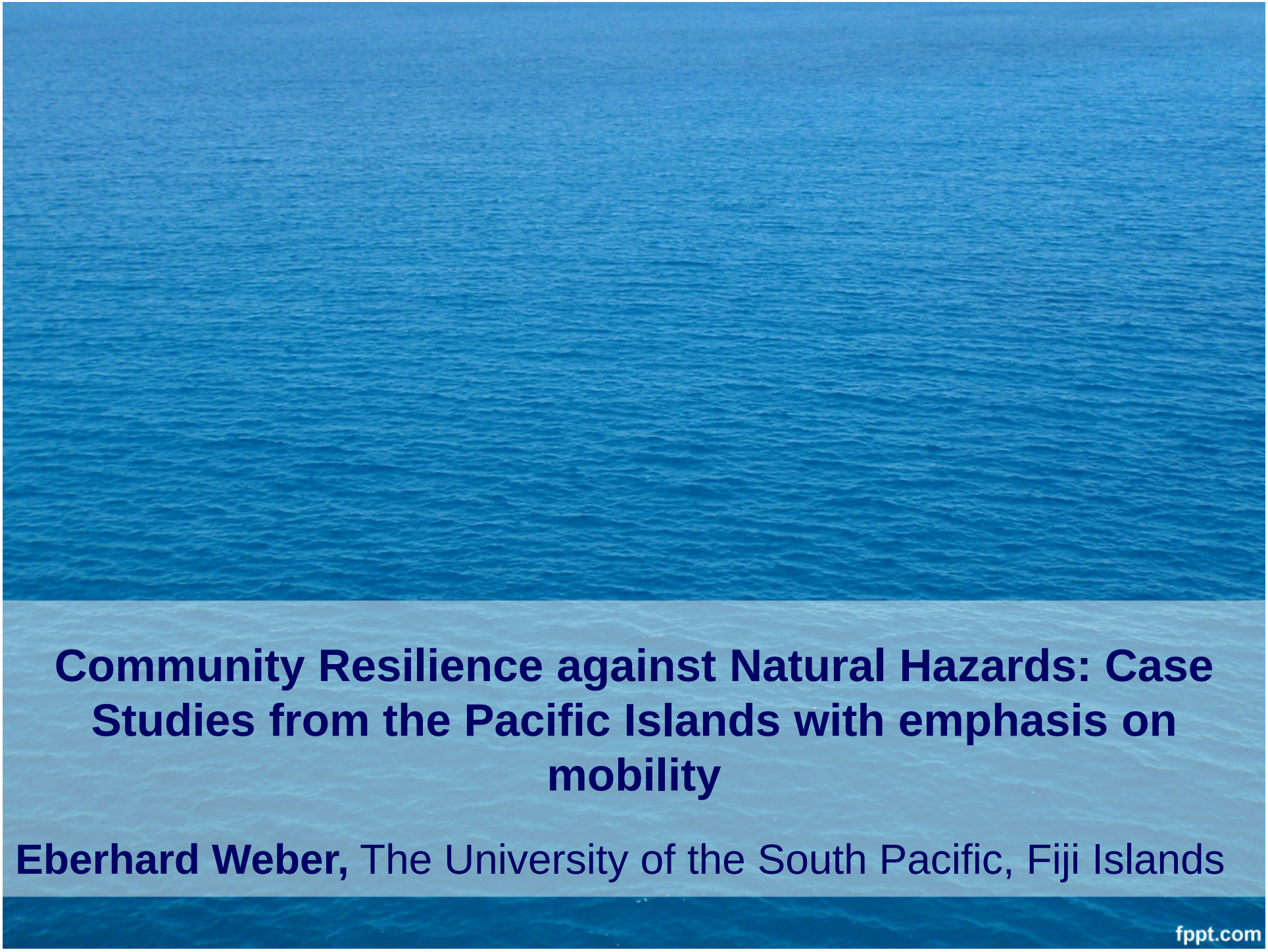
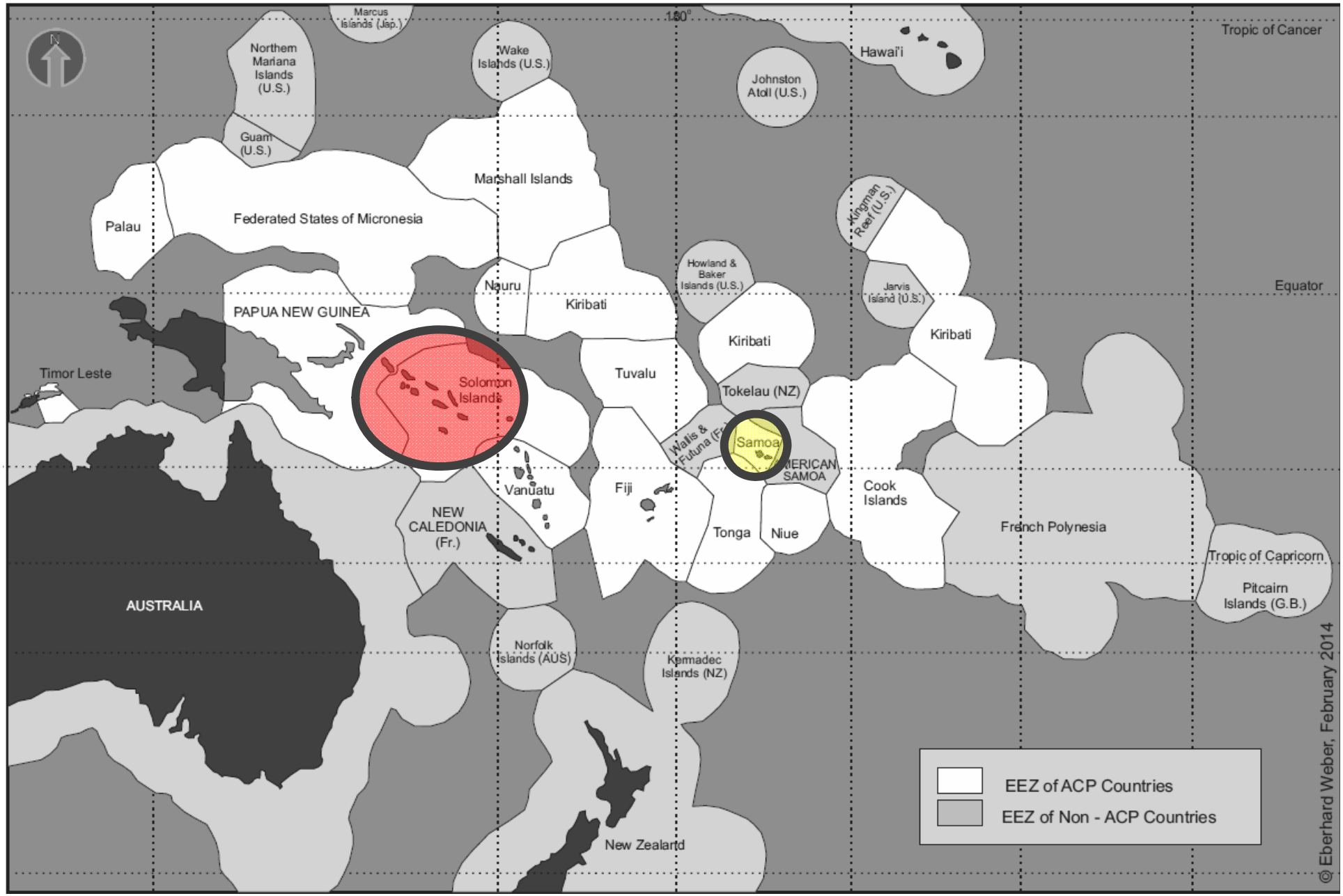


