

# Timor Sea Maritime Boundaries: a presentation for the ICJA/ILA Colloquium at University of New South Wales

16 August 2014 (*revised 2014 – 2018*)



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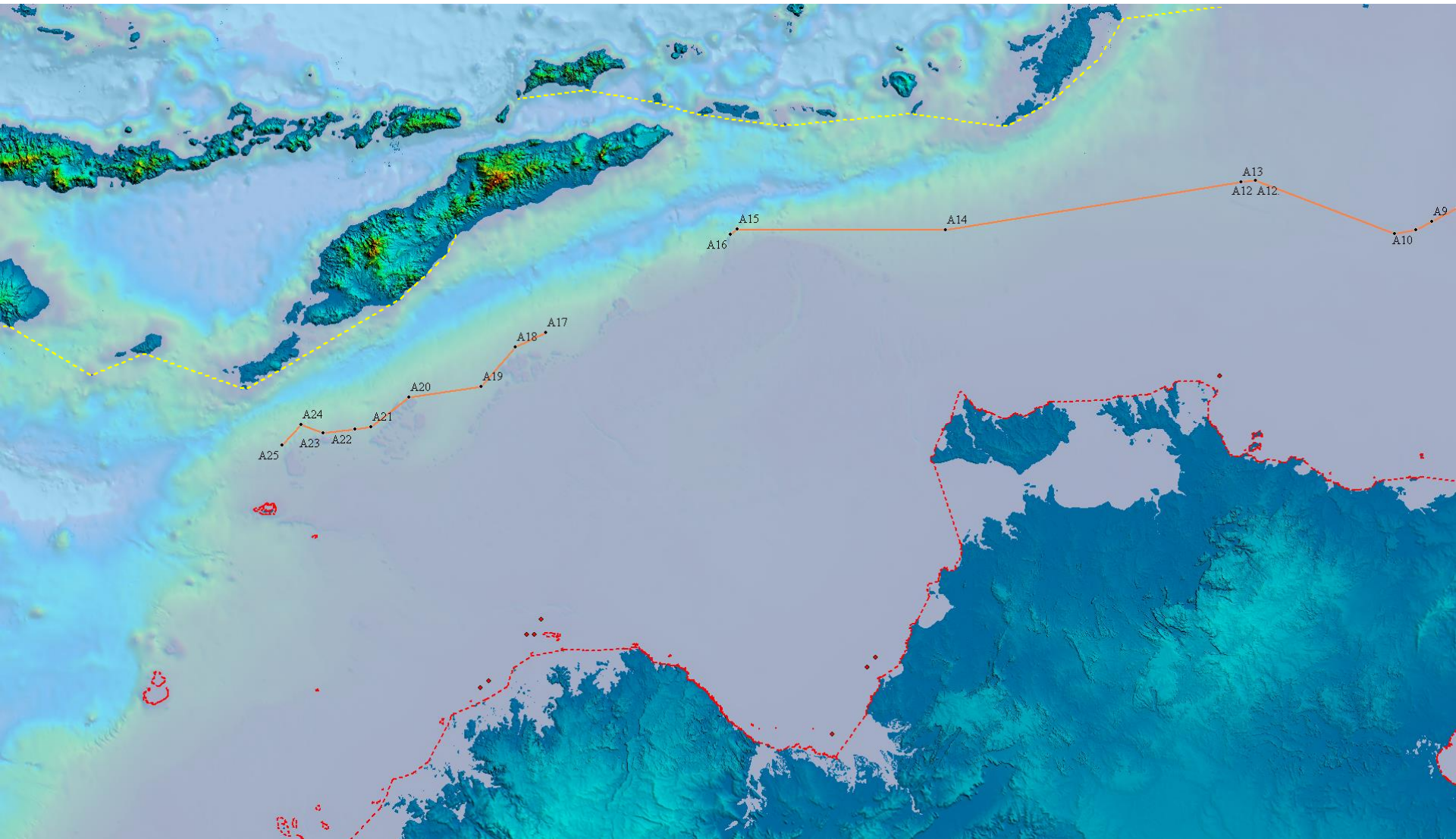
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**Maritime boundaries of East Timor: a graphical presentation of some historical and current issues**

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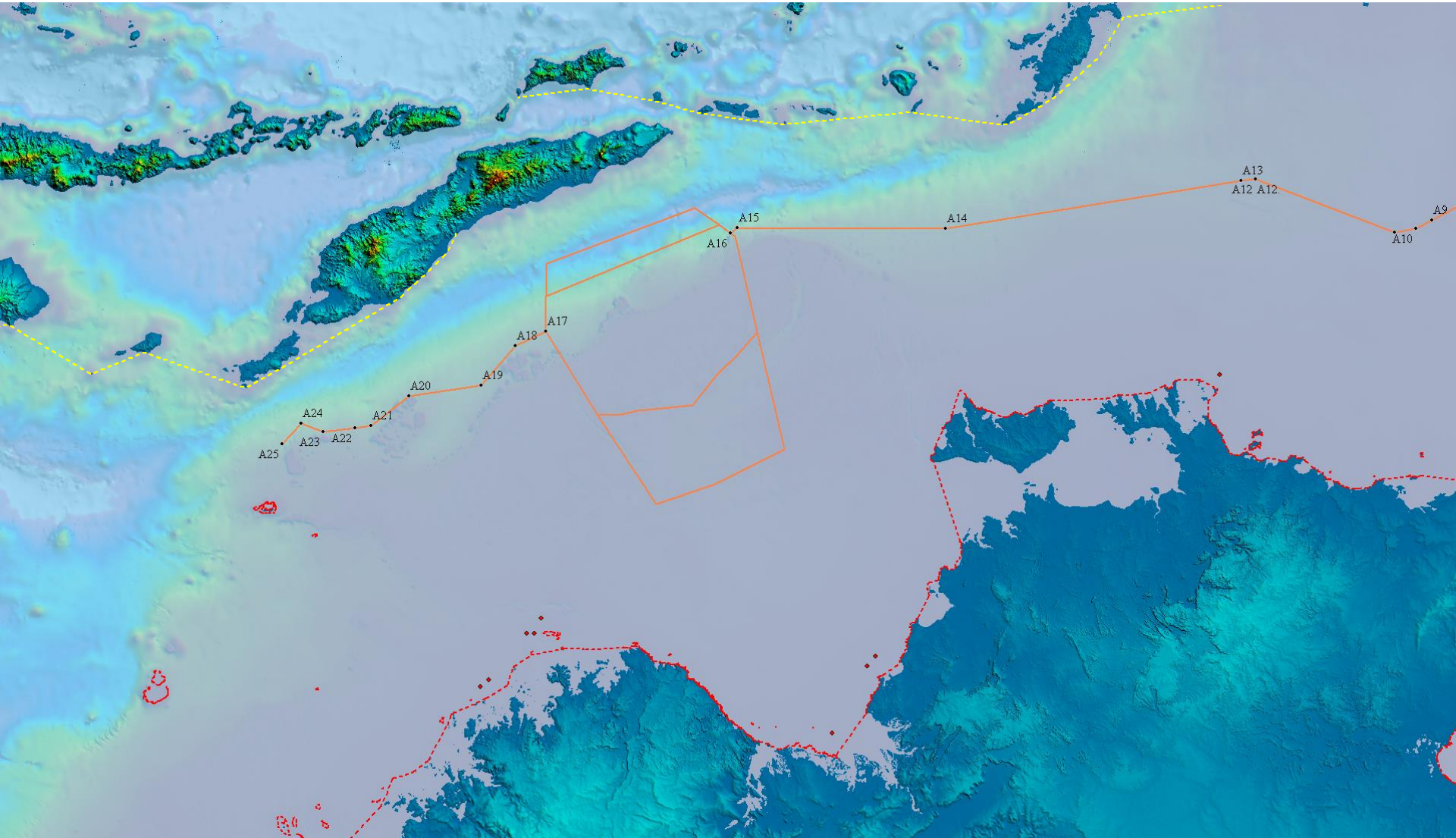


## Agreement between Australia and Indonesia establishing Certain Seabed Boundaries in the Area of the Timor and Arafura Seas 1972 (entry into force 1973)



Boundaries between the area of seabed that is adjacent to and appertains to the Commonwealth of Australia and the area of seabed that is adjacent to and appertains to the Republic of Indonesia. The boundary is interrupted in the “Timor Gap”. The dashed yellow line is the published Indonesian baseline. The dashed red line is the Australian baseline.

# Treaty between Australia and Indonesia on the Zone of Cooperation in an Area between the Indonesian Province of East Timor and Northern Australia [Timor Gap Treaty] 1989 (entry into force 1991)

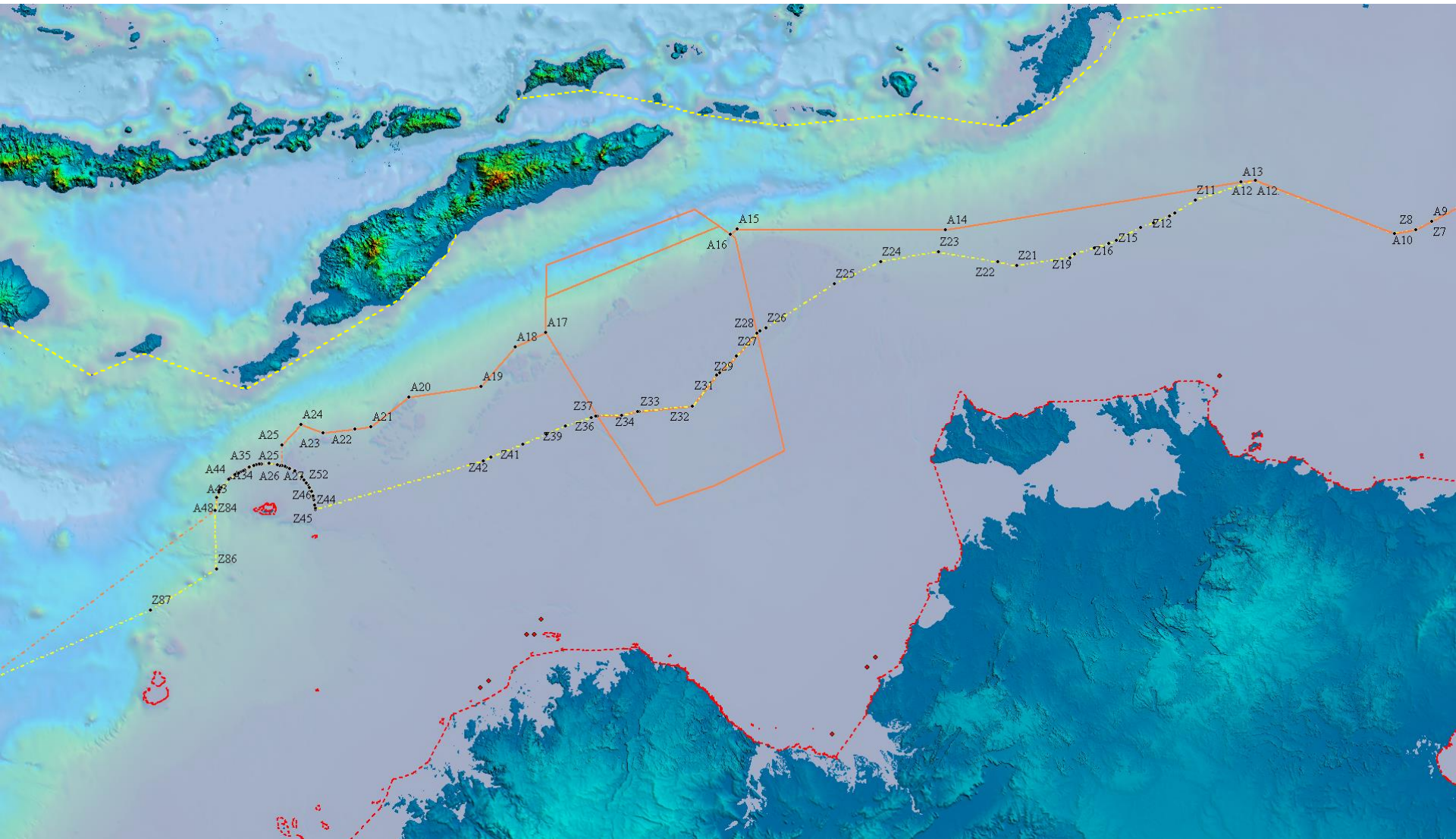


The treaty establishes in the “Timor Gap” a zone of cooperation with 3 areas: Area A (central area, with equal sharing of the benefits of exploitation of petroleum resources); Area B (southern area, Australia paying Indonesia 10% of gross Resource Rent Tax); Area C (northern area, Indonesia paying Australia 10% of Contractor’ Income Tax).



# Treaty between Australia and Indonesia establishing an Exclusive Economic Zone Boundary and Certain Seabed Boundaries

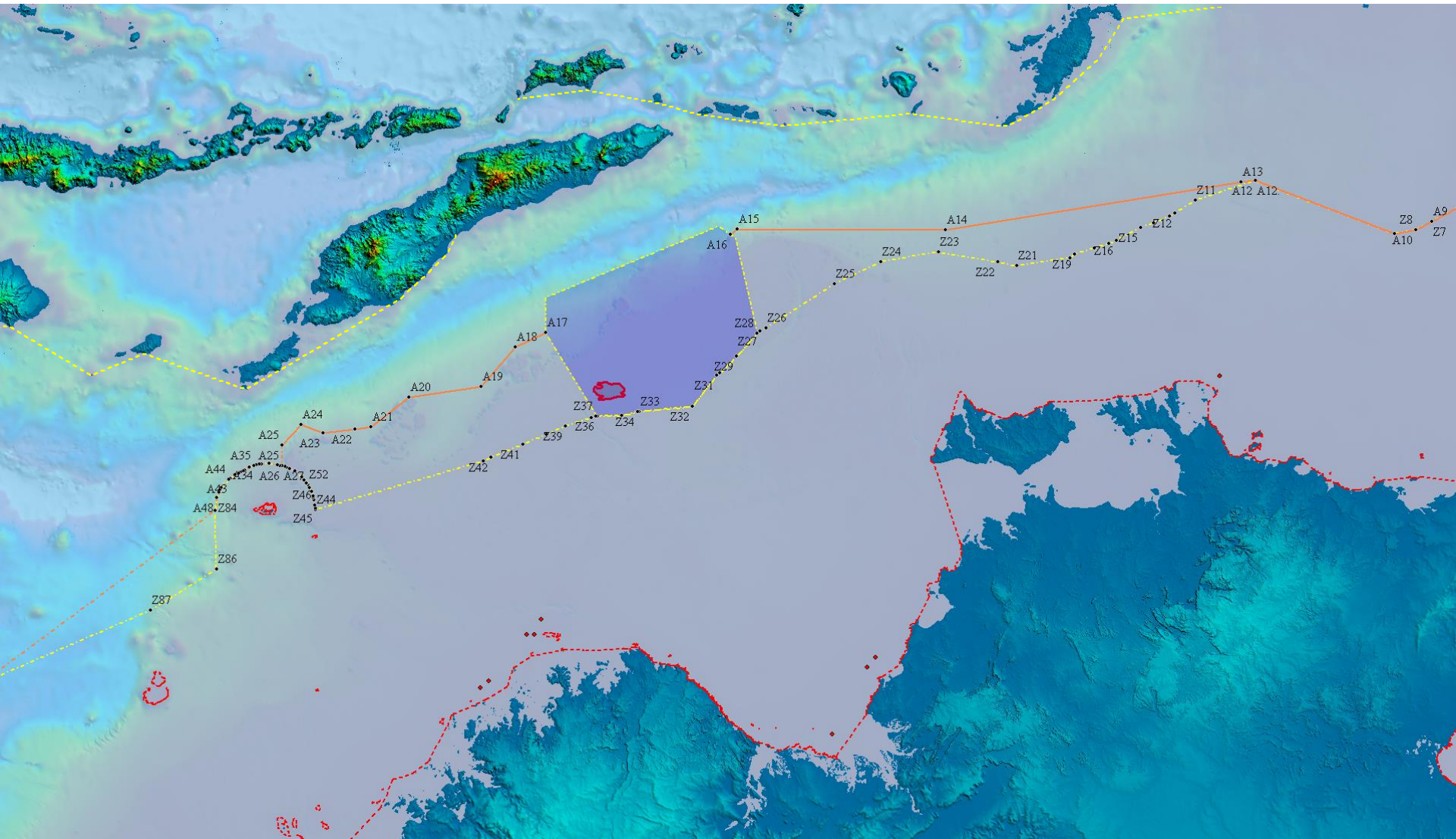
1997 (not ratified, but the EEZ line east of point Z42 is the acknowledged current de facto boundary)



The 1997 treaty extends the seabed boundary to the west and establishes an Exclusive Economic Zone (EEZ) boundary. The treaty was not ratified, as part of its jurisdiction was transferred to East Timor in 1999. However, between points Z1 and Z42 the eastern side of the EEZ line is the acknowledged current de facto boundary in Australia's national geological survey's documents and maps, as well as on marine charts.



## Timor Sea Treaty between East Timor and Australia 2002 (entry into force 2003)

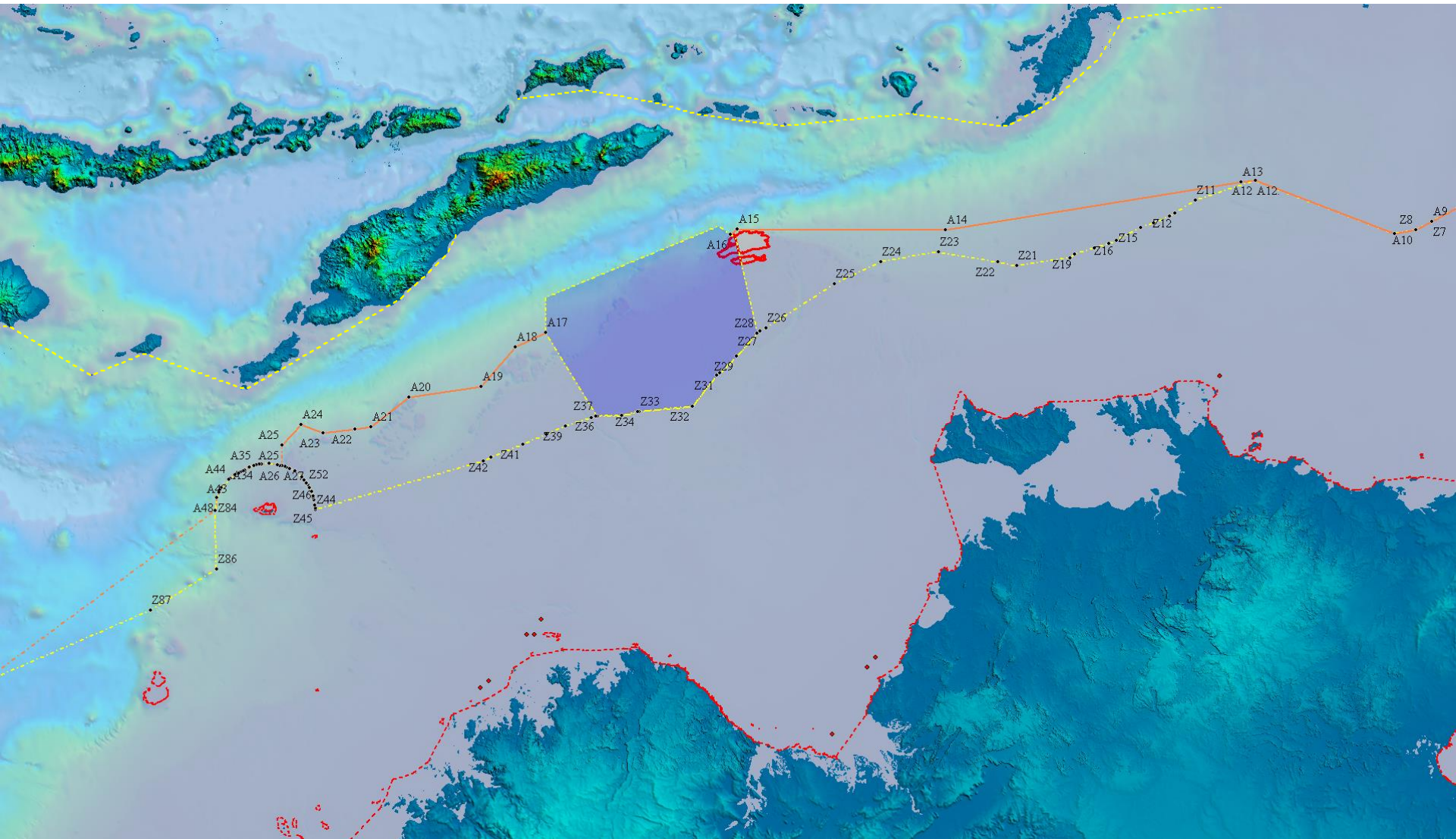


The Joint Petroleum Development Area (JPDA) is created. It is identical to Area A of the Timor Gap Treaty of 1989. Australia and East Timor shall have title to all petroleum produced in the JPDA. Of the petroleum produced in the JPDA, ninety (90) percent shall belong to East Timor and ten (10) percent shall belong to Australia.



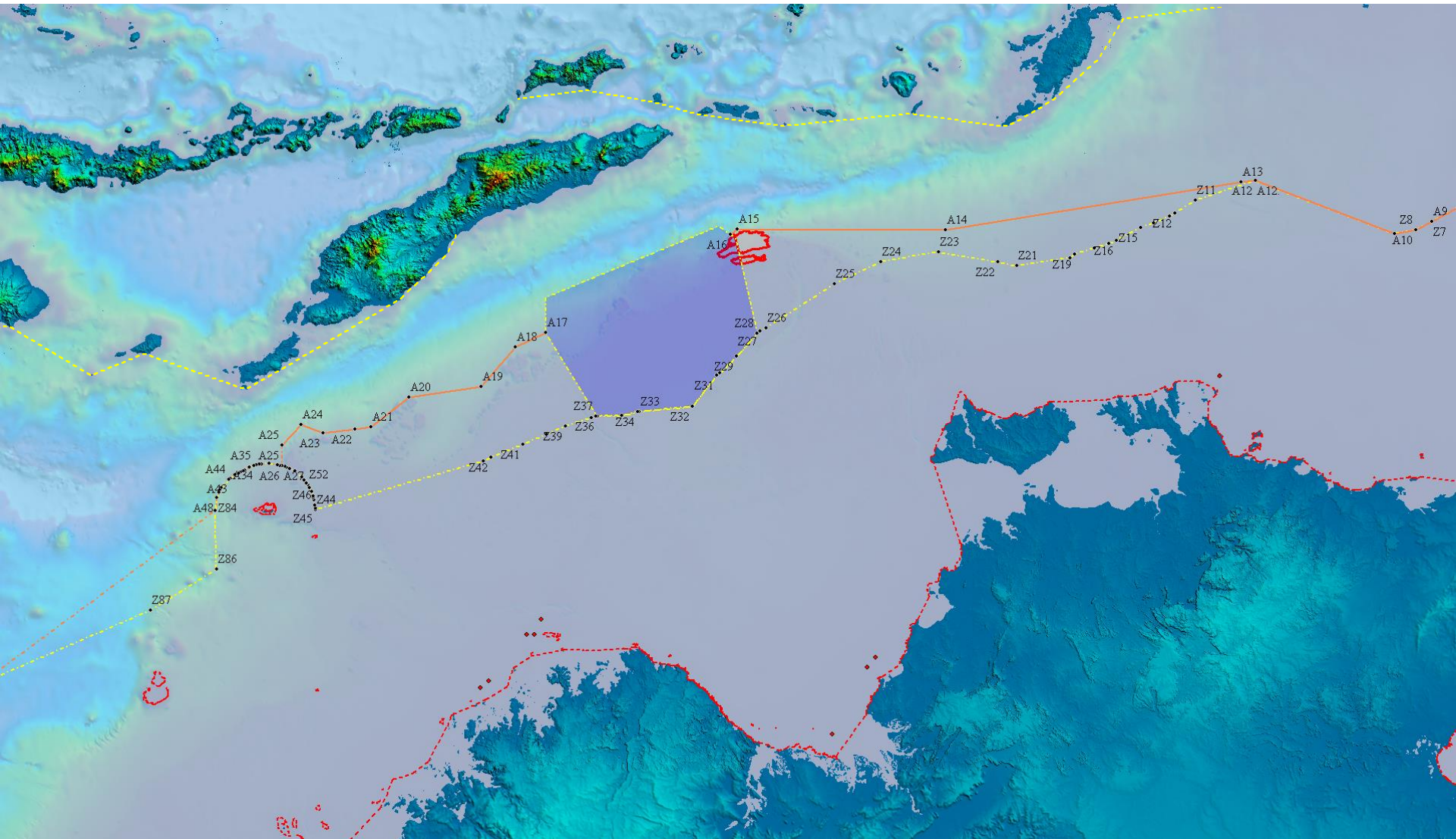
# Agreement between Australia and East Timor relating to the Unitisation of the Sunrise and Troubadour Fields

2003 (entry into force 2007)



Production of Petroleum from the Sunrise and Troubadour Unit Reservoirs shall be apportioned between the JPDA and Australia according to the Apportionment Ratio 20.1:79.9, with 20.1% apportioned to the JPDA and 79.9% apportioned to Australia.

## Treaty between Australia and East Timor on Certain Maritime Arrangements in the Timor Sea (CMATS) 2006 (entry into force 2007)



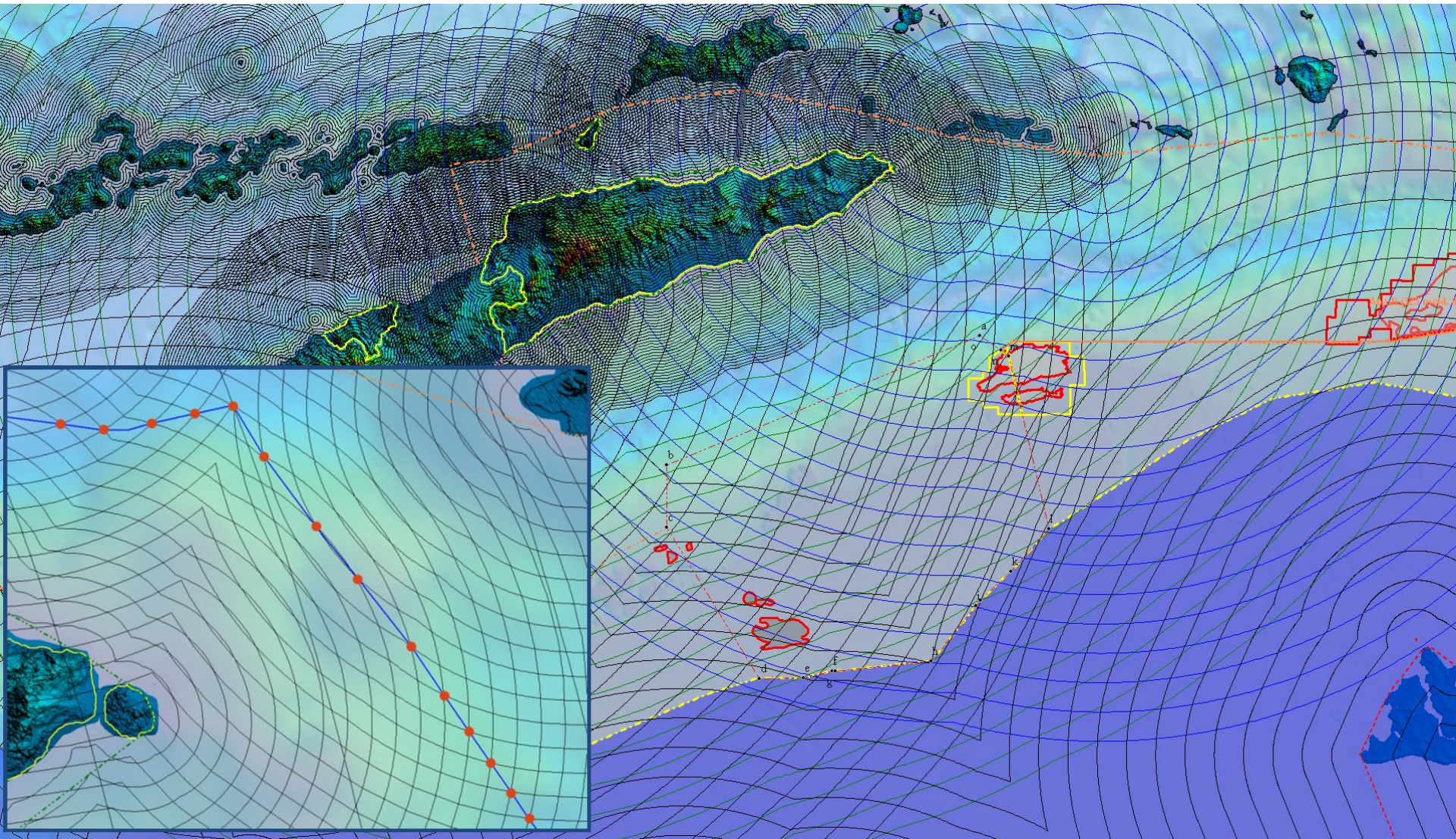
Notwithstanding the 20.1:79.9 Apportionment Ratio, the Parties shall share equally revenue derived directly from the production of that petroleum lying within the Greater Sunrise Unit Area in so far as the revenue relates to the upstream exploitation of that petroleum. All of the JPDA is declared to lie inside East Timor's water column (EEZ).



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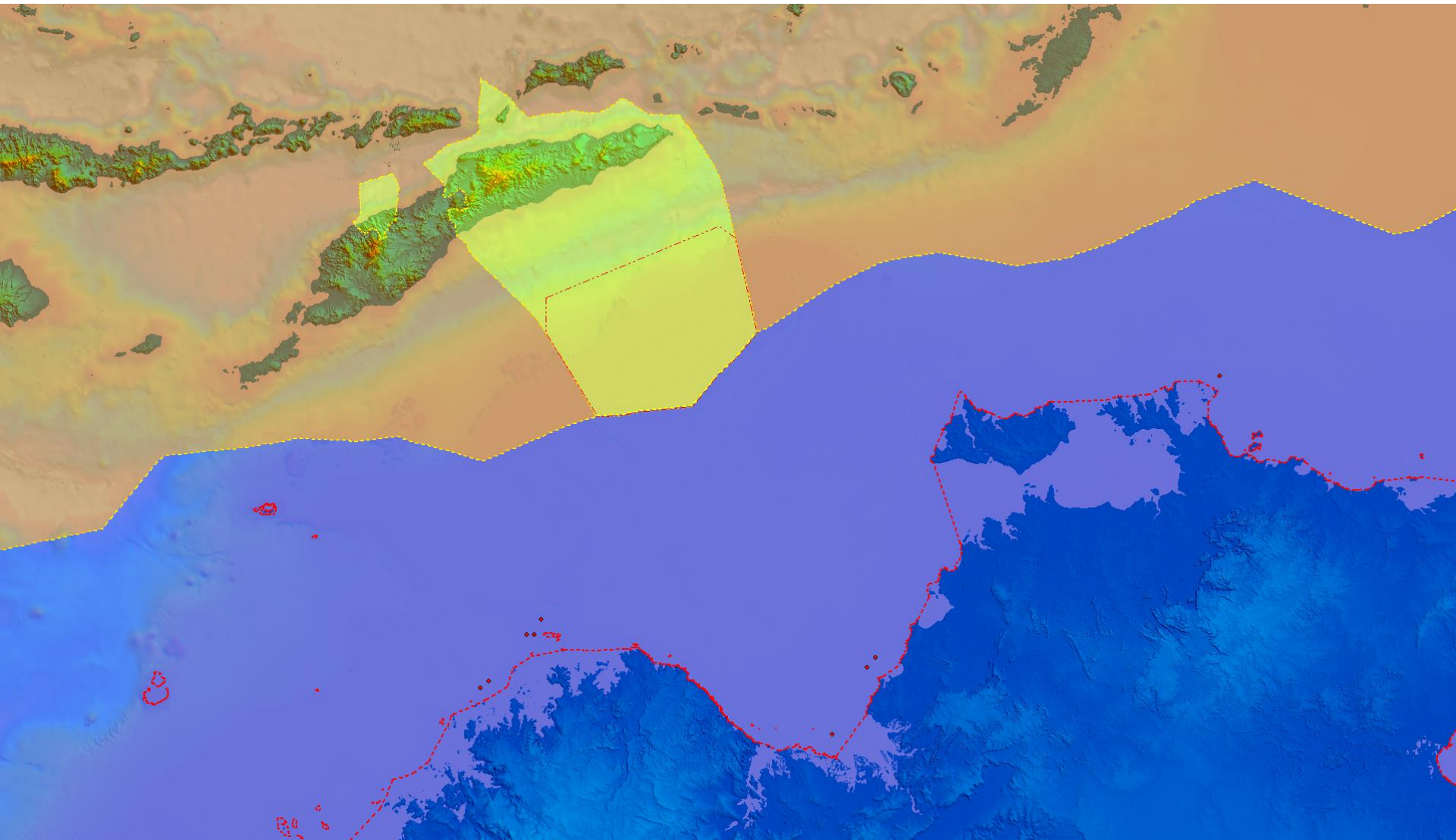
## Determining equidistance



Using precise offset contours from baselines and coastlines (NASA/JPL SWBD shoreline vectors) with 1 to 10 NM spacing, exact lines of equidistance will be constructed in the following pages. Each line of equidistance (see blue line in inset) is the locus of equal distance contour line intersections. The existing median line between Australia and the Indonesian-East Timorese archipelago, as shown above, is a line of equidistance.



