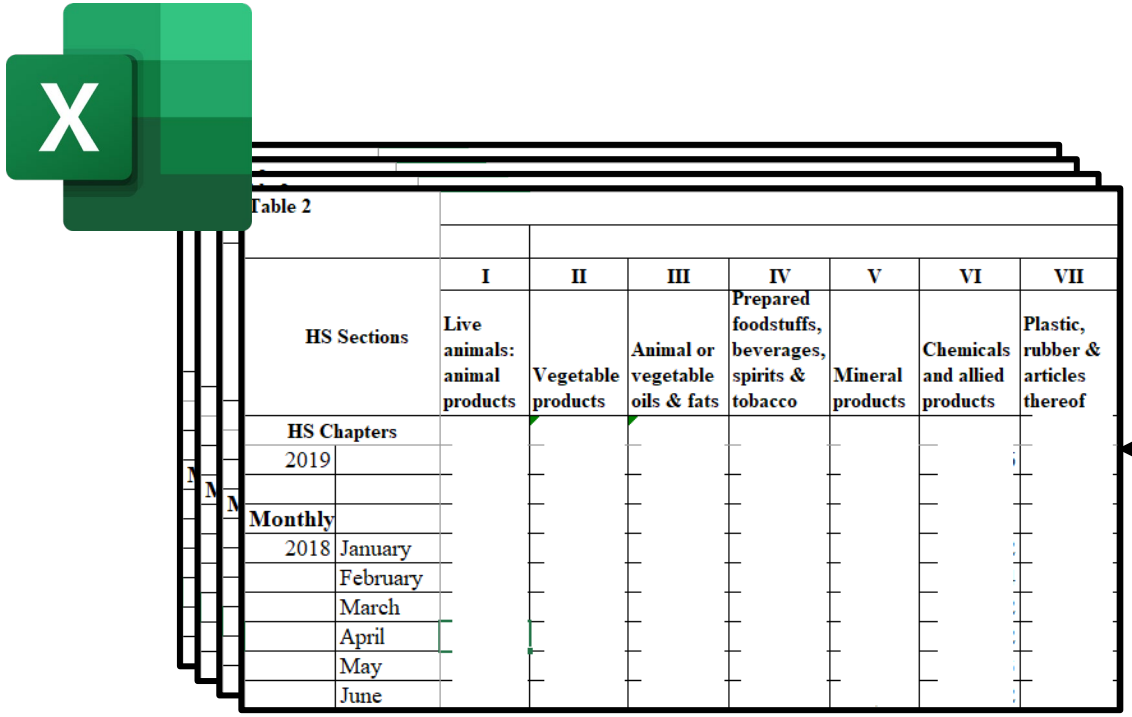


Table 2

HS Sections	I Live animals: animal products	II Vegetable products	III Animal or vegetable oils & fats	IV Prepared foodstuffs, beverages, spirits & tobacco	V Mineral products	VI Chemicals and allied products	VII Plastic, rubber & articles thereof
HS Chapters							
2019							
Monthly							
2018 January							
February							
March							
April							
May							
June							

