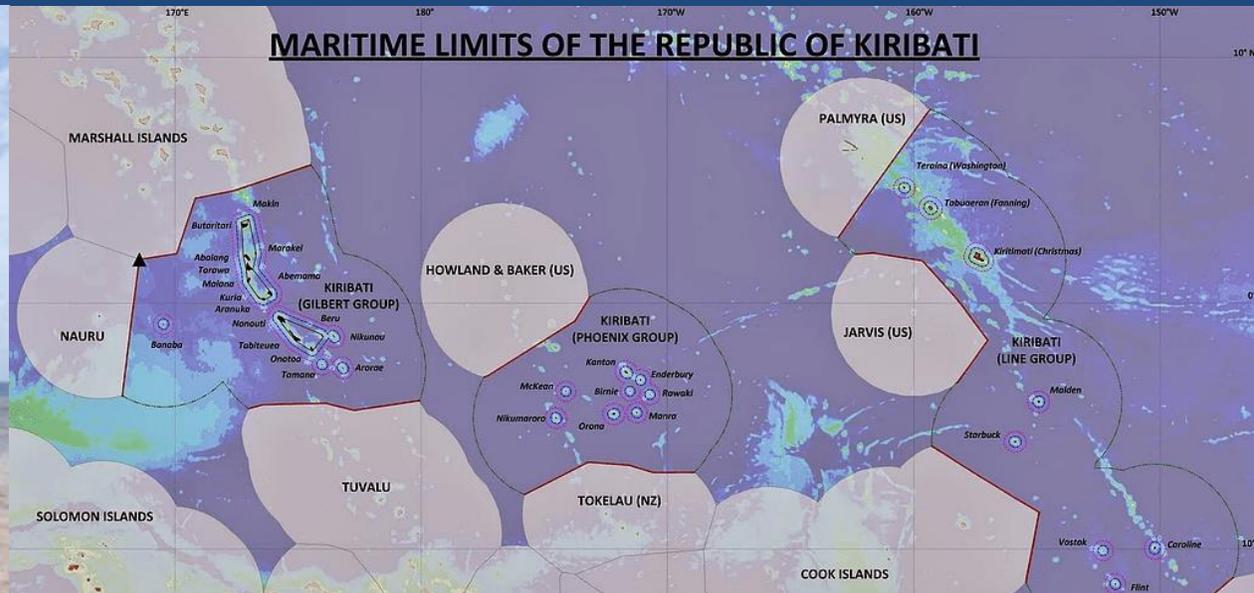


Tion Uriam

UN GNSS Workshop, Suva, Fiji, 2019

THE KIRIBATI MARITIME BOUNDARIES PROJECT

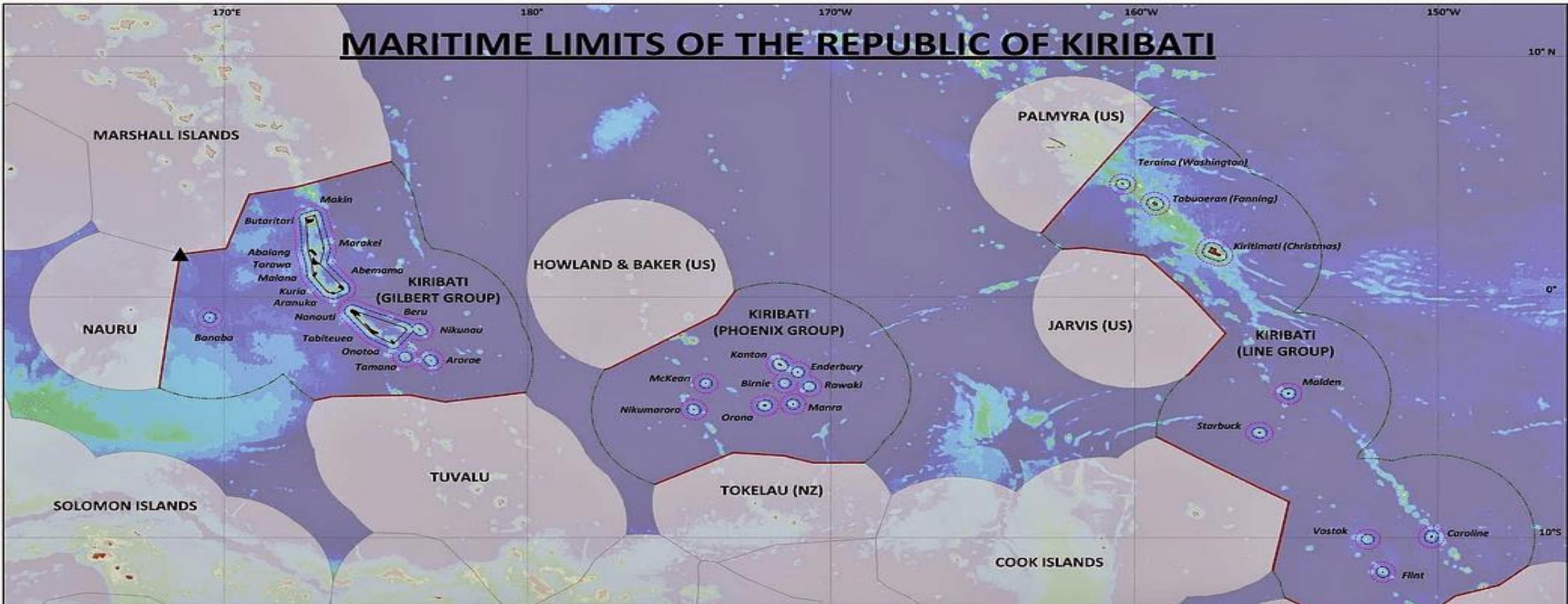


OUTLINE

- Where is Kiribati?
- Background
- Method
- What remains to be done
- Outcome
- Conclusion
- Questions



MARITIME LIMITS OF THE REPUBLIC OF KIRIBATI

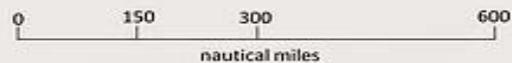


Legend

- ▲ Tri-junction point stated in the Trilateral Agreement between Kiribati, Marshall Islands and Nauru
- Signed Maritime Boundary Agreement between Kiribati and neighbouring countries
- Outer Limits of the Exclusive Economic Zone and the Continental Shelf (200 nautical miles) with the High Seas
- Outer Limits of the Contiguous Zone (24 nautical miles)
- Outer Limit of the Territorial Seas (12 nautical miles)
- Territorial Sea Baselines
- Archipelagic Straight Baselines
- Coastline
- Provisional EEZ boundaries



