

Standardising Human Geography Data

GEOINT NEW ZEALAND



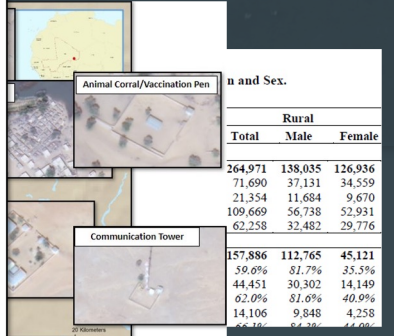
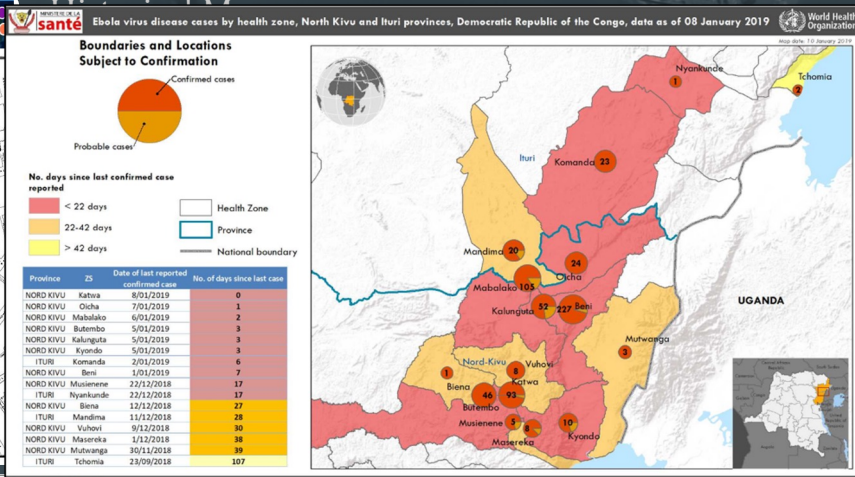
Human Geography data

- **Communications**
- **Demographics**
- **Economy**
- **Education**
- **Ethnicity**
- **Significant Events**
- **Groups and Organizations**
- **Health and Medical**
- **Land Use**
- **Language**
- **Religion**
- **Water Supply & Control**
- **Transportation Use**

The issue

Products

Websites



Human Geography & Spreadsh

Popn	Total		Total		0-4		0-4		5-9	
	Total	MALE	FEMALE	Total	MALE	FEMALE	Total	MALE	FEMALE	
Place of residence										
Samoa	205557	104853	100704	27593	14391	13202	27491	14432	13059	23995
Apia Urban Area	35974	17990	17984	4351	2304	2047	4325	2219	2106	4041
Vaimauga 2	5721	2857	2864	650	343	307	661	337	324	630
Moataa	1420	715	705	157	86	71	175	93	82	189
Vaivase Tai	824	422	402	104	60	44	75	40	35	80
Vaivase Uta	1024	496	528	134	75	59	117	58	59	108
Tanoaleia	660	327	333	65	28	37	81	38	43	58
Moataa Uta	232	122	110	23	15	8	28	14	14	19
Toomatagi	232	122	110	22	14	8	15	6	9	23
Vaiala Tai	560	266	294	68	32	36	78	37	41	57
Vaiala Uta	342	168	174	34	11	23	47	24	23	48
Vaipuna	363	188	175	38	19	19	41	24	17	42
Levili	64	31	33	5	3	2	4	3	1	6
Vaimauga 3	10868	5427	5441	1352	692	660	1337	673	664	1265
Magiagi Tai	1822	893	929	208	92	116	228	120	108	224
Magiagi Uta	351	188	163	53	32	21	45	24	21	44
Faaitoalemanu	906	441	465	114	59	55	100	51	49	96
Vinifou	81	39	42	14	9	5	14	1	3	9



GeoJSON

```

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  "ymax" : 3956137.802,
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  }
}
    
```