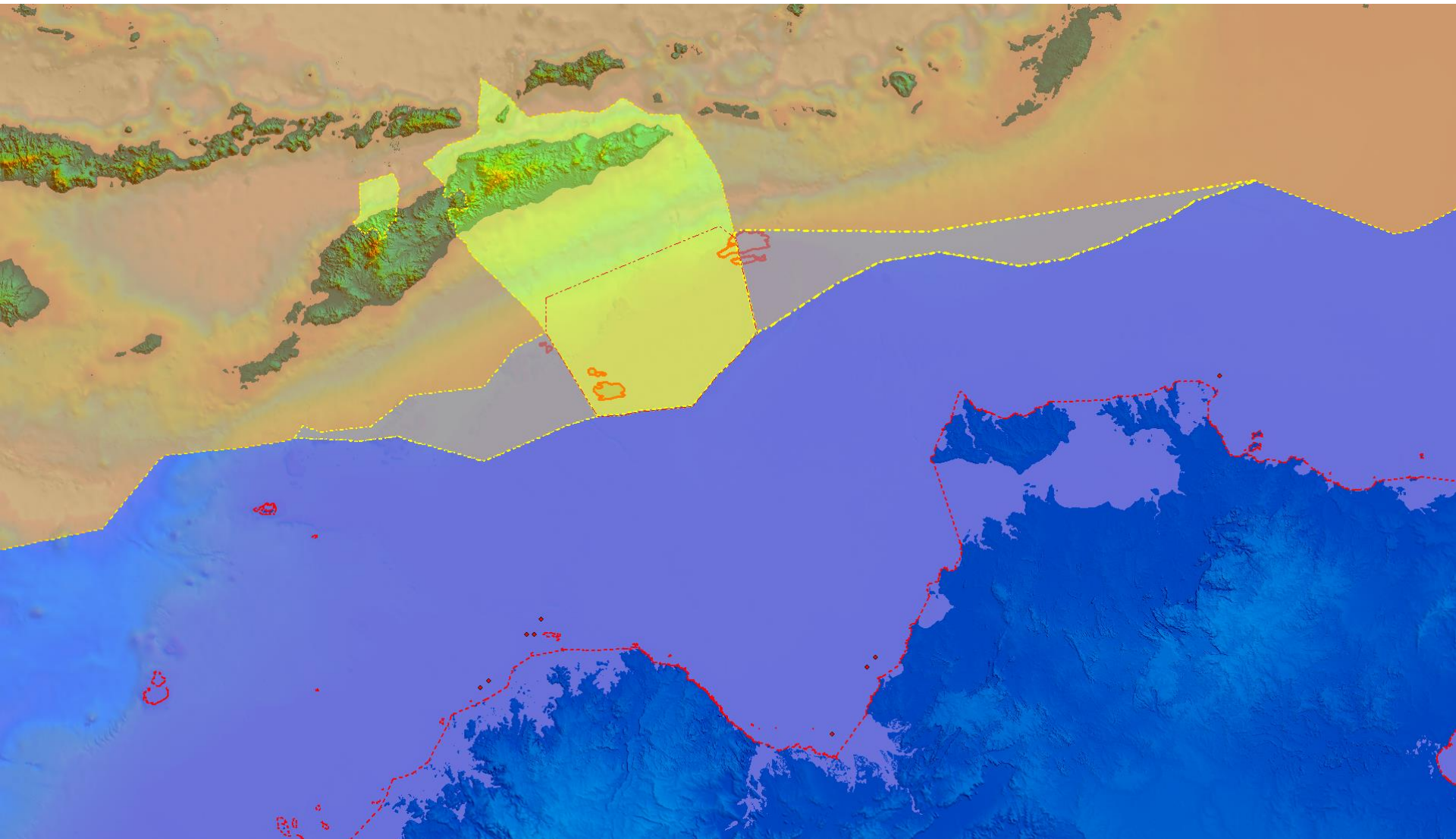
## The EEZ's of Australia, East Timor and Indonesia if they were defined purely by median lines



The proposed EEZ. Each point on the boundary lines is equidistant to any two countries (for detail see pages 36 and following).



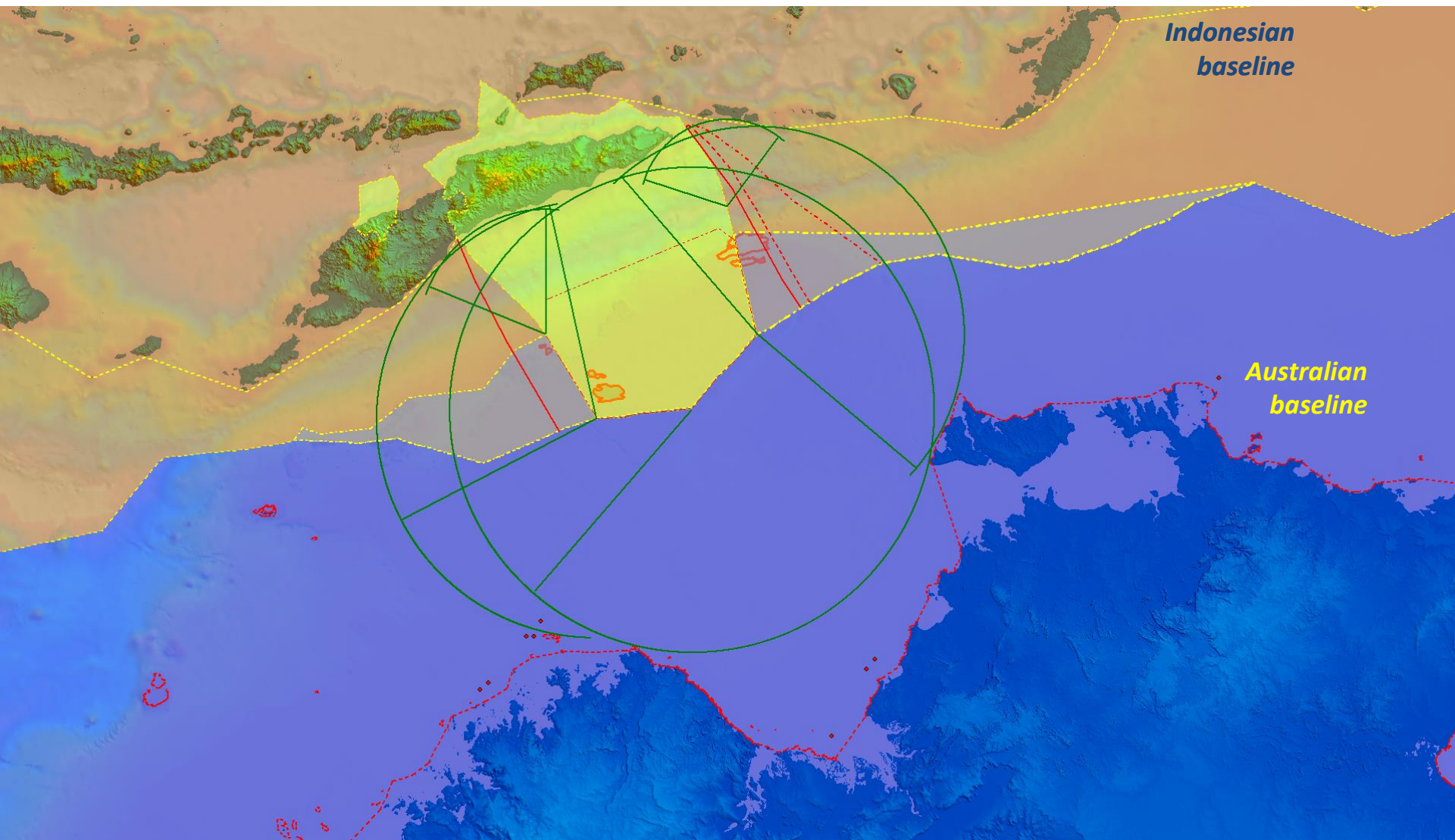
## The overlapping zones south of Timor and the Moluccas



In the gray areas, south of Timor and north of the Australian/Indonesian median line, the seabed is Australian and the water column, or EEZ, Indonesian.



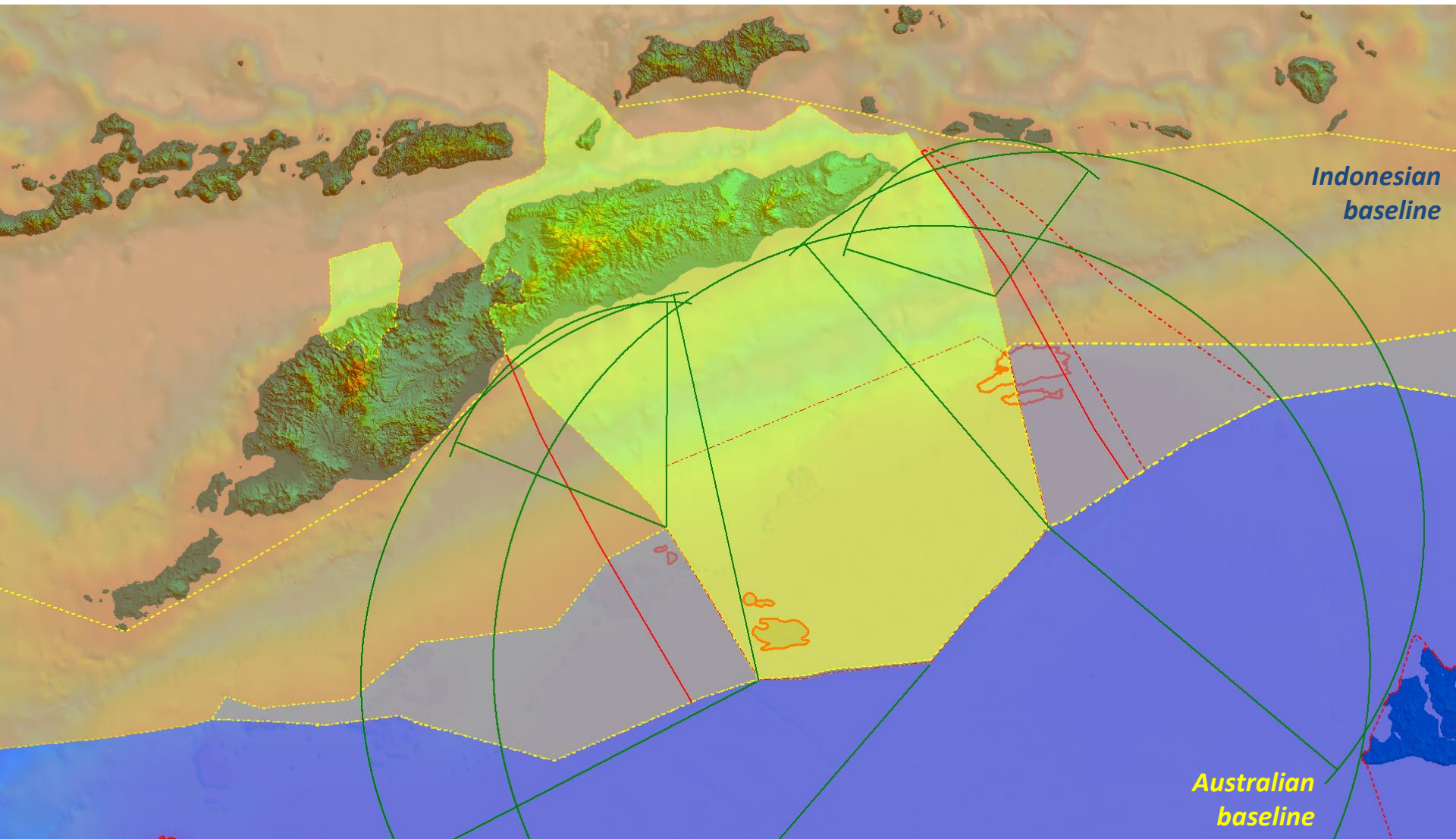
## Rule of equidistance for defining boundaries



Equidistance to coastlines (see circles above) should be the preferred method for equitably defining East Timor's EEZ (yellow areas), in accordance with UNCLOS guideline of equitable principle, which, in the vast majority of maritime boundaries globally, leads to equidistance. Various alternatives to the rule of equidistance in the Timor Sea have been proposed by different authors, which significantly depart from equidistance. Note that a small rock on the Australian side was ignored (Combe Rock)



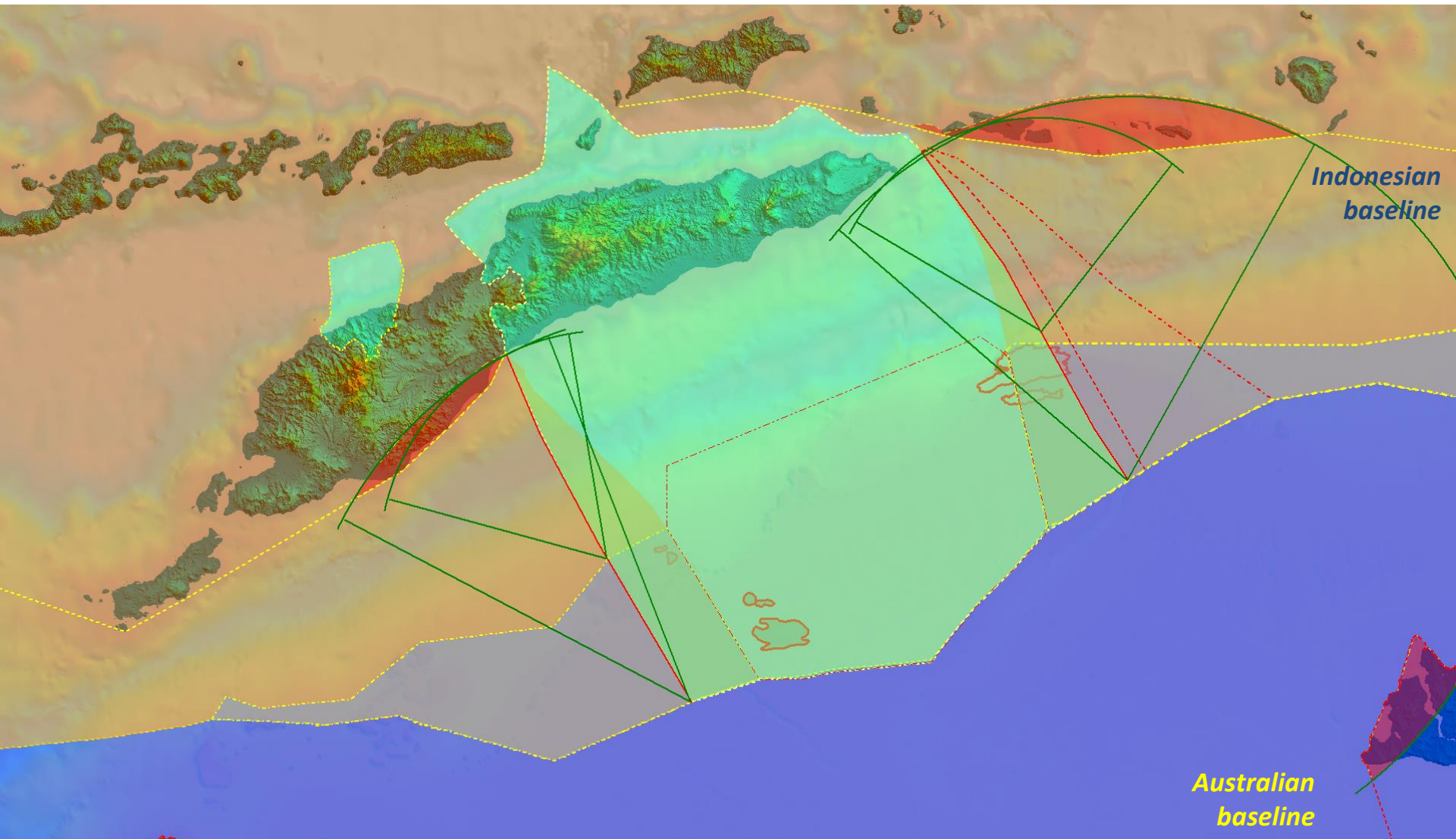
## The proposed lateral boundary lines according to Lowe, Carleton and Ward, 2002



The solid red lines are defined as alternative “opposite coasts median lines” between Indonesia and East Timor. In the east, the dashed lines represent the alternative “lateral median lines” if Indonesian islands were given “3/4 effect” and “1/2 effect” respectively. All red lines are drawn inside of the Indonesian EEZ, thus encroaching upon current Indonesian EEZ.

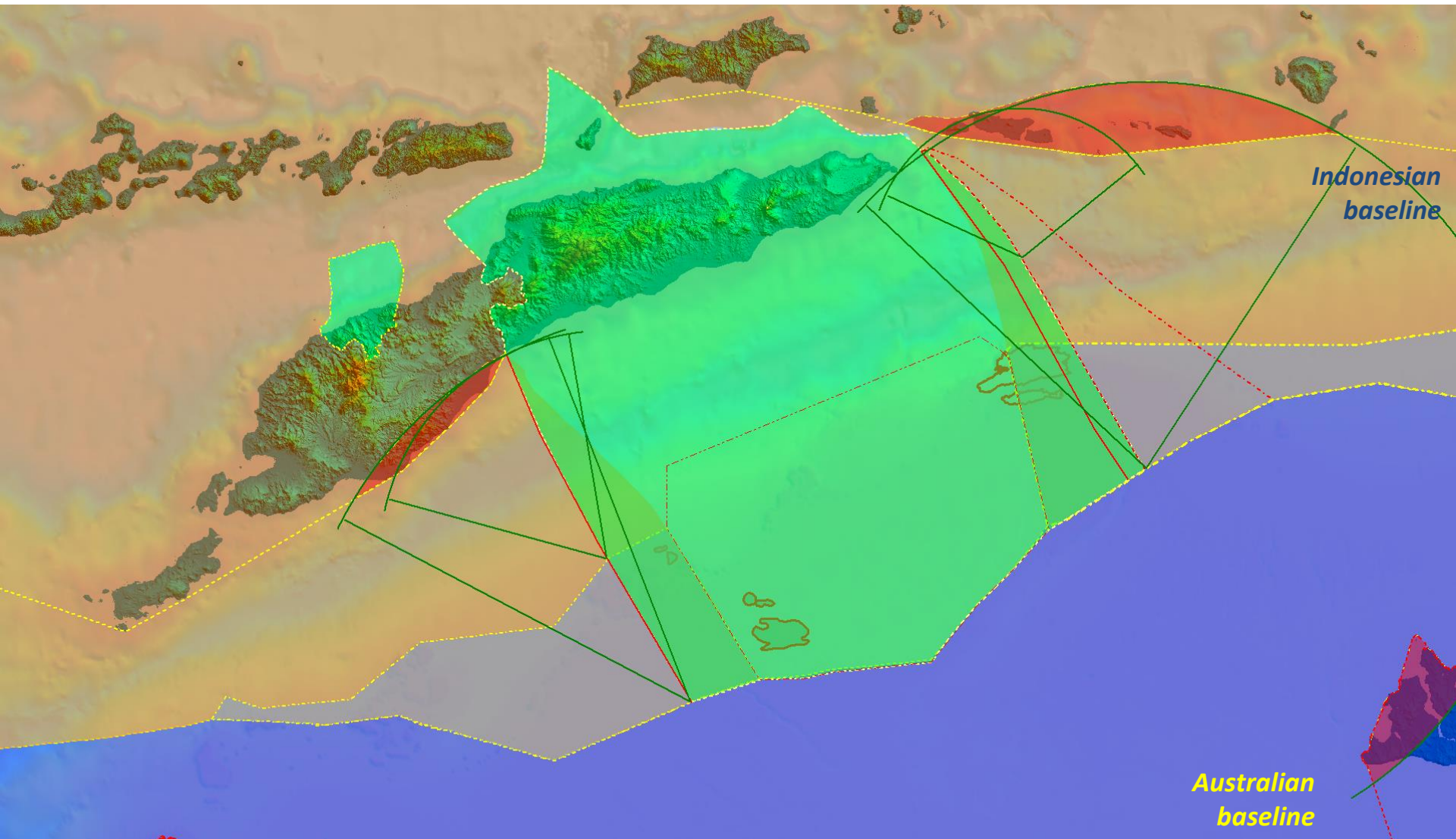


## The proposed lateral boundary lines according to Lowe, Carleton and Ward, 2002



“Opposite coasts median line” approach: the rule of equidistance to neighboring coastlines would result in disregarding both Indonesian (7,100 sq. km) and Australian (2,500 sq. km) sovereign territory. The EEZ area increases by 17%, overlapping over 13,000 sq. km. of otherwise Indonesian EEZ. Indonesian baselines are shifted 10 and 20 nautical miles, the Australian 22.

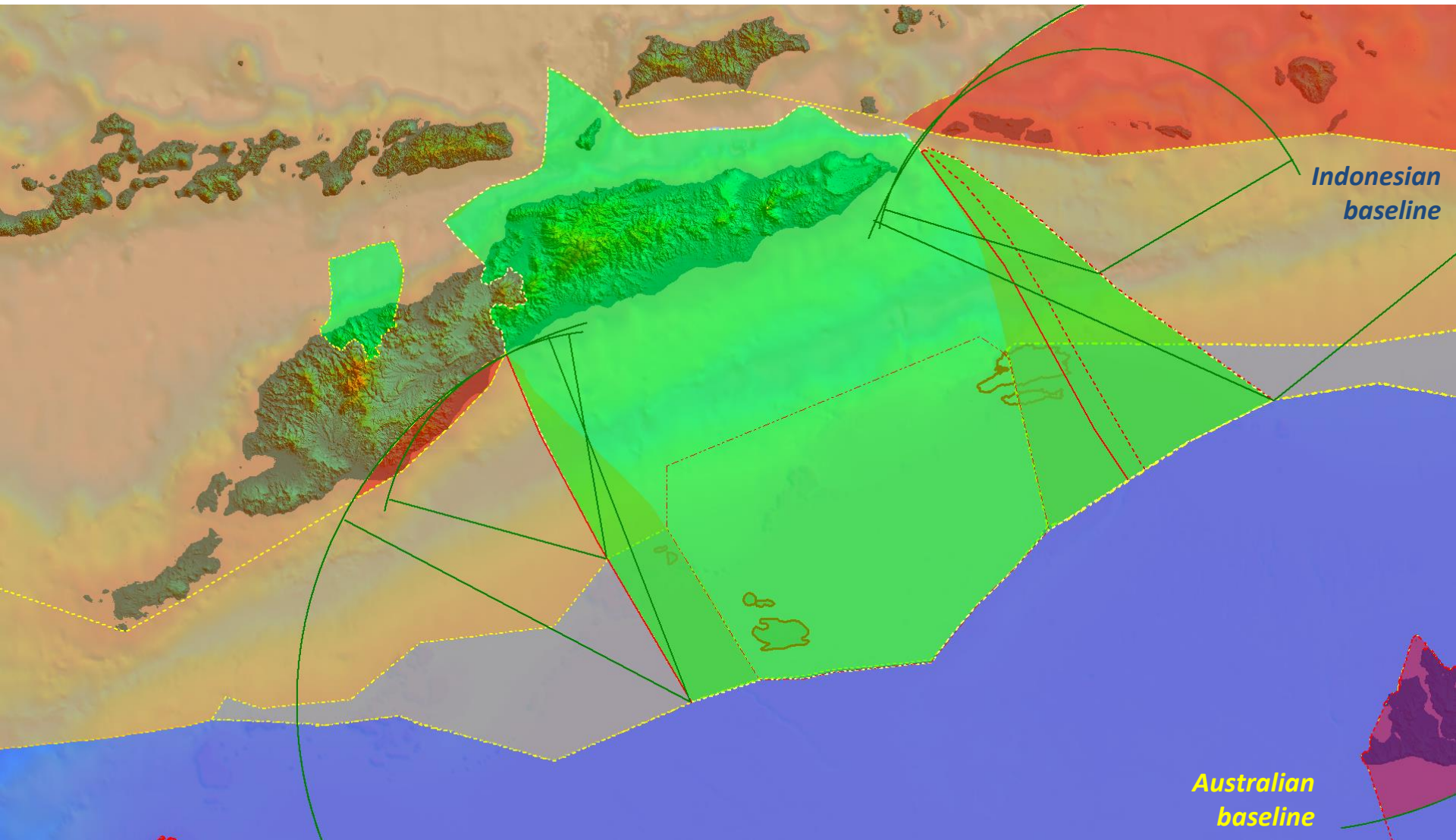
## The proposed lateral boundary lines according to Lowe, Carleton and Ward, 2002



“3/4 effect lateral median line” approach: the rule of equidistance to neighboring coastlines would result in disregarding both Indonesian (9,400 sq. km) and Australian (2,900 sq. km) sovereign territory. The EEZ area increases by 21%, overlapping over 16,400 sq. km. of otherwise Indonesian EEZ . Indonesian baselines are shifted 10 and 25 nautical miles, the Australian 25.

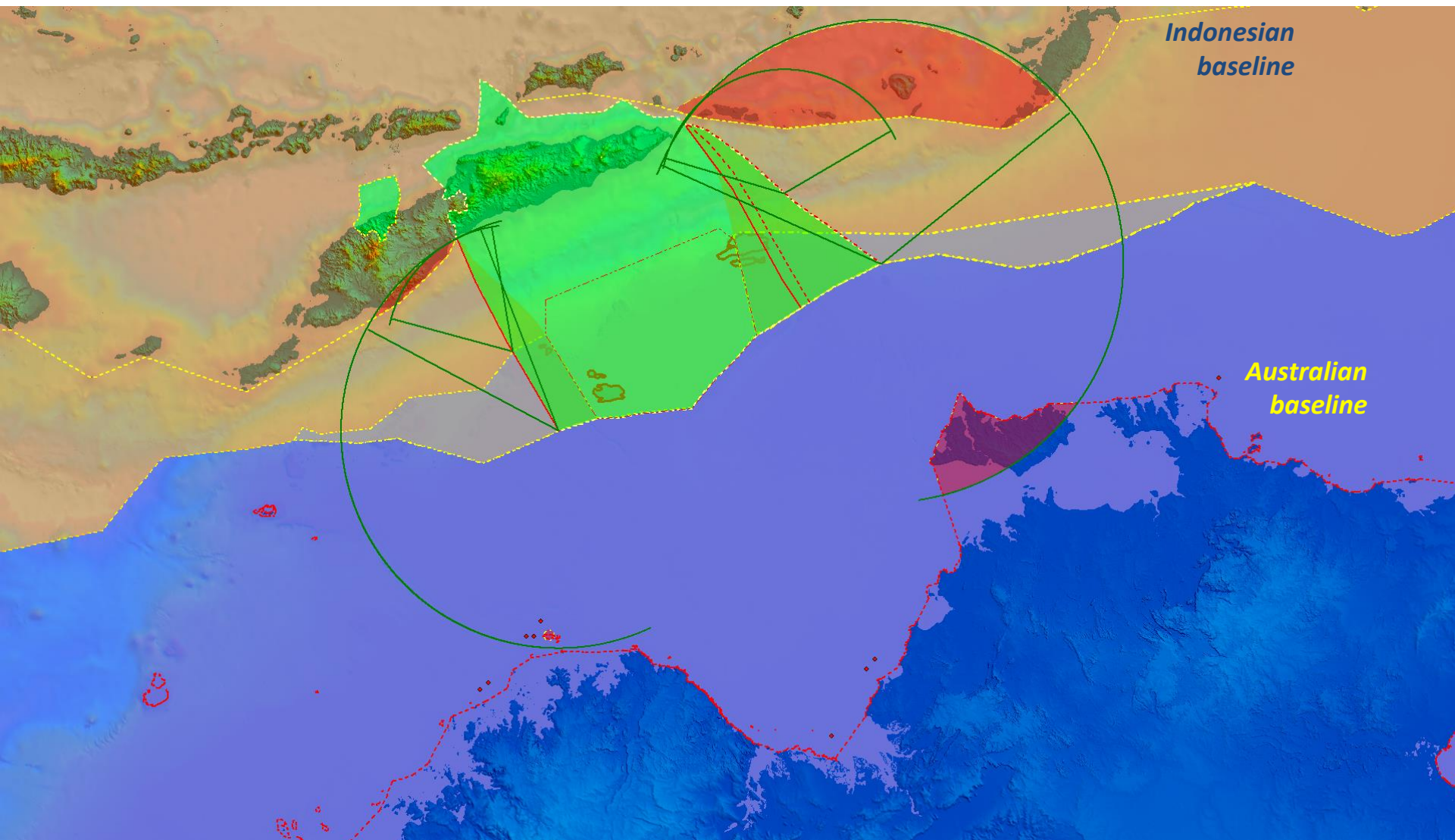


## The proposed lateral boundary lines according to Lowe, Carleton and Ward, 2002



“1/2 effect lateral median line” approach: the rule of equidistance to neighboring coastlines would result in disregarding both Indonesian (37,100 sq. km) and Australian (10,000 sq. km) sovereign territory. The EEZ area increases by 34% overlapping over 26,300 sq. km. of otherwise Indonesian EEZ . Indonesian baselines are shifted 10 and 60 nautical miles, the Australian 55.

