

## Appendix 1. Supplementary information.

**Table A1.1:** Coded data from Incident at sea database.