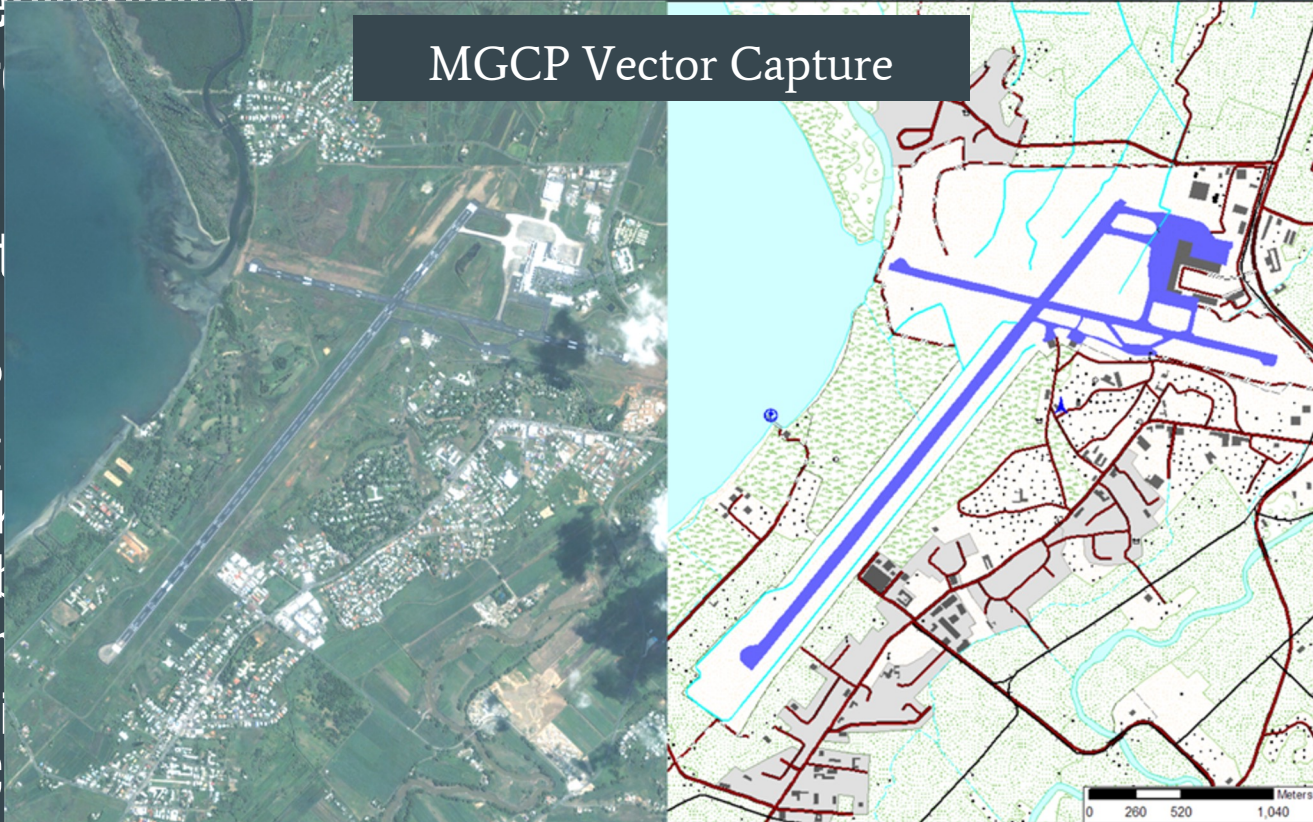
IPHG What and Why



- **IPHG - International Program for Human Geography**
- **Intent**
 - Generate high-quality standardised human geography data that informs a global understanding of the human environment, through multi-national production coordination.
 - 14 Nations working in the IPHG
- **Objectives**
 - Increase human geography data holdings available to the IPHG nations
 - Harmonise human geography data
 - Coordinate data collection
- **IPHG is not a product specification**
 - Database schema
 - HG tradecraft
 - Data sharing