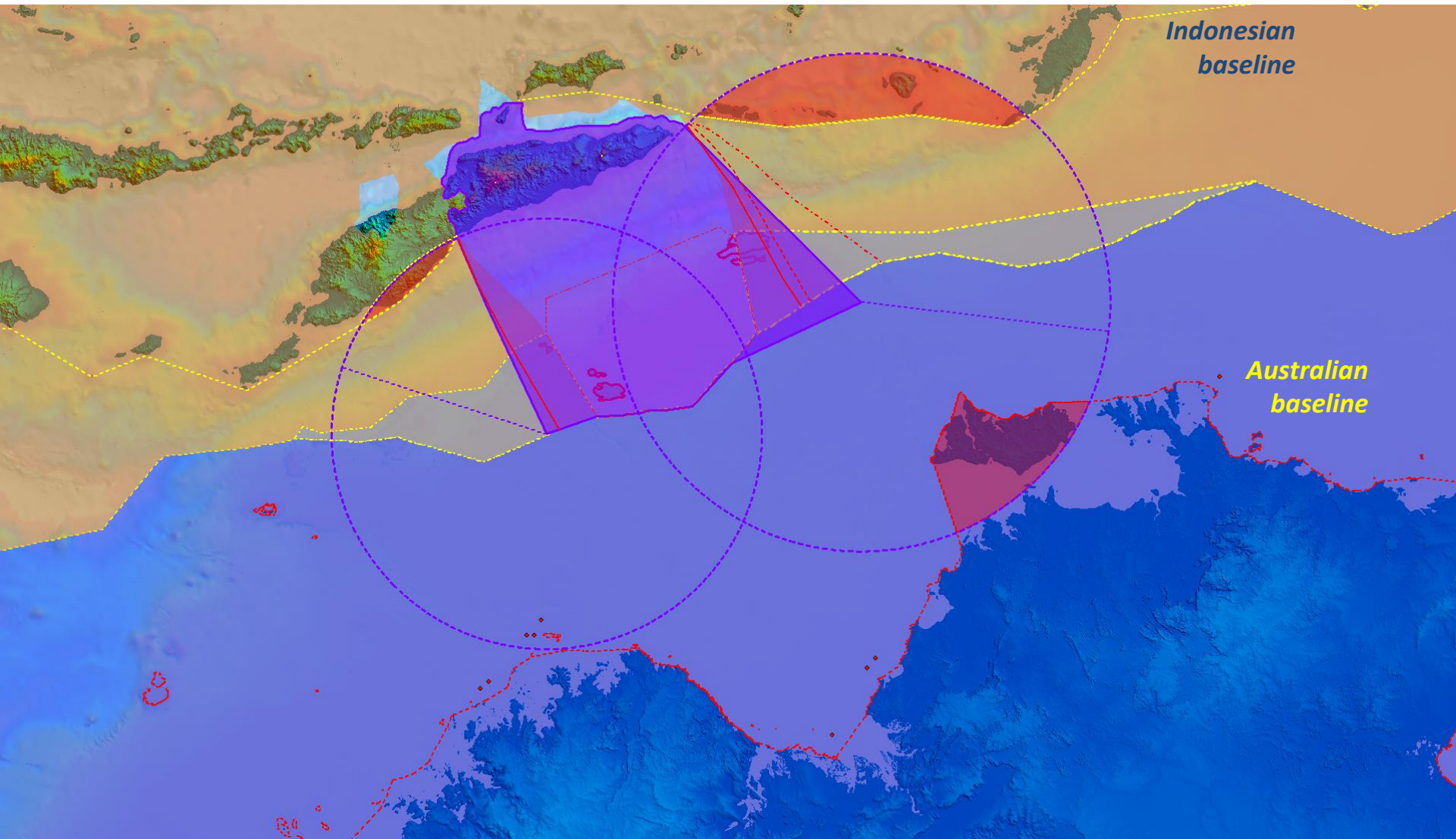
## The proposed lateral boundary lines according to Lowe, Carleton and Ward, 2002



“1/2 effect lateral median line” approach: smaller scale. Indonesian baselines are shifted 10 and 60 nautical miles, the Australian 55.

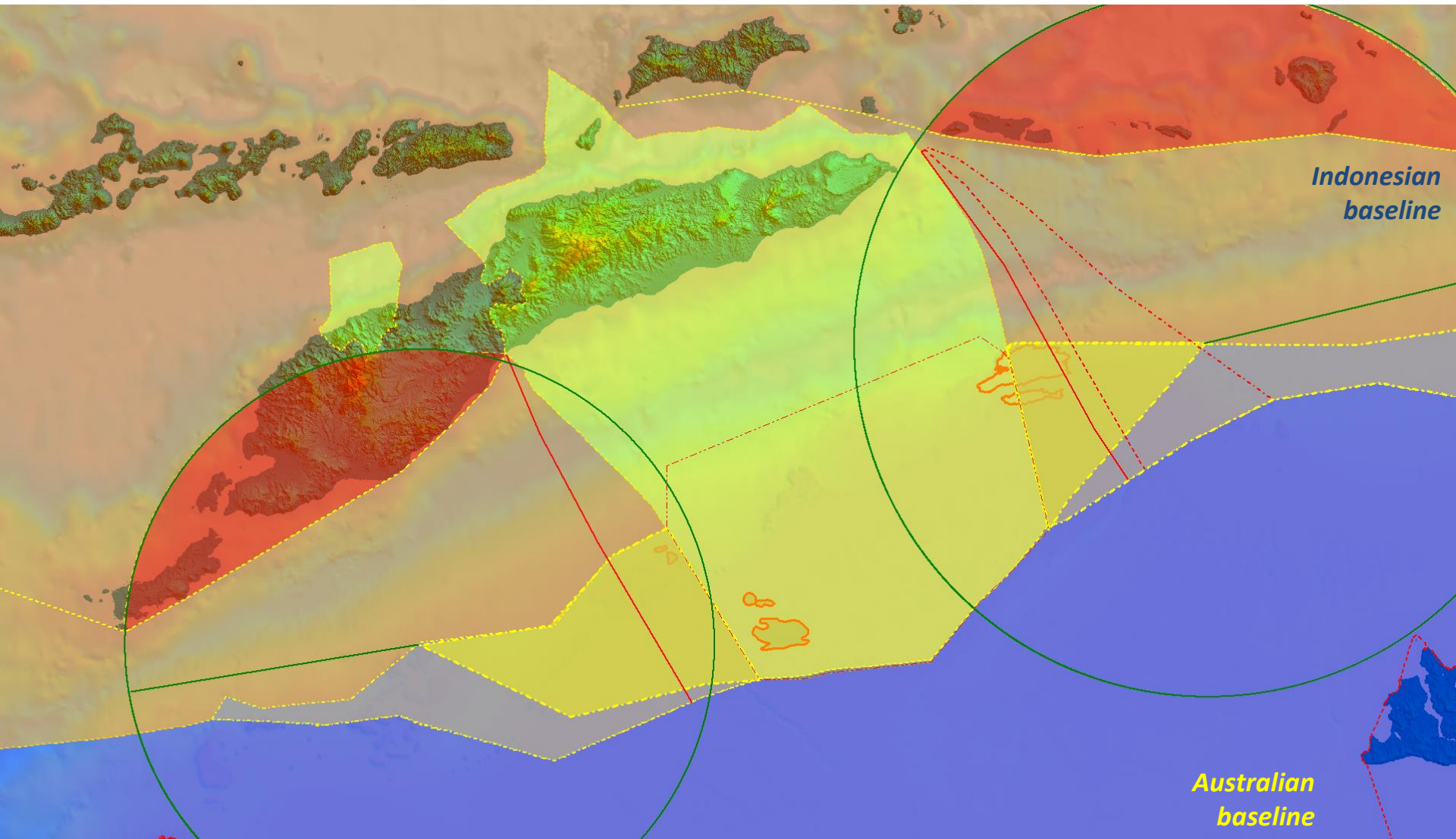


## The proposed East Timor EEZ according to La'o Hamutuk



The proposed La'o Hamutuk EEZ overlaps both 19,800 sq.km of Indonesian EEZ and 3,300 sq.km of Australian EEZ in the UNCLOS sense, a 30% increase of area. Circles of equidistance tangent to East Timor's coastline are centered on corners of area. The rule of equidistance to neighboring coastlines would result in disregarding both Indonesian (23,200 sq. km) and Australian (15,600 sq. km) sovereign territory. Indonesian baselines are shifted 12 and 40 nautical miles, the Australian 70.

## The East Timor EEZ when Indonesian EEZ is ignored in Australian seabed areas



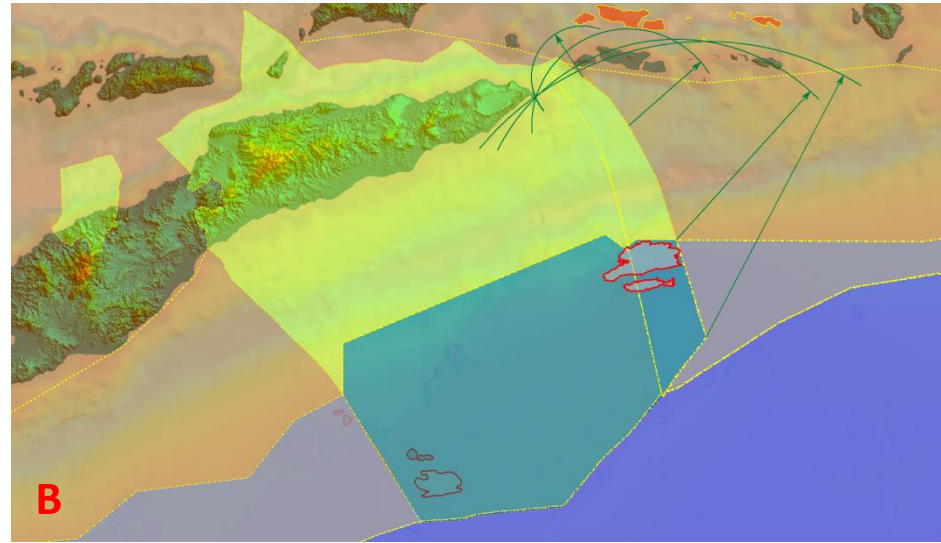
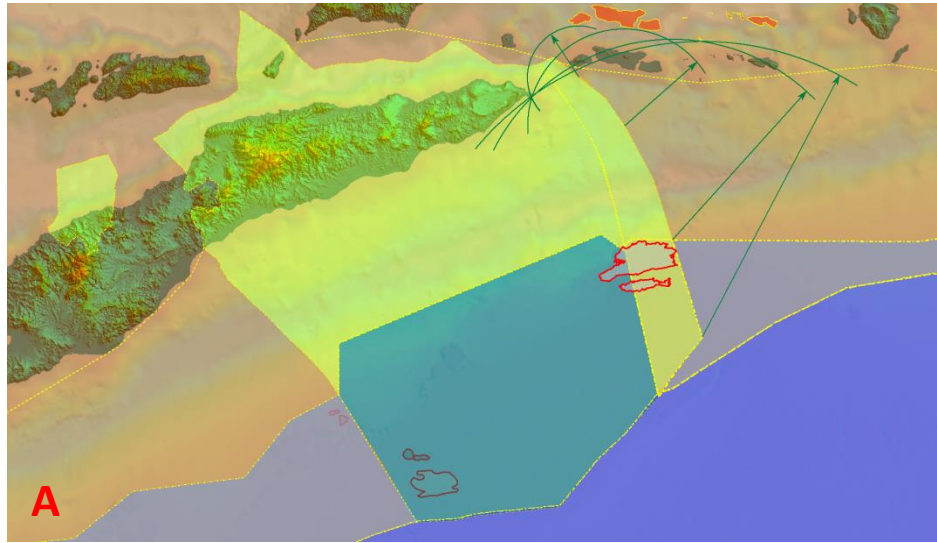
*Indonesian  
baseline*

*Australian  
baseline*

This diagram examines the claim that an East Timor EEZ must contain all areas of Australian seabed closer to East Timor than to Australia (yellow dovetails, with an area of 18,900 sq. km). The Indonesian baselines must be shifted north 47 and 53 nautical miles before redrawing the median lines (intersecting the Oecusse border). The red areas are disregarded Indonesian territory. The rule of equidistance to neighboring baselines would result in disregarding 43,100 sq. km of Indonesian sovereign territory.



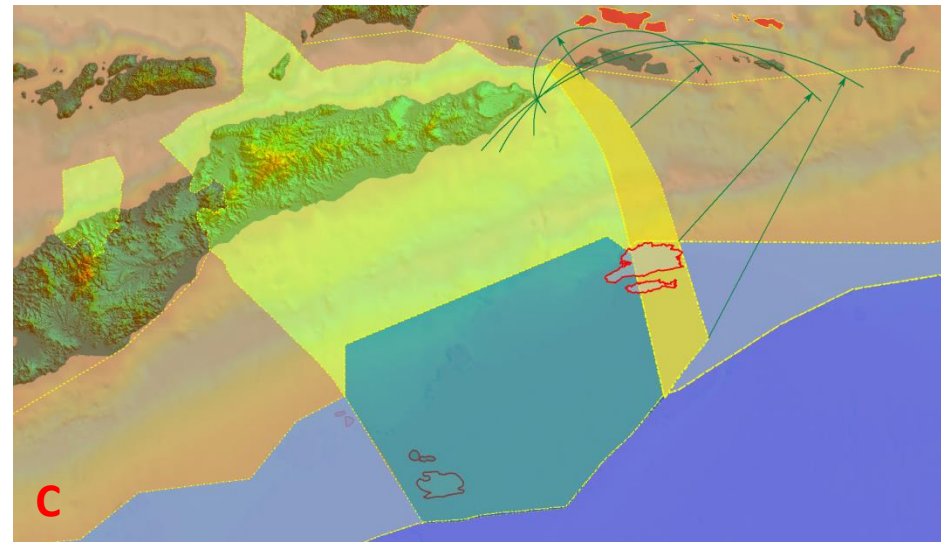
## The East Timor EEZ if the Leti Islands and Miarang are offset virtually 17 nautical miles



In a parallel with the Isles of Scilly case, which is often mentioned as a justification of the Lowe, Carleton and Ward proposals, these diagrams examine the shift of equidistant boundary if the Leti and Miarang Islands were offset the distance required to place all of the Sunrise fields within East Timorese EEZ. While the Isles of Scilly were pushed back halfway toward the UK mainland, a distance of 10 nautical miles, there is no mainland toward which the Leti Islands could be pushed halfway, and these islands would need to be moved north the arbitrary distance of 17 nautical miles.

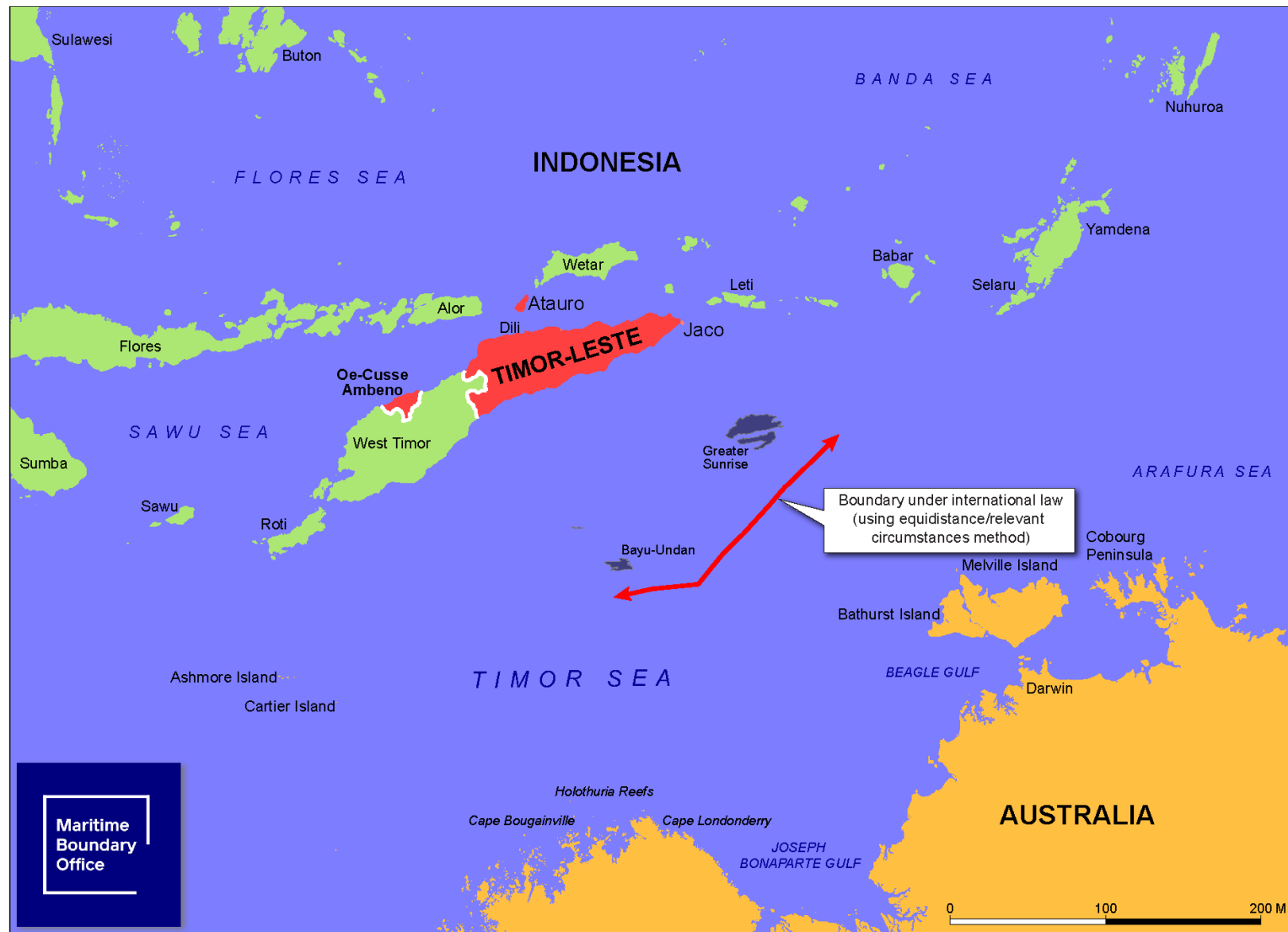
The next issue would be to determine whether the gained areas become:

- A. East Timorese Exclusive
- B. East Timorese Exclusive north of the current Australian seabed boundary and JPDA south of the current Australian seabed boundary



- C. A new Indonesian-Timorese Joint Petroleum Development Zone in which income is split equally

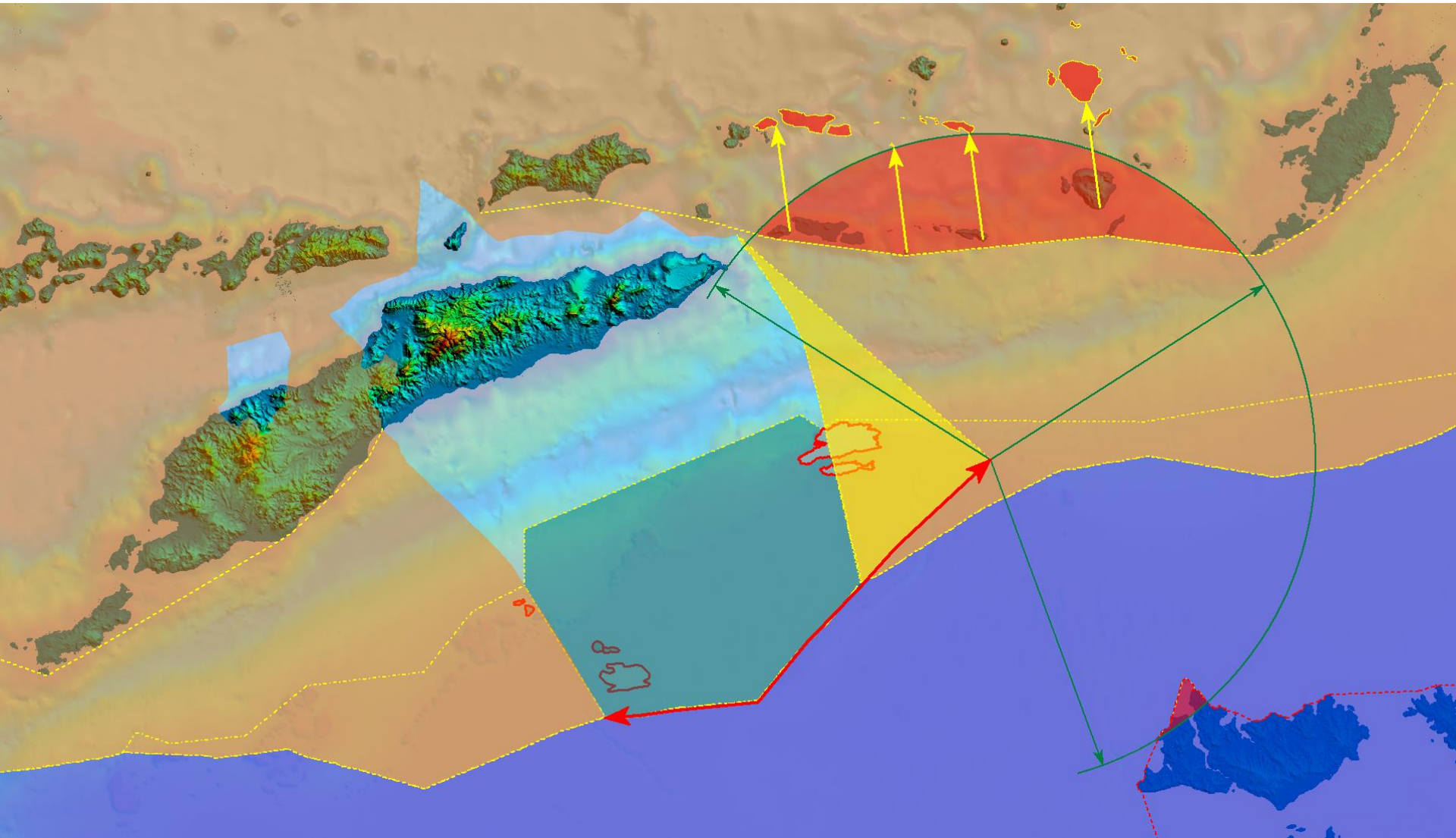
## The boundary claimed by the East Timorese Government on Feb. 29<sup>th</sup>, 2016 (*gfm.tl*)



A median line between East Timor and Australia is drawn. The median lines with Indonesia are not shown. Several ICJ case examples are provided (*Libya v. Malta*, *Romania v. Ukraine*, *Bangladesh v. Myanmar*, *Nicaragua v. Colombia*, and *Peru v. Chile*). The precedent of the Isles of Scilly seems to have been abandoned, as well as claims west of the JPDA. The relevance of the cases is not explained but seems to be quite disconnected from the geographical, political, and historical realities of the Timor Sea. 22 of 76

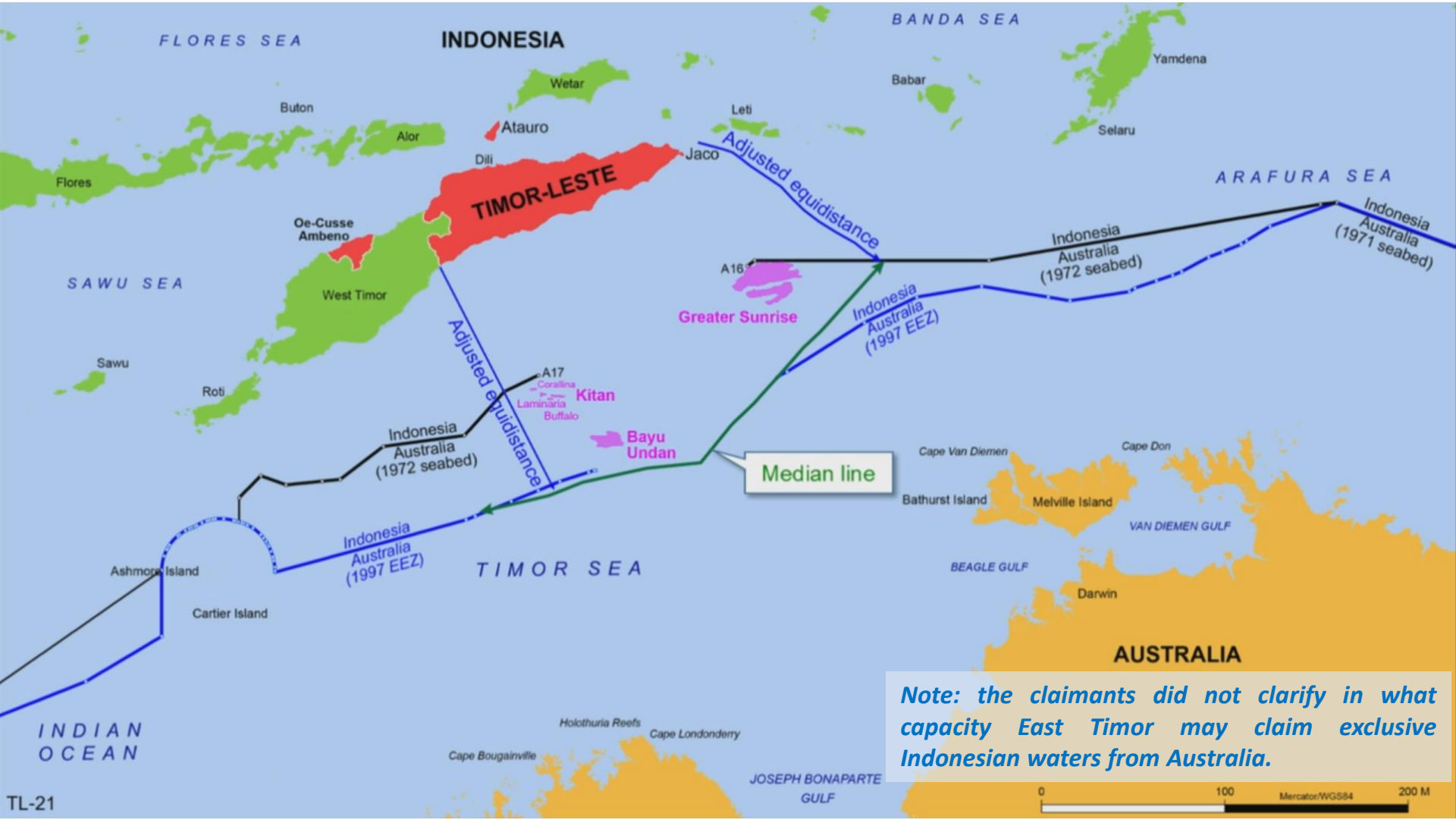


## Analysis of the East Timorese boundary claim of Feb. 29<sup>th</sup>, 2016



In yellow, the EEZ apparently claimed. The 15 islands of the Leti, Sermata, and Babar groups must be shifted north an arbitrary distance of 42 nautical miles (78 km) if the claimed boundary is to be also equidistant to Indonesia. An area of 19,490 sq. km of Indonesian plus 480 sq. km of Australian sovereign territories is disregarded, 1/3 larger than East Timor's land area. The EEZ gain over Indonesia is 12,600 sq. km. The ratio EEZ to land area becomes equal to 6, in a tie with the Philippines for largest in Asia. 23 of 76

## The boundaries claimed by East Timor before the Permanent Court of Arbitration (PCA) in The Hague on August 29<sup>th</sup>, 2016



The proposed median line departs by about 4 nautical miles from the currently acknowledged line of equidistance between the Australian and East Timorese and Indonesian shores. Lines of 'adjusted equidistance' are drawn inside Indonesian EEZ and above Australian seabed, at a further distance from the lines of true equidistance reaching 25 nautical miles in the west and 85 miles in the east. As a result, the width of the southern edge of the Timorese EEZ is almost doubled, from 110 to 216 nautical miles. 24 of 76



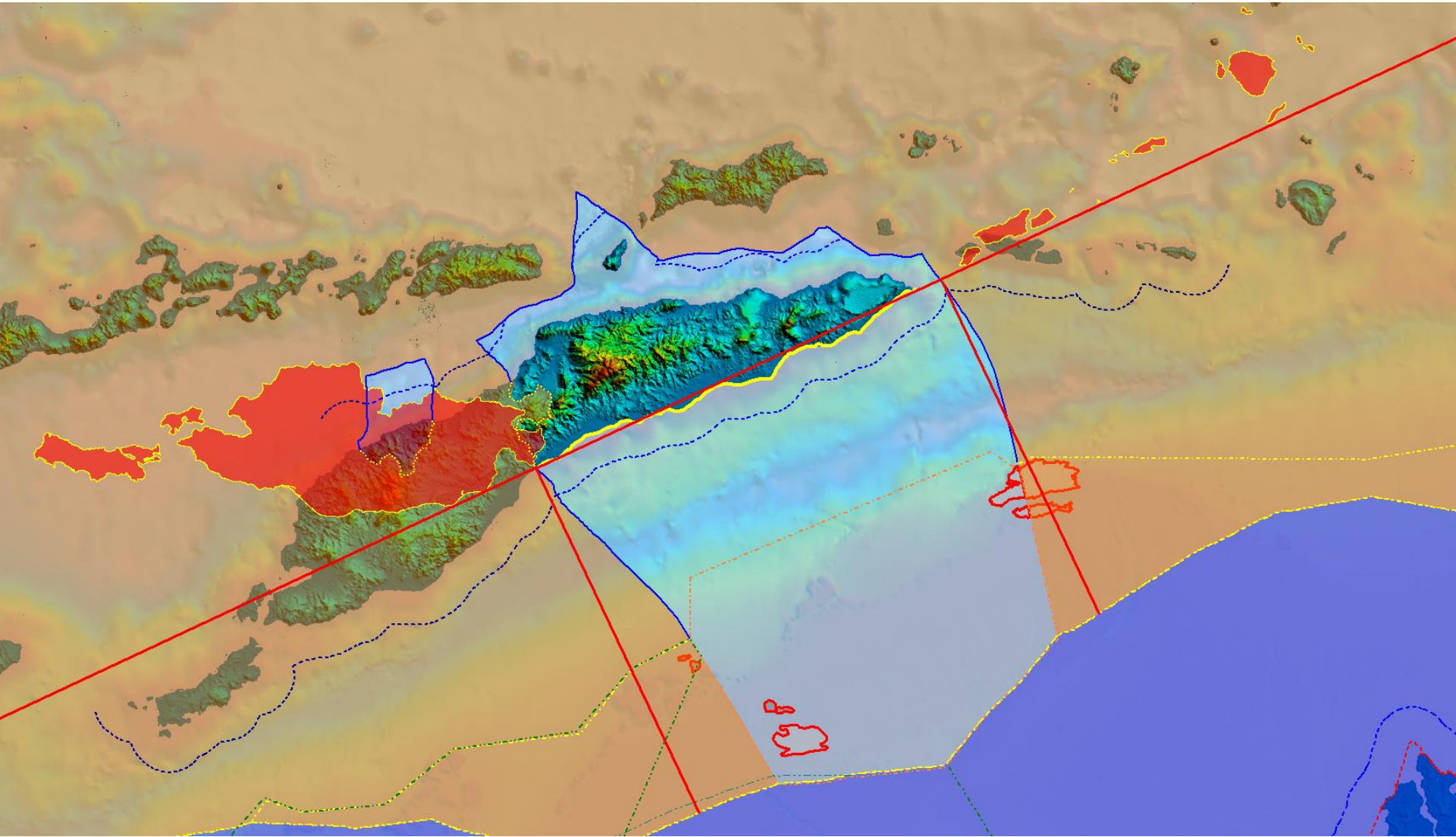
## The exclusive sovereign rights claimed by East Timor before the Permanent Court of Arbitration (PCA) in The Hague on August 29<sup>th</sup>, 2016



Technically, rights within the Exclusive Economic Zone (EEZ) are not sovereign, since they relate only to economic matters, not to territorial sovereignty. The maritime area claimed by East Timor before the PCA on August 29, 2016, represents a 37% increase over lines of true equidistance. The claim results in an incursion over current Indonesian waters which covers 22,100 sq. km of Indonesian EEZ and 170 sq. km of Indonesian territorial waters.