Community Resilience against Natural Hazards: Case Studies from the Pacific Islands with emphasis on mobility

Eberhard Weber, The University of the South Pacific, Fiji Islands

- Resilience is not enough.
- Disasters often provide a chance to improve in the rehabilitation process (“rebuild better”).
- It is the cooperation between affected populations, the state and civil society which enables development. Only then a disaster can become a „blessing in disguise“

Pacific Islands



Hazards / Environmental / Climate Change, Mobility and Development

- **Environmental Refugees, Forced Migration, Environmentally Inducted Migration / Mobility**
- **Migrants are people who act under the impact of opportunities and constraints**
  - **It is difficult to generalize, but one has to ask…**
    - **What are these opportunities and constraints in specific contexts?**
    - **How far are people actors deciding and shaping their destinies, how far are they driven, to what extend are they forced?**

Hazards / Environmental / Climate Change, Mobility and Development

The purpose of mobility is to increase well-being, to reduce risk, or to survive.

- **Can these categories be clearly separated from each other, or do they overlap?**
- **They even might contradict each other**
  - **Survival strategies often increase risk and decrease well-being.**
  - **People in their action may trade in one risk against another.**

Tsunami Hazards in the Pacific Islands

Case Studies of Samoa and Solomon Islands

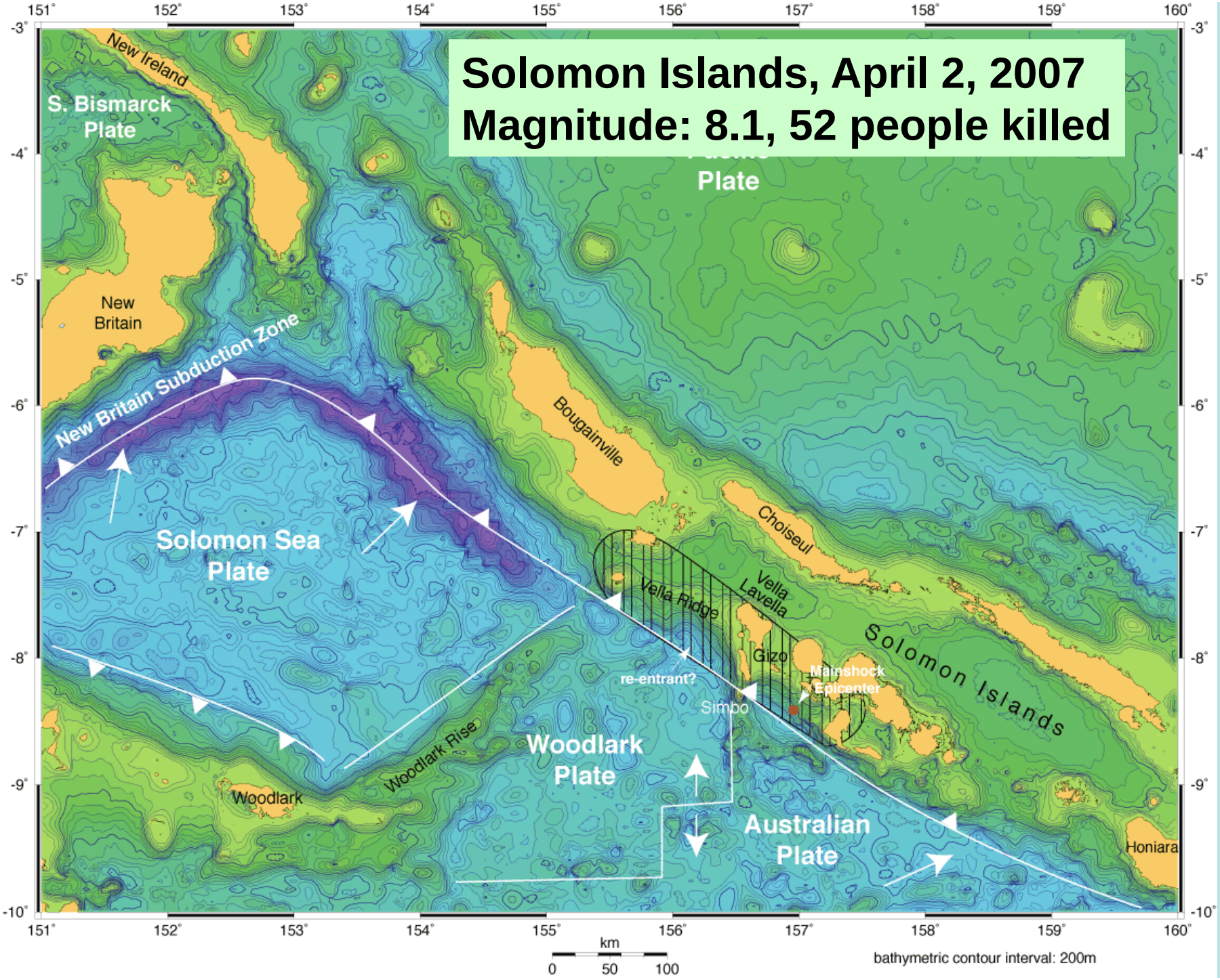
- Tsunami in Solomon Islands April 2007
- Tsunami in Samoa September 2009

Is it really resilience we hope to achieve???