IPHG Benefits to Defence

- Data interoperability
 - Shared
 -
 -
- Support for
 - Natural
 - Op P
 - Cont
 - quick
- Provides b
- Alignment
 - Multi
 - MGC



d prepared
nt

IPHG Schema

Statistics Extent Location

- IPHG_SEL_Template_v2_1_xx_05_23_CAT1.gdb
 - IPHG_SEL_v2_1
 - SHGD
 - Z1170S_ThemeNumbers_Title

Cultural Context Location

- IPHG_CCL_Template_v2_1_xx_06_23_CAT1.gdb
 - IPHG_CCL_v2_1
 - SHGD
 - ZD030S_ThemeNumbers_Title
 - ZD030_Table

Points of Interest Location

- IPHG_POI_Interim_v1_xx_10_21_xx_CAT1.gdb
 - HG_FC
 - POL_C
 - POL_P
 - POL_S
 - IPHG_POI_Interim_v1

- The schemas capture the following minimum attributes:
 - Location
 - Information
 - Date of capture
 - Source
 - Release statement

OBJECTID	4
BLV	2021
FEMET_CUD	2024
ADDES_ANM	Savaii
LOD	This data represents the 2021 Region census boundary for Samoa
STATC_SCN	2021 population census of Samoa, final report
STATC_SCD	This collection represents the total population of Savaii
STATC_SPS	45175
STATC_UOE	Person
STATC_SCT	Demographic
STATC_STAT1_SDE	Total_Male Population of Savaii
STATC_STAT1_SCV	23149
STATC_STAT1_SPE	51.2
STATC_STAT1_SEV	<Null>
STATC_STAT1_SOINF_SID	Samoa 2016 population census
STATC_STAT1_2_SDE	Total_Female Population of Savaii
STATC_STAT1_2_SCV	22026
STATC_STAT1_2_SPE	48.8
STATC_STAT1_2_SEV	<Null>
STATC_STAT1_2_SOINF_SID	Samoa 2016 population census
STATC_STAT1_2_SPE	48.8

IPHG Example

- **Title:** Samoa 2021 census (Demographics)
- **Abstract:** This project will convert the 2021 census data, using the GeoJSON boundary files
- **Schemas:** SEL
- **Datasets:**
 - 2021 census boundaries
 - 2021 Samoa census

GeoJSON Boundary File

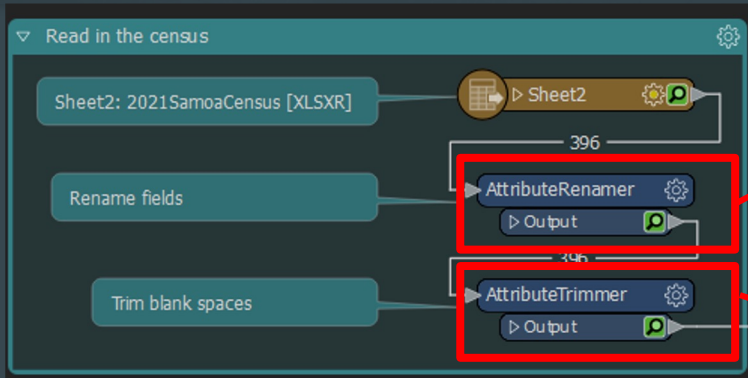
LAYER	MAP_NAME	FID	rid	r_name
1 Unknown Area Type	2011_PHC_WSM_rid_4326 - 2011_PHC_Samoa_Region_4326.geojson	0	2	North West Up...
2 Unknown Area Type	2011_PHC_WSM_rid_4326 - 2011_PHC_Samoa_Region_4326.geojson	1	1	Apia Urban Area
3 Unknown Area Type	2011_PHC_WSM_rid_4326 - 2011_PHC_Samoa_Region_4326.geojson	2	3	Rest of Upolu
4 Unknown Area Type	2011_PHC_WSM_rid_4326 - 2011_PHC_Samoa_Region_4326.geojson	3	4	Savaii