Foreign, Commonwealth & Development Office

Planning a Reproducible Analytical Pipeline

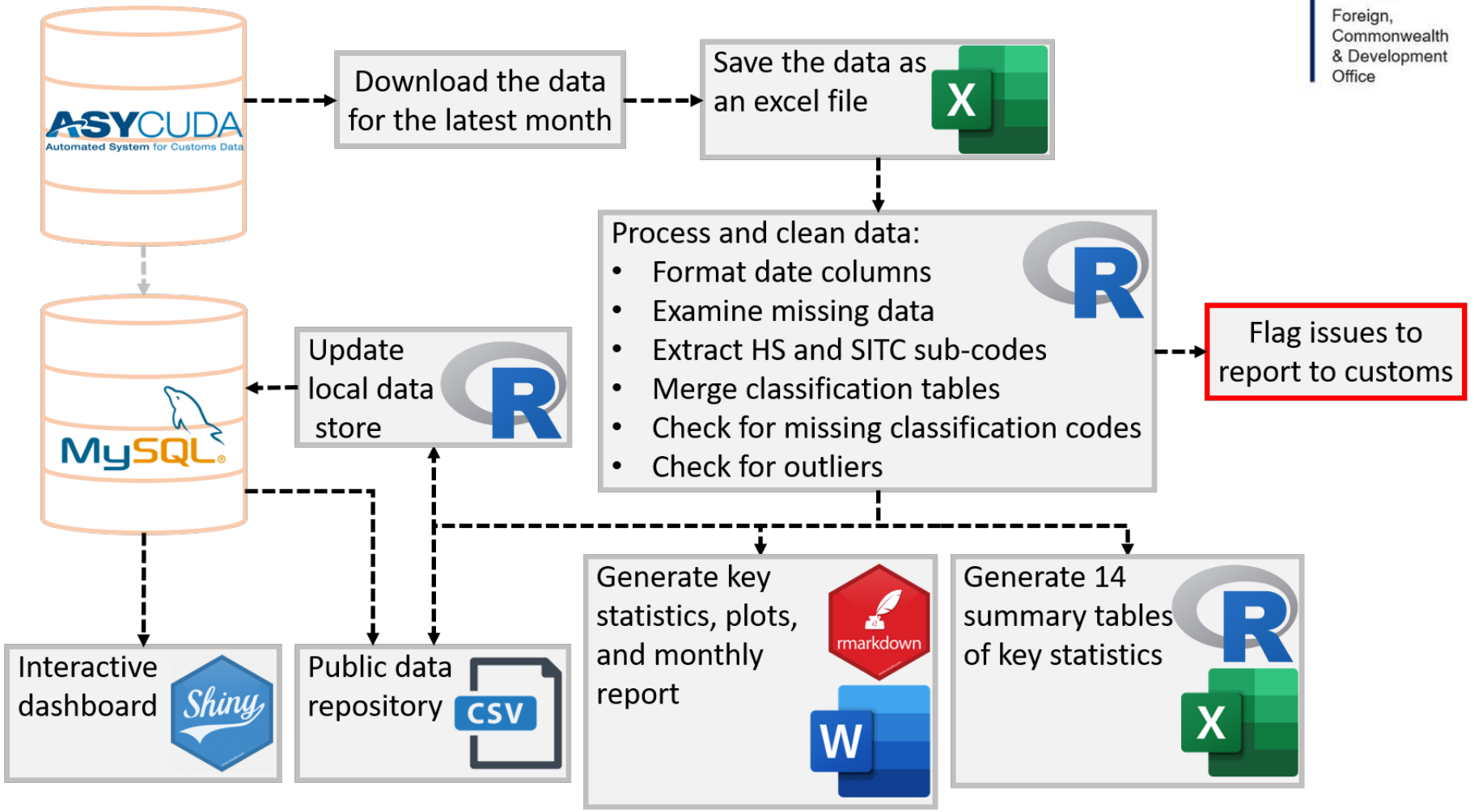
Foreign, Commonwealth & Development Office

- Document existing manual excel based processes
- Map existing process to equivalent automated steps using R
- Provide preparatory training for collaborative work
- Provide regular mentoring to meet mentee needs

Project Expectations

- Automate and speed up the data analysis & reporting process
- Build foundational coding skills in open-source programming tools (R)
- Save Analyst's time
- Free up Analyst to do something more innovative at NSO

Building a Reproducible Analytical Pipeline



Reproducible Analytical Pipeline: outputs

Table 2

HS Sections	I Live animals: animal products	II Vegetable products	III Animal or vegetable oils & fats	IV Prepared foodstuffs, beverages, spirits & tobacco	V Mineral products	VI Chemicals and allied products	VII Plastic, rubber & articles thereof
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2018 January							
February							
March							
April							
May							
June							

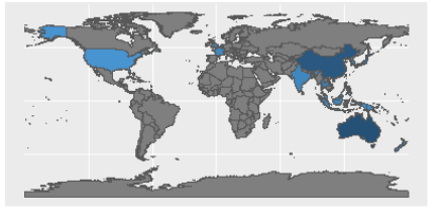
OFFICIAL

International Merchandise Trade Statistics - November 2021 Highlights

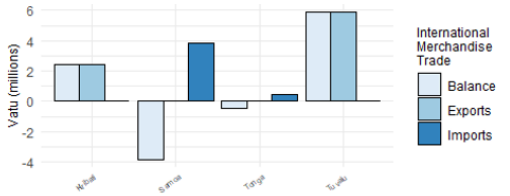
1. *National Sustainable Development Plan Indicators (NSDP)*