- The tsunami was a blessing in disguise. Without everything destroyed we never would have settled where we are right now. Our lives improved a lot....., but it is at risk what has been achieved.

Victims of the 2007 tsunami in the Solomon Islands some 5 years after the disaster


Bougainville
(Papua New Guinea)
SOLOMONS
HILLY - MOUNTAINS
Pacific
Ocean
Choiseul
Amayan
Is.
Santa
Isabel
125 mi
125 km
Shortland
Is.
Mono
New
Georgia
Sound
Buala
Gizo
Sikaiana
New Georgia
Islands
Florida
Is.
Auki
Malaita
New
Georgia
Solomon
Sea
Russell
Is.
Honiara
Maramasike
Mt. Makarakomburu
Guadalcanal
Uki
Kirakira
Solomon
Islands
worldatlas.com
San
Chrisobal
Bellona
Rennell
150 mi
Reef Is.
Duff Is.
Santa Cruz
Islands
Nendo
Indispensable
Reefs
Utupua
Anuta
Vanikolo
Fatutaka
Coral Sea
Tikopia
©GraphicMaps.com
Feb 2012
http://www.surfingsolomonislands.com/surftrips.html



http://walrus.wr.usgs.gov/tsunami/solomon07/tectonic_big.html

Samoa quake and tsunami

September 29, 2009
about 160 dead

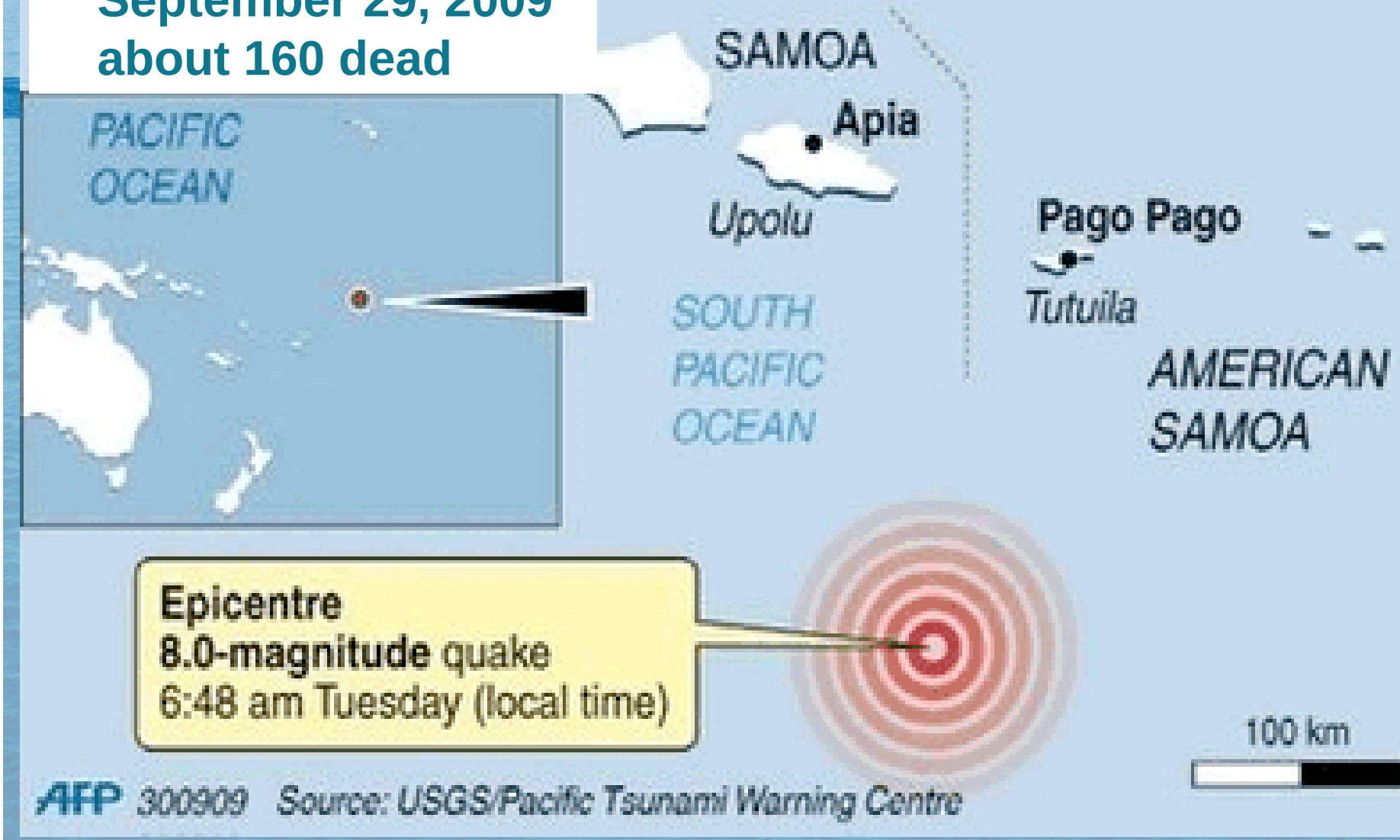


Figure 12: Villages selected for Social Impact Assessment (Source: Unknown)

Source: UNESCO-IOC International Tsunami Survey Team Samoa (ITST Samoa) Interim Report of Field Survey 14th – 21st October 2009

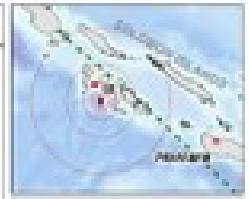
Preliminary Damage Assessment for Ghizo Island (Solomon Islands)