2021 Census Table

A	B	C	D	E	F	G	H	I	J	K	L	M	N	15
Admn	Popn	Total	MALE	FEMALE	Total	MALE	FEMALE	5-9	5-9	5-9	10-14	10-14	10-14	
country	Place of residence	Total	MALE	FEMALE	Total	MALE	FEMALE	Total	MALE	FEMALE	Total	MALE	FEMALE	Total
Samoa	Apia Urban Area	35974	17990	17984	4351	2304	2047	4325	2219	2106	4041	2114	1927	
District	Vaimauga 2	5721	2857	2864	650	343	307	661	337	324	630	346	284	
Village	Moataa	1420	715	705	157	86	71	175	93	82	189	102	87	
Village	Vaivase Tai	824	422	402	104	60	44	75	40	35	80	42	38	
Village	Vaivase Uta	1024	496	528	134	75	59	117	58	59	108	52	56	
Village	Tanoaleia	660	327	333	65	28	37	81	38	43	58	40	18	
Village	Moataa Uta	232	122	110	23	15	8	28	14	14	19	9	10	
Village	Toomatagi	232	122	110	22	14	8	15	6	9	23	11	12	
Village	Vaiala Tai	560	266	294	68	32	36	78	37	41	57	32	25	
Village	Vaiala Uta	342	168	174	34	11	23	47	24	23	48	30	18	
Village	Vaipuna	363	188	175	38	19	19	41	24	17	42	25	17	
Village	Levili	64	31	33	5	3	2	4	3	1	6	3	3	
District	Vaimauga 3	10868	5427	5441	1352	692	660	1337	673	664	1265	674	591	
Village	Magiagi Tai	1822	893	929	208	92	116	228	120	108	224	117	107	

FME Workbenches

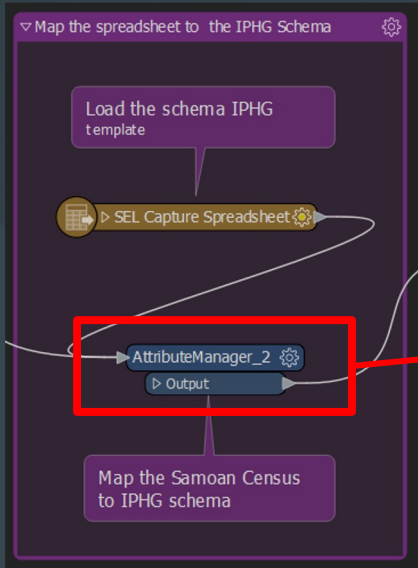
- Fiji 2017 Census workbench



Input Attribute	Output Attribute
Admn	Admin
Popn	Residence
Total	Total_Popn
Total00	Total_Male
Total01	Total_Female
0-4	Total 0-4
0-400	Male 0-4
0-401	Female 0-4
5-9	Total 5-9
5-900	Male 5-9
5-901	Female 5-9
10-14	Total 10-14

A	B
Admn	Popn
Admn	Place of residence
country	Samoa
Region	Apia Urban Area
District	Vaimauga 2
Village	Moataa
Village	Vaivase Tai
Village	Vaivase Uta
Village	Tanoaleia
Village	Moataa Uta
Village	Toomatagi
Village	Vaiala Tai
Village	Vaiala Uta
Village	Vaipuna
Village	Levili
District	Vaimauga 3
Village	Magiagi Tai

