

exploration & production



PERFURASAUN ESPLORASAUN TIMOR-LESTE

Konsulta Maksoin-lisuk (stakeholder) (Parte 2)
27 Outubru 2010

eni

PART TWO:

- Environmental studies completed by Eni

PARTE RUA:

- Estudo ambiental ne'ebé completa hosi Eni



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environmental studies/estudu ambiental sira

Review of literature and existing data

- Timor Sea climate
 - Ocean currents
 - Water temperature and salinity profiles
 - Regional marine biology
 - Protected species
 - Socio-economics (e.g. fisheries)
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Revizaun literatura nian no dados ne'ebé eziste ona

- Klima Tasi Timór nian
- Korrente Tasi-boot nian
- Temperatura bee nian no perfíl salinidade nian
- Biolojia Tasik (Marítimu) rejionál
- Espésie Protejidu sira
- Sosio-Ekonimiku (e.g. peskador sira)



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Sources of information:

- Australian government data (e.g. CSIRO, DEWHA, BoM)
 - Timor Leste data (e.g. timorNET)
 - Published scientific studies
 - Information from previous oil & gas projects
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Fonte informasaun nian:

- Dadus governu australianu nian (e.g. CSIRO, DEWHA, BoM)
- Dadus Timor-Leste nian (e.g. timorNET)
- **Estudu sientífiku ne'ebé publika ona**
- Informasaun hosi projetu petróleu & gás ida uluk nian



environmental studies/estudu ambiental sira

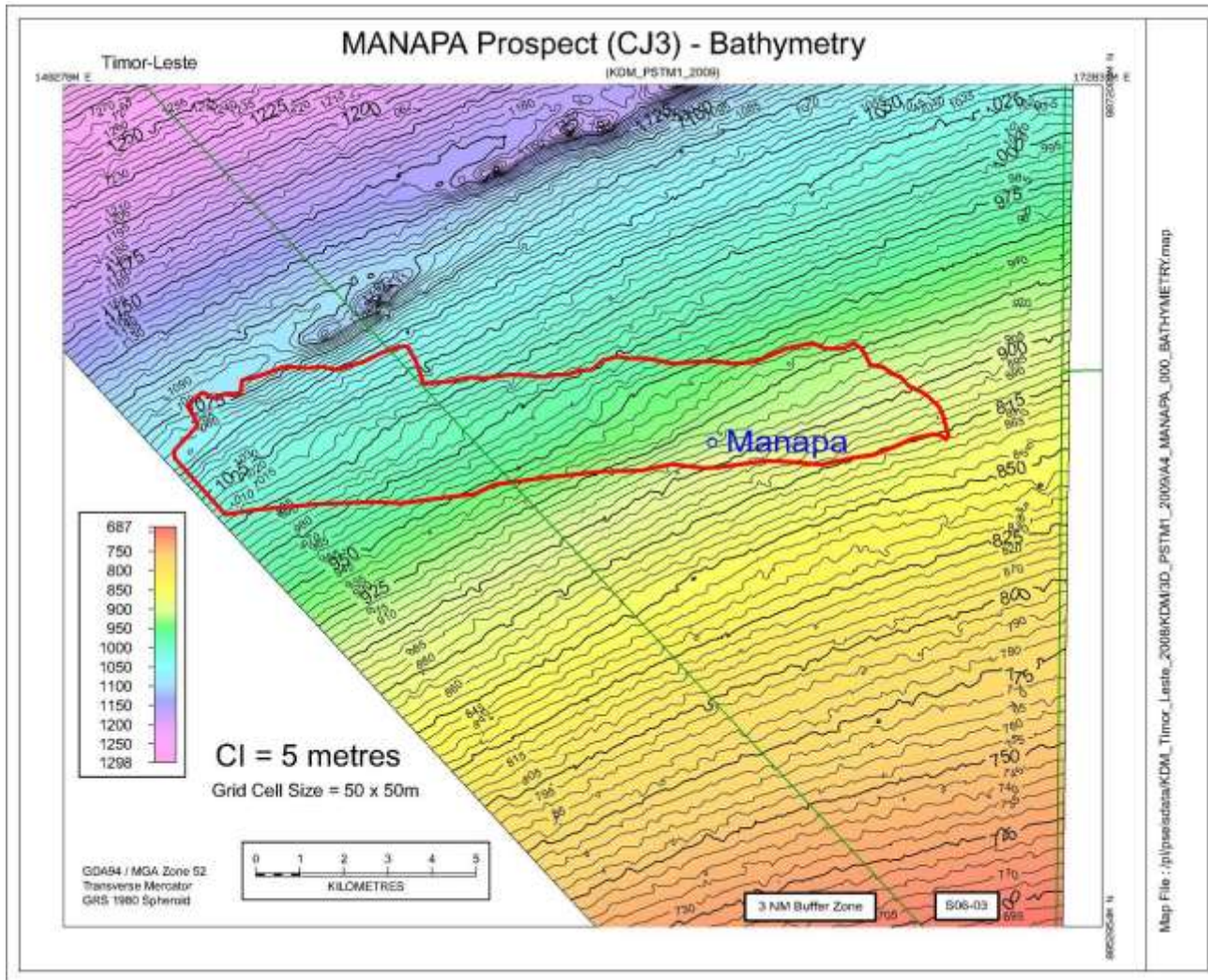
Site-specific information:

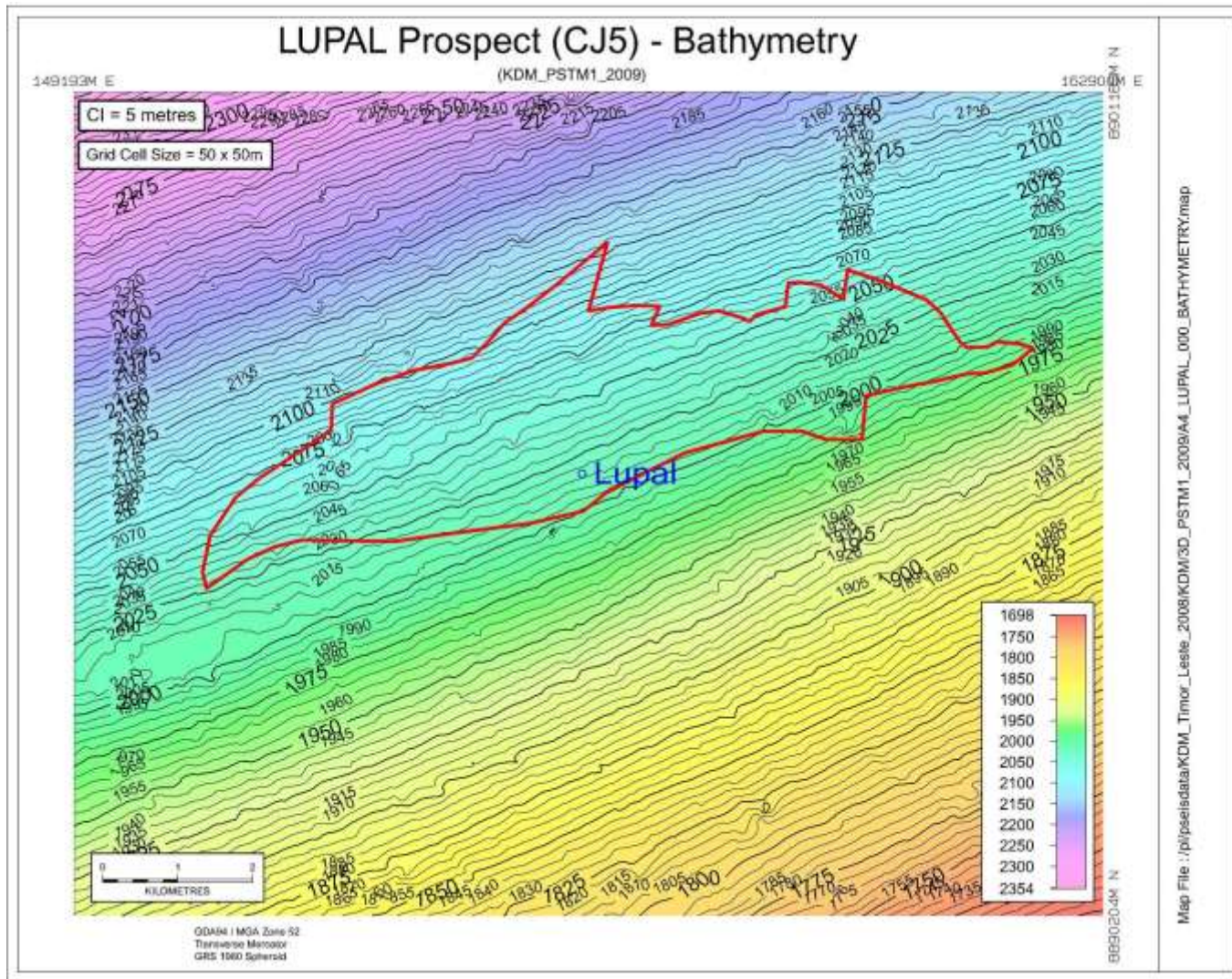
- Bathymetry survey
 - Water depth
 - Features of the seabed
 - Baseline data from Kitan field
 - Water quality
 - Sediment quality
 - Infauna
 - Plankton
 - Sampling of Kitan oil (same reservoir)
-