Horizontal Datum: World Geodetic System 1984 (WGS 84)



This Illustrative Chart is not to be used for navigation purposes.

The purpose of this Chart is solely to illustrate the Maritime Zones (the Territorial Sea Baseline, the Archipelago, the Territorial Seas (TS), the Contiguous Zone (CZ), the Exclusive Economic Zones (EEZ) and the Continental Shelf (CS) of the Gilbert Group, the Phoenix Group and the Line Group in Kiribati.

This Chart was compiled with the collaboration of the Government of Kiribati, Ministry of Fisheries and Marine Resources Development and Ministry of Environment, Lands & Agriculture Development and the Applied Geoscience & Technology Division (SOPAC) of the Secretariat of the Pacific Community (SPC).

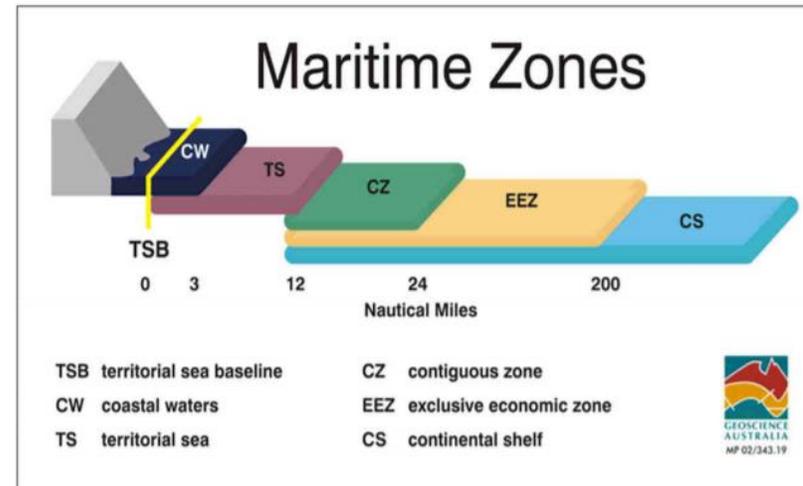
16 July 2014

KIR2014/1

BACKGROUND

- UNCLOS
- Baselines
- Maritime Limits
- Regional program (run by SPC) for developing maritime boundaries