Post-Disaster QuickBird Satellite Imagery Recorded on 5 April 2007

Magnitude 8.0 Earthquake 01 April 2007 07:39:56 GMT

5 April 2007

Version 1.0



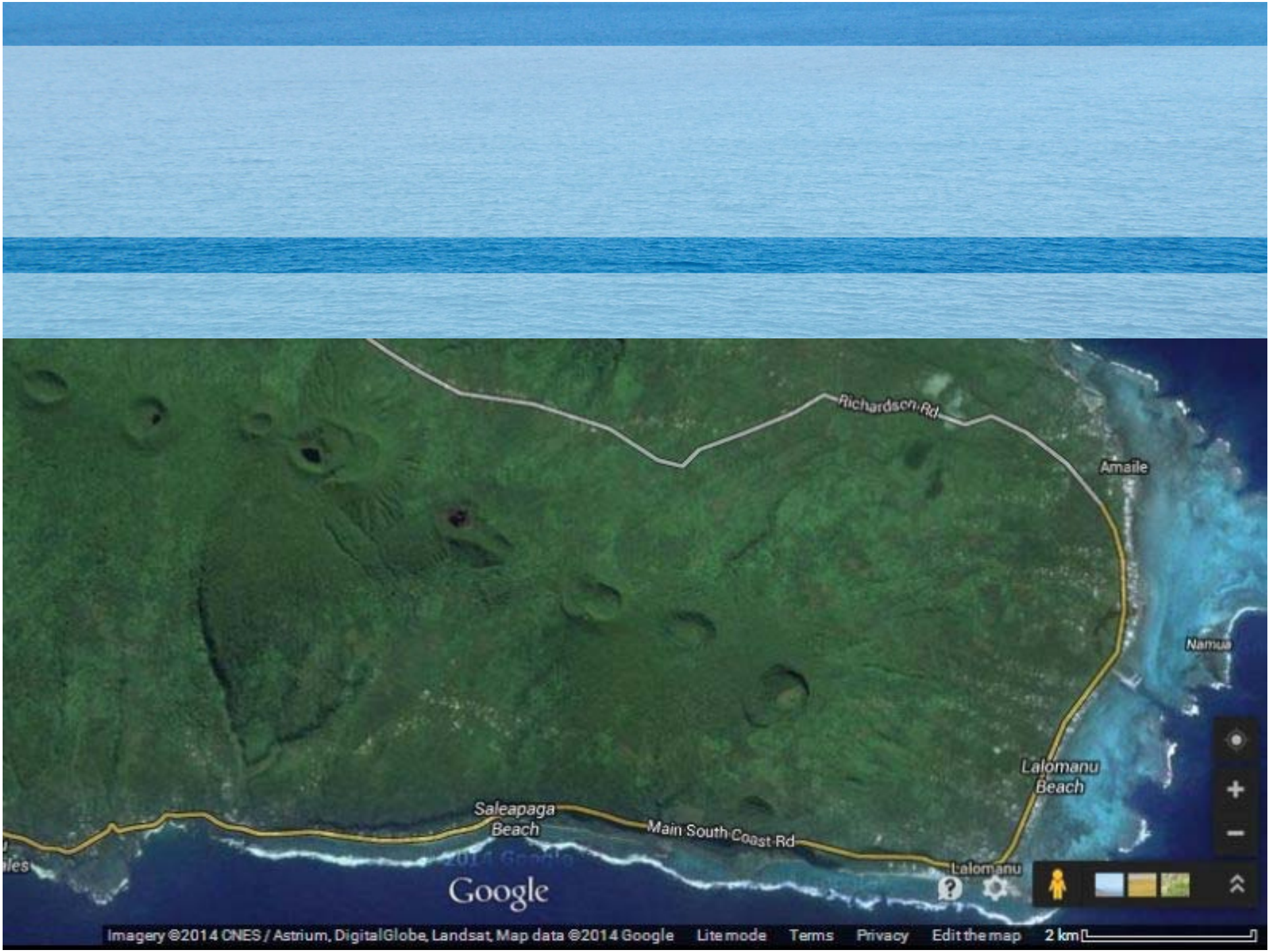
Map Information

Map Legend

Data Sources

UNOSAT

satellite imagery for all


Richardson Rd
Amaile
Namua