Informasaun espesífiku sítiu nian:

- Levantamentu batimetria
 - **Bee nia lale'an**
 - Karakterístika tasi-okos nian
- Dadus baseline nian husi Kitan nian
 - Kualidade be nian
 - Kualidade sedimen nian
 - Infauna
 - Plankton
- Amostra petróleu Kitan nian (rezervatóriu ne'ebé hanesan)







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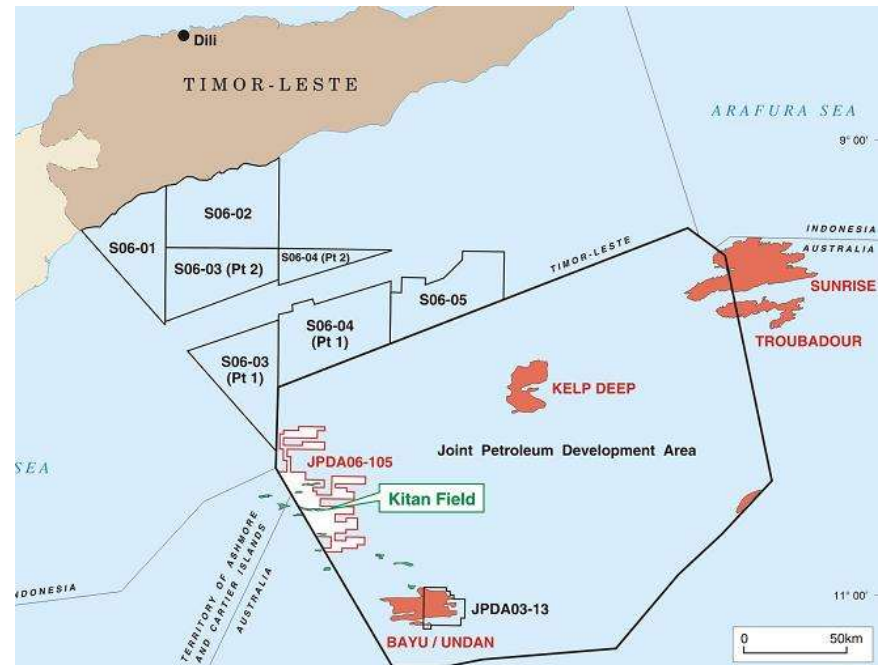
environmental studies/estudu ambiental sira