UNCLOS and Maritime Boundaries

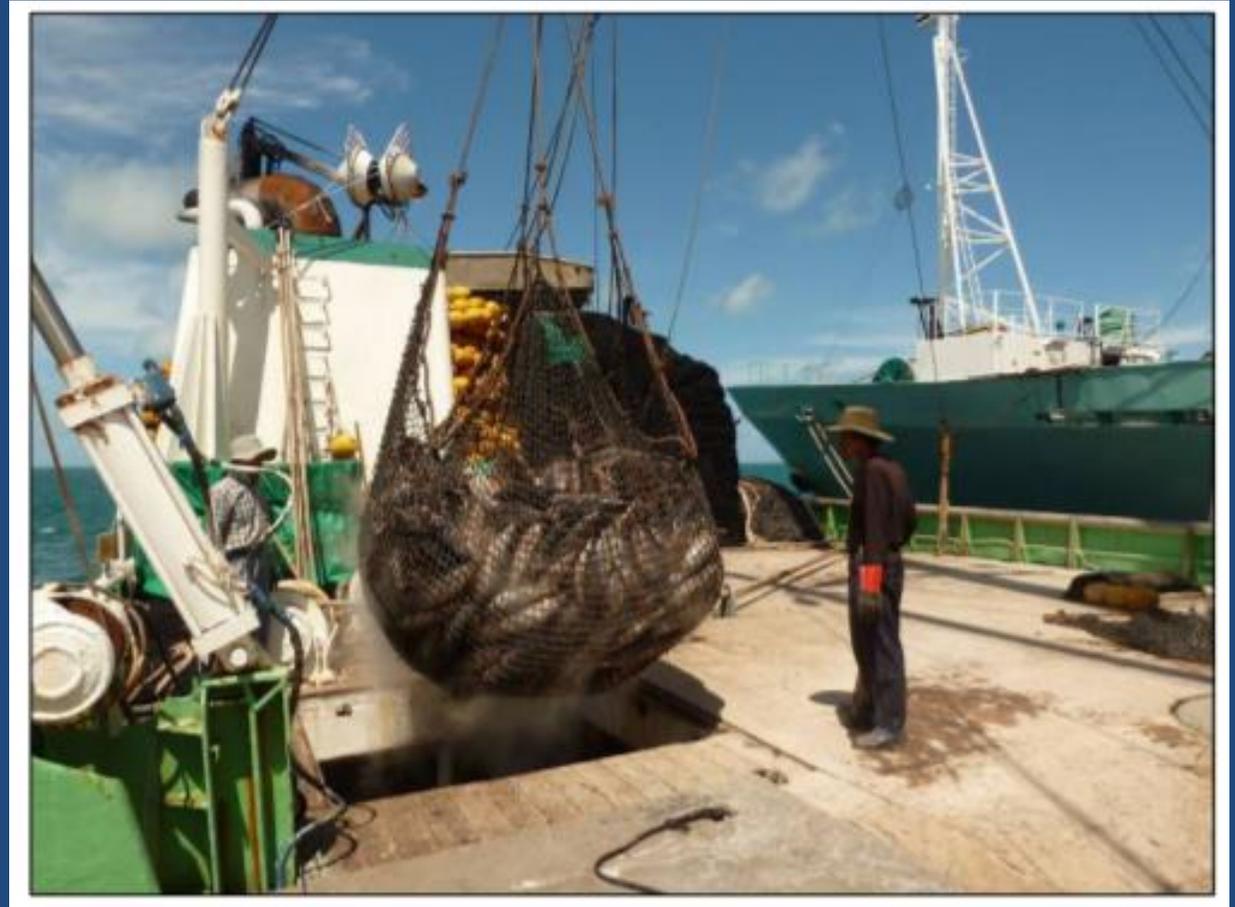


Geoscience Australia, "Maritime Boundary Definitions" retrieved December 8, 2013, from <http://www.ga.gov.au/marine/jurisdiction/maritime-boundary-definitions.html>