Lalomanu Beach
Saleapaga Beach
Main South Coast Rd
Lalomanu
Google
Imagery ©2014 CNES / Astrium, DigitalGlobe, Landsat, Map data ©2014 Google
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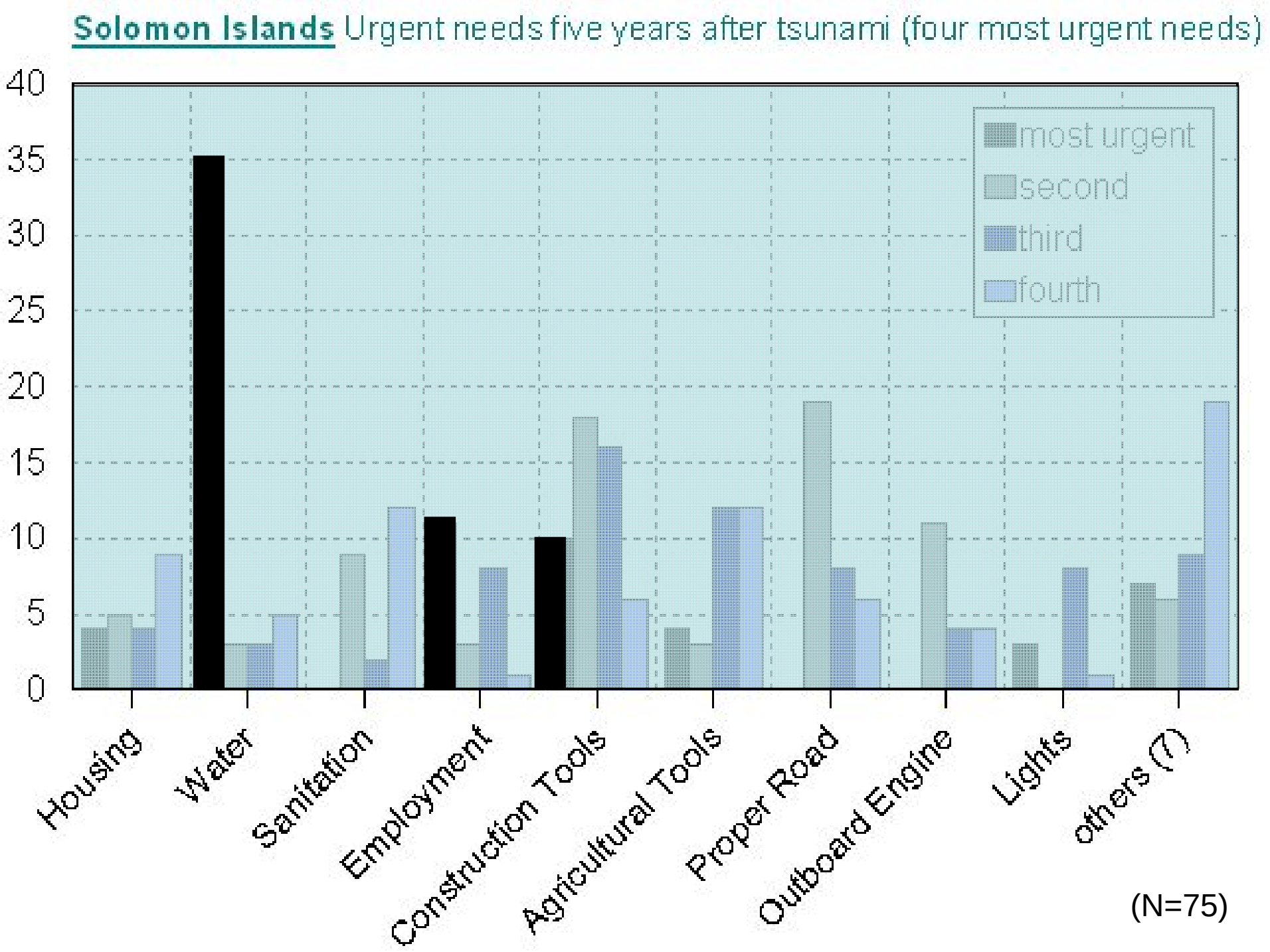
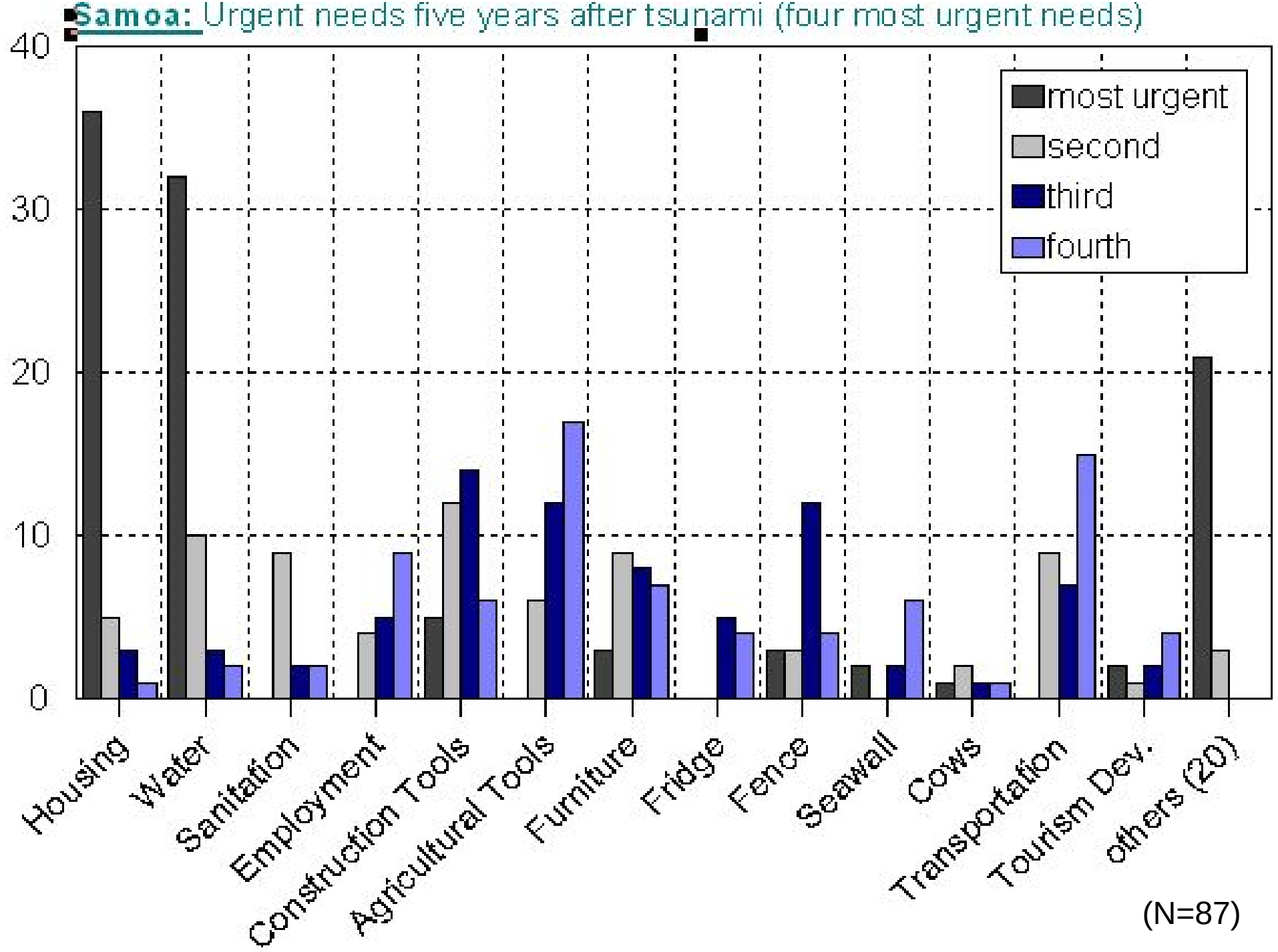
Edit the map
2 km