## Notes on the concavity of the coastline

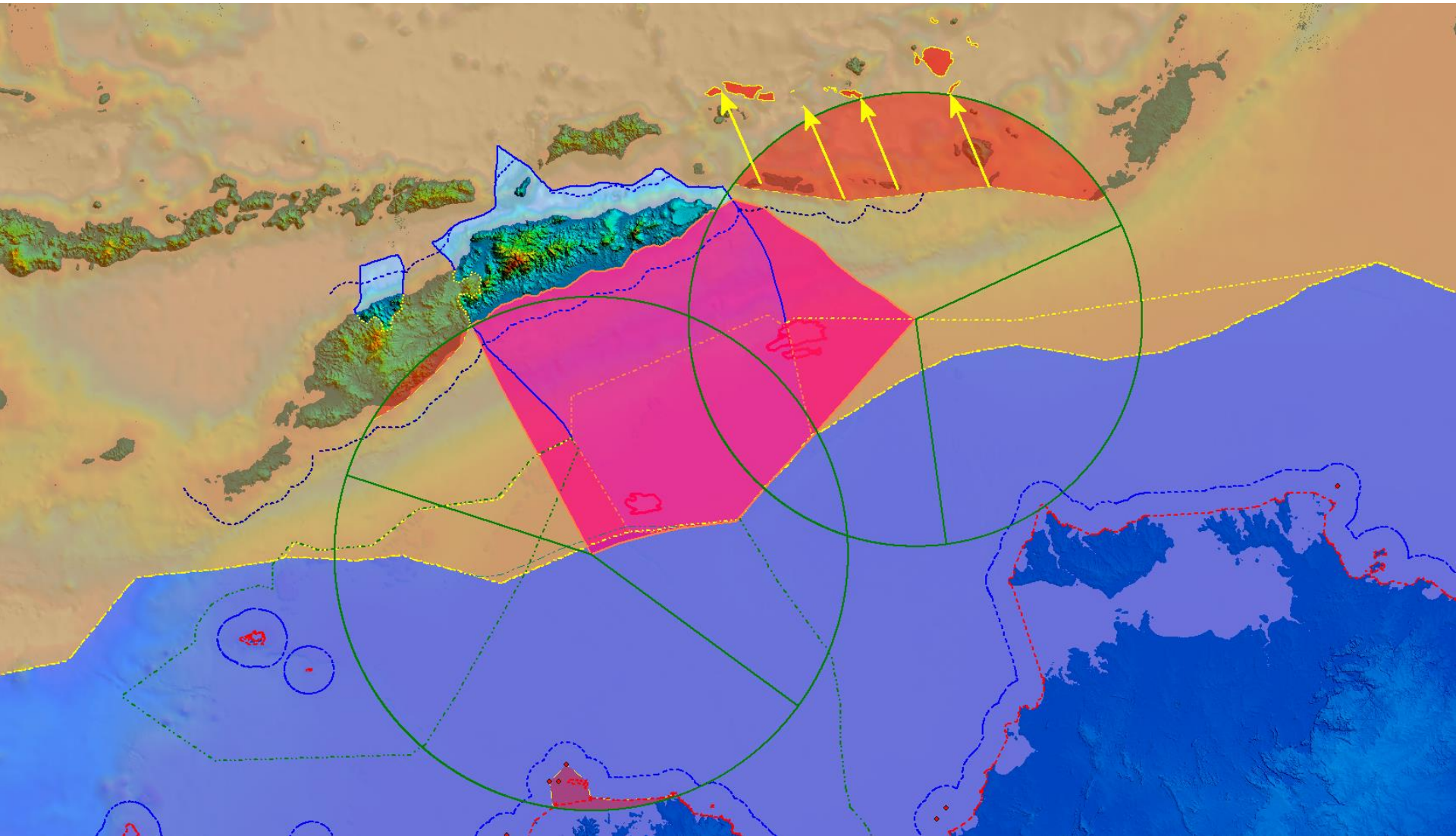
The counsel for East Timor argues that the '*concavity of its coast*' entitles East Timor to claim the divergent lines of '*adjusted equidistance*' shown in page 24 (see transcript at <https://pcacases.com/web/sendAttach/1889>, page 45 line 15 and 46 line 14)



However, the geometric analysis of the southern coastline of East Timor shows that the alternating concave and convex line is overall rather convex, by a 7% margin over concavity, with a global center of curvature located north of the island. The neighboring coastlines are not aligned with that of East Timor, but if they were rotated virtually by about 40 degrees in each direction so as to align all the islands, the amended East Timorese EEZ would cover about 50% of the Sunrise and Troubadour fields.

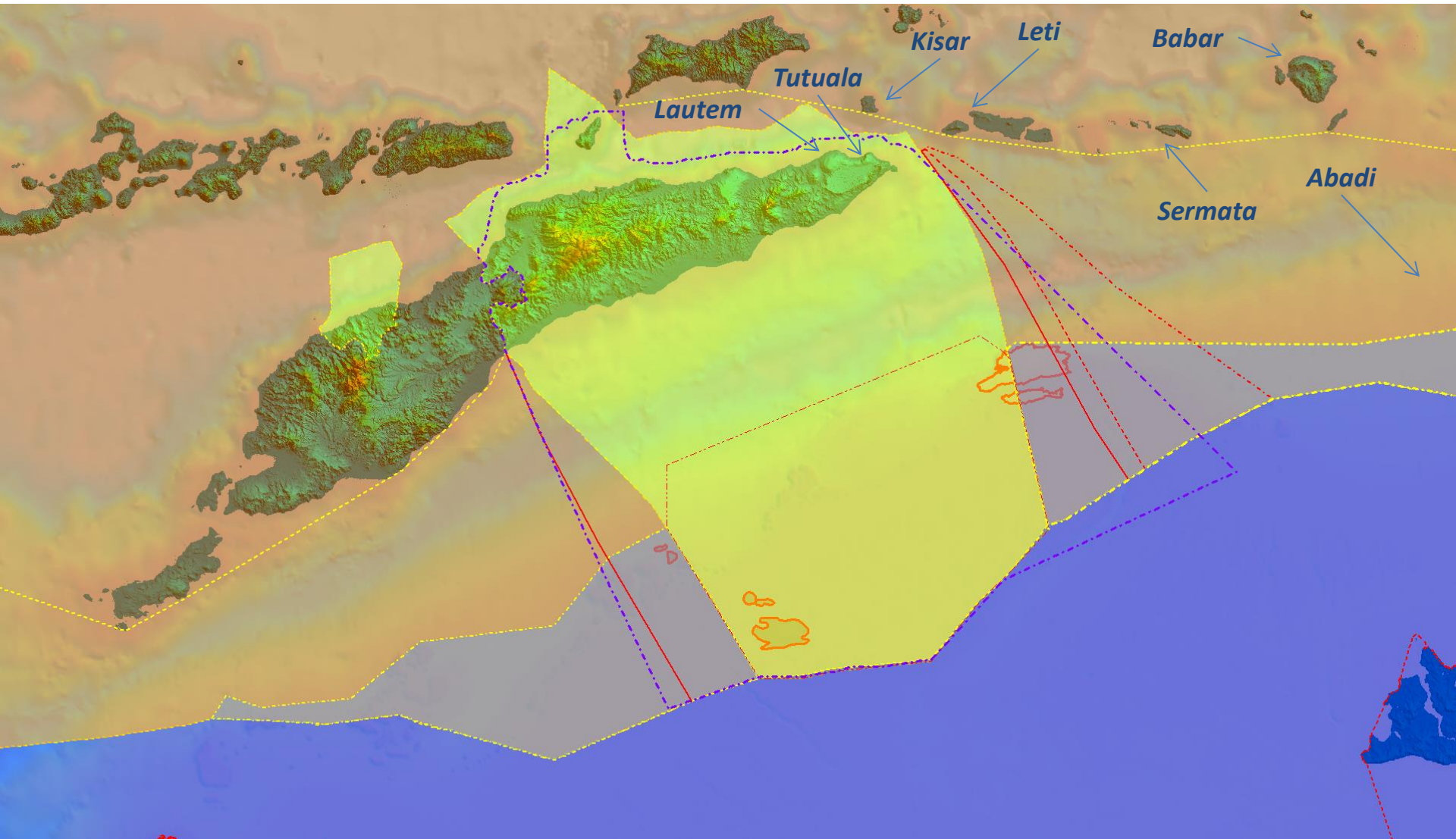


## Analysis of the boundaries claimed by East Timor before the Permanent Court of Arbitration (PCA) in The Hague on August 29<sup>th</sup>, 2016



In pink, the EEZ claimed on August 29<sup>th</sup>. The 15 islands of the Leti, Sermata, and Babar groups must be shifted NNW an arbitrary distance of 53 nautical miles (98 km) if the claimed boundary is to be also equidistant to Indonesia. An area of 26,620 sq. km of Indonesian plus 2,065 sq. km of Australian sovereign territories are disregarded, 90% larger than East Timor's land area. The EEZ gain over Indonesia is 22,100 sq. km, and 870 over Australia. The ratio EEZ to land area is now equal to 6.7, the largest is Asia.<sup>27 of 76</sup>

## Equidistant and Equitable Principles: the Southern Maluku Islands and Eastern East Timor



This map illustrates the discussion of the Equidistant and Equitable Principles in the next page



## Equidistant and Equitable Principles: the Southern Maluku Islands and Eastern East Timor

When drawing the maritime boundary between East Timor and Southern Maluku (Moluccas), the critical first step is to determine the line of equidistance, which relies on relatively straightforward geometry. Second, any party wishing to diverge from this line should present an argument stating for what equitable reason the line should depart from physical equidistance, and how the corresponding baselines should be virtually shifted.

The principle of equidistance is applied in Article 15 of UNCLOS when defining the territorial seas between states with opposite or adjacent coasts, while the delimitation of the exclusive economic zones (EEZ), “the area beyond and adjacent to the territorial sea”, (Article 55), is to be “effected by agreement ... in order to achieve an equitable solution” (Article 74).

The deflection between equidistant and equitable boundary lines, if any, may be based on either the geographic or demographic and economic particularities of the states with opposite or adjacent coasts:

- Geographically, for a land area close to 15,000 sq.km, East Timor’s EEZ (including its Territorial Sea) slightly exceeds 77,000 sq.km. The ratio EEZ to land area is 5.2 (for comparison, this ratio is 1.0 in Australia, 3.3 in Indonesia, 5.1 in Papua New Guinea, about 1.2 in Malaysia, and 6.2 in the Philippines).
- From a demographic and economic standpoint, the eastern lateral boundary will separate East Timor from an archipelago of smaller islands in the southern parts of the Indonesian Province of Maluku, some of which particulars are in the following table.

	East Timor	Maluku Province
Landlocked:	No	No
Archipelagic state:	No	Yes
Population (million) :	1.2	1.7
Bordering district population:	60,000 (Lautem)	70,000 (Kisar-Leti-Sermata-Babar)
Bordering sub-district population:	3,800 (Tutuala)	8,400 (Leti)
GDP per capita (approx., World Bank and Indonesian data):	\$1,380	\$100 to \$150 (Kisar-Leti-Sermata-Babar)
GDP per capita (non oil and gas, approx.):	\$300	\$100 to \$150 (Kisar-Leti-Sermata-Babar)
Other oil and gas fields in the Timor and Arafura Seas:	Bayu Undan (active)	Abadi (in development, will return full revenue starting in the mid-2020s)

- 
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## A summary of the Treaties between Australia and East Timor until 2018

### TIMOR SEA TREATY (2002)

- **IN THE JPDA, WHICH THE TREATY CREATED, 90% OF THE PETROLEUM PRODUCED BELONGS TO EAST TIMOR AND 10% TO AUSTRALIA:** Australia and East Timor shall have title to all petroleum produced in the JPDA. Of the petroleum produced in the JPDA, ninety (90) percent shall belong to East Timor and ten (10) percent shall belong to Australia.
- **20.1% OF PRODUCTION FROM GREATER SUNRISE IS DISTRIBUTED TO THE JPDA AND 79.9% TO AUSTRALIA:** Australia and East Timor agree to unitise the Sunrise and Troubadour deposits on the basis that 20.1% of Greater Sunrise lies within the JPDA. Production from Greater Sunrise shall be distributed on the basis that 20.1% is attributed to the JPDA and 79.9% is attributed to Australia.

### UNITISATION OF THE SUNRISE AND TROUBADOUR FIELDS (2003)

- **PRODUCTION FROM GREATER SUNRISE IS APPORTIONED 79.9% TO AUSTRALIA AND 20.1% TO THE JPDA:** Production of Petroleum from the Unit Reservoirs shall be apportioned between the JPDA and Australia according to the Apportionment Ratio 20.1:79.9, with 20.1% apportioned to the JPDA and 79.9% apportioned to Australia.

### CMATS (2006)

- **REVENUE FROM GREATER SUNRISE SHALL BE SHARED 50% - 50%:** The Parties shall share equally revenue derived directly from the production of that petroleum lying within the Unit Area in so far as the revenue relates to the upstream exploitation of that petroleum.
- **MORATORIUM ON MARITIME BOUNDARIES:** Neither Australia nor Timor-Leste shall assert, pursue or further by any means in relation to the other Party its claims to sovereign rights and jurisdiction and maritime boundaries for the period of this Treaty.
- **THE JPDA IS ENTIRELY WITHIN EAST TIMOR'S EEZ:** Timor-Leste will continue to exercise jurisdiction in relation to the water column, and sovereign rights over the resources of the water column, north of the line delimiting the southern boundary of the JPDA

## Invalidating CMATS

If CMATS were invalidated, the parties would go back to the Timor Sea Treaty, according to which:

- 20.1% OF PRODUCTION FROM GREATER SUNRISE IS DISTRIBUTED TO THE JPDA AND 79.9% TO AUSTRALIA

*Note: although the terms of the treaty on CMATS provide that it would cease to be in force three months after one party notified the other that it wished to terminate the treaty, for instance if production had not commenced within ten years after the date of entry into force (23 February 2007), the terms of the treaty do not provide for its permanent invalidation, in particular with regard to maritime boundaries and petroleum production. To achieve permanent invalidation the parties would need to agree that the termination provisions of the treaty are also terminated.*

CMATS articles which would be lost:

- REVENUE FROM GREATER SUNRISE SHALL BE SHARED 50% - 50%
- MORATORIUM ON MARITIME BOUNDARIES
- THE JPDA IS ENTIRELY WITHIN EAST TIMOR'S EEZ

Accordingly, East Timor would forego 64% of the revenue from Greater Sunrise granted by CMATS and also Australian formal recognition of its EEZ jurisdiction over the JPDA.

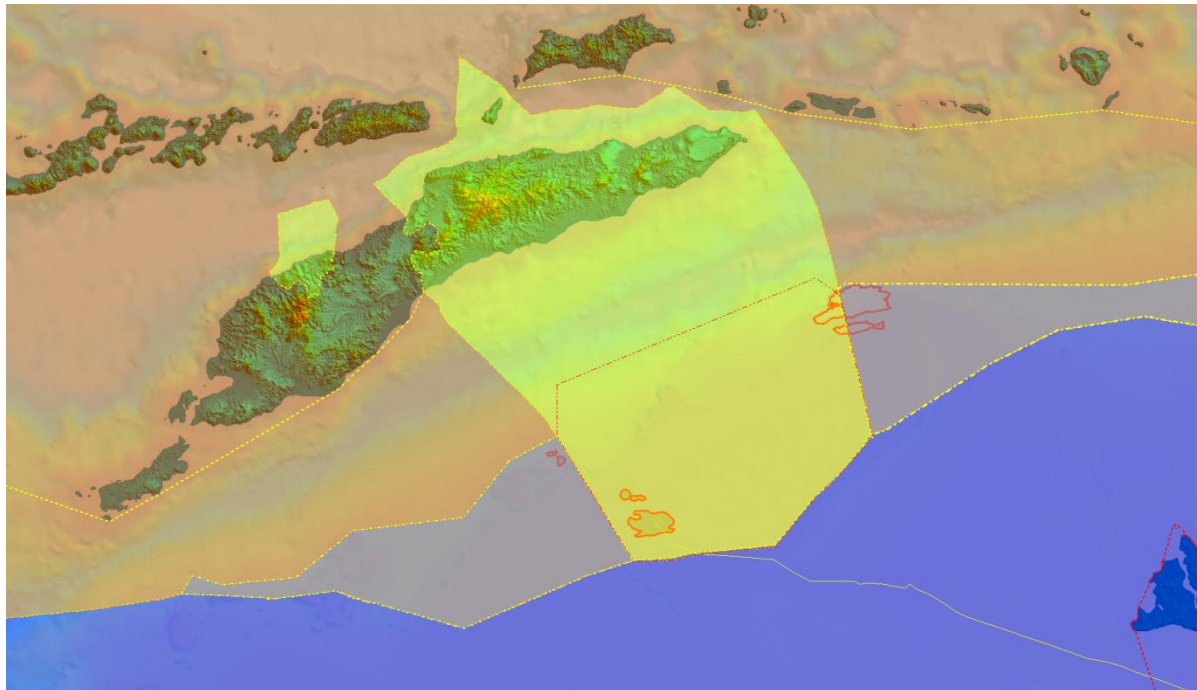
East Timor would regain the ability to “assert, pursue or further its claims to sovereign rights and jurisdiction and maritime boundaries”, which it agreed not to do in CMATS. Australia obtained rights to its share of Greater Sunrise by effect of the 1972 and 1997 treaties with Indonesia. Whether the 1997 treaty is still valid or not with regard to the Indonesian EEZ (the treaty was never ratified but still defines the de facto EEZ boundaries in the area on Australian maps and marine charts), Australia may decide to share more revenue with East Timor than the 20.1% East Timor is entitled to according to the Timor Sea Treaty, but it is not obliged to do so.



## Effect of the 1997 treaty between Australia and Indonesia if East Timor were to seek geographic expansion of its petroleum rights and/or its EEZ

There are two possible scenarios, affecting the two gray seabed areas on each side of the JPDA:

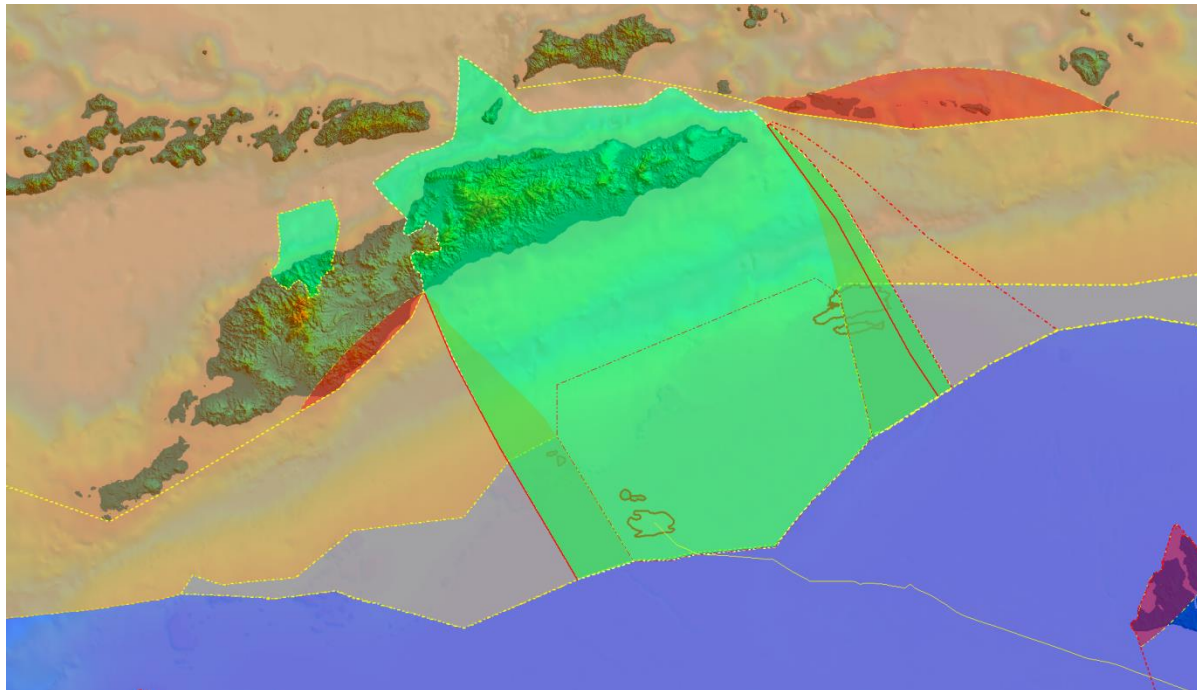
1. The 1997 treaty between Australia and Indonesia is valid with regard to the Indonesian EEZ in the area (or is ratified by Indonesia after due amendment to exclude references to areas now under East Timor's jurisdiction): Australia has sovereign rights and jurisdiction under the Treaty in relation to its seabed north of the median line, where its share of Sunrise lies, while Indonesia has sovereign rights and jurisdiction under the Treaty in the EEZ above the seabed.
2. The 1997 treaty between Australia and Indonesia is not valid: falling back to the 1972 treaty, Australia has sole sovereign rights and jurisdiction in and over parts of its seabed north of the median line, where its share of Sunrise lies. Indonesia has no agreed right whatsoever in those areas, notwithstanding the 1997 lines being current de facto Australian EEZ boundaries in the area.



## Scenario number 1: the 1997 treaty between Australia and Indonesia is valid

Indonesia having sovereign EEZ rights over that particular part of Australian seabed, the shifting of the lateral boundary lines as per Lowe, Carleton, Ward must involve Indonesia: when East Timor invokes UNCLOS in its claim for all of Greater Sunrise, it must allow the UNCLOS requirement that the seabed rights should coincide with the EEZ. Accordingly it will be necessary first to transfer the seabed rights from Australia to Indonesia, and second to transfer the corresponding EEZ from Indonesia to East Timor. The red areas of Indonesia will in effect be disregarded in the delineation of the boundaries. To summarize, the process will require acknowledgement by the parties that:

- a) Indonesia accepts the concept of compensated effect for the outlying Indonesian islands
- b) Australia transfers its seabed rights in the areas to Indonesia
- c) Indonesia transfers its EEZ rights in the areas to East Timor

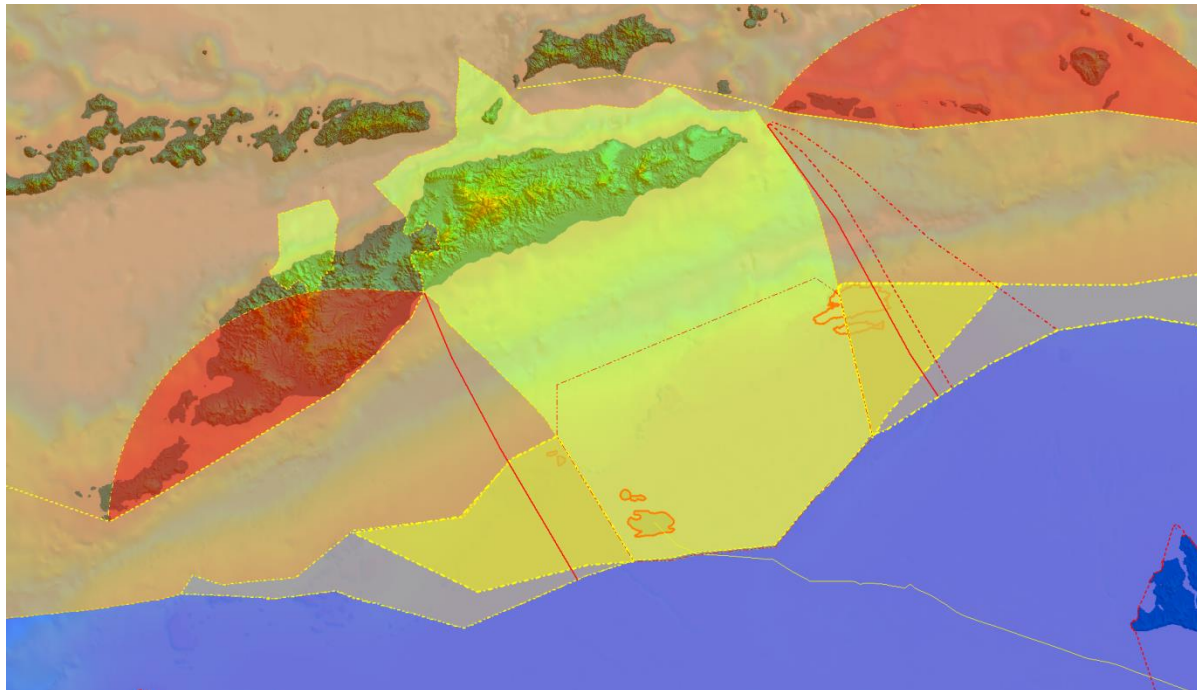




## Scenario number 2: the 1997 treaty between Australia and Indonesia is not valid

In this case, in a reversion from the treaty lines being the acknowledged current de facto EEZ boundaries in the area, Australia has sovereign rights in and over its seabed areas, according to the 1972 agreement, and is at liberty to transfer its seabed and/or water column to anyone it wishes, provided of course that such transfer is according to national law. It will also require substantial public and legislative involvement. Australia may also relinquish, without involving Indonesia, those parts of its seabed areas that are closer to East Timor than to Australia. This scenario would be contrary to the essence of UNCLOS, as the potential transfer areas are significantly closer to Indonesia than they are to East Timor.

All points inside the yellow dovetails are Australian seabed closer to East Timor than to Australia. The red areas in Indonesian territory are in effect disregarded in the delineation of the boundaries.



# Analysis

Scenario number 1 involves several layers of yet untested multilateral prerequisites and scenario number 2 is contrary not only to the status quo regarding the current Indonesian/Australian de facto EEZ boundary, but also to the essence of UNCLOS. In case Australia were amenable to relinquishing part of its seabed voluntarily, both scenarios would likely be quite objectionable to Indonesia.

The invalidation of CMATS would terminate for East Timor the guaranteed benefits of CMATS over the Timor Sea Treaty, apparently only in exchange for the right for East Timor to negotiate maritime boundaries along the same lines of equidistance that were used to define the boundaries of the JPDA.

East Timor would need to either file suit before the International Court of Justice or the International Tribunal for the Law of the Sea, or seek mediation with Australia and Indonesia. Whichever scenario applies, East Timor could only achieve its objectives by claiming territory which would result in jurisdiction over areas closer to Indonesia than to East Timor.

Australia declared in 2002 that it accepted as compulsory the jurisdiction of the International Court of Justice with the exception that such jurisdiction did not apply to its maritime boundaries, and made a similar declaration under article 287 of UNCLOS with regard to the International Tribunal for the Law of the Sea. Indonesia has never declared its acceptance of the compulsory jurisdiction of the International Court of Justice, although a decision by an arbitral tribunal under the International Tribunal for the Law of the Sea would be binding on Indonesia as a State Party to UNCLOS. However, as already noted, Indonesia only has jurisdiction over the water column in the 1997 EEZ area, if the 1997 treaty is valid, but no jurisdiction at all if the treaty is not valid.

To accommodate East Timor's request for jurisdiction beyond the lines of equidistance, both Australia and Indonesia would need to voluntarily give away large expanses of what they consider to be their sovereign seabed and/or EEZ. Doing so could only be achieved through complex, difficult, and lengthy political processes requiring considerable public and legislative involvement in both countries.