FME Workbenches



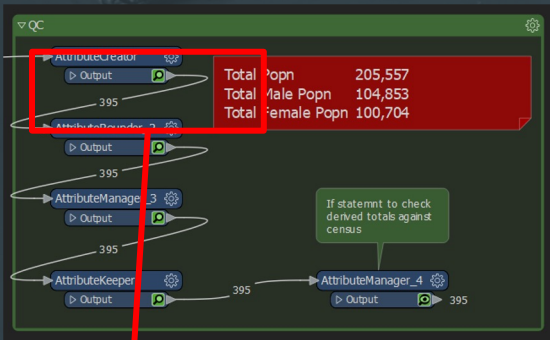
Output Attribute	Value
Admin	<Enter value (optional)>
Residence	<Enter value (optional)>
BLV	2021
FEMET_CUD	2024
ADDES_ANM	Residence
LOD	This data represents the 2021 @Value(Admin) census boundary for Samoa
STATC_SCN	2021 population census of Samoa, final report
STATC_SCD	This collection represents the total population of @Value(ADDES_ANM)
STATC_SPS	Total_Popn
STATC_UOE	Person
STATC_SCT	Demographic
STATC_STAT1_SDE	Total_Male Population of @Value(ADDES_ANM)... (MultiLine)
STATC_STAT1_SCV	Total_Male
STATC_STAT1_SPE	@Evaluate(@Evaluate(@Value(STATC_STAT1_SCV)/@Value(STATC_SPS))*100)
STATC_STAT1_SEV	<null>
STATC_STAT1_SOINF_SID	\$(DEF_VAL)
STATC_STAT1_2_SDE	Total_Female Population of @Value(ADDES_ANM)... (MultiLine)
STATC_STAT1_2_SCV	Total_Female
STATC_STAT1_2_SPE	@Evaluate((@Value(STATC_STAT1_2_SCV)/@Value(STATC_SPS))*100)
STATC_STAT1_2_SEV	<null>
STATC_STAT1_2_SOINF_SID	\$(DEF_VAL)
STATC_STAT1_3_SDE	Male 0-4 Population of @Value(ADDES_ANM)... (MultiLine)
STATC_STAT1_3_SCV	Male 0-4
STATC_STAT1_3_SPE	@Evaluate((@Value(STATC_STAT1_3_SCV)/@Value(STATC_STAT1_3_SCV))*100)
STATC_STAT1_3_SEV	<null>
STATC_STAT1_3_SOINF_SID	\$(DEF_VAL)

FME Workbenches

Output Attribute	Value
Admin	<Enter value (optional)>
Residence	<Enter value (optional)>
BLV	📅 2021
FEMET_CUD	📅 2024
ADDES_ANM	📍 Residence
LOD	📄 This data represents the 2021 @Value(Admin) census boundary for Samoa
STATC_SCN	📄 2021 population census of Samoa, final report
STATC_SCD	📄 This collection represents the total population of @Value(ADDES_ANM)
STATC_SPS	📍 Total_Popn
STATC_UOE	📄 Person
STATC_SCT	📄 Demographic
STATC_STATI_SDE	📄 Total_Male Population of @Value(ADDES_ANM)... (MultiLine)
STATC_STATI_SCV	📍 Total_Male
STATC_STATI_SPE	🔢 @Evaluate(@Evaluate((@Value(STATC_STATI_SCV)/@Value(STATC_SPS))*100))
STATC_STATI_SEV	🚫 <null>
STATC_STATI_SOINF_SID	🌸 \$(DEF_VAL)
STATC_STATI_2_SDE	📄 Total_Female Population of @Value(ADDES_ANM)... (MultiLine)
STATC_STATI_2_SCV	📍 Total_Female
STATC_STATI_2_SPE	🔢 @Evaluate((@Value(STATC_STATI_2_SCV)/@Value(STATC_SPS))*100)
STATC_STATI_2_SEV	🚫 <null>
STATC_STATI_2_SOINF_SID	🌸 \$(DEF_VAL)
STATC_STATI_3_SDE	📄 Male 0-4 Population of @Value(ADDES_ANM)... (MultiLine)
STATC_STATI_3_SCV	📍 Male 0-4
STATC_STATI_3_SPE	🔢 @Evaluate((@Value(STATC_STATI_3_SCV)/@Value(STATC_STATI_SCV))*100)
STATC_STATI_3_SEV	🚫 <null>
STATC_STATI_3_SOINF_SID	🌸 \$(DEF_VAL)