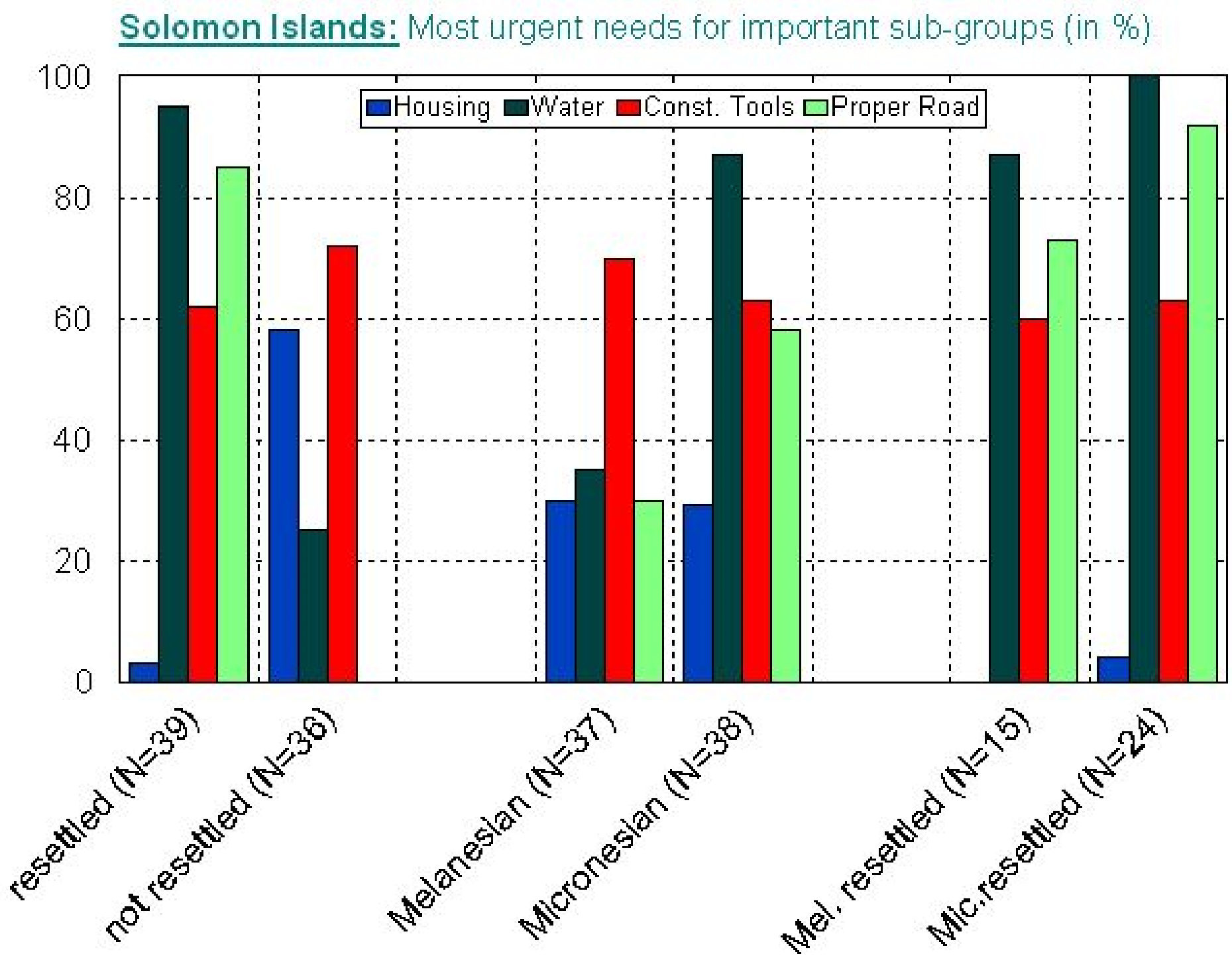
Resettlement is a political decision. In Samoa it is backed by the Government, in the Solomon Islands it is not.

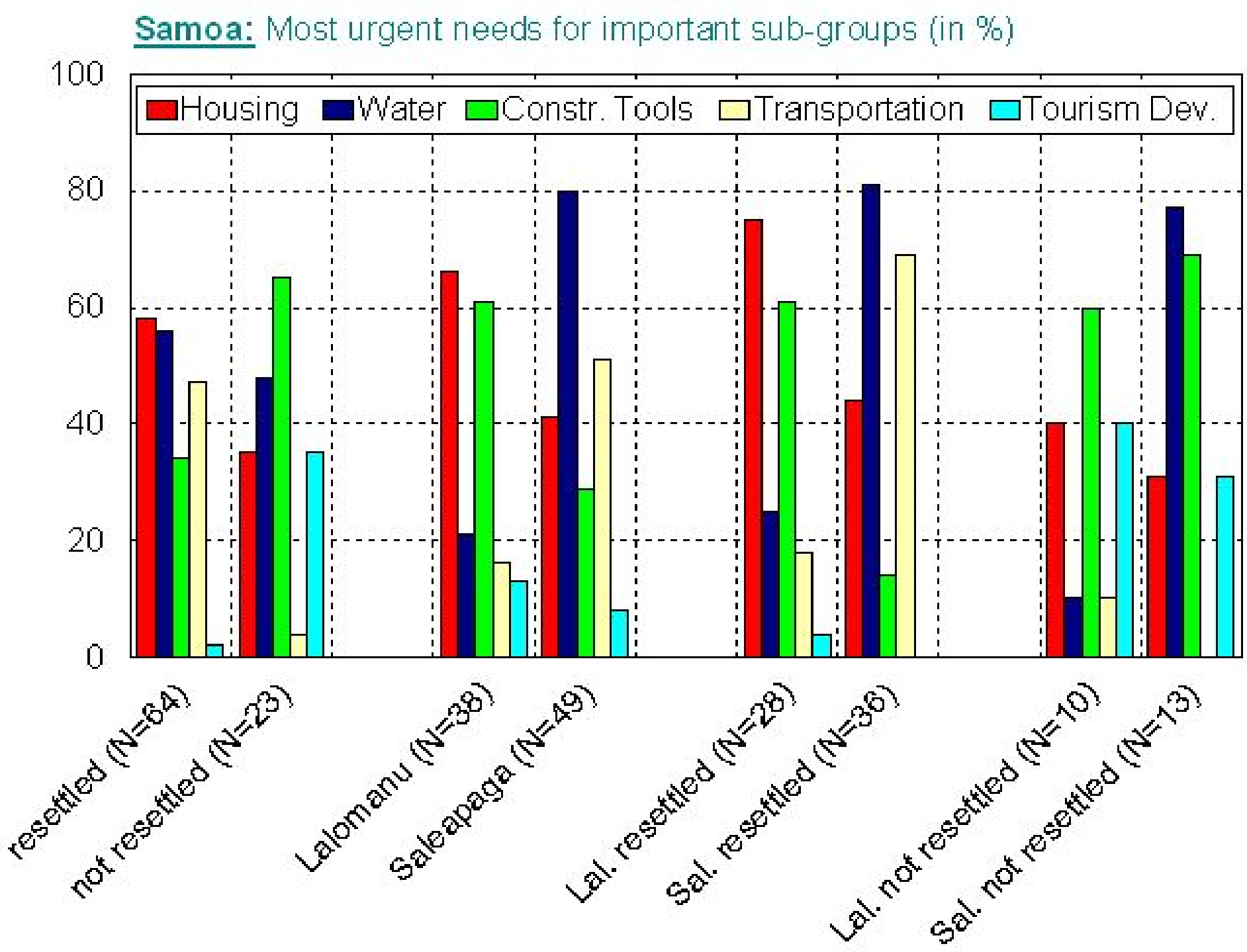
Empirical Case Studies

- Needs assessment after 5 years
- Importance of Food Security in Disaster Risk
- Importance of Social Capital
- Similar kind of disaster - different challenges
- The role of the governments