Policy Objectives	SMART Indicators	Indicator Value
ENV 1.3: Reduce reliance on food imports through import substitution for food products that can be produced domestically	ENV 1.3.1 Total annual volume of imports of food and products targeted by DARD as those that can be produced domestically (including 'value-added products)	3.75
ECO 1.5: Increase access to markets for Vanuatu exports	ECO 1.5.2 Trade by trade agreement (value)	172.49
	ECO 1.5.3 Balance of trade by major partner countries	-1,809.34
ECO 1.6: Require all new trade agreements to demonstrate tangible benefits in the national interest	ECO 1.6.2 Total estimated value of trade agreement as proportion of GDP	0.17
ECO 1.7: Stimulate economic diversification to spread the benefits of growth and increase economic stability	ECO 1.7.1 Level of production of major commodities to include cocoa and copra	543.24
ECO 4.2: Increase production and processing of niche commodities, and value addition to commodities in which Vanuatu enjoys a comparative advantage	ECO 4.2.2 Ratio of processed export commodities (including coconut, kava, cocoa, coffee) to raw exports	6.34

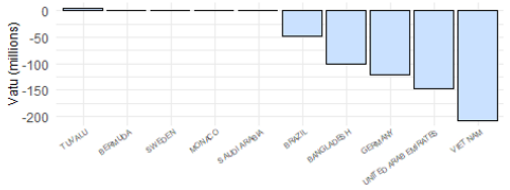
2. *Trade Balance by Major Partner Countries*



3. *Trade Balance of Pacific Islands (excluding Melanesian Islands, Australia and New Zealand)*



4. *Trade Balance of Emerging Markets*



5. *Trade by Trade Agreement- Melanesian Spearhead Group*

SITC Description	FIJI EXPORTS	FIJI IMPORTS	PAPUA NEW GUINEA EXPORTS	PAPUA NEW GUINEA IMPORTS	SOLOMON ISLANDS EXPORTS	SOLOMON ISLANDS IMPORTS	Total
Basic Manufactured Products	0.01	0.49					0.5
Food & Live Animals	0.86	3.40	8.2	18	8.5	17	55.2
Miscellaneous Manufactured Goods	0.08	3.66					3.7
Grand Total	**0.95**	**7.55**	**8.2**	**18**	**8.5**	**17**	**59.5**

Mentoring impact

VNSO
VANUATU NATIONAL STATISTICS OFFICE
BUREAU NATIONAL DES STATISTIQUES

LONG GOD YUMI STANAP

Foreign, Commonwealth & Development Office

Impact:

- 1.5 years of mentoring
- 2 mentees grew to 12 mentees
- What originally took an Analyst 6 weeks to achieve, now takes <1 week
- Recognition of value of data science across VNSO

Mentoring impact

spiritual education of a child is very important today because

legacy of the first missionaries when they started mission schools.

will help you," he said. "I also encourage you to engage in fishing activities."

Minister Samsen said the

that will financially their respective schoo

Before indepenc 1980; Presbyterian,

2020 Census Repor

10 VNSO staff trained on Reproducible Anal

By Josepheen Tarianga

THE BASIC REPORTS FROM the 2020 National Housing and Population Census puts Vanuatu's official population at 300,019.

This was disclosed when Vanuatu National Statistics Office (VNSO) launched the basic tables report yesterday, a year after the official start of the data collection of the largest census ever to happen in the country.

Government Statistician, Benuel Lenge, explained that when the census started, Vanuatu was going through its first lockdown due to the pandemic. This did not stop VNSO's work.

VNSO acknowledges that the possibility of this launching is largely due to the survey solutions software for data collection and the R statistical software for data processing and tabulations.

Around 30 staff of the VNSO have shown capacity in using the R software, which has proven useful in producing the table published in the reports launched.

Additionally, 10 VNSO staff received certificates during the launching for having completed learning, building and managing Reproducible Analytical Pipeline (RAP) over an 18-month period. The RAP mentoring programme is developed by the United Kingdom's Office of National statistics (ONS). Mentoring was provided to the VNSO officers by Joseph Crispell and Tom Wilkinson of ONS.

In a demo of RAP, 2 VNSO officers illustrated how RAP cuts down data processing time from what used to be 6 weeks to a few seconds.

British High Commissioner, Karen Bell, attended the launch and was pleased to present the 10 VNSO officers with their certificates.

"The ONS expressed that the partnership it shares with the VNSO is an exemplary partnership," she said.

Finance Minister Johnny Koanapo thanked the British High Commissioner for aiding the VNSO in the RAP mentoring.

Mr. Koanapo said the VNSO shows Vanuatu's resilience, as despite the lockdown last year the officers collected data because more people were home and made the data collection easier.

"With this report we can now track our progress and our population growth," he said. "We can see where we need to develop. We cannot keep pushing to expand the agriculture sector and not our population. I will refer to the namele metaphor once more in saying, remove the namele leaf from the places we still need to grow and develop."