- Total_Male Population of @Value(ADDES_ANM)
- @Value(Total_Male)
- @Evaluate(@Evaluate(@Evaluate((@Value(STATC_STATI_SCV)/@Value(STATC_SPS))*100)))
- \$(DEF_VAL) = Samoa 2021 population census

Data Check



Output Attribute	Value	Type
TotalPopn	@sum(@Value(Female 0-4),@Value(Female 5-9),@Value(Female 10-14),@Value(Female 15-19),@Value(Female 20-24),@Value(Female 25-29),@Value(Female 30-34),@...	varchar
TotalMale	@Evaluate(@sum(@Value(Male 0-4),@Value(Male 5-9),@Value(Male 10-14),@Value(Male 15-19),@Value(Male 20-24),@Value(Male 25-29),@Value(Male 30-34),@Value...	varchar
TotalMalePercentage	@Evaluate(@sum(@Value(STATC_STATI_3_SPE),@Value(STATC_STATI_5_SPE),@Value(STATC_STATI_7_SPE),@Value(STATC_STATI_9_SPE),@Value(STATC_STATI_11_SPE),@Val...	varchar
TotalFemale	@Evaluate(@sum(@Value(Female 0-4),@Value(Female 5-9),@Value(Female 10-14),@Value(Female 15-19),@Value(Female 20-24),@Value(Female 25-29),@Value(Femal...	varchar
TotalFemalePercentage	@sum(@Value(STATC_STATI_4_SPE),@Value(STATC_STATI_6_SPE),@Value(STATC_STATI_8_SPE),@Value(STATC_STATI_10_SPE),@Value(STATC_STATI_12_SPE),@Value(STATC_...	varchar

@Evaluate(@sum(@Value(Male 0-4),@Value(Male 5-9),@Value(Male 10-14),@Value(Male 15-19),@Value(Male 20-24),@Value(Male 25-29),@Value(Male 30-34),@Value(Male 35-39),@Value(Male 40-44),@Value(Male 45-49),@Value(Male 50-54),@Value(Male 55-59),@Value(Male 60-64),@Value(Male 65-69),@Value(Male 70-74),@Value(Male 75+))))

Data Check

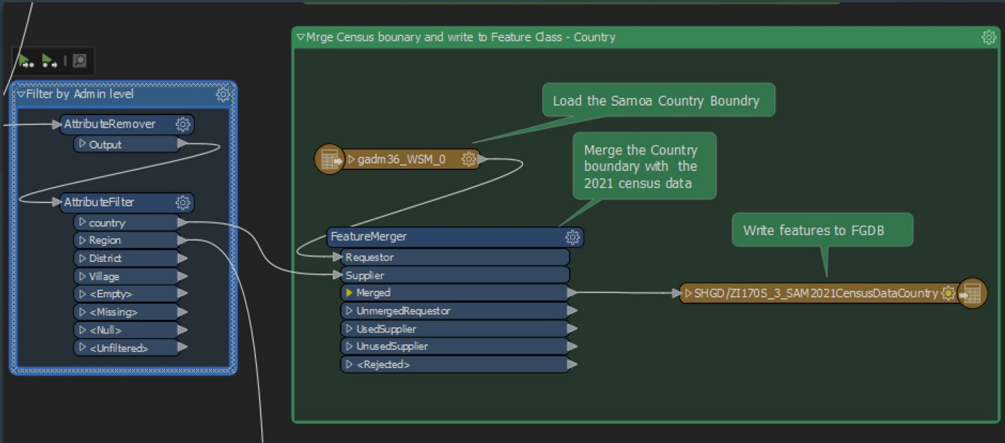
- Check

- 'IF' statement checks the aggregated data against the census totals
- Status is either 'Correct' or 'Error'