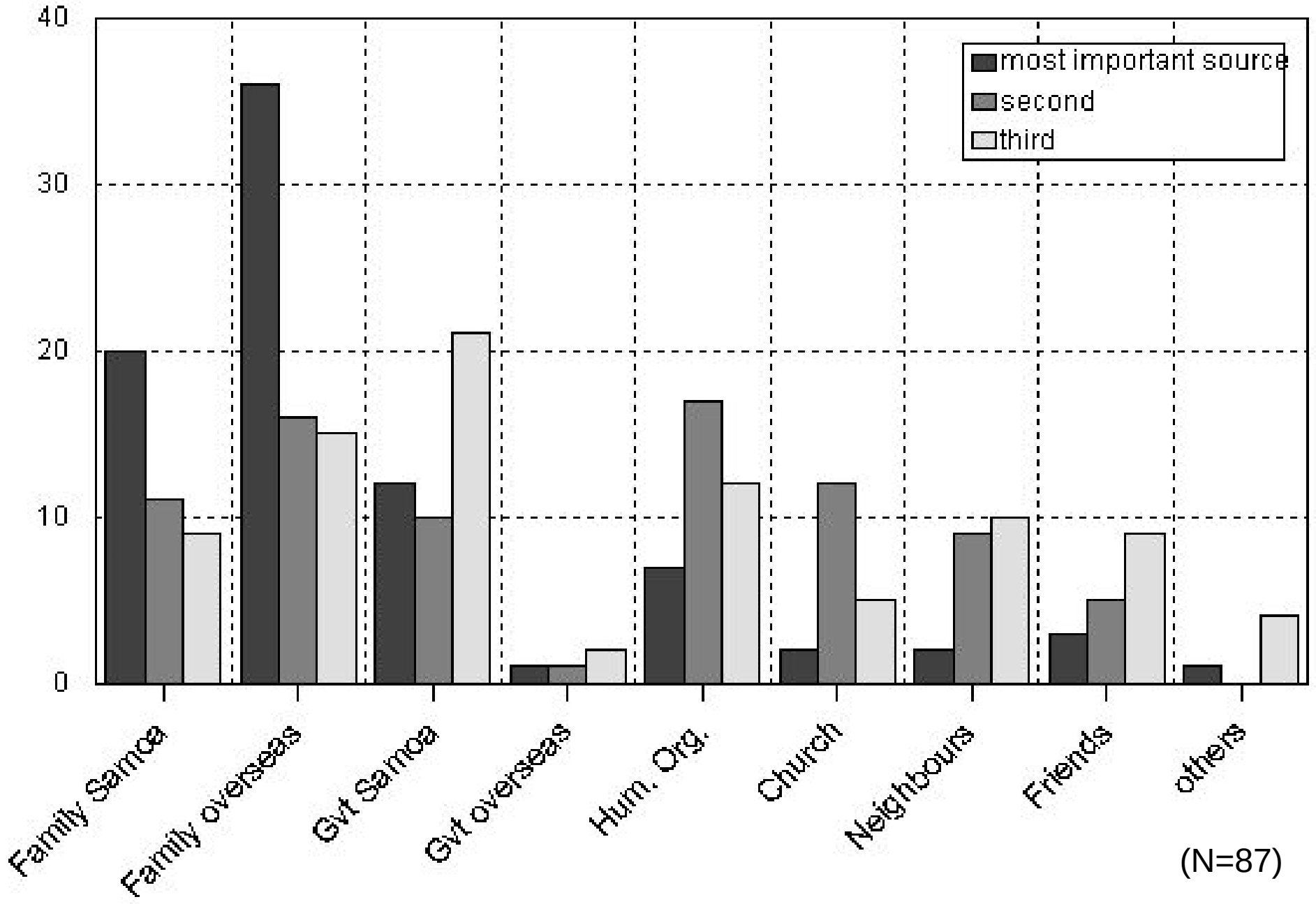

Solomon Islands Urgent needs five years after tsunami (four most urgent needs)
40
35
30
25
20
15
10
5
0
most urgent
second
third
fourth
Housing
Water
Sanitation
Employment
Construction Tools
Agricultural Tools
Proper Road
Outboard Engine
Lights
others (7)
(N=75)


Samoa: Urgent needs five years after tsunami (four most urgent needs)
40
30
20
10
0
most urgent
second
third
fourth
Housing
Water
Sanitation
Employment
Construction Tools
Agricultural Tools
Furniture
Fridge
Fence
Seawall
Cows
Transportation
Tourism Dev.
others (20)
(N=87)