- One of the major features of the UNCLOS is the definition of a number of jurisdictional zones.
- These zones refer to an area of ocean in which the coastal state has specific rights relating to the seabed, the subsoil, airspace and the water column

BACKGROUND

- Kiribati got involved around 2007
- Kiribati makes much of its earnings from Fisheries Licenses
- Has one of the largest marine reserves in the world



METHOD

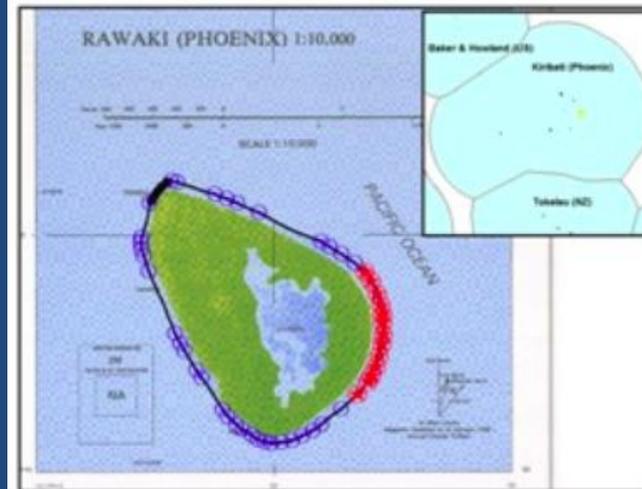
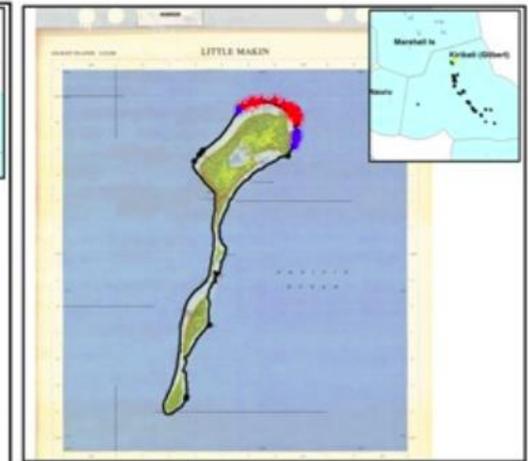
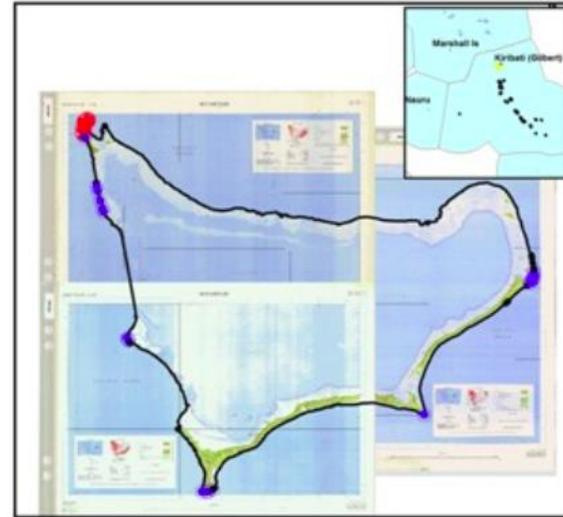
1. LEGAL

- Updated our Marine Zones
- Act the current definition of the sea baselines and maritime zones

2. TECHNICAL

- Derive baselines
- Compute technical solutions for shared boundaries

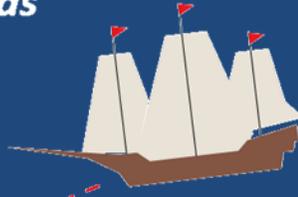
3. ADMINISTRATIVE



Historical data

Gilbert Islands

Makin
Butaritari



Early 1900's survey by
Royal Aus. and NZ
Navy (Astro datum &
Chart datum)

Abaiang Marakei

Tarawa
Maiana

1940's - 1960's
US Army Aerial photography
(Local Mercator Grid)