■ Baseline data:

- 33 sampling sites
- 30-60 km from Manapa
- Water depth 270-490 m
- Water quality consistent across all sites
- Sediments free of contamination
- Low numbers of animals (worms, crustaceans, molluscs)

■ Dadus Baseline:

- Fatin sira dadus nian hamutuk 33
- 30-60 hosi Manapa
- **Be'e klean 270-490 m**
- **Konsistensia kualidade be'e liu fatin sira hotu**
- Laiha rai rahun hosi kontaminasaun
- Numeru animal sira oituan (worms, crustaceans, molluscs)



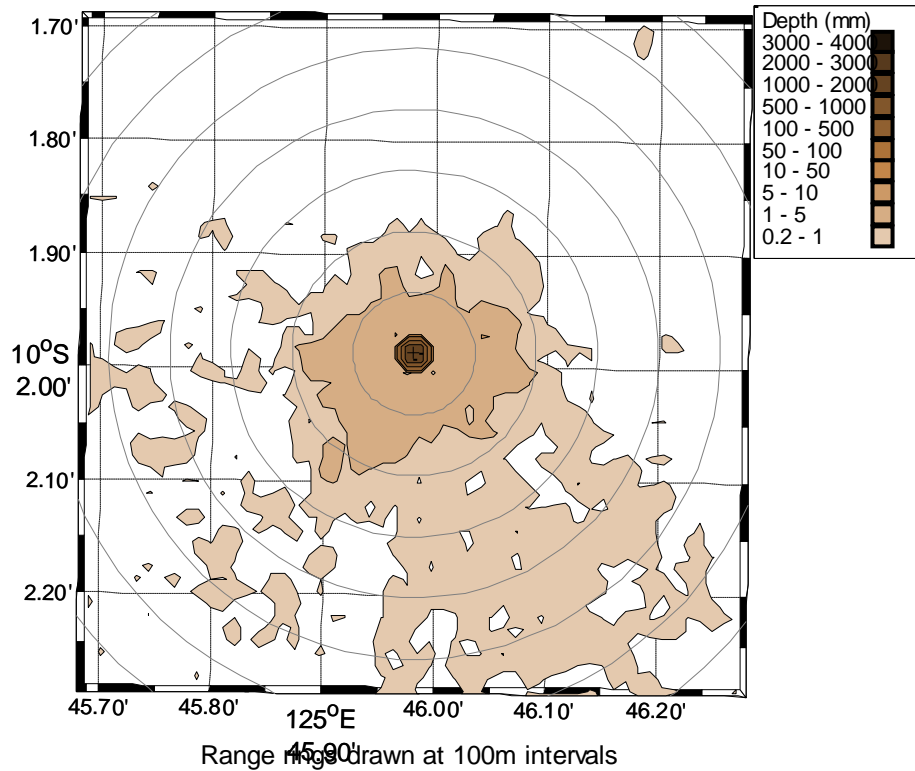
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- Computer-based modelling – Cova well location