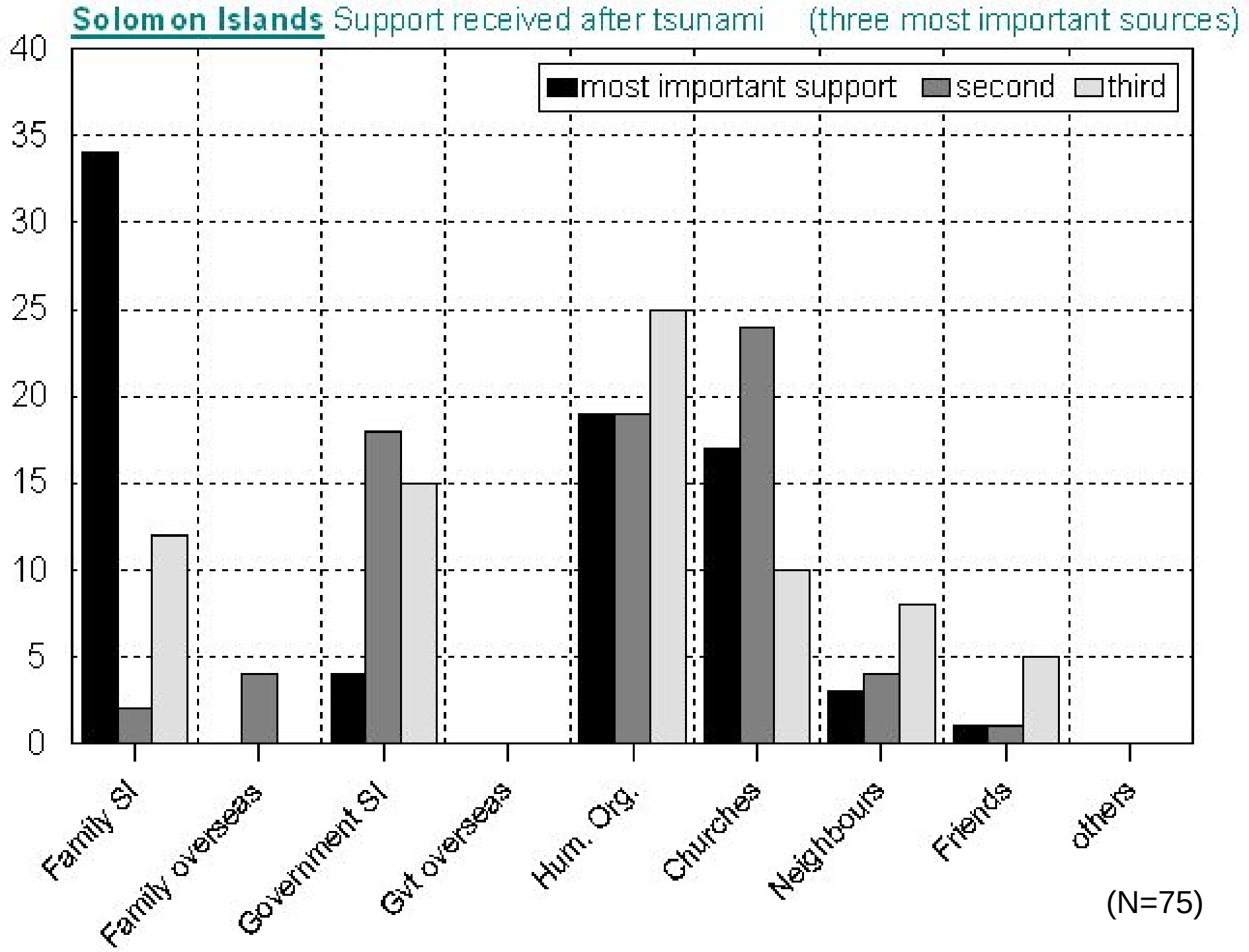

Solomon Islands: Most urgent needs for important sub-groups (in %)
Housing
Water
Const. Tools
Proper Road
100
80
60
40
20
0
resettled (N=39)
not resettled (N=36)
Melanesian (N=37)
Micronesian (N=38)
Mel. resettled (N=15)
Mic.resettled (N=24)


Samoa: Most urgent needs for important sub-groups (in %)
Housing
Water
Constr. Tools
Transportation
Tourism Dev.
100
80
60
40
20
0
resettled (N=64)
not resettled (N=23)
Lalomanu (N=38)
Saleapaga (N=49)
Lal. resettled (N=28)
Sal. resettled (N=36)
Lal. not resettled (N=10)
Sal. not resettled (N=13)

Samoa: Support received (three most important sources, naming)



(N=87)


Solomon Islands Support received after tsunami (three most important sources)
most important support
second
third
40
35
30
25
20
15
10
5
0
Family SI
Family overseas
Government SI
Gvt overseas
Hum. Org.
Churches
Neighbours
Friends
others
(N=75)


Thank you very much
© E. Weber, Tarawa Atoll, Kiribati

Table 1: Population, Area and Island Topography of Pacific Islands Countries and Territories

Country	Sub-Region	Population (2013)	Population (around 1960)	Land Area (km^2)[1]	Exclusive Economic Zone (km^2)[1]	Population Density (per/km^2)	Atolls / Coral Islands	Raised Islands	Volcanic Islands	Total
Cook Islands	Polynesia	15,200	18,378[f]	240	1,960,135	63	7	0	8	15
Niue	Polynesia	1,500	4,864[f]	259	316,629	6	0	1	0	1
Samoa	Polynesia	187,400	114,427[f]	2,934	131,812	64	0	0	2 + 8 islets	2
Tonga	Polynesia	103,300	56,383[a]	688	664,853	150	a few	>100	a few	~170
Tuvalu	Polynesia	10,900	5,444[h]	26	751,797	419	9	0	0	9
Fed. States of Micronesia	Micronesia	103,000	39,284[c]	700	2,992,597	147	~600	0	>10	607
Kiribati	Micronesia	108,800	43,336[h]	726	3,437,345	149	32	1	0	33
Marshall Islands	Micronesia	54,200	13,928[c]	181	1,992,232	299	34	0	0	34
Nauru	Micronesia	10,500	4,613[f]	21	308,502	500	0	1	0	1
Palau	Micronesia	17,800	9,344[c]	487	604,289	37	<300	>10	>5	340
Fiji Islands	Melanesia	859,200	345,737[a]	18,272	1,281,122	47	2	a few	<100	~320
Papua New Guinea	Melanesia	7,398,500	2,184,986[i]	462,000	2,396,214	16	a few	a few	>600	>600
Solomon Islands	Melanesia	610,800	124,076[d]	28,000	1,597,492	22	a few	0	>900	>990
Vanuatu	Melanesia	264,700	78,088[k]	12,190	827,891	22	0		82	82
Timor Leste		1,066,409	n.k.	15,007	77,256	71	0	0	2	2
sub-total		10,812,209	n.k.	541,731	16,347,569					
Territory										
American Samoa	Poly	56,500	20,051[e]	199	404,391	284	2	0	5	7
French Polynesia	Poly	261,400	84,551[g]	3,660	4,767,242	71	~80	a few	~40	130
Tokelau	Poly	1,200	1,870[f]	12	319,031	100	3	0	0	3
Wallis & Futuma	Poly	12,200	8,546[m]	143	258,269	85	0	0	2	2
Guam	Micro	174,900	67,044[e]	549	221,504	318	0	0	1	1
Northern Mariana Islands	Micro	55,700	8,290[c]	457	749,268	121	0	0	15	15
New Caledonia	Mela	259,000	86,519[c]	18,600	1,422,543	14	0	0	7	7
sub-total		820,900	n.k.	23,620	8,142,248	n.k	n.k	n.k.	n.k.	n.k.
overall		11,633,109	n.k.	565,351	24,489,817	n.k	n.k	n.k.	n.k.	n.k.

[a]1956 [b]1957 [c]1958 [d]1959 [e]1960 [f]1961 [g]1962
[h]1963 [i]1966 [k]1967 [l]1968 [m]1969

Source: for Population Data: SPC Population Data 2011 and Time Series from 1900
for Island size and island type: Pacific Islands Yearbook, 1989

[1] Land Area and EEZ for Pacific Island Countries according to www.forumsec.org
EEZ for Pacific Island Territories: http://www.seaaroundus.org/eez/
figures for Timor Leste from http://dne.mof.gov.tl