Abemama

Kuria

Aranuka

Nonouti

Tabiteuea

Beru

Nikunau

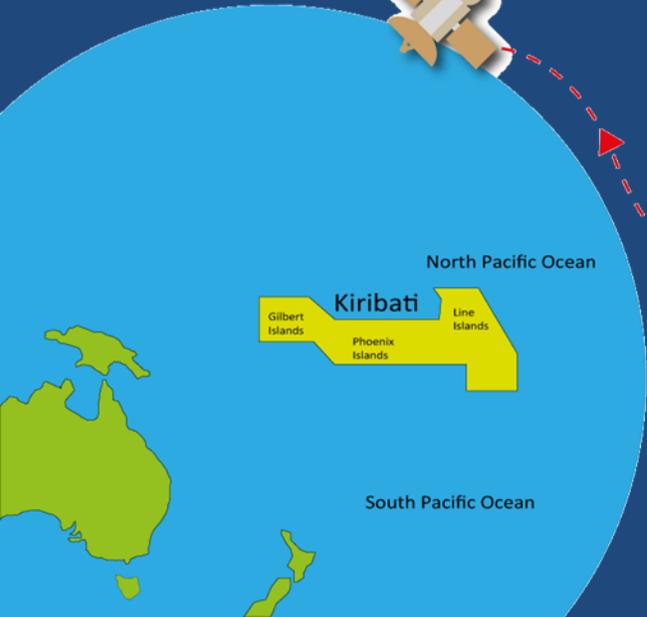
Onotoa

Tamana

Arorae

1970's Aus. doppler
Surveys and DOS Surveys
(WGS72, WGS84 datum)

1998 Photo Control
Survey establishes
WGS84 datum for
Tarawa



Tide Gauge



METHOD

- Acquired new satellite imagery
- We needed to be convinced that the imagery was of good positional accuracy
- Conducted GNSS Surveys for 7 islands
 - Established new survey marks
 - Occupied existing benchmarks
 - Collected Image reference points



RESULTS

- Processing of the GNSS survey data was done mostly by SPC
- 5m residuals
- Fit the purpose of the project



OUTCOME

- Derived our territorial sea baselines
- Computed our outer limits
- Able to move forward with our shared boundaries negotiations and treaty signings



OUTCOME

Maritime Legislation for Kiribati deposited with the UN in December 2014



Four maps illustrating Kiribati's maritime limits. The first map, titled "SCHEDULE 3 - CHART ILLUSTRATING THE BASELINES AROUND THE ARCHIPELAGOS OF KIRIBATI", shows the baselines for the Gilbert Group. The second map, "SCHEDULE 4 - CHARTS ILLUSTRATING THE OUTER LIMIT OF THE EXCLUSIVE ECONOMIC ZONE OF KIRIBATI", shows the EEZ limits for the Gilbert Group. The third map, "MARITIME LIMITS OF KIRIBATI (PHOENIX GROUP)", shows the EEZ limits for the Phoenix Group. The fourth map, "MARITIME LIMITS OF KIRIBATI (LINE GROUP)", shows the EEZ limits for the Line Group. Each map includes a scale bar and a north arrow.

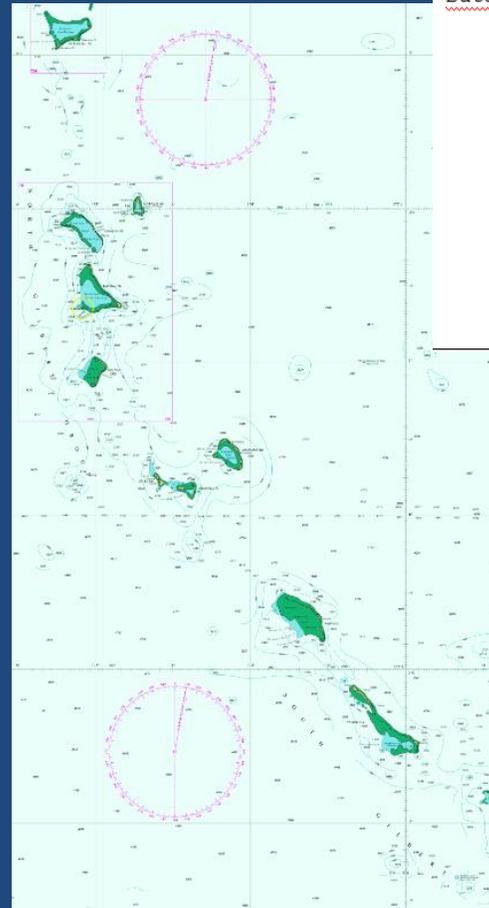
- Marine Zones (Declaration) Act, 1983 - Territorial Sea and the Exclusive Economic Zone
- Marine Zones (Declaration) Act 2011
- Territorial Sea Baselines of Kiribati Regulations 2014 [Pending]
- Baselines around the Archipelagos of Kiribati Regulations 2014
- Closing Lines Regulations 2014
- Territorial Sea Outer Limits Regulations 2014
- Contiguous Zones Outer Limits Regulations 2014
- Exclusive Economic Zone Outer Limits Regulations 2014