 - Drilling discharges (drill cuttings)
 - Accidental oil spills
 - Each model simulates:
 - Currents and winds of the Timor Sea
 - Behaviour of the discharge (e.g. settling of cuttings, evaporation of oil)
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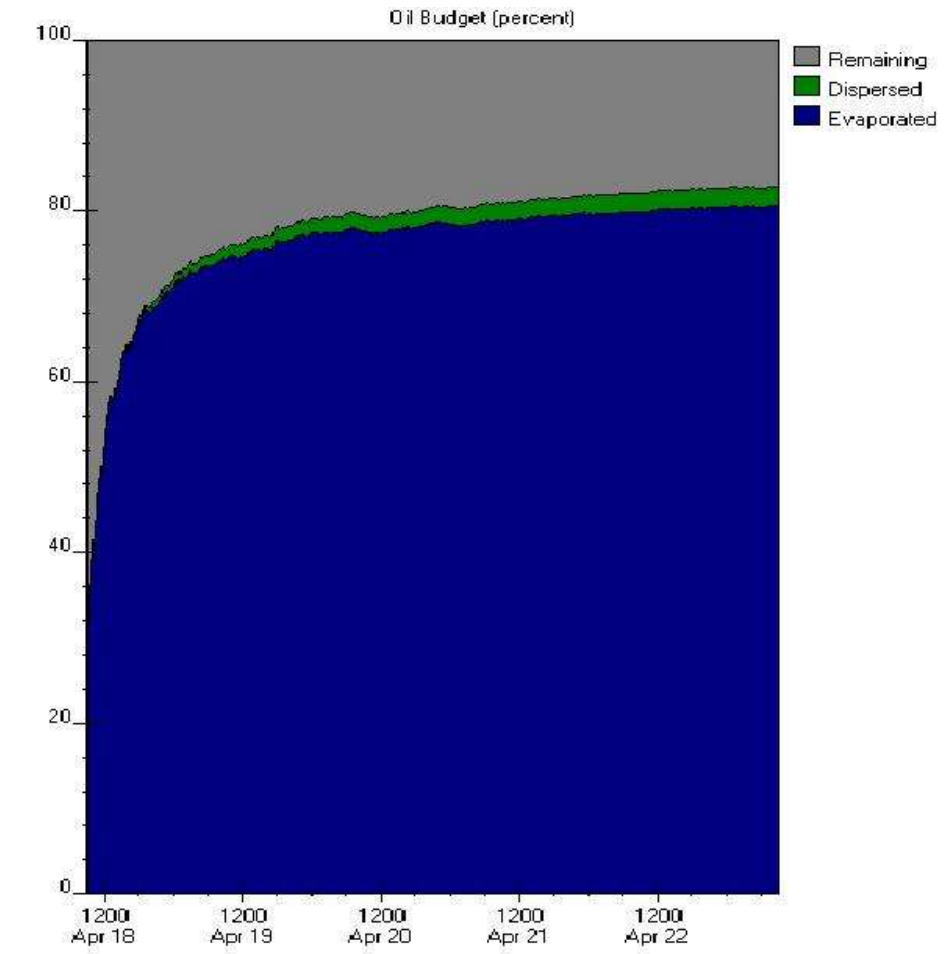
- **Modelu ne'ebé bazeia ba komputadór** – fatin posu Cova nian
 - Sasaoek perfurasaun nian (perfurasaun nia eskavasaun)
 - Fafakar petróleu asidentál
- Modelu ida-idak hakfudik/finje:
 - Korrente no anin Tasi Timór nian
 - Hahalok sasoek nian (ez. Klarifikasaun eskavasaun, evaporasaun petróleu)