- 
1. History of Treaties
  2. Assessing selected boundary proposals
  3. Commentary
  4. **The 2018 treaty**
  5. The fundamental issue: the process for determining boundaries for East Timor
  6. References

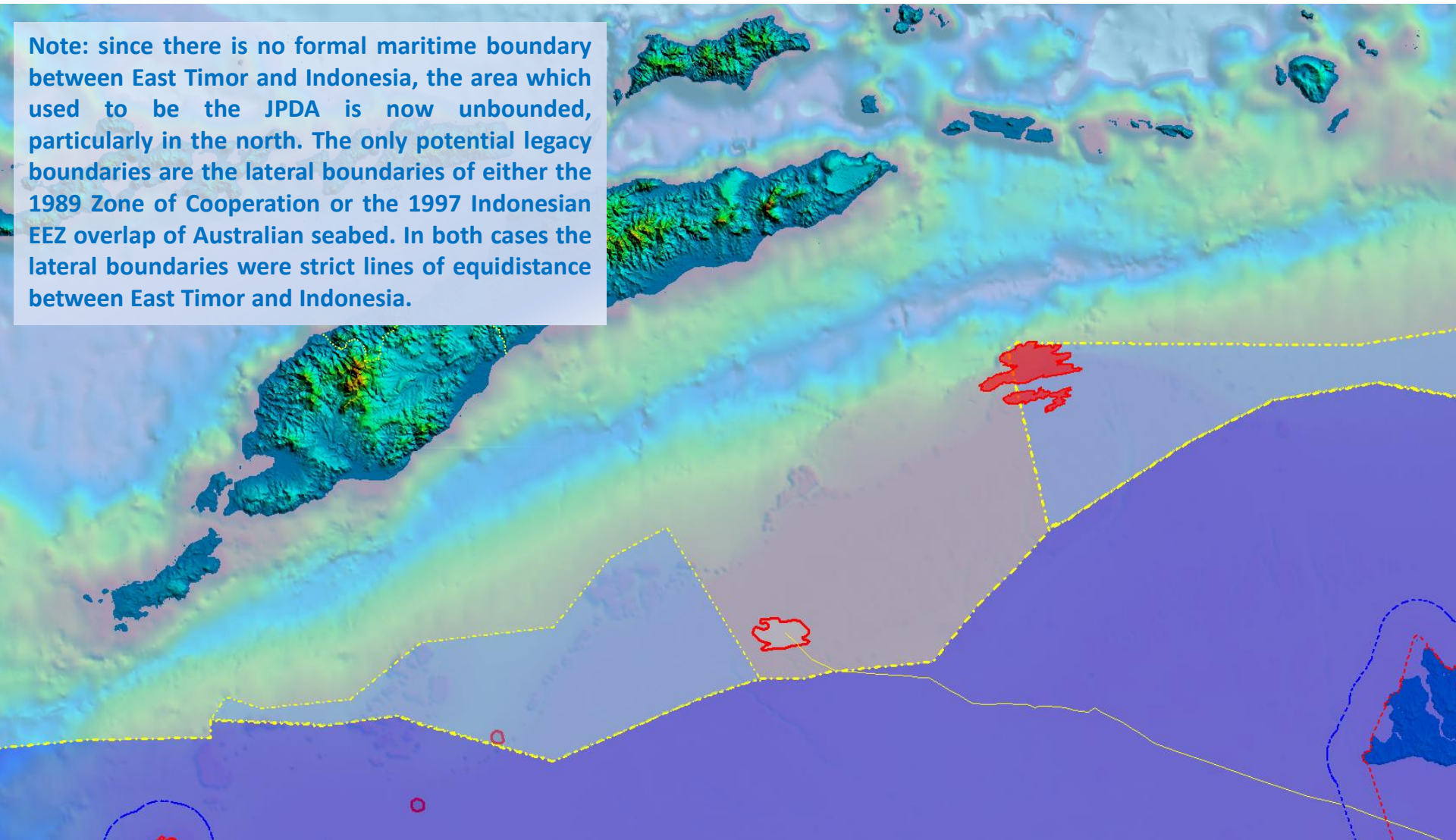
*The text of the treaty can be found at:*

*Permanent Court of Arbitration: [Press release No. 14](#), 6 March 2018*

*Australian Department of Foreign Affairs and Trade: [Treaty between Australia and Timor-Leste](#), 6 March 2018*

## The 2018 treaty: abrogation of prior arrangements

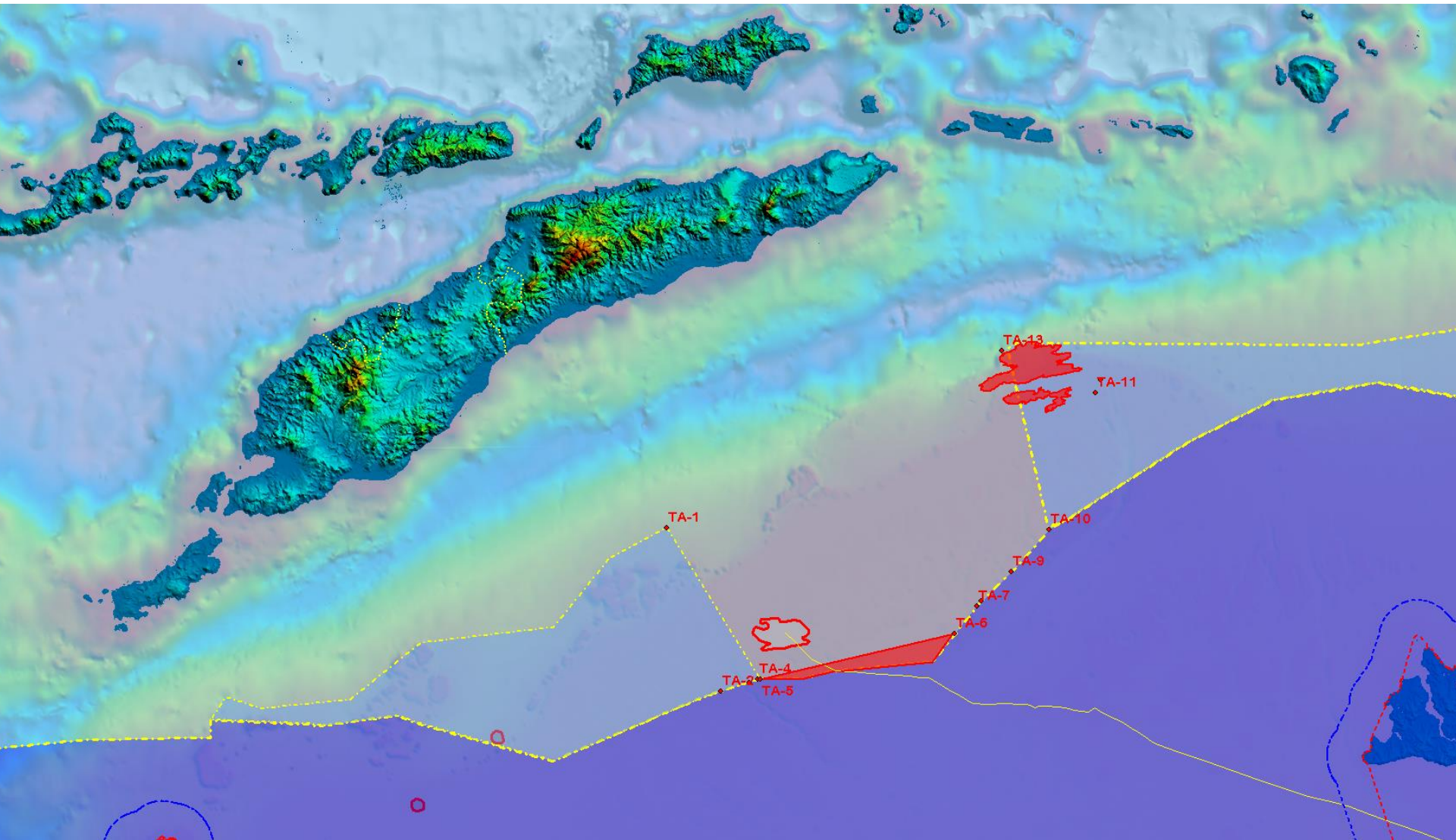
Note: since there is no formal maritime boundary between East Timor and Indonesia, the area which used to be the JPDA is now unbounded, particularly in the north. The only potential legacy boundaries are the lateral boundaries of either the 1989 Zone of Cooperation or the 1997 Indonesian EEZ overlap of Australian seabed. In both cases the lateral boundaries were strict lines of equidistance between East Timor and Indonesia.



After the repeal of CMATS in 2017, the Timor Sea Treaty and the International Unitisation Agreement cease now to be in force. The JPDA disappears, and with it the Australian right to 10% of petroleum revenue in the area. The area reverts to Timor Gap status (see note above). No formal maritime boundary exists between East Timor and Indonesia, be it EEZ or seabed. The light blue areas represent the Indonesian EEZ overlap of Australian seabed according to previous Indonesian-Australian treaties.

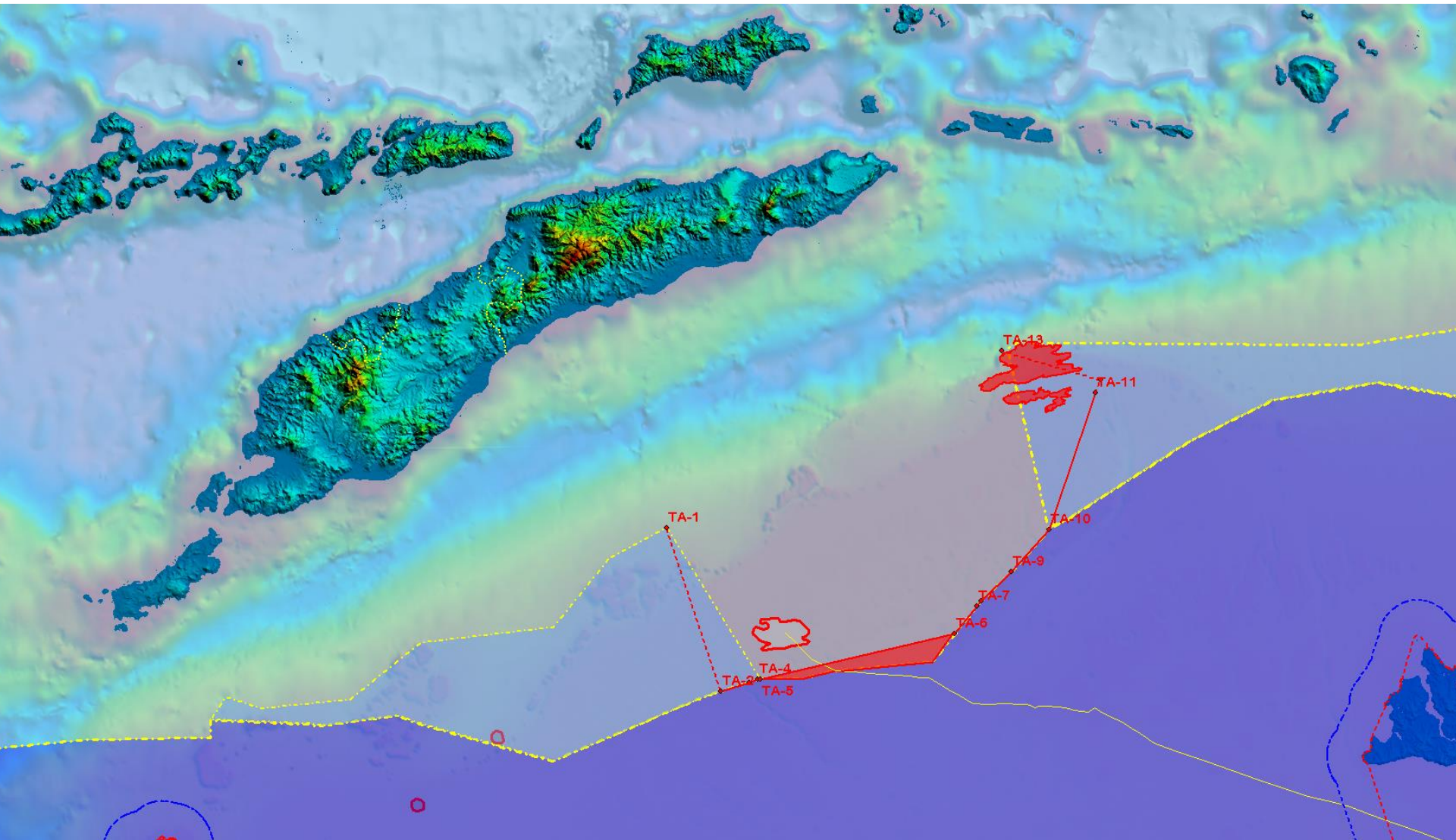


## The 2018 treaty: the EEZ and southern continental shelf boundaries



The East Timor-Australia EEZ boundary, which coincides with part of the southern continental shelf boundary, is defined by the lines connecting points TA-5 to TA-10. East Timor loses 922 sq. km. of EEZ and continental shelf in the red triangle. Although there is a provision that *"the Parties may agree to extend the exclusive economic zone boundary ... as necessary"*, presumably towards TA-4, TA-3, and TA-2, the extension would not affect the size of the EEZ and continental shelf loss.

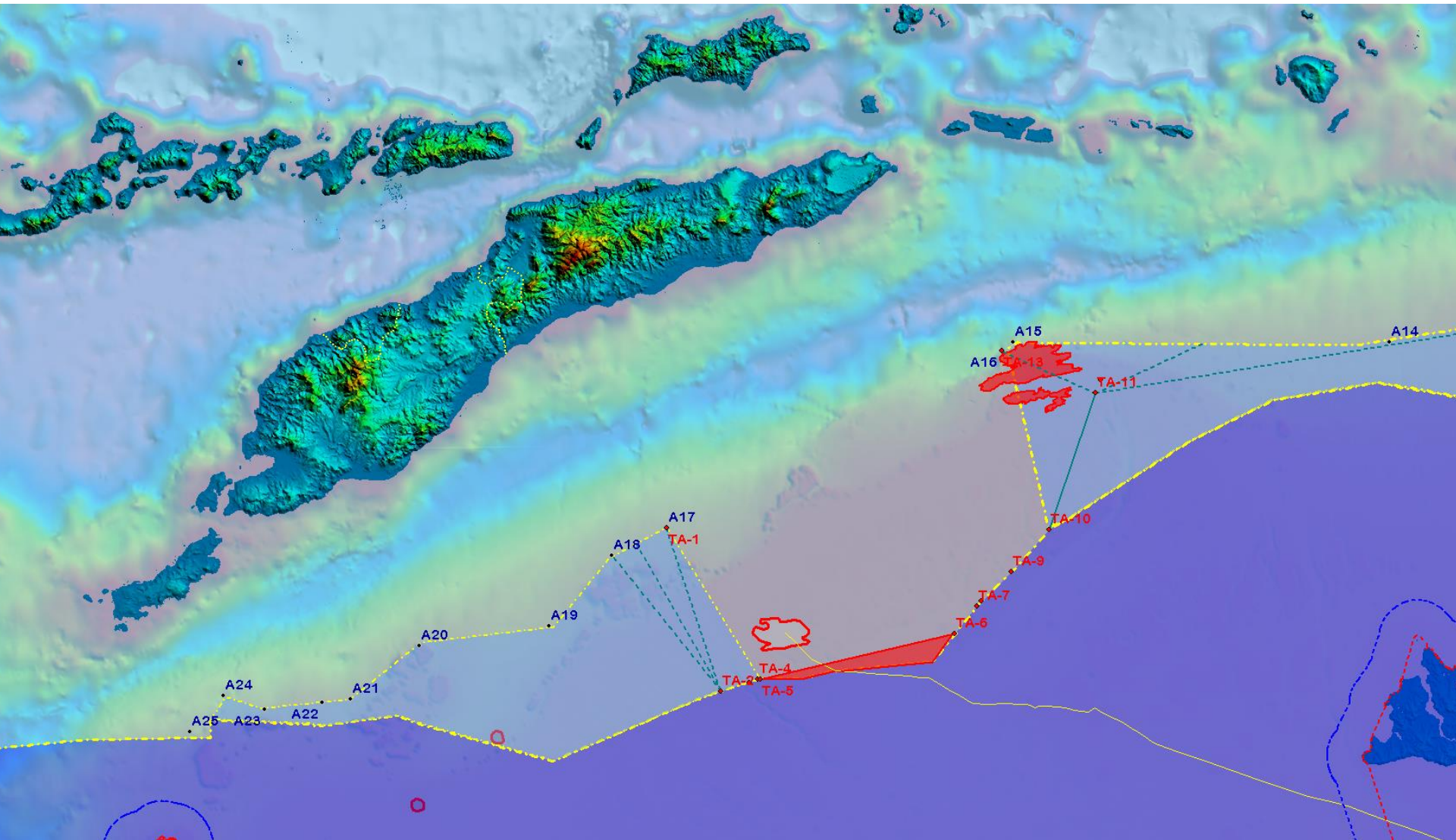
## The 2018 treaty: the lateral continental shelf boundaries



The continental shelf boundary is defined along the lines connecting points TA-1 to TA-13. The line connecting points TA-1 and TA-2, and the lines connecting points TA-11, TA-12, and TA-13, dashed in the map above, are "Provisional", until "(a) the Commercial Depletion of the Laminaria and Corallina Fields" and "of the Greater Sunrise Fields; and (b) the entry into force of an agreement between Timor-Leste and Indonesia delimiting the continental shelf boundary between those two States".

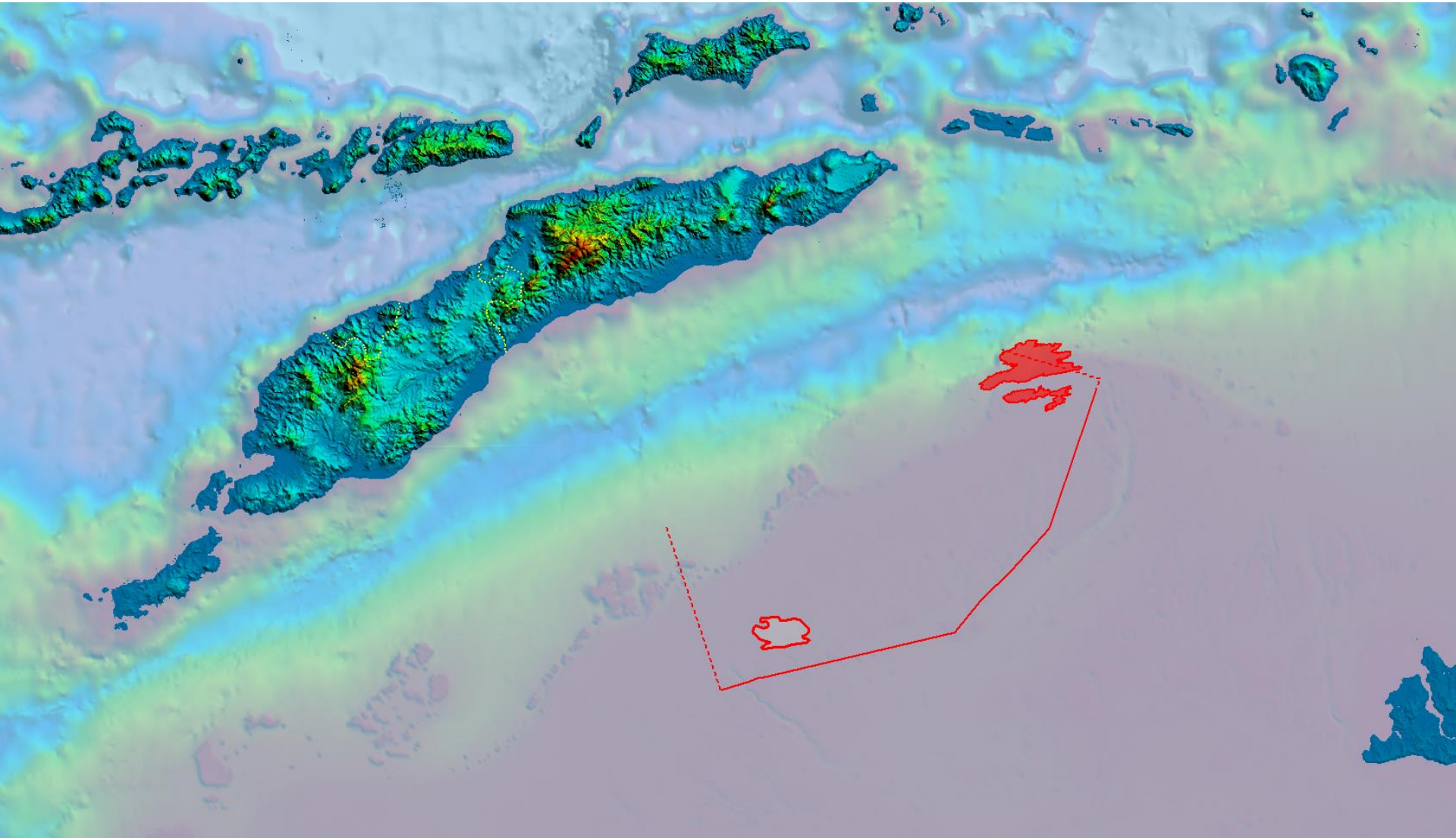


## The 2018 treaty: provisional and adjustable boundaries



After the commercial depletion of the eastern and western fields and *“the entry into force of an agreement between Timor-Leste and Indonesia delimiting the continental shelf boundary between those two States”*, the provisional *“continental shelf boundary between Timor-Leste and Australia shall be adjusted”* so that the eventual boundary would run along any one of the dashed green lines in the map above (the middle lines are indicative between extreme possible positions).

## The 2018 treaty: the boundary does not define a territorial area



1. The treaty defines maritime boundary segments that are partly provisional;
2. There is no other boundary for East Timor, since maritime boundaries between East Timor and Indonesia do not exist;
3. Being discontinued and gapping in the north, the boundary polyline defined by the treaty does not define a territorial area: there is no defined area belonging to East Timor which can be described on all sides by any agreed boundary.



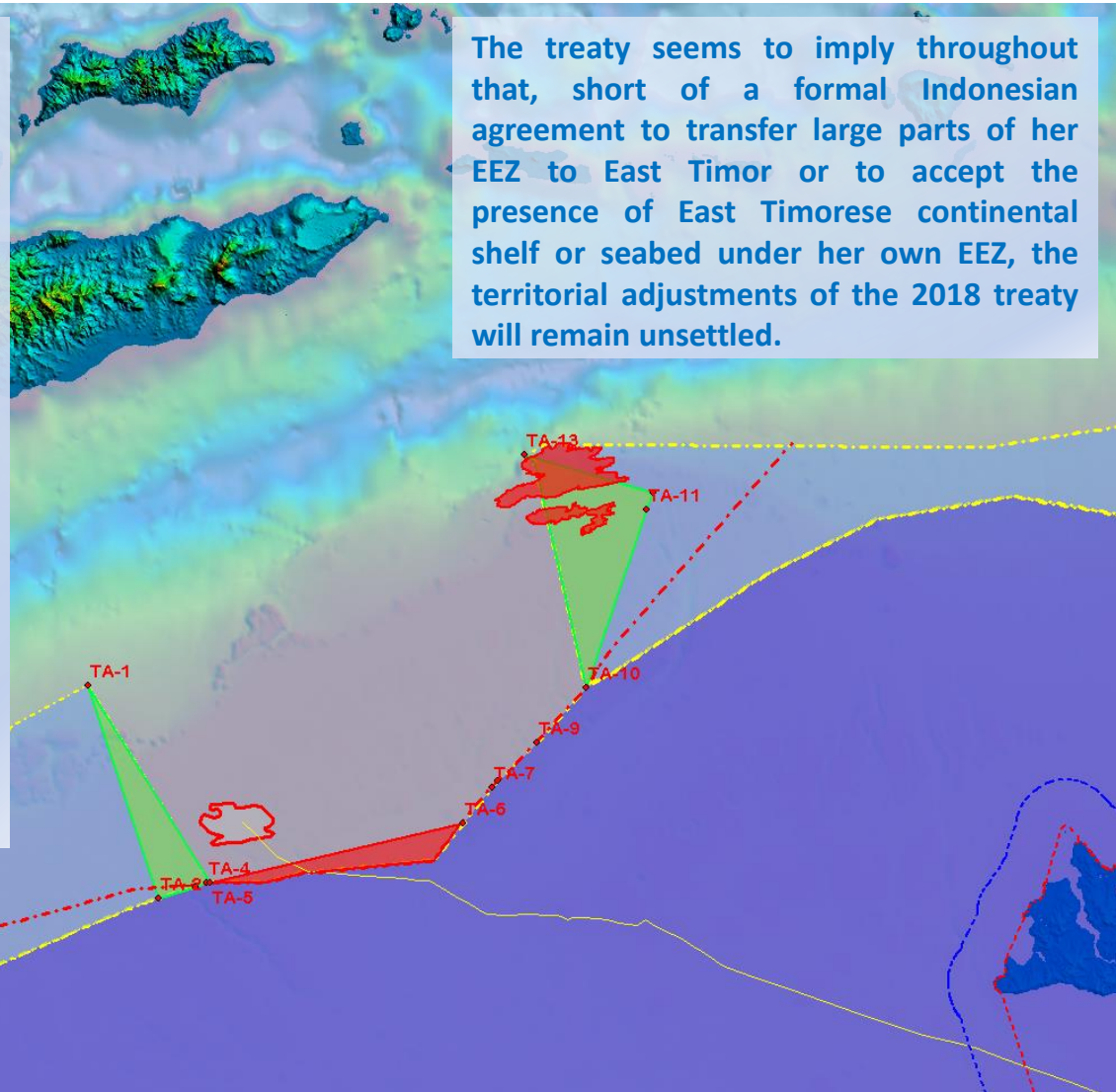
## The 2018 treaty: the practical geographic outcome

Note: since the purpose of a set of boundaries is to enclose the territory it is meant to delimit, two green East Timorese continental shelf areas are defined here by the continental shelf boundary of the 2018 treaty and, tentatively, by the line of equidistance between East Timor and Indonesia, which delineated the lateral boundaries in the Timor Sea treaty, in CMATS, and in the 1989 and 1997 treaties. The green areas are inside Indonesia's Exclusive Economic Zone, as determined by previous treaties between Indonesia and Australia.

The 2018 treaty defines no EEZ boundary other than the southern TA-5 to TA-10 line.

Article 6 of the treaty stipulates that *"nothing in this Treaty shall be interpreted as prejudicing negotiations with third States with regard to delimitation of the exclusive economic zone and the continental shelf in the Timor Sea"*.

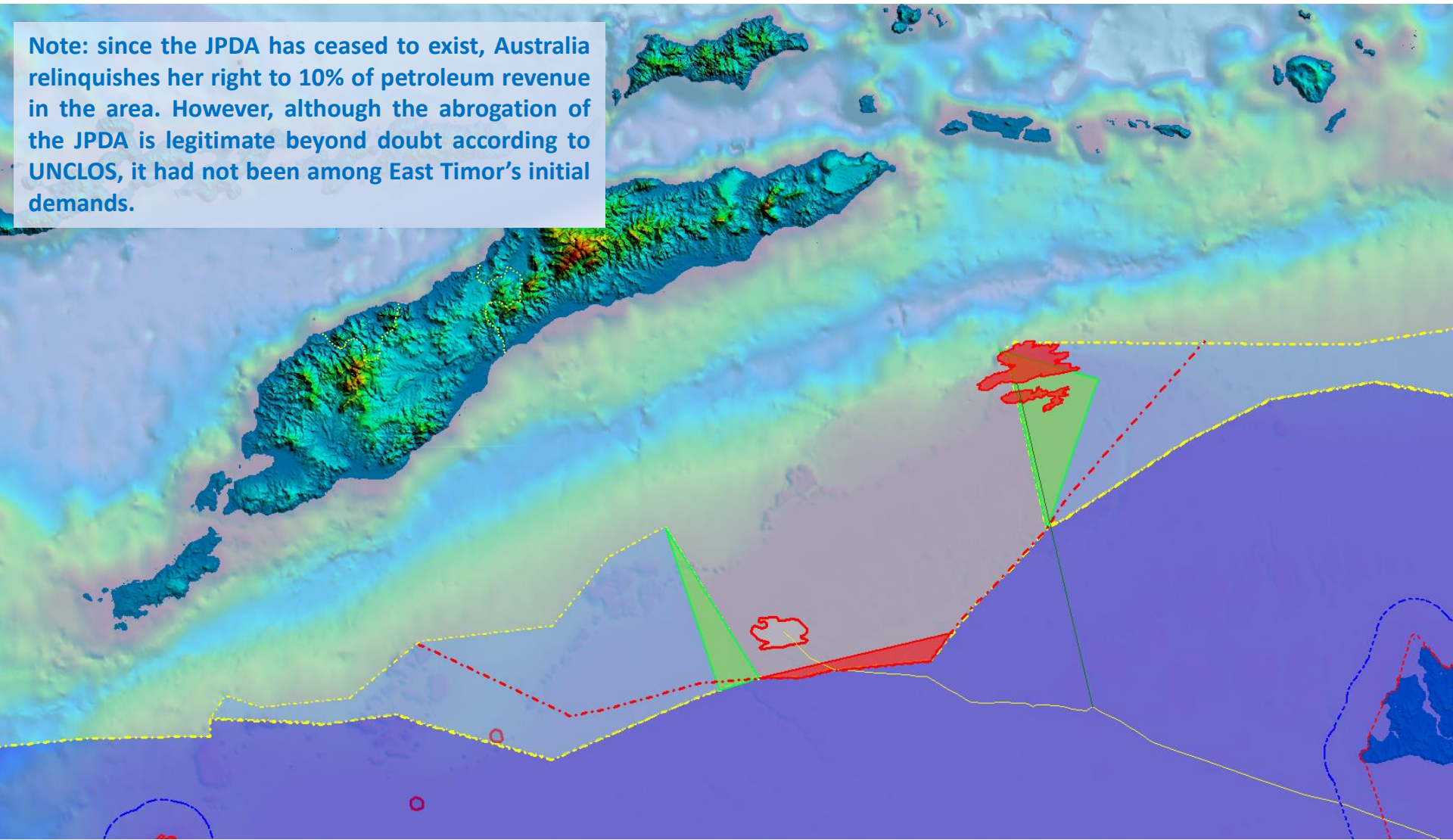
The treaty seems to imply throughout that, short of a formal Indonesian agreement to transfer large parts of her EEZ to East Timor or to accept the presence of East Timorese continental shelf or seabed under her own EEZ, the territorial adjustments of the 2018 treaty will remain unsettled.



1. The continental shelf boundary segments TA-1 to TA-2 and TA-11 to TA-13 are provisional for at least 30 years;
2. Two areas of Timorese continental shelf are created de-facto inside Indonesian EEZ (see note); they are not defined by the median line between East Timor and Australia (red dashed line); the areas are provisional;
3. The southern boundary amputates East Timor's pre-CMATS EEZ and its continental shelf of an area of 922 sq. km.

## The 2018 treaty: comparing the outcome of the treaty with the initial Timorese demands

Note: since the JPDA has ceased to exist, Australia relinquishes her right to 10% of petroleum revenue in the area. However, although the abrogation of the JPDA is legitimate beyond doubt according to UNCLOS, it had not been among East Timor's initial demands.

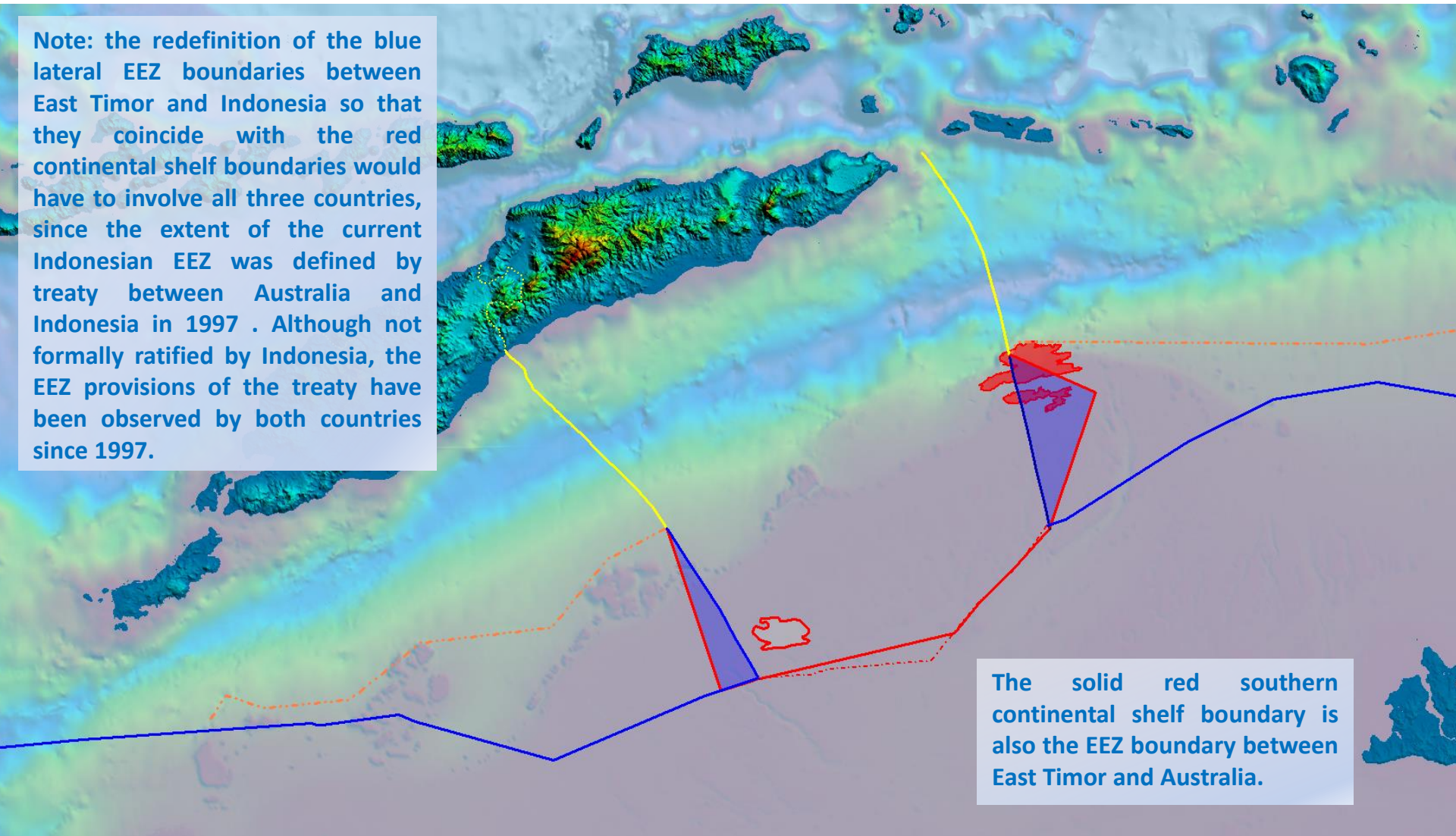


1. Neither of the areas created de-facto by the 2018 treaty on each side of the ex-JPDA are permanent, both are provisional;
2. Both the East Timorese-Australian EEZ and continental shelf limit and the eastern continental shelf area created by the treaty inside Indonesian EEZ are significantly short of the geographic median line between East Timor and Australia;
3. The Conciliation Commission reports as the only viable option that the gas be piped to the existing LNG plant in Darwin.