Remove namele leaves from the places that we still need to develop and grow: Minister responsible for VNSO, Johnny Koanapo

Minister Koanapo handing over the new vehicle the Government has gift

The Minister officially launched the report and presented the VNSO with a new vehicle provided by the Government, in appreciation of their work.

The VNSO has a few vehicles and is retiring a vehicle that has served for 10 years yesterday. The office prides itself of never having any of its vehicles involved in traffic accidents or major incidents. The new vehicle was handed just in time for the retirement of the older vehicle.

United Nations | Department of Economic and Social Affairs
Statistics • Capacity Development

Home | Principles | Inventory | Task Teams | Clinics

Collaborative on Use of Administrative Data for Statistics > Case Study

United Nations | DESA Statistics

← Back

Reproducible Analytical Pipelines for the Vanuatu National Statistics Office

Vanuatu

A small NSO, the Vanuatu Nation
resources, and cut production tim
Pipeline for the VNSO trade statis
other topics such as new analyse
provide mentorship to mentees i
statistics on the Tourism, Consur

Online materials available

vnso-RAP-tradeStats-materials

Coverage

Trade statistics

Administrative data sourc

Foreign, Commonwealth & Development Office

Other Mentoring examples

- R Training and RAP project for Caribbean Countries – 5 months
  - 21 analysts, 12 countries
  - R training, hands-on workshops, applied learning to a project, mentoring

- Rwanda ongoing mentoring:
  - Moving statistical processes from Stata across to open source R (saved $)
  - Developing dashboards for monitoring Census data
  - Future: web-scraping to use job vacancy data for Labour Market statistics

- Namibia ongoing mentoring:
  - looking to support the automation of CPI

More information

- An overview of the FCDO Data Science Hub is available here: ONS FCDO Data Science Hub | Data Science Campus

- An overview of the Hub's International Mentoring – Blog Post

- Contact for more information or to enquire about obtaining mentoring – tim.harris@fcdo.gov.uk

International Data Science Accelerator Programme

Campus International, Data Science Campus

Office for National Statistics

International DS Accelerator Programme - Background

- Aimed at building DS skills in analysts at NSO - mentee
  - Individual analyst, or a team of 2 or 3
  - Propose / submit a small project -> application process
- Mentors: NSOs, UN, other respected orgs -> application process
- Campus International - review, sift & select projects & mentors
- Match mentees with mentor

Virtual

International DS Accelerator Programme - Background

- Paired mentor & mentee:
  - Work on the project for 1 day a week, for 12 weeks (so just 12 days)
  - Arrange a day that mentee will work on project each week
  - Mentor available (2 – 3 hours) to steer and guide

- The mentee does the work, guided by the mentor

International DS Accelerator Programme - Background

- Campus International organises (virtually):
  - Mentor workshop – bring together to discuss role and expectations
  - Official launch event - for mentors and mentees
  - Monthly check-in meetings – for mentors and mentees
  - Graduation ceremony with high level speakers and presentations from all mentee / mentor pairs

- Certificate of Completion for mentees

Pilot (Sep – Dec 2021)

- Mentors:
  - Ghana Statistical Services, UNSIAP, Federal Competitiveness and Statistics Centre, Statistics Poland
- Mentees:
  - Zimbabwe Nat Stat Agency, General Statistics Office of Vietnam, Department of Statistics Jordan
- Projects:
  - Web-scraping job vacancies, web-scraping gold prices, Natural Language Processing in Arabic, data linkage of large datasets for analysis

First official cohort application stage start 31st January 2022

- Application period - 4 weeks - closing date 28th February
- Data Science project submitted by mentee
- Mentors put themselves forward, noting their knowledge and skills
- Programme starts 28th March
- For more details contact - geanina.sopron@ons.gov.uk or data.science.mentoring@ons.gov.uk

Project Example

- Mentor: Hatem Elsherif - Data Analytics Advisor, Federal Competitiveness and Statistics Centre, UAE

- Mentee Team:
  - Ahlam Alrousan - IT Director, Department of Statistics, Jordan
  - Fatima ALTaharwah - Programmer & Data Scientist, Department of Statistics, Jordan

Summary

- ONS FCDO Hub mentoring
  - 3 – 6 months, larger project, ODA countries
  - tim.harris@fcdo.gov.uk

- ONS International Data Science Accelerator
  - 12 days, smaller project, open to all NSO analysts
  - geanina.sopron@ons.gov.uk or
  - data.science.mentoring@ons.gov.uk