- Drill cuttings are predicted to drift up to 700 m from the *Saipem 10000*, and settle in a thin layer on the seabed (<1 mm)
- Perfurasaun nia eskavasaun ne'e prevee atu butuk hamutuk to'o 700 m hosi *Saipem 10000*, no akomoda iha dalas mihis iha tasi-okos nian (<1 mm)

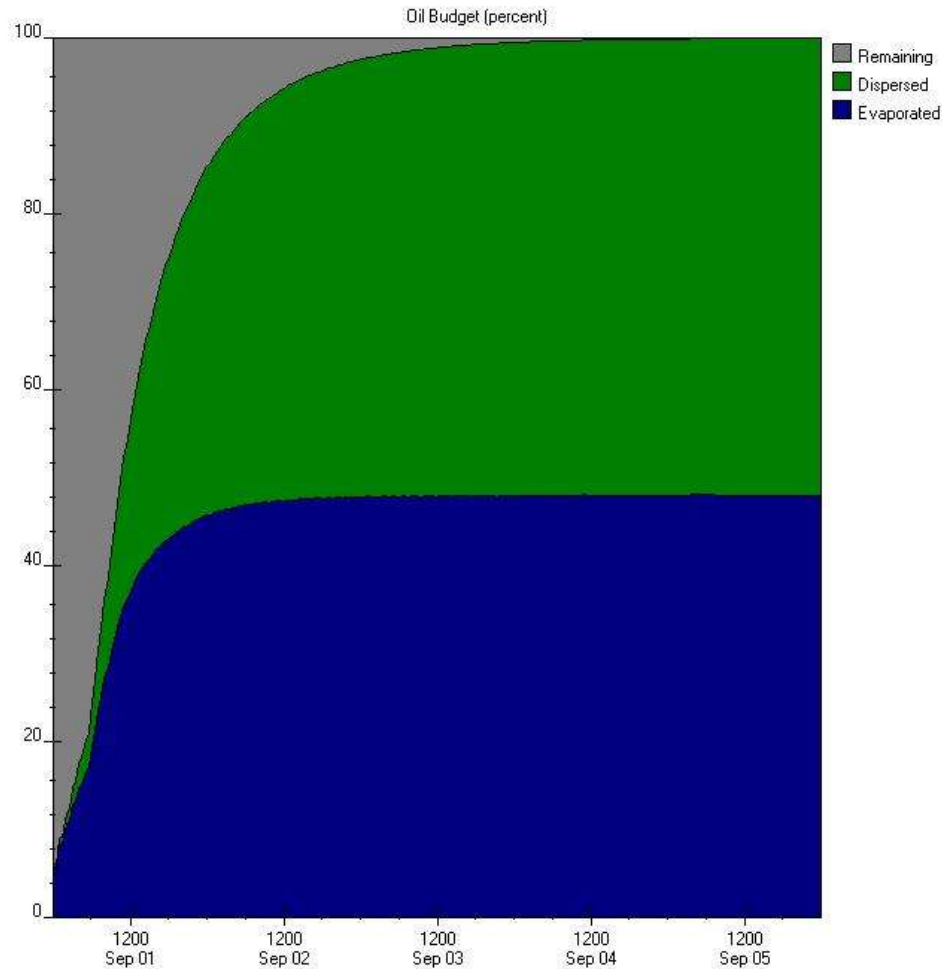




- Oil is expected to be similar to Kitan oil
- Kitan oil evaporates quickly, with 70–75% gone in 48 hours

- Petróleu nian ne'e hein** atu hanesan ho petróleu Kitan nian
- Petróleu Kitan evapora ho lais, ho 70–75% lakon iha oras 48

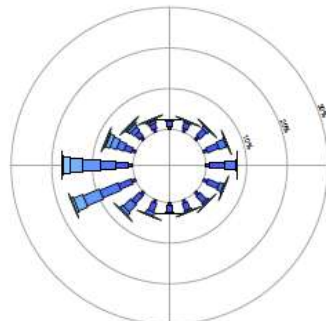




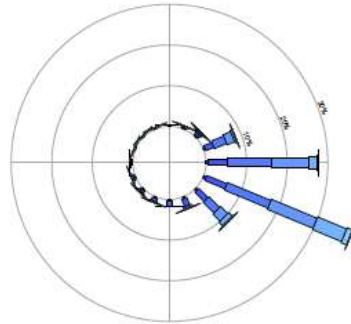
- Diesel is a light, persistent oil
 - 50% evaporates in the first 24 hrs. The other 50% disperses into the water within 72 hours
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- **Gazóleu ne'e nu'udar**
Petróleu ida ne'ebé kmaan, persistente
 - 50% evapora iha oras 24 dahuluk. 50% seluk lakon ba iha oras 72 nia laran



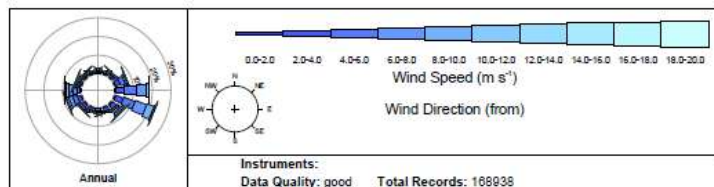
Combined Seasonal
00:00 01 July 1997 to 23:00 30 June 2007