## The 2018 treaty: the future permanent boundaries after the depletion of Sunrise if the East Timor - Indonesia boundaries run along true median lines between East Timor and Indonesia

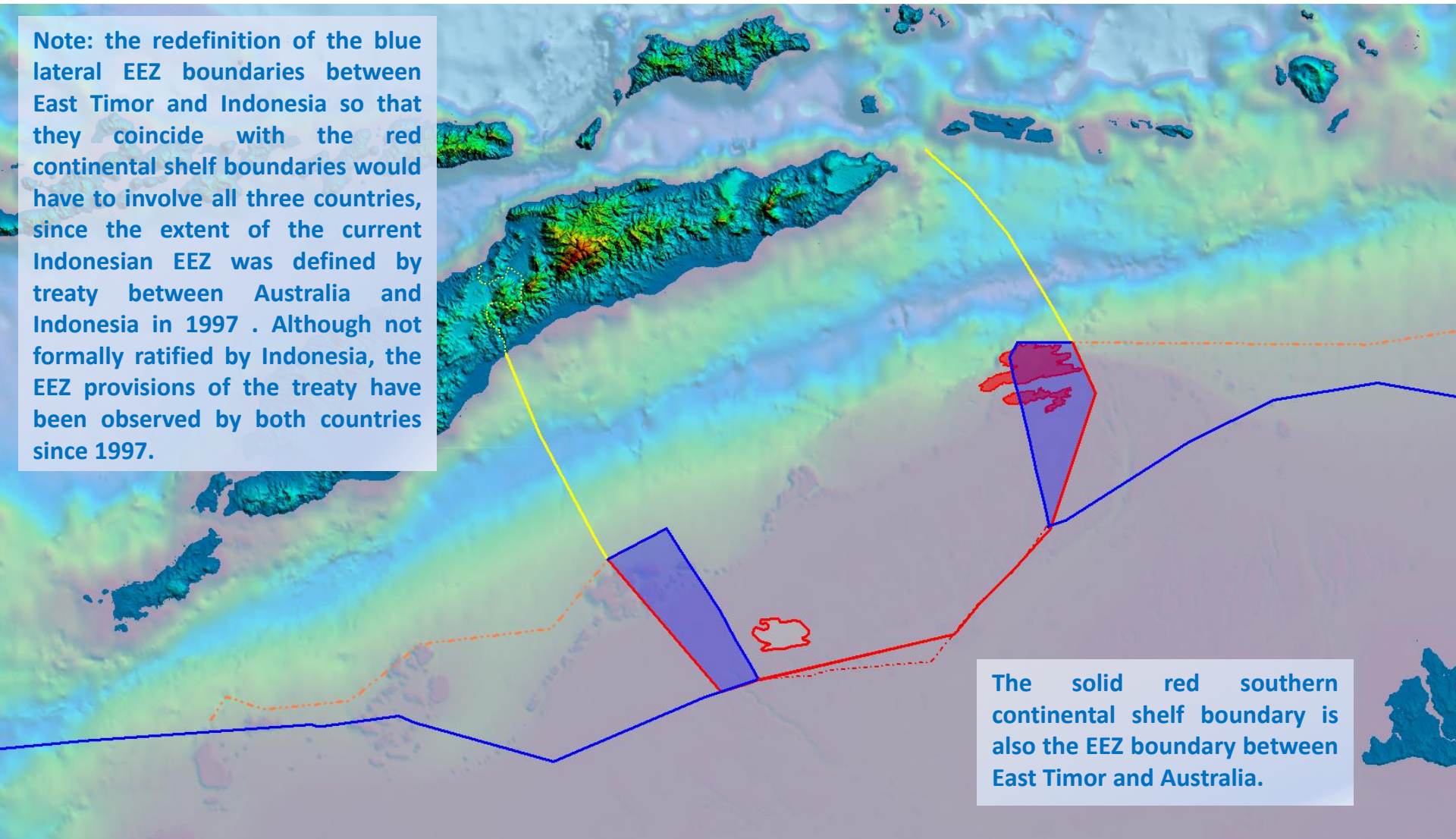
Note: the redefinition of the blue lateral EEZ boundaries between East Timor and Indonesia so that they coincide with the red continental shelf boundaries would have to involve all three countries, since the extent of the current Indonesian EEZ was defined by treaty between Australia and Indonesia in 1997. Although not formally ratified by Indonesia, the EEZ provisions of the treaty have been observed by both countries since 1997.



The yellow lines represent potential East Timor-Indonesia EEZ and continental shelf boundaries north of the Australia-Indonesia continental shelf boundary. The solid red lines are the 2018 treaty continental shelf boundaries. The dashed red line is the median line between East Timor and Australia. The blue lines delineate the Indonesian EEZ boundaries according to the 1997 treaty. The shaded areas are Indonesian Exclusive Economic Zone overlapping East Timorese continental shelf.

## The 2018 treaty: the future permanent boundaries after the depletion of Sunrise if the East Timor - Indonesia boundaries run along non-median lines to fully encompass the eastern and western fields

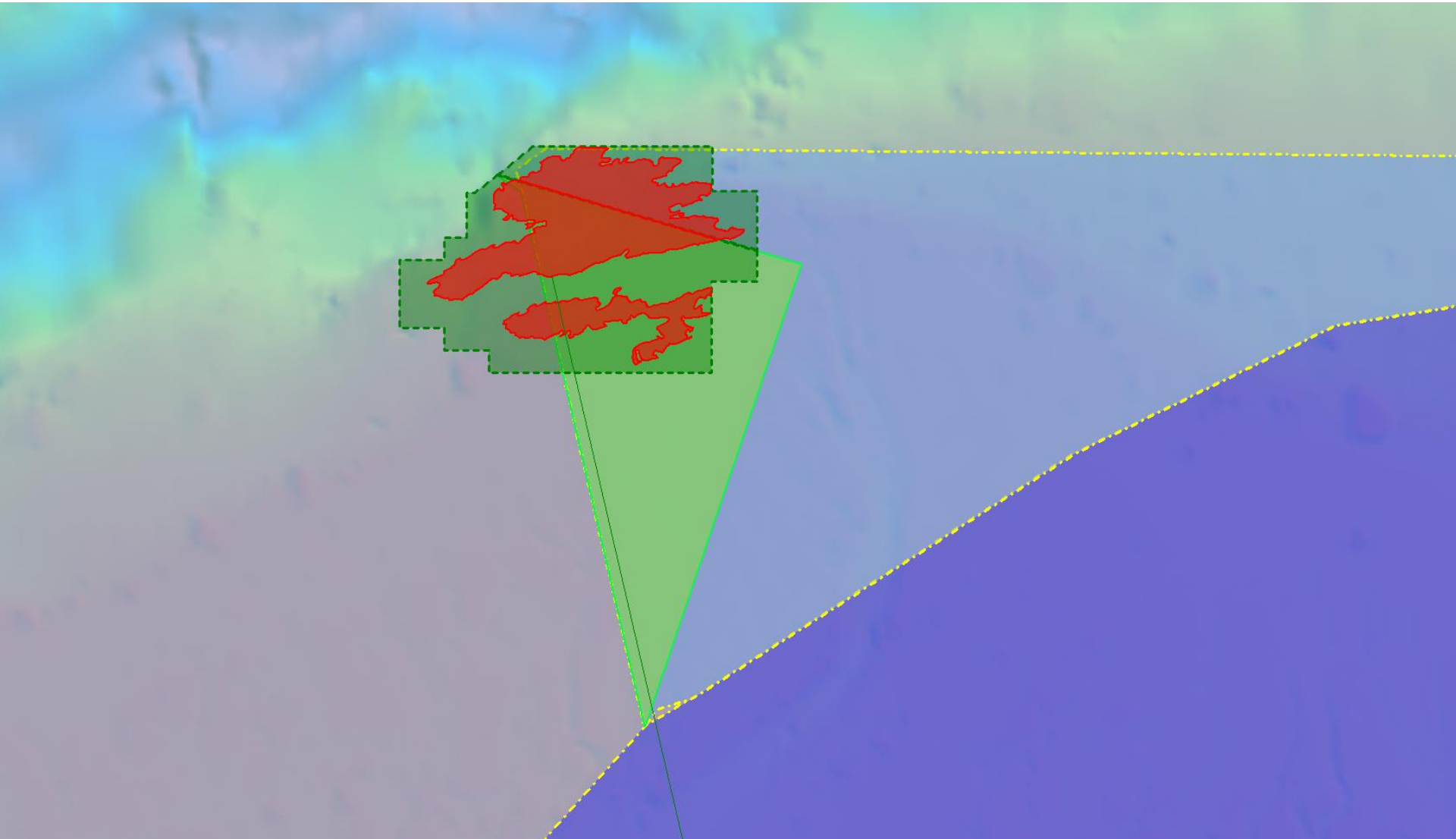
Note: the redefinition of the blue lateral EEZ boundaries between East Timor and Indonesia so that they coincide with the red continental shelf boundaries would have to involve all three countries, since the extent of the current Indonesian EEZ was defined by treaty between Australia and Indonesia in 1997. Although not formally ratified by Indonesia, the EEZ provisions of the treaty have been observed by both countries since 1997.



The yellow lines represent potential East Timor-Indonesia EEZ and continental shelf boundaries north of the Australia-Indonesia continental shelf boundary. The solid red lines are the 2018 treaty continental shelf boundaries. The dashed red line is the median line between East Timor and Australia. The blue lines delineate the Indonesian EEZ boundaries according to the 1997 treaty. The shaded areas are Indonesian Exclusive Economic Zone overlapping East Timorese continental shelf.



## The 2018 treaty: probable actual sharing of tax revenue



Upstream revenue will be shared in the ratio of 80% to Timor-Leste and 20% to Australia in the event that the gas be piped to the existing LNG plant in Darwin, which the Conciliation Commission reports as the only commercially viable option. However, when taking into consideration the downstream taxation regime which can be reasonably expected in Darwin and Dili, it is probable that overall taxation, upstream plus downstream, would result in a sharing of tax revenue significantly more even than 80%-20%. 47 of 76

# The 2018 treaty: probable significance

## 1/4

The 2018 treaty refers to the *continental shelf* extensively, albeit the very concept of *continental shelf*, as dissociated in the Timor Sea from the *Exclusive Economic Zone*, was perhaps the prominent stumbling block in the Timorese rhetoric during the years leading to the conciliation procedure. There is not a single reference to the word *seabed* in the 14 articles of the treaty and in its annexes, except for the title of the 1972 *Seabed Treaty*. The permanence of the *continental shelf* concept in the region, as distinct from the *Exclusive Economic Zone*, is clearly reinforced throughout the treaty.

There are 25 mentions of the *continental shelf* in the 14 articles of the treaty and in its annexes, but only 5 mentions of the *Exclusive Economic Zone*.

UNCLOS recognizes *continental shelf* rights as distinct from the *Exclusive Economic Zone* regime only in a fringe extending beyond the *Exclusive Economic Zone* outer limit, from 200 up to 350 nautical miles from shore, where applicable, an instance that is not quite relevant in the Timor Sea. The 2018 treaty reinforces in effect the past dichotomy between *continental shelf* and *Exclusive Economic Zone* in areas where the two should be coterminous, in contradiction to both the spirit of UNCLOS and the rhetoric professed for decades by the critics of the past treaties.

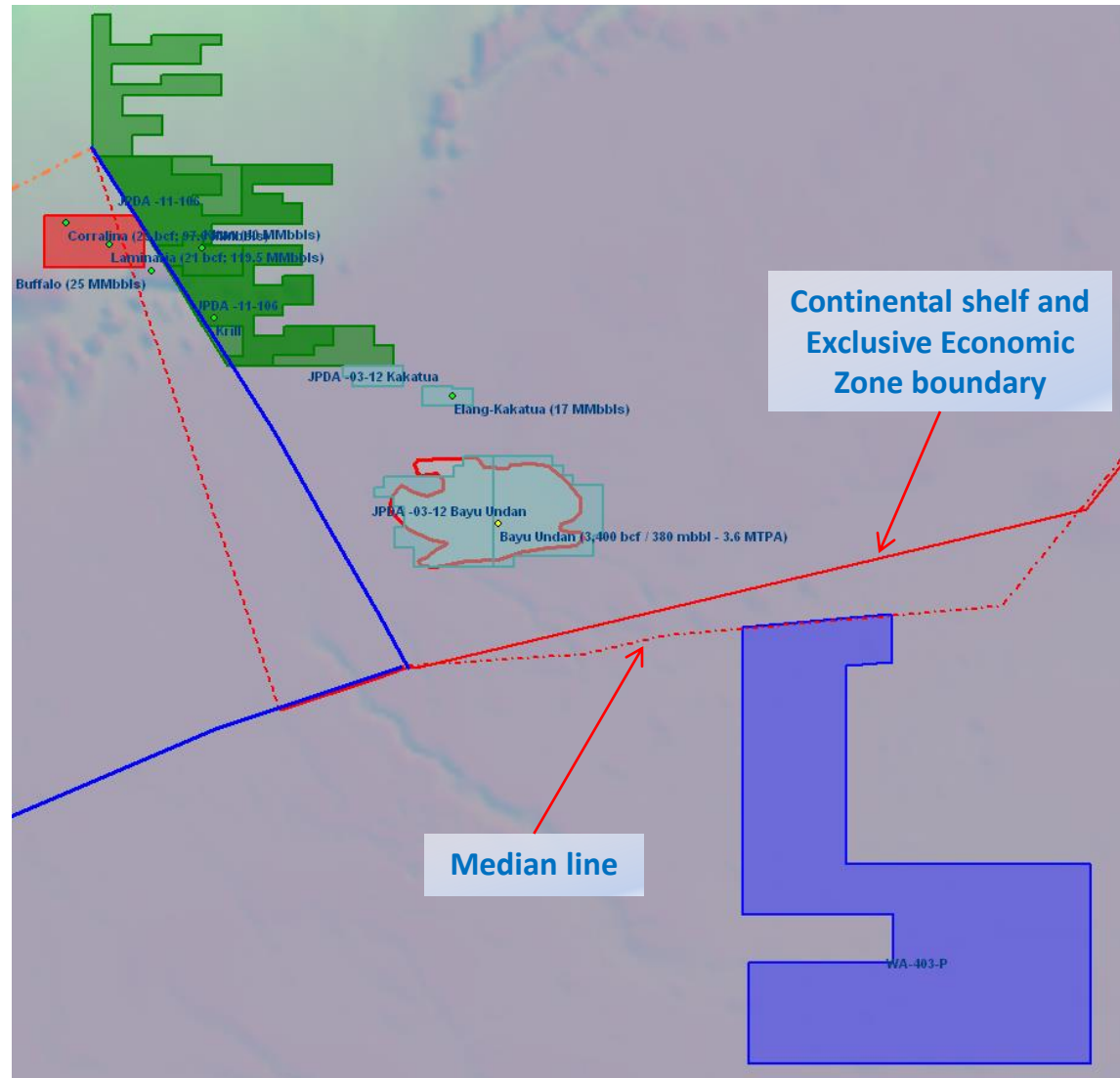


# The 2018 treaty: probable significance

## 2/4

Remarkably, the only 2018 treaty boundary defining both the continental shelves and the Exclusive Economic Zones of East Timor and Australia is drawn markedly to the north of the median line and results in the transfer to Australia of almost 1,000 sq. km of Exclusive Economic Zone which was East Timorese as per CMATS. Also lost to Australia in the process is the corresponding area of continental shelf.

*The displaced boundary line provides an Australian buffer for lease WA-403-P, a Total-Petronas lease.*



# The 2018 treaty: probable significance

## 3/4

Only the lateral boundaries defined in the 2018 treaty affect the potential ownership of the petroleum fields east and west of the ex-JPDA. The lateral boundaries are drawn inside the de-facto Indonesian *Exclusive Economic Zone* (which is defined by lines of strict equidistance), with nearly 70% of their length being provisional until after the fields are depleted and an agreement is reached by East Timor and Indonesia to define a *continental shelf boundary*, which presumably indicates it will not affect the water column boundary and the *continental shelf boundary* will still be inside the Indonesian *Exclusive Economic Zone* – although the treaty does not prejudice negotiations with third States with regard to delimitation of the *Exclusive Economic Zone* and the *continental shelf*. The boundaries won't be permanent for at least the next 30 years, and not before the fields are depleted and a probably difficult agreement can be reached between East Timor and Indonesia to divide areas which, by then, will be barren.



# The 2018 treaty: probable significance

## 4/4

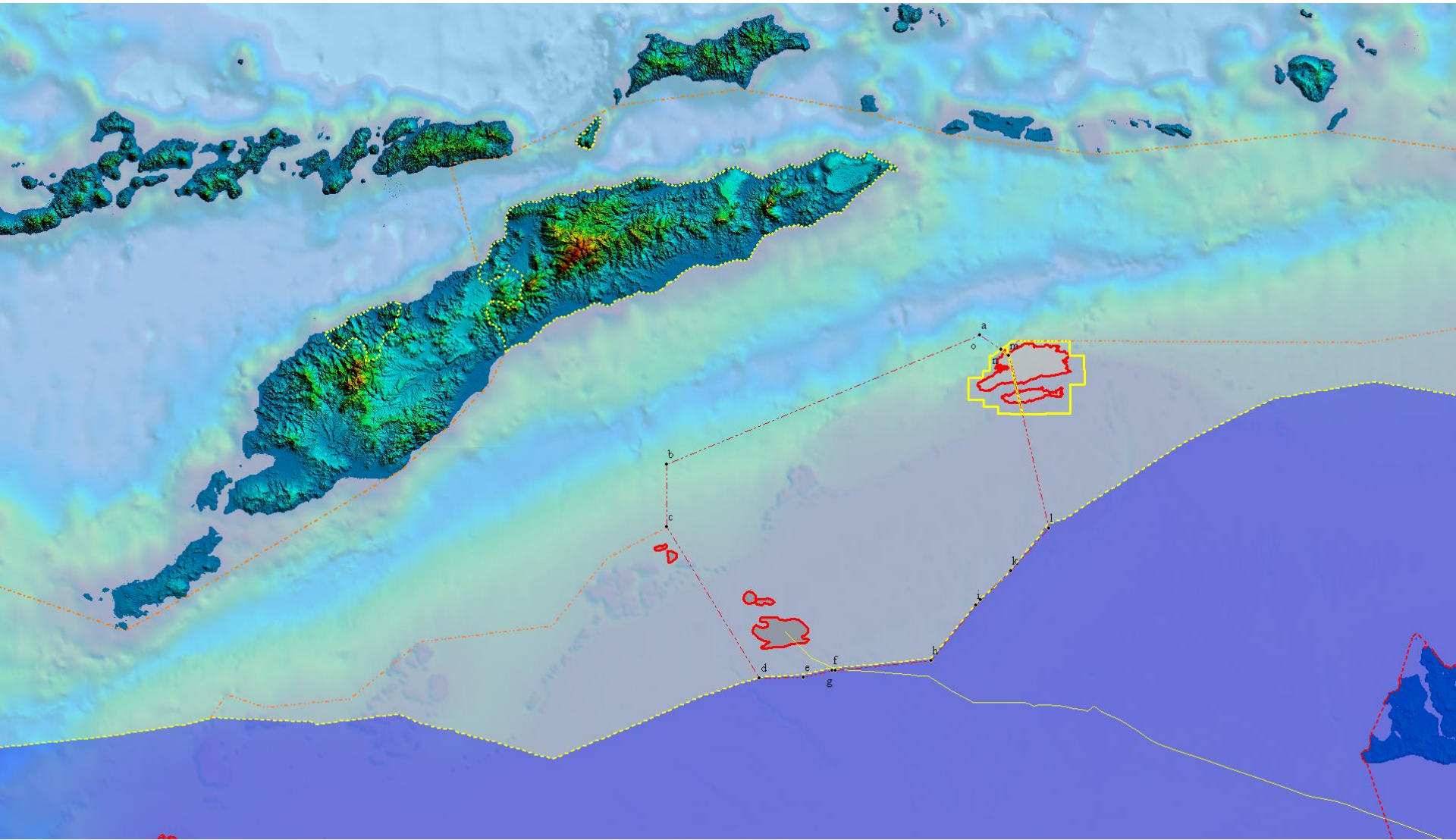
In view of the above, it appears that the real purpose of the 2018 treaty could hardly have been the *bona fide* delineation of permanent boundaries (since all the boundary segments which are not *provisional* encroach upon areas that were either East Timorese before the treaty was signed, or are still Indonesian afterwards), but rather the confirmation of the Australian *continental shelf* concept, packaged with the redefinition of the sharing of upstream tax revenue, which, since the shallow water pipeline to the existing and soon to be available LNG plant in Darwin is quite understandably the better economic option, will likely result in a more or less even sharing of total upstream and downstream revenue between the two countries. A similar distribution of revenue could probably have been reached much earlier and quite economically, through possible addenda to CMATS. On March 19, the East Timorese Prime Minister reported that East Timor had incurred so far costs in excess of US\$50 million in relation to the conciliation.

Otherwise, the positive outcome for East Timor, fully in accordance with the spirit of UNCLOS but apparently not energetically sought beforehand, is that Australia relinquishes to East Timor its 10% share of petroleum revenue in the ex-JPDA, although the only producing field in the area is nearing depletion and East Timor loses in the process nearly 1,000 sq. km of exclusive territory.

- 
1. History of Treaties
  2. Assessing selected boundary proposals
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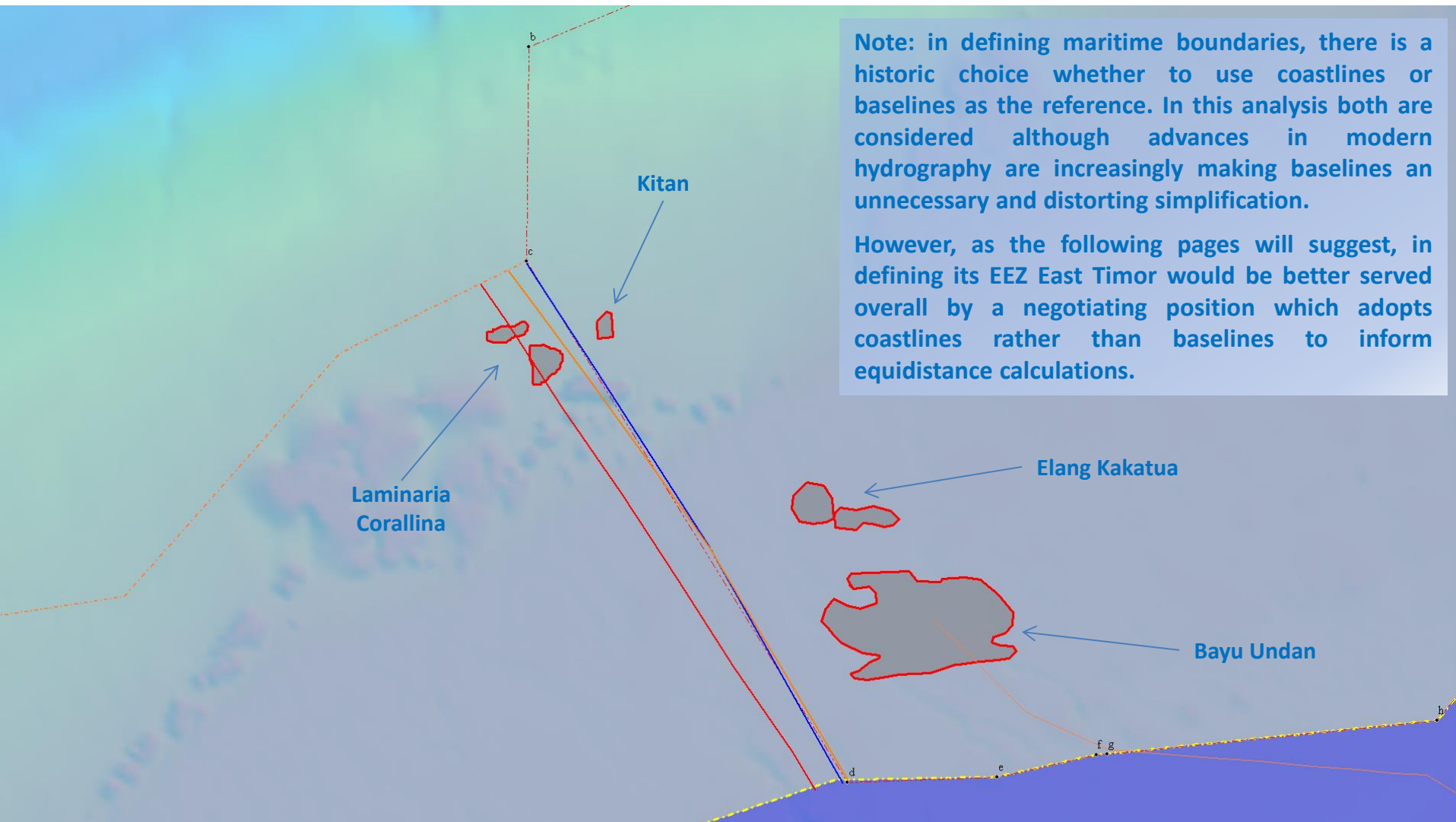


## The fundamental issue



Only the Indonesian baseline (dashed orange line), the JPDA and the treaty lines between Indonesia and Australia have been formally defined. No maritime boundary for East Timor outside of the JPDA has been formally defined. The following diagrams use coastlines from the updated NASA/BAE Systems/JPL SRTM Water Body Data (SWBD), from which boundaries can be drawn with a high degree of accuracy (see method in page 10).

## Western JPDA boundaries



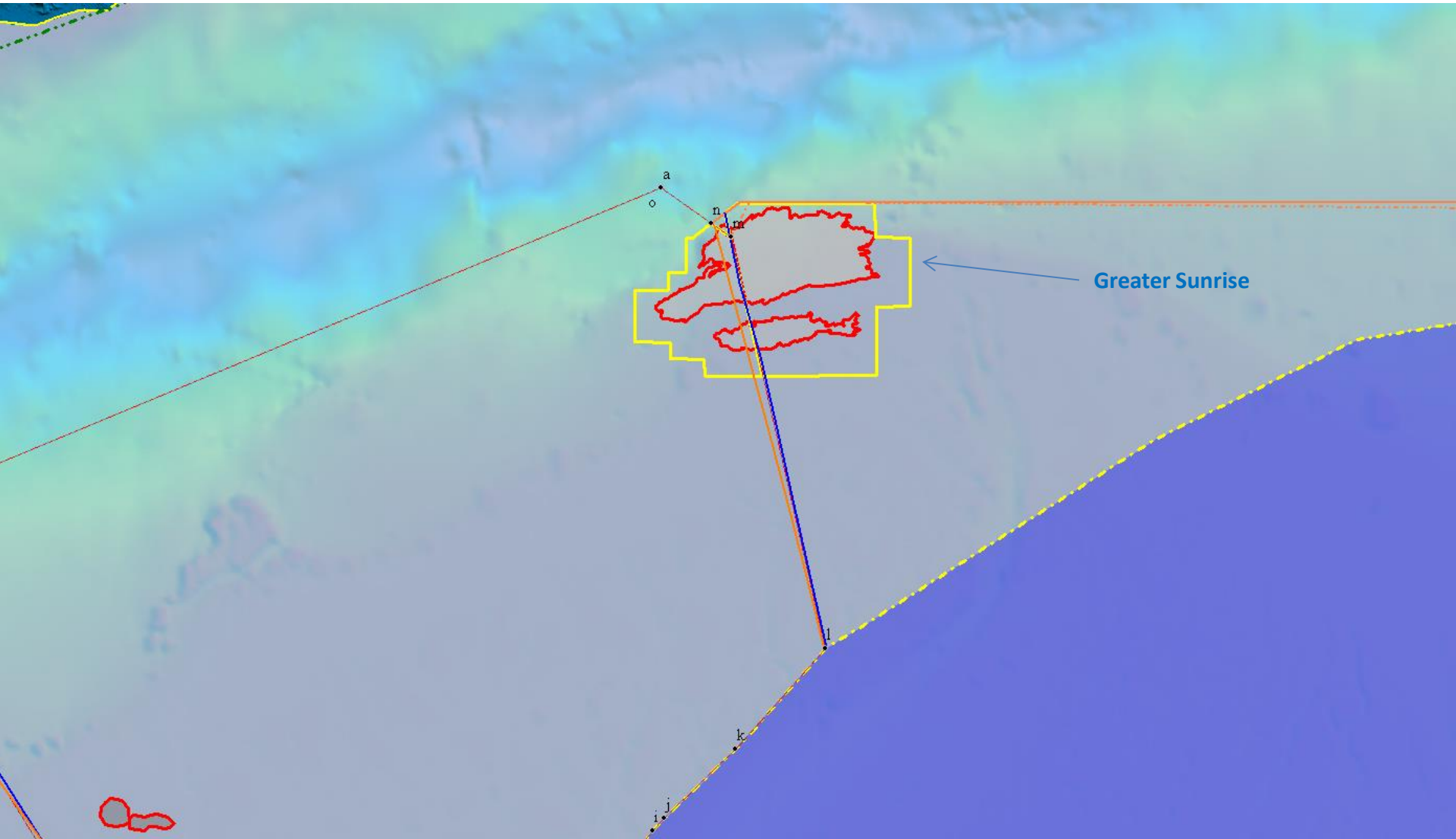
Note: in defining maritime boundaries, there is a historic choice whether to use coastlines or baselines as the reference. In this analysis both are considered although advances in modern hydrography are increasingly making baselines an unnecessary and distorting simplification.

However, as the following pages will suggest, in defining its EEZ East Timor would be better served overall by a negotiating position which adopts coastlines rather than baselines to inform equidistance calculations.