International Declaration - <http://www.un.org/Depts/los/LEGISLATIONANDTREATIES/STATEFILES/KIR.htm>

- Reaping the benefits
- By knowing our jurisdiction we have had successful prosecutions of vessels fishing illegally
- Effectively managing our marine space

WHAT REMAINS TO BE DONE

- Our island's are still on legacy datum
- We still need to update our nautical charts and maps
- Information surrounding the islands datum are disjointed - why hasn't there been any efforts to consolidate all of this information?
- We still need to improve improve our current capacity



<u>Butaritari</u>	Datum: 1965 <u>Butaritari Datum</u>
	Physical mark: Datum origin is at third-order station BTZ 26
	Coordinates: $\phi = 03^{\circ} 15' 40.629''$ N and $\lambda = 172^{\circ} 41' 45.8381''$ East of Greenwich and Ho = 1.87m
	Local grid projection: Transverse Mercator projection Central meridian, $\lambda_0 = 172^{\circ} 50' E$ False Easting = 20,000m False Northing = zero Scale Factor at Origin is unity ($m_0 = 1.0$)
	<u>Butaritari Datum of 1965 to WGS 84 conversion:</u> Doppler solution: DX = +253.8 m, DY = +6.1 m, and DZ = +528.2 m The Operation ANON 1984-85: DX = +254.2 m, DY = +3.2 m, DZ = +544.2 m.

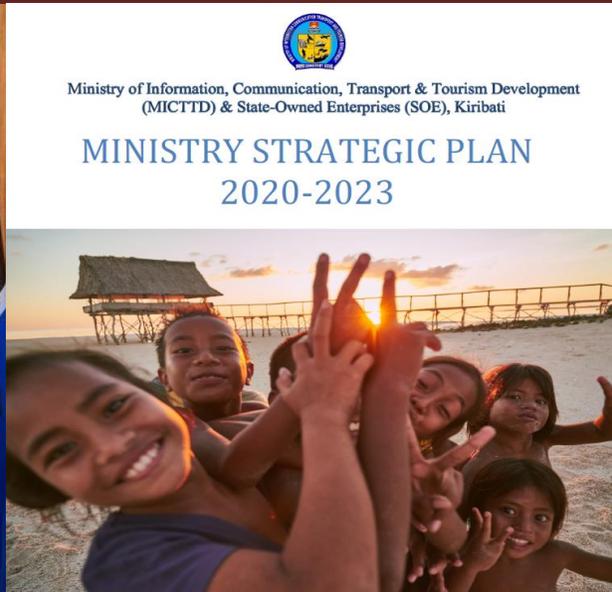


WAYS FORWARD

Seek regional and international assistance

Develop National Action Plans and Strategies

Training and capacity building



CONCLUSION

- The Model that was used for the Regional Maritime Boundaries Project, is something I believe we can learn from with regards to our efforts to address the following:
 - a. Modernising of our country's geodetic datum
 - b. Capacity building
 - c. Raising awareness
- Requires commitment of funds, resources, time and expertise



REFERENCES

- Pictures: Courtesy of Andrick Lal
- http://star.gsd.spc.int/meeting_docs/presentations/Session2b-4_Outter%2olimits%2oof%2omaritime%2ozones_ArtackE.pdf

QUESTIONS

Kam bati n raba' (Thank you all)