Summer
(Oct Nov Dec Jan Feb Mar)



Winter
(Apr May Jun Jul Aug Sep)



Oil spill modelling

- Summer: westerly winds most common
- Winter: easterly winds most common

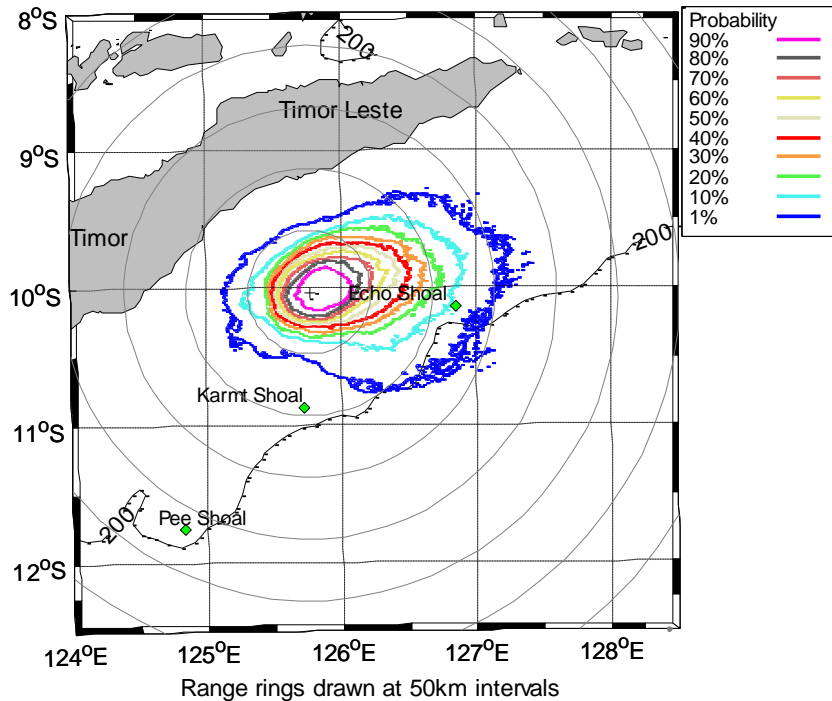
Modelu Fafakar petróleu nian

- Invernu: anin loromonu mak domina
- Anin bailoron: anin lorosa'e mak domina



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Well blowout (8 weeks):

- In summer, no contact with the coast is predicted
- The slick would stay in the Timor Sea, and evaporate into the air or disperse into the water.

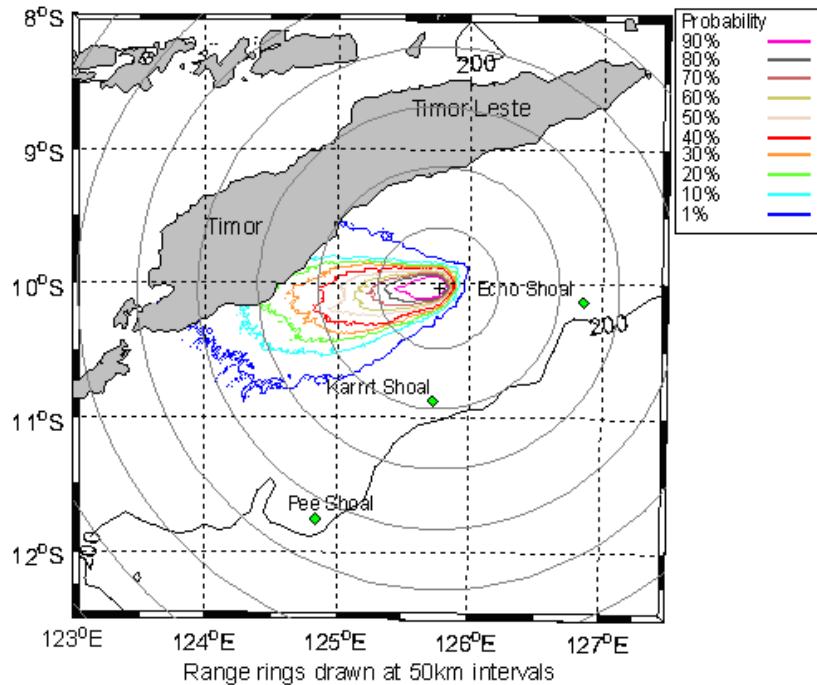
Posu ne'ebe rebenta (Semana 8):