West of the JPDA: the blue line defines equidistance between Indonesian and East Timorese coastlines, while the solid orange line defines equidistance between conservative baselines and the solid red line between quite liberal but questionable baselines. The lateral JPDA boundary coincides almost exactly with the blue line. The maximum deviation between the existing JPDA boundary (c-d) and the orange line is 2 NM. It is 9 NM for the red line. Jurisdiction over the fields of Bayu Undan, Elang Kakatua, and Kitan is unchanged, but that over the nearly exhausted fields of Laminaria and Corallina may be affected by the questionable red line

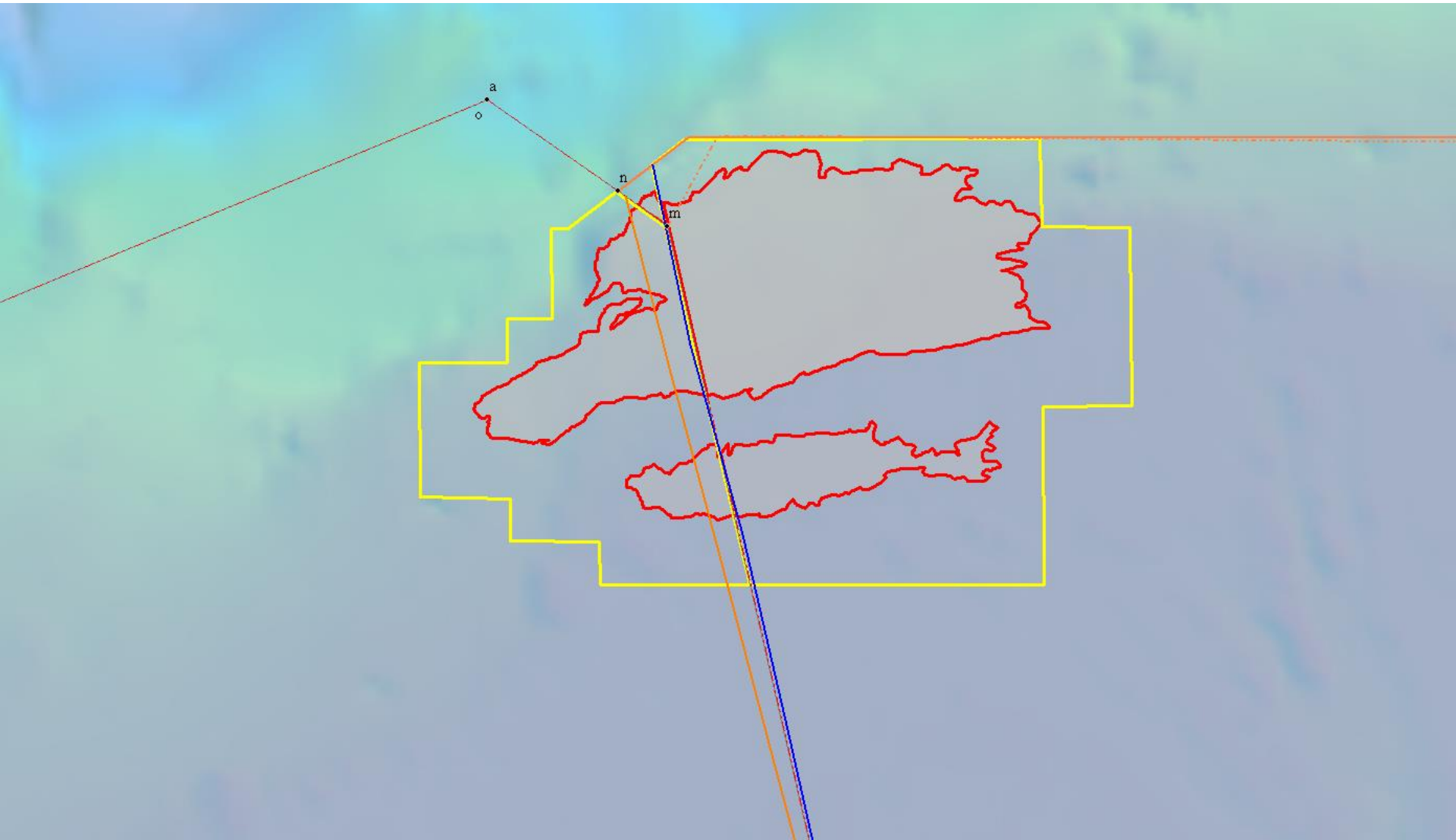


## Eastern JPDA boundaries



East of the JPDA: the blue line defines equidistance between Indonesian and East Timorese coastlines, while the N/S orange line defines equidistance between baselines. The orange line is entirely west of the existing JPDA boundary, while the blue line almost exactly follows it.

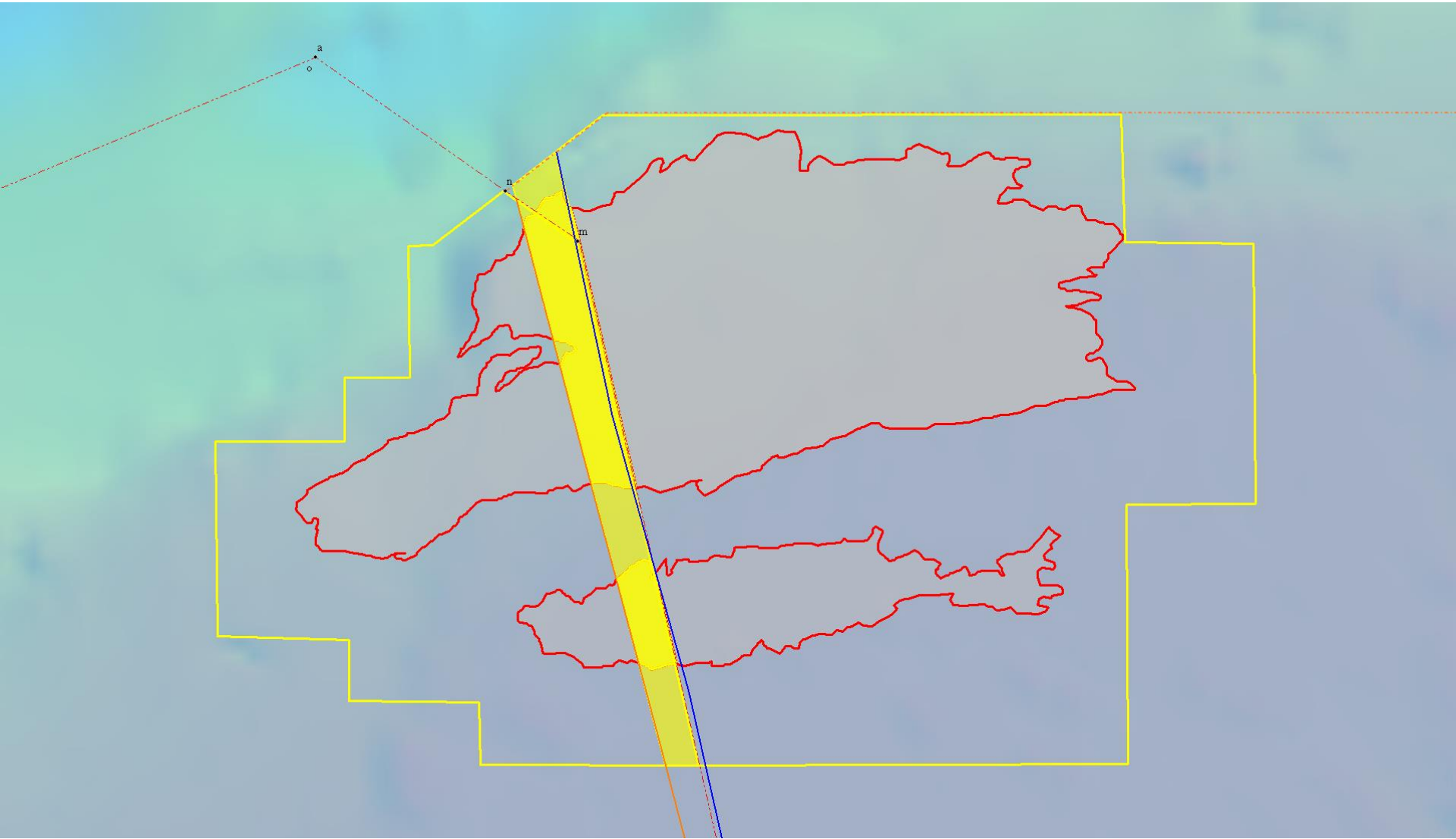
## Sharing Greater Sunrise after redefining JPDA boundaries



If baselines were to be chosen to determine the lines of equidistance, jurisdiction over the fields of Greater Sunrise would shift to the detriment of East Timor. The maximum deviation from the orange line to the existing JPDA boundary (yellow) is 2 NM. The blue line of equidistance between the coastlines follows the yellow existing boundary with insignificant deviations.

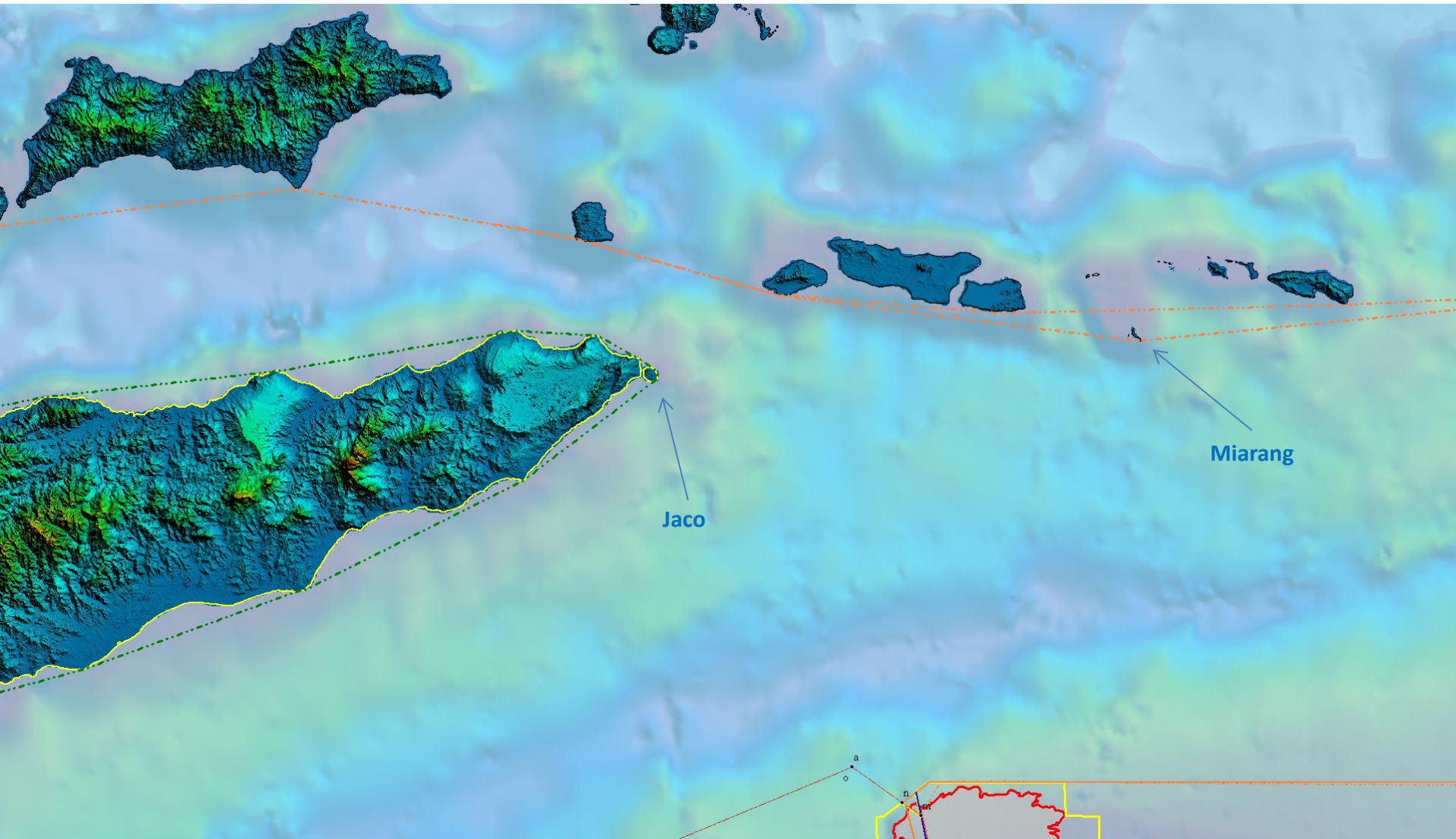


## Jurisdiction is partially changed



If baselines were to be chosen to determine the lines of equidistance, jurisdiction over 126 km<sup>2</sup> of unit surface area (within yellow straight lines) and 85 km<sup>2</sup> of field outline surface area (within the red lines) is lost by the JPDA, which represents 6.9% of the total field outline surface area. East Timor loses 29% of its jurisdiction over the Greater Sunrise fields.

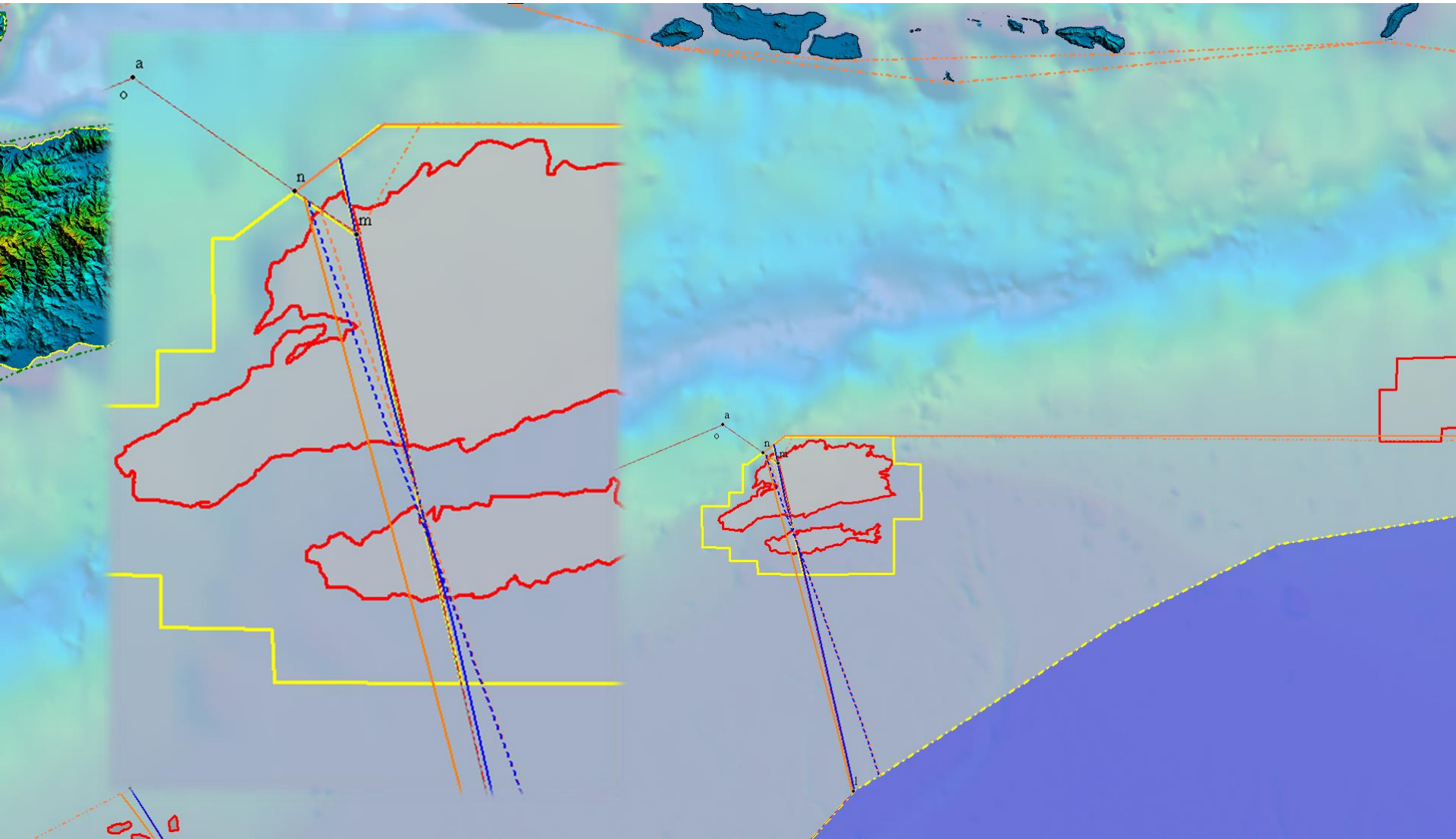
## Option: ignoring slightly populated islands



Assuming that Miarang Island is ignored because of its very small population would require, in all fairness, that Jaco Island is also ignored, because of its zero population.



## Option: ignoring slightly populated islands



The new coastline-defined boundary is the dashed blue line; the new baseline-defined boundary is the dashed N/S orange line. The effect is mostly to the detriment of East Timor, although East Timor would gain some EEZ south of the fields.

## Population of Miarang Islands



The Indonesian main island of Miarang is slightly populated with visible signs of human activity. It bears an active, manned, 24 m high navigation lighthouse visible from 27 nautical miles and a radar transponder beacon (Racon). Miarang main island is 3 km long.

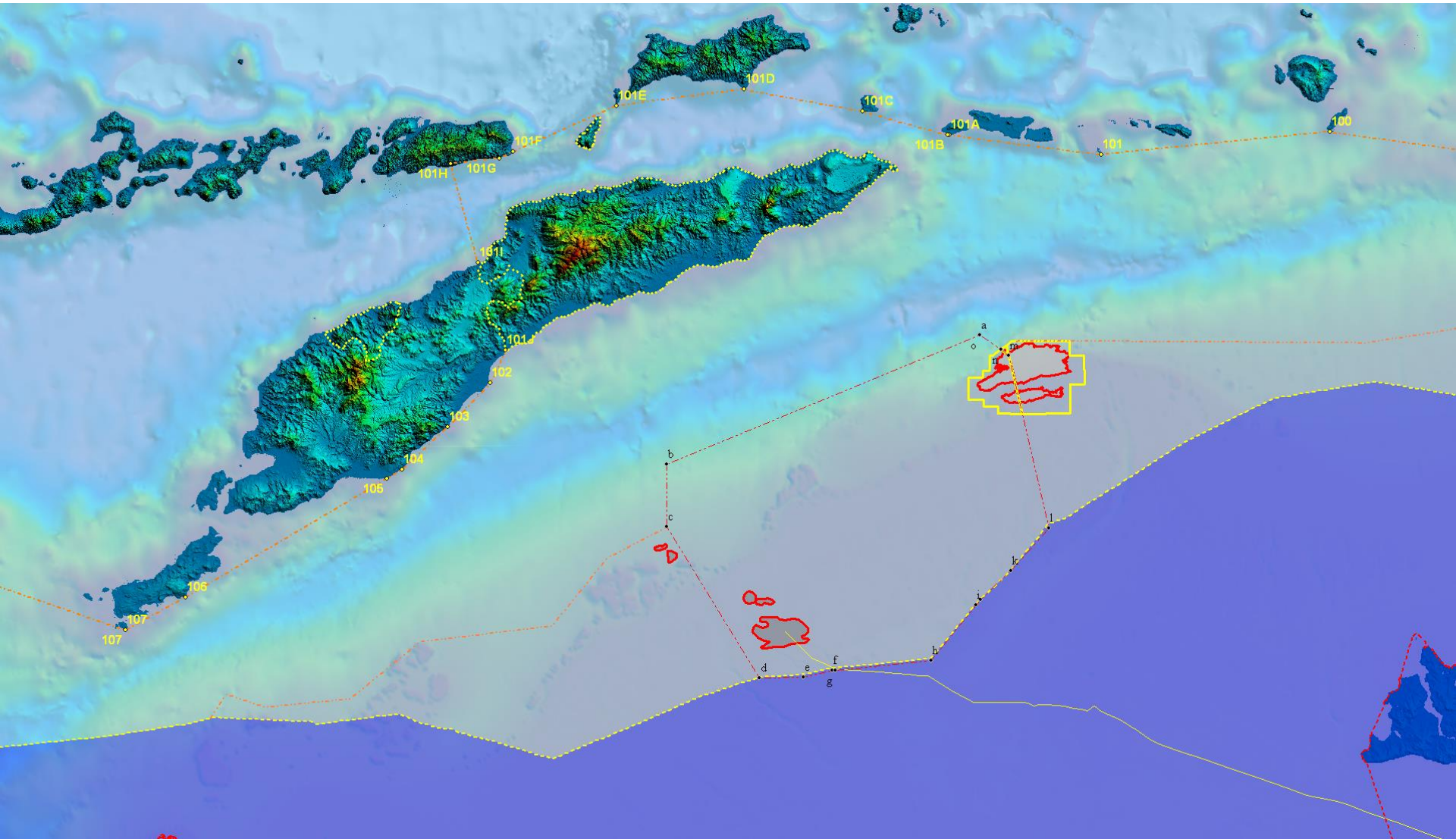


## Population of Jaco Island



East Timor's Jaco Island is uninhabited. It bears an abandoned and extinguished 47 m high navigation lighthouse that used to be visible from a distance of 14 nautical miles. Jaco Island is 4 km long.

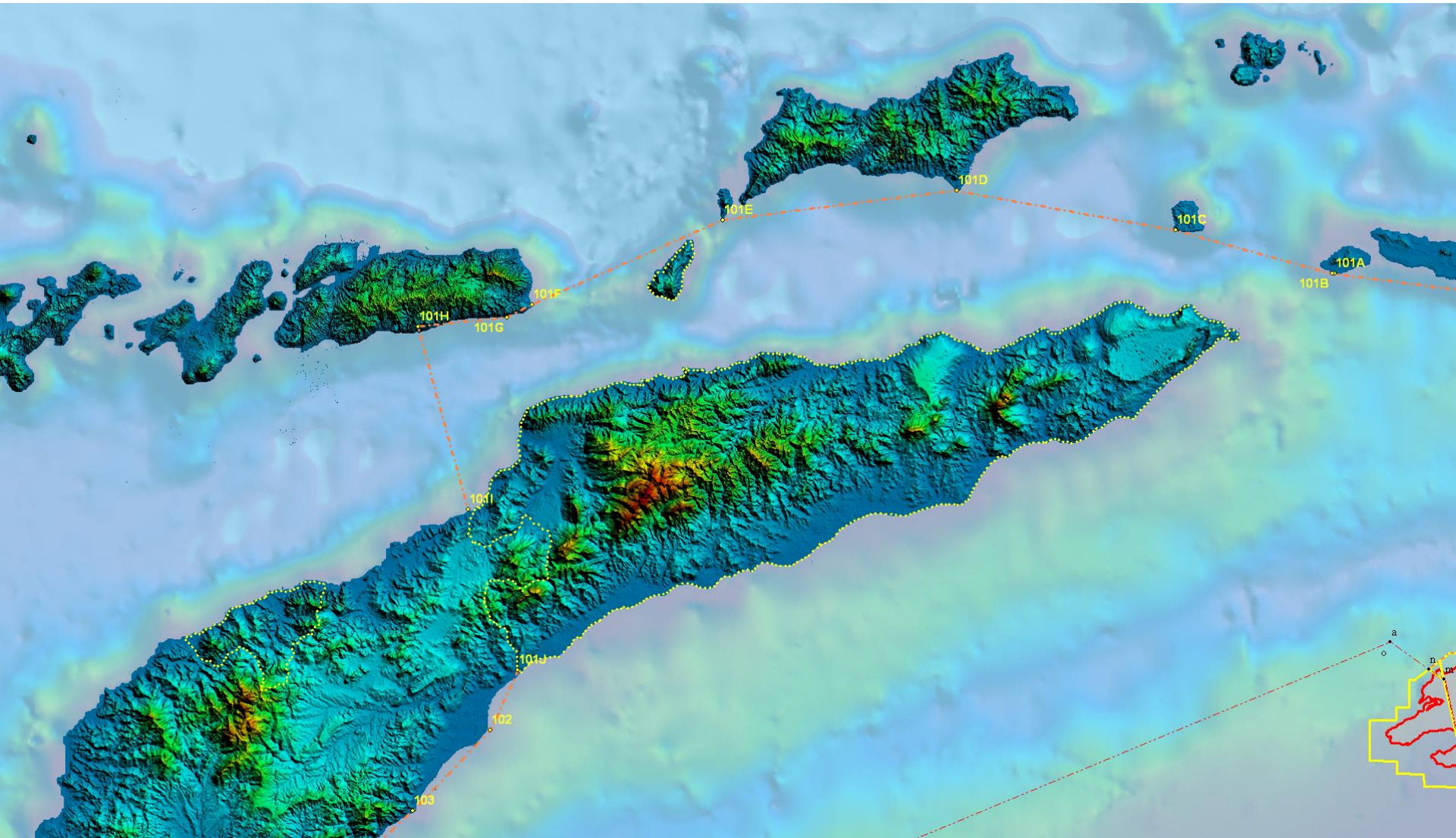
## Defining East Timor boundaries outside of the JPDA



The only existing official boundaries are those of the JPDA, the Australia-Indonesia treaty lines and the Indonesian published baseline. No maritime or EEZ boundary for East Timor outside of the JPDA has been formally defined. East Timor formally controls the EEZ inside of the JPDA, pursuant to CMATS.



## Defining East Timor boundaries outside of the JPDA

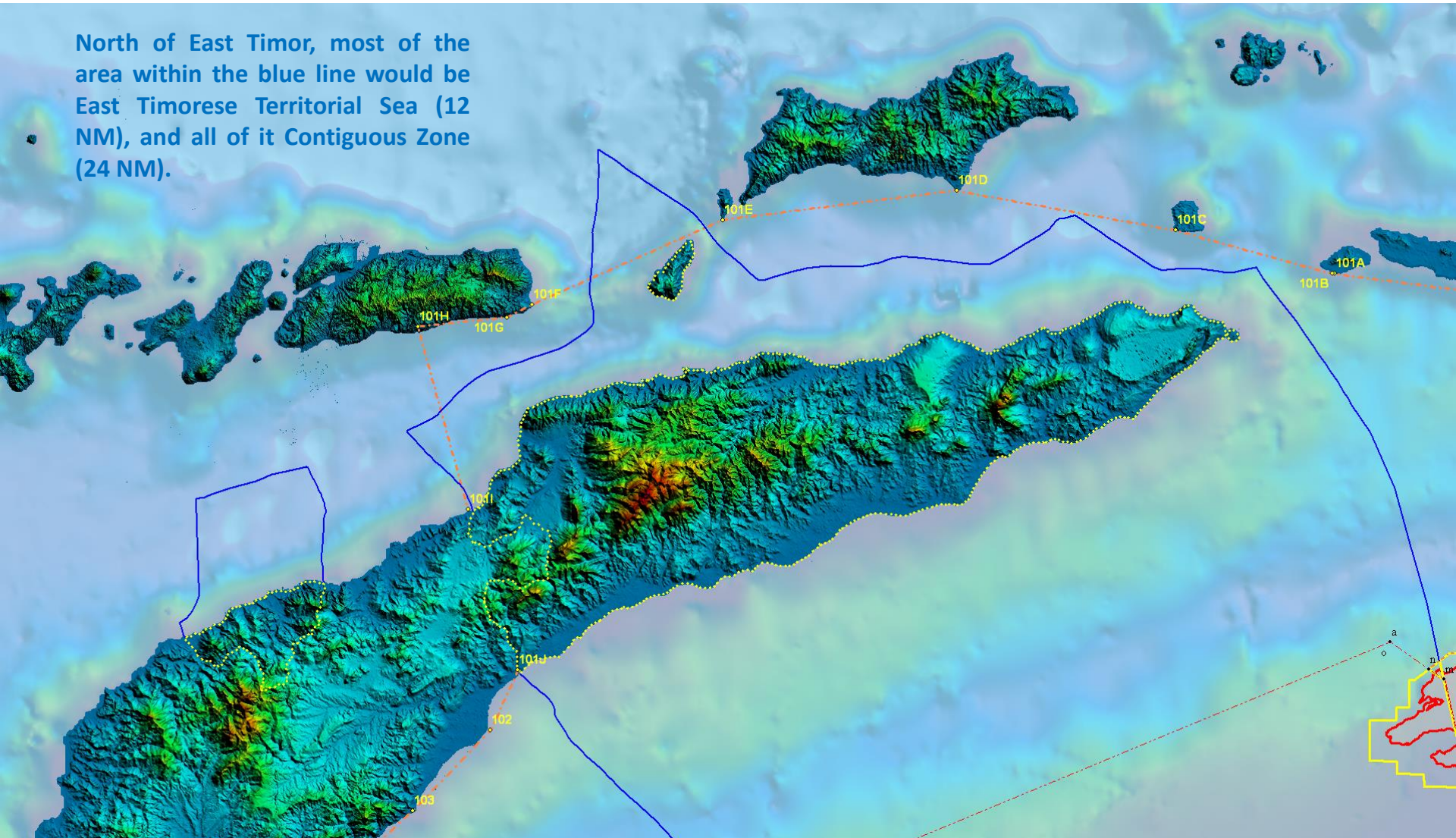


North of East Timor and south of the Lesser Sunda Islands and the Moluccas, the Indonesian government established baselines that in effect isolate the exclave of Oecusse, in contravention of paragraph 5 of Article 47 of UNCLOS (*the system of such baselines shall not be applied by an archipelagic State in such a manner as to cut off from the high seas or the exclusive economic zone the territorial sea of another State*).



## Defining East Timor boundaries outside of the JPDA

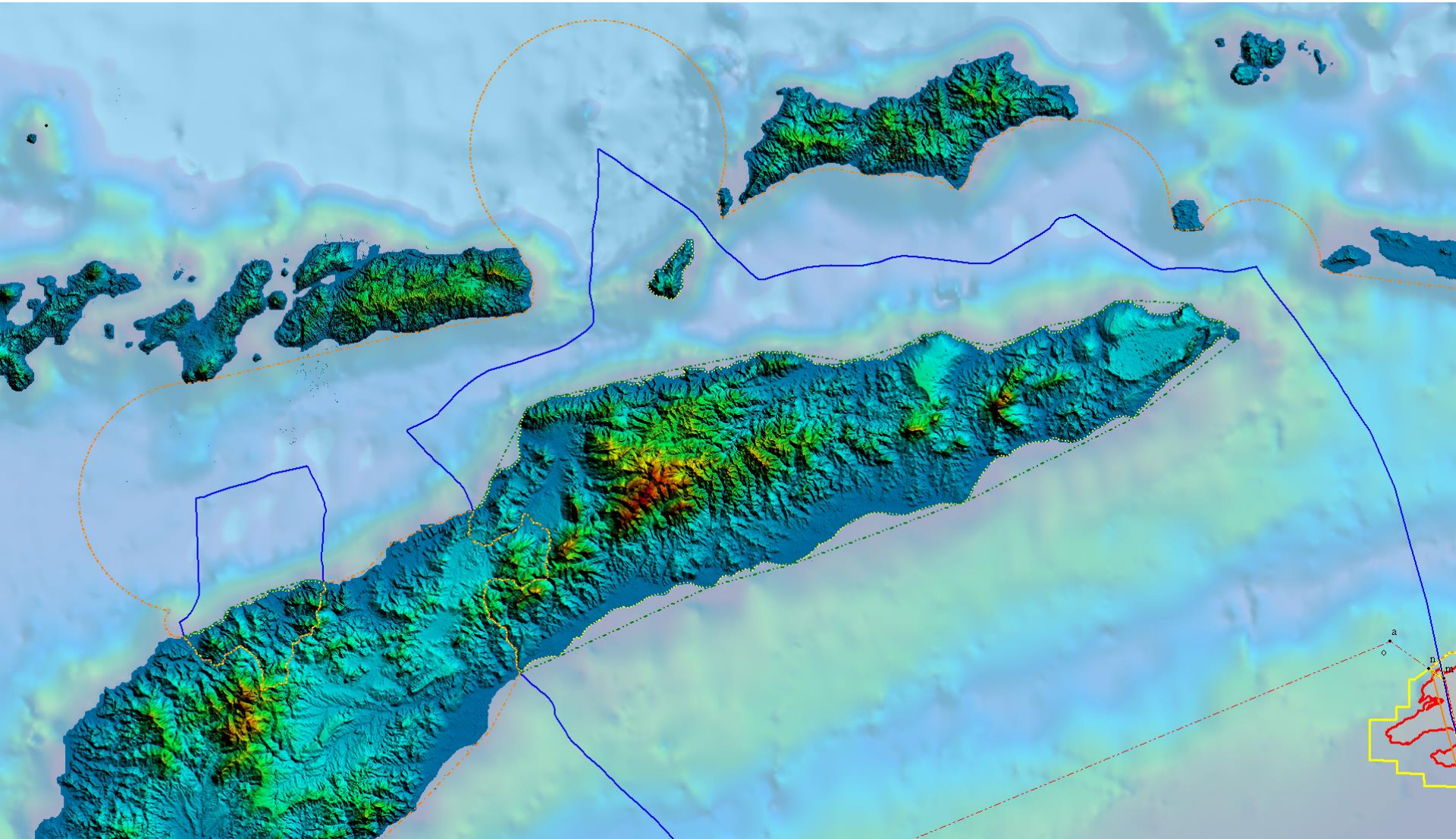
North of East Timor, most of the area within the blue line would be East Timorese Territorial Sea (12 NM), and all of it Contiguous Zone (24 NM).