The screenshot shows a software interface with a table of output attributes and a conditional value definition window. The table lists attributes like TotalPopn, STATC_SPS, CheckStatus_Total, TotalMale, STATC_STAT1_SCV, CheckStatus_Male, TotalMalePercentage, TotalFemale, STATC_STAT1_2_SCV, CheckStatus_Female, and TotalFemalePercentage. The conditional value definition window shows a condition statement: "If @Value{TotalPopn} = @Value{STATC_SPS} then Correct, Else <No Action>".

	TotalPopn	STATC_SPS	CheckStatus_Total	TotalMale	STATC_STAT1_SCV	CheckStatus_Male	TotalMalePercentage	TotalFemale	STATC_STAT1_2_SCV	CheckStatus_Female	TotalFemalePercentage
1	205557	205557	Correct	104853	104853	Correct	100	100704	100704	Correct	100
2	35974	35974	Correct	17990	17990	Correct	100	17984	17984	Correct	100
3	5721	5721	Correct	2857	2857	Correct	100	2864	2864	Correct	100
4	1420	1420	Correct	715	715	Correct	100	705	705	Correct	100
5	824	824	Correct	422	422	Correct	100	402	402	Correct	100
6	1024	1024	Correct	496	496	Correct	100	528	528	Correct	100
7	660	660	Correct	327	327	Correct	100	333	333	Correct	100
8	232	232	Correct	122	122	Correct	100	110	110	Correct	100
9	232	232	Correct	122	122	Correct	100	110	110	Correct	100
10	560	560	Correct	266	266	Correct	100	294	294	Correct	100
...

FME Workbenches



SHGD/ZI170S_3_SAM2021CensusDataCountry
BLV
FEMET_CUD
ADDES_ANM
LOD
STATC_SON
STATC_SOD
STATC_SPS
STATC_UOE
STATC_SCT
STATC_STATI_SDE
STATC_STATI_SOV
STATC_STATI_SPE
STATC_STATI_SEV
STATC_STATI_SOINF_SID
STATC_STATI_2_SDE
STATC_STATI_2_SOV
STATC_STATI_2_SPE
STATC_STATI_2_SEV
STATC_STATI_2_SOINF_SID
STATC_STATI_3_SDE
STATC_STATI_3_SOV
STATC_STATI_3_SPE
STATC_STATI_3_SEV
STATC_STATI_3_SOINF_SID
STATC_STATI_4_SDE
STATC_STATI_4_SOV
STATC_STATI_4_SPE
STATC_STATI_4_SEV
STATC_STATI_4_SOINF_SID
STATC_STATI_5_SDE
STATC_STATI_5_SOV
STATC_STATI_5_SPE
STATC_STATI_5_SEV
STATC_STATI_5_SOINF_SID
STATC_STATI_6_SDE
STATC_STATI_6_SOV