- Iha tempu invernu, sei laiha kontaktu ho tasi ibun nebe bele sasi'ik
- Rai rahun sira sei hela iha tasi Timor no sei evapura ba iha a'ar ou dispersa iha be laran



Well blowout (8 weeks):

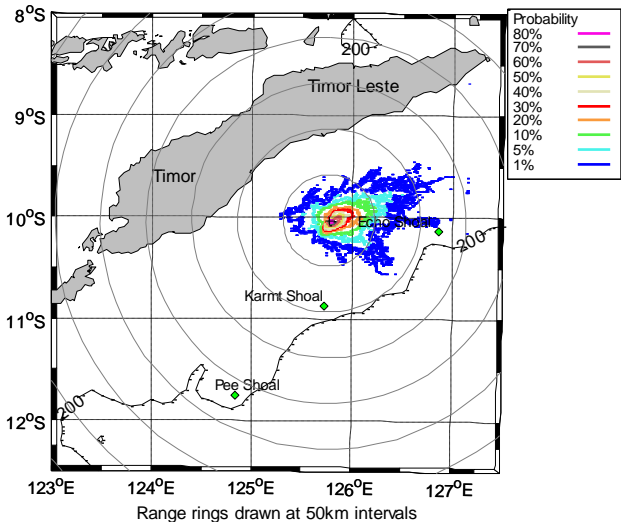
- In winter, there is 20–30% chance of reaching the West Timor coast
- Minimum time: 2.5 days
- Volume: 20% of total spill (80% evaporated).



Rebenta Posu (Semana 8):

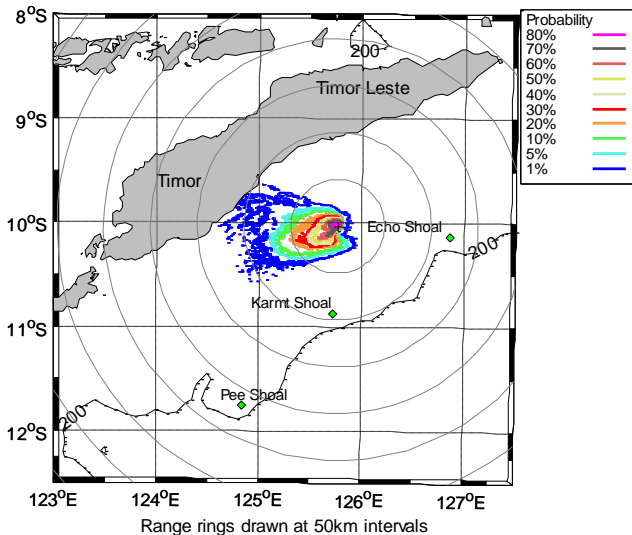
- Iha tempu invernu, iha 20-30% tempu atu hakbesik ba kosta oeste Timor nian
- Tempu minimu: lora 2.5
- Volume: 20% hosi total nakfera (80% evaporadu)





Diesel spill (80 m³):

- In summer, no contact with the coast is predicted
- In winter, the chance of reaching the coast is 1% (very low)



Fafakar Gazóleu (80 m³):

- Iha tempu verao, sei laiha kontaktu ho tasi ibun nebe bele **sasi'ik**
- Iha tempu invernu, possibilidade atu to'o tasi ibun 1% (ki'ik liu)