In addition, the Indonesian baseline intersects the blue line of equidistance between the coastlines of East Timor and Indonesia, as depicted above. North of East Timor, most of the area within the blue line would be East Timorese territorial sea. The baseline will need to be redefined by Indonesia as a precondition to any maritime boundary negotiation. As an archipelagic nation, Indonesia considers any point inside its baseline as being within its internal waters and therefore within its sovereign national territory.



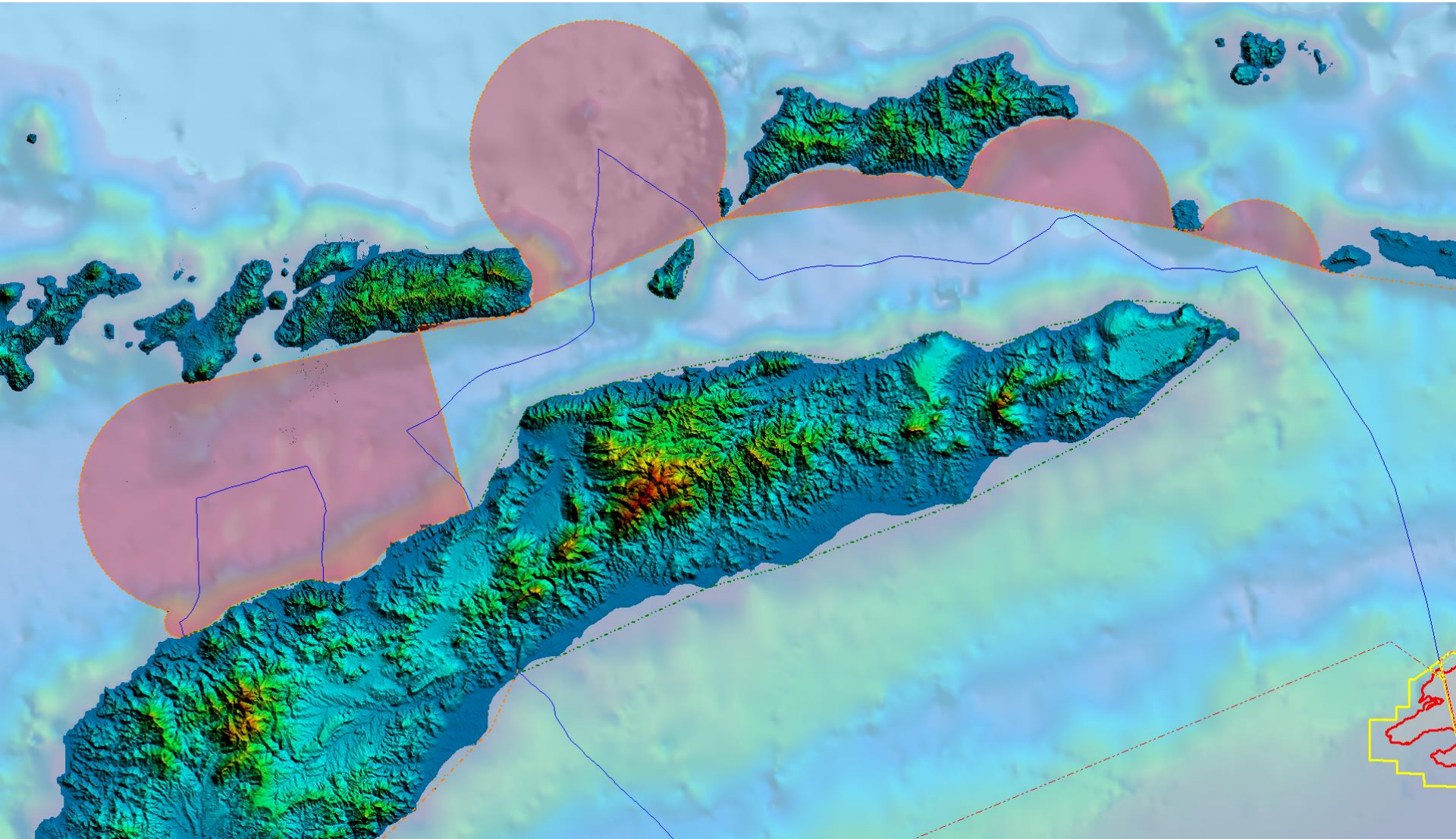
## Defining East Timor boundaries outside of the JPDA



One option for redefining the Indonesian baseline is depicted above (dashed orange line). The new baseline should leave equal space on each side of the boundary to each country and should provide access to Oecusse from East Timorese waters. The process of redefining Indonesian sovereign national territory is likely to be quite complex and time consuming but needs to be urgently undertaken.



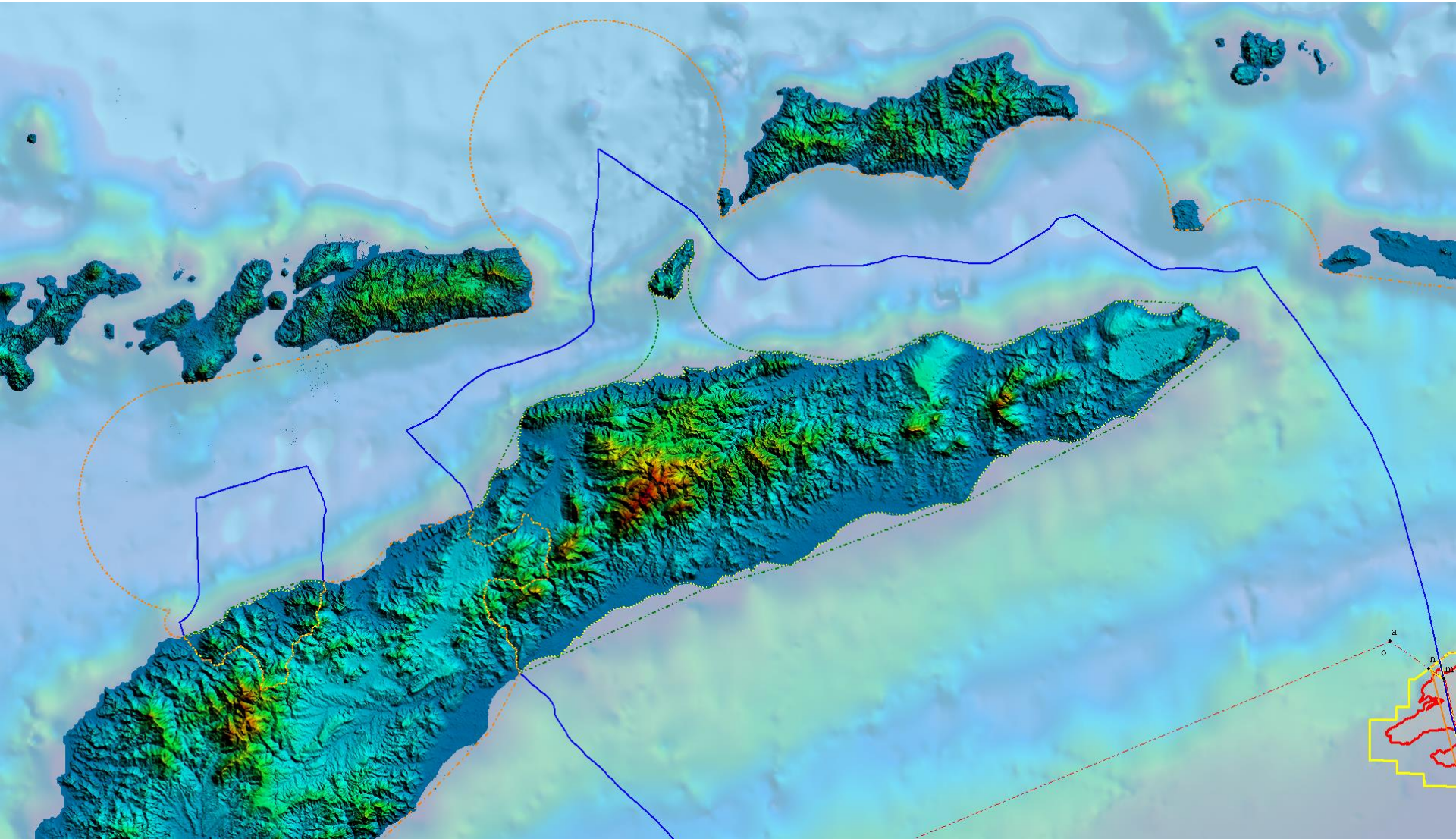
## Defining East Timor boundaries outside of the JPDA



The pink area represents internal archipelagic waters lost by Indonesia in the process of redefining her baselines. Its surface area is 18,250 sq. km. Length of affected baseline: 750 km.



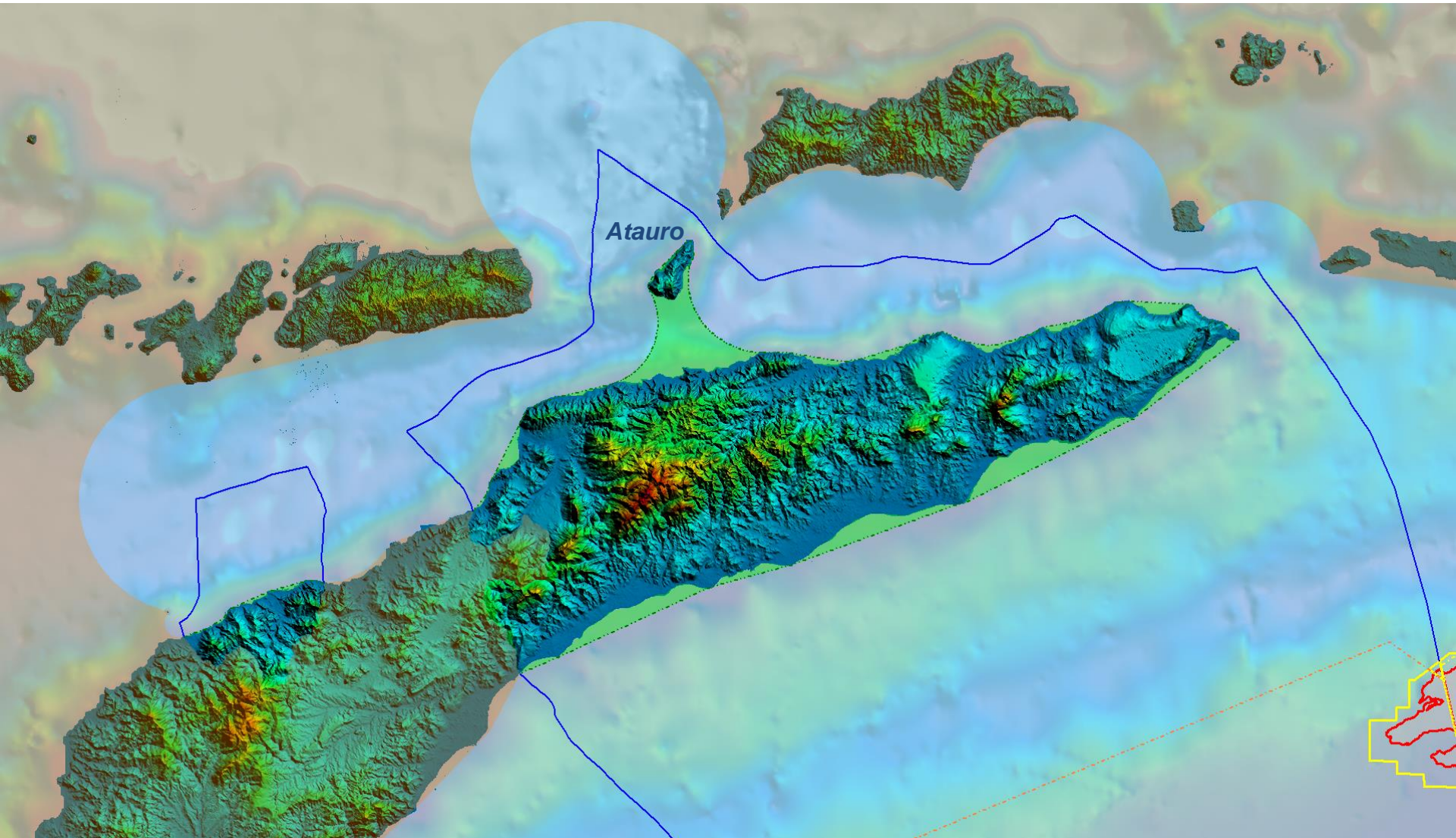
## Defining East Timor boundaries outside of the JPDA



Tentative baselines for East Timor are depicted above (dashed green lines). The blue line represents equidistance between coastlines as well as between revised baselines drawn in such a way as not to affect geographic equidistance. It is suggested that equidistance between the coastlines is a more equitable method for determining the boundaries.



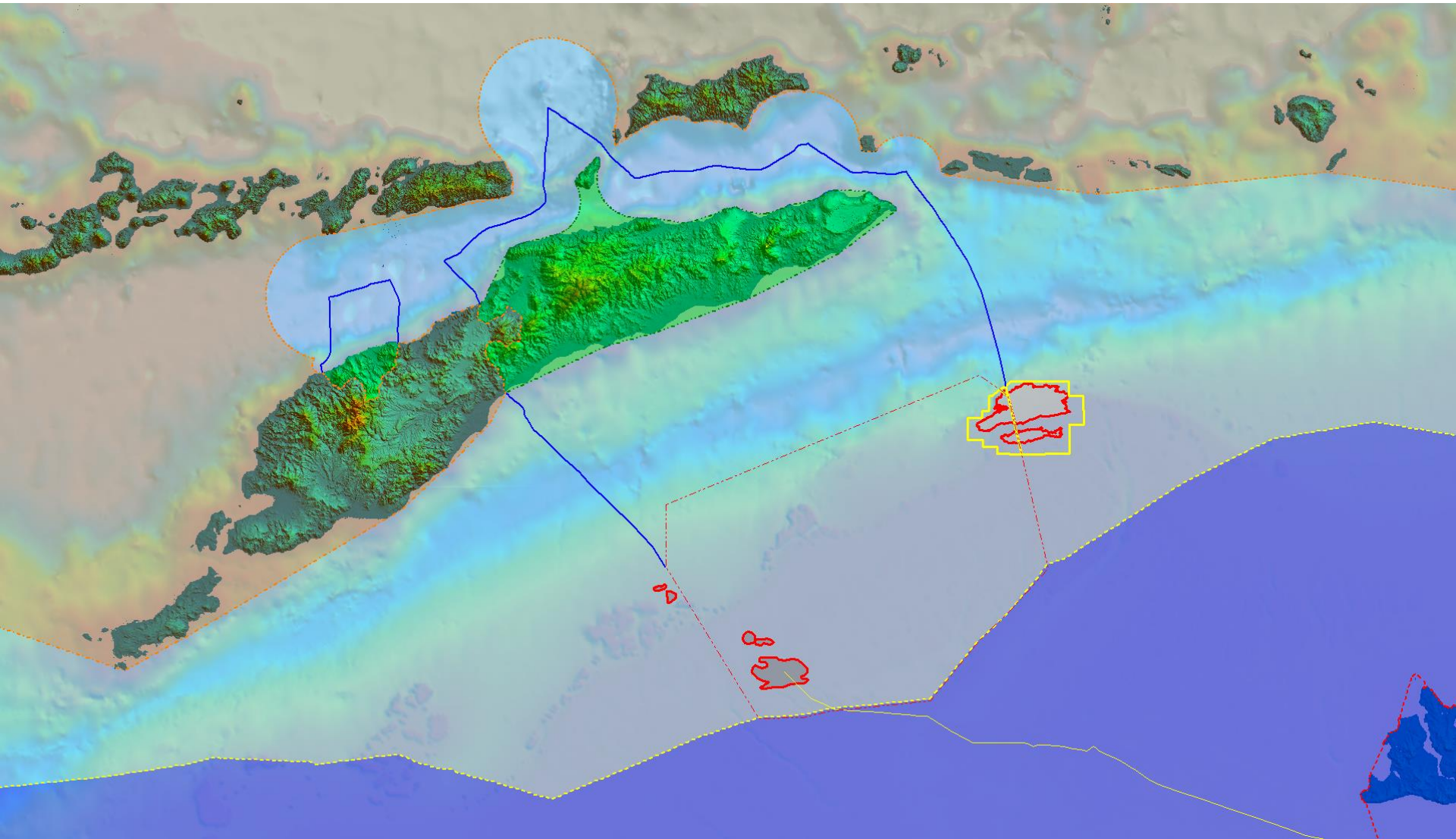
## Defining East Timor boundaries outside of the JPDA

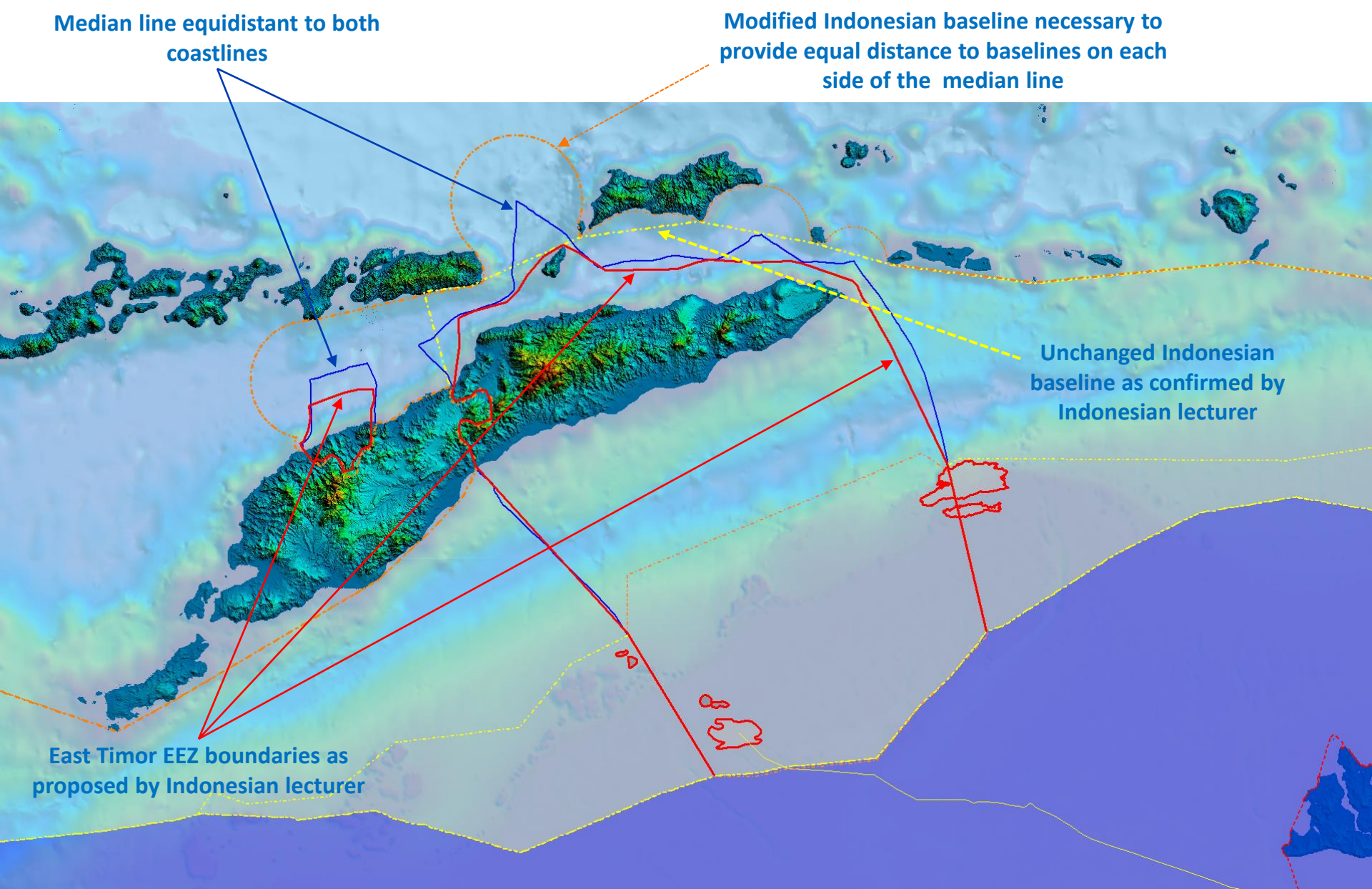


To mirror Indonesia's status as an archipelagic state, East Timor has the option to request from UNCLOS similar status, and claim as sovereign internal waters part of the channel separating the main island from the island of Atauro. This expanse of sovereign internal waters south of Atauro would not affect the equidistance boundary between Indonesia and East Timor. The proposed 1,905 sq. km revised East Timorese sovereign internal archipelagic waters are highlighted in green, the Indonesian in orange.



## The proposed set of boundaries in and outside the JPDA



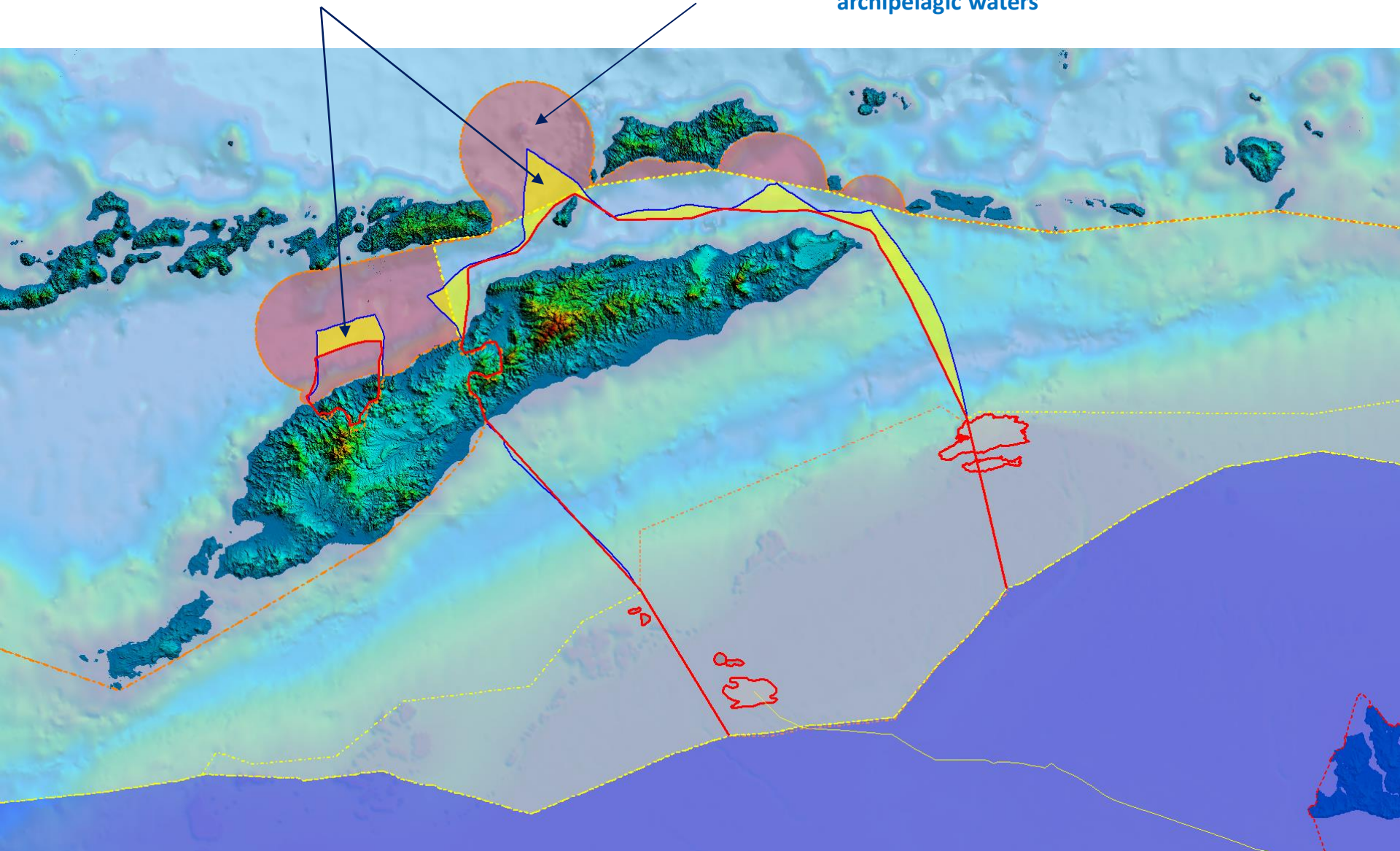


However, the East Timorese EEZ proposed by an Indonesian lecturer on Feb. 15, 2016 at a conference held at Monash University in Melbourne, is significantly contracted - by as much as 5,000 sq. km, or 6.5% of East Timor's total EEZ area - when compared with that defined by true lines of equidistance between coastlines. It also seems, from the lecturer's remarks, that Indonesia is not prepared to alter her baseline, which in effect isolates the exclave of Oecusse, in contravention of Article 47 of UNCLOS.



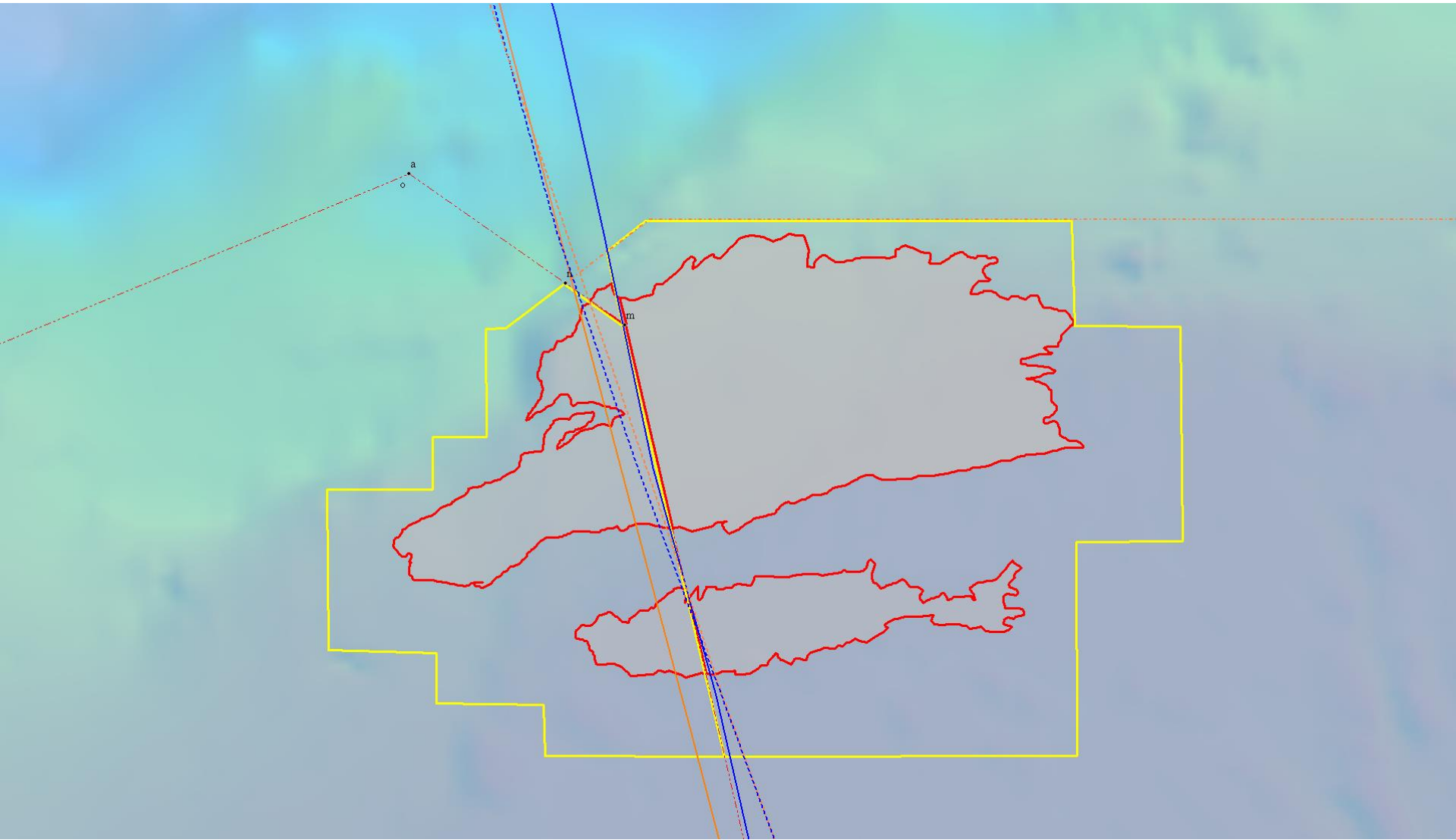
5,000 sq. km of East Timorese EEZ lost to Indonesia

18,250 sq. km incursion of Indonesian internal archipelagic waters



The 5,000 sq. km area of East Timorese EEZ lost to Indonesia is shown in yellow. Additionally, not redrawing Indonesia's baseline would result in a 18,250 sq. km incursion of Indonesian internal archipelagic waters upon areas which should be considered non-archipelagic if the geography of East Timor is to be taken into account. This incursion compares with the total 1,905 sq. km of internal archipelagic waters proposed for East Timor in page 68.

## Note about the complete set of boundaries



**Note:** the coastline equidistant option seems to place a small triangle in the north end of the fields outside the JPDA and under East Timor's exclusive jurisdiction.



## Defining maritime boundaries for East Timor: summary

1. The lateral boundaries of the JPDA almost exactly follow the lines of equidistance between coastlines, while the southern boundary is actually shifted a few miles towards Australia with respect to the line of equidistance between the 12 nautical mile territorial limits
2. In defining its EEZ East Timor would be better served overall by a negotiating position which adopts coastlines rather than baselines to inform equidistance calculations
3. Indonesia must redefine its baselines as a precondition to any maritime boundary negotiation with East Timor
4. Seeking to minimize the influence of the low population islands of Jaco and Miarang is unlikely to produce any substantial advantage and could even result in net loss of maritime jurisdiction for East Timor

- 
1. History of Treaties
  2. Assessing selected boundary proposals
  3. Commentary
  4. The 2018 treaty
  5. The fundamental issue: the process for determining boundaries for East Timor
  6. **References**



## References

- a. The United Nations Convention on the Law of the Sea (UNCLOS)
- b. List of geographical coordinates of points of the Indonesian archipelagic baselines based on the government regulation of the Republic of Indonesia number 38 of 2002 as amended by the government regulation of the Republic of Indonesia number 37 of 2008
- c. Agreement between the Government of the Commonwealth of Australia and the Government of the Republic of Indonesia establishing certain Seabed Boundaries , 18 May 1971 (entry into force: 8 November 1973; registration #: 14122; registration date: 7 August 1975)
- d. Agreement between the Government of the Commonwealth of Australia and the Government of the Republic of Indonesia establishing certain sea-bed boundaries in the area of the Timor and Arafura seas, supplementary to the Agreement of 18 May 1971, 9 October 1972 (entry into force: 8 November 1973; registration #: 14123; registration date: 7 August 1975)
- e. Treaty between the Government of Australia and the Government of the Republic of Indonesia establishing an exclusive economic zone boundary and certain seabed boundaries, 14 March 1997
- f. Exchange of Notes constituting an Agreement between the Government of Australia and the Government of the Democratic Republic of East Timor concerning Arrangements for Exploration and Exploitation of Petroleum in an Area of the Timor Sea between Australia and East Timor, Dili, 20 May 2002
- g. Timor Sea Treaty, Dili, 20 May 2002 (entry into force: 2 April 2003; registration #: 40222; registration date: 19 May 2004)
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