Result

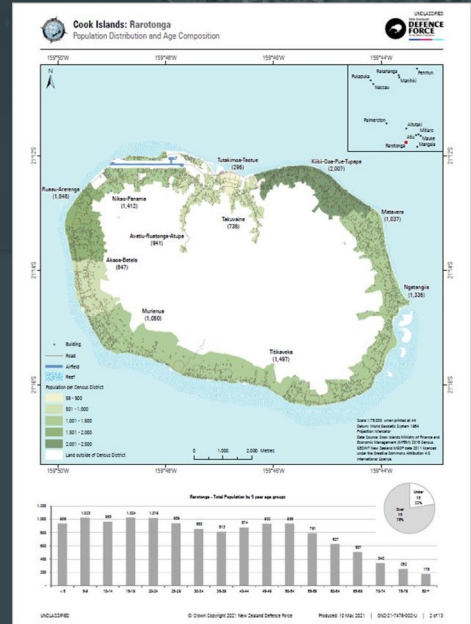
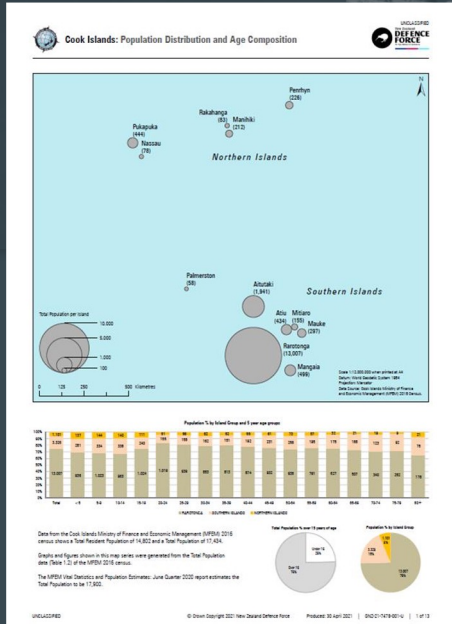
Z11705_3_SAM2021CensusDataRegion_new - 2021

OBJECTID	4
BLV	2021
FEMET_CUD	2024
ADDES_ANM	Savaii
LOD	This data represents the 2021 Region census boundary for Samoa
STATC_SCN	2021 population census of Samoa, final report
STATC_SCD	This collection represents the total population of Savaii
STATC_SPS	45175
STATC_UOE	Perrson
STATC_SCT	Demographic
STATC_STATI_SDE	Total_Male Population of Savaii
STATC_STATI_SCV	23149
STATC_STATI_SPE	51.2
STATC_STATI_SEV	<Null>
STATC_STATI_SOINF_SID	Samoa 2016 population census
STATC_STATI_2_SDE	Total_Female Population of Savaii
STATC_STATI_2_SCV	22026
STATC_STATI_2_SPE	48.8
STATC_STATI_2_SEV	<Null>
STATC_STATI_2_SOINF_SID	Samoa 2016 population census
STATC_STATI_3_SDE	Male 0-4 Population of Savaii
STATC_STATI_3_SCV	3174
STATC_STATI_3_SPE	13.7
STATC_STATI_3_SEV	<Null>
STATC_STATI_3_SOINF_SID	Samoa 2016 population census
STATC_STATI_4_SDE	Female 0-4 Population of Savaii
STATC_STATI_4_SCV	3000
STATC_STATI_4_SPE	13.6
STATC_STATI_4_SEV	<Null>
STATC_STATI_4_SOINF_SID	Samoa 2016 population census
STATC_STATI_5_SDE	Male 5-9 Population of Savaii
STATC_STATI_5_SCV	3431
STATC_STATI_5_SPE	14.8
STATC_STATI_5_SEV	<Null>
STATC_STATI_5_SOINF_SID	Samoa 2016 population census

61W 1,589,480.335 m Selected Features: 0

adm1	lat_dms	long_dms
WS-000	-13:48:28	-171:48:43
WS-000	-13:48:28	-171:48:43
WS-000	-14:02:34	-171:32:55
WS-000	-14:02:10	-171:40:46
WS-000	-13:50:43	-171:44:48
WS-000	-13:49:36	-171:47:36
WS-000	-13:49:36	-171:47:36
WS-000	-14:02:23	-171:39:40
WS-000	-13:30:11	-172:47:27
WS-000	-13:30:11	-172:47:27
WS-000	-13:49:11	-171:48:09
WS-000	-13:49:11	-171:48:09

IPHG Data Use



An aerial photograph of a city harbor, likely Auckland, New Zealand. A large ship is docked at a pier on the left side of the image. The city buildings and streets are visible on the right side of the harbor. The text "IPHG Data Use" is overlaid in white on the dark background of the harbor.

IPHG Data Use

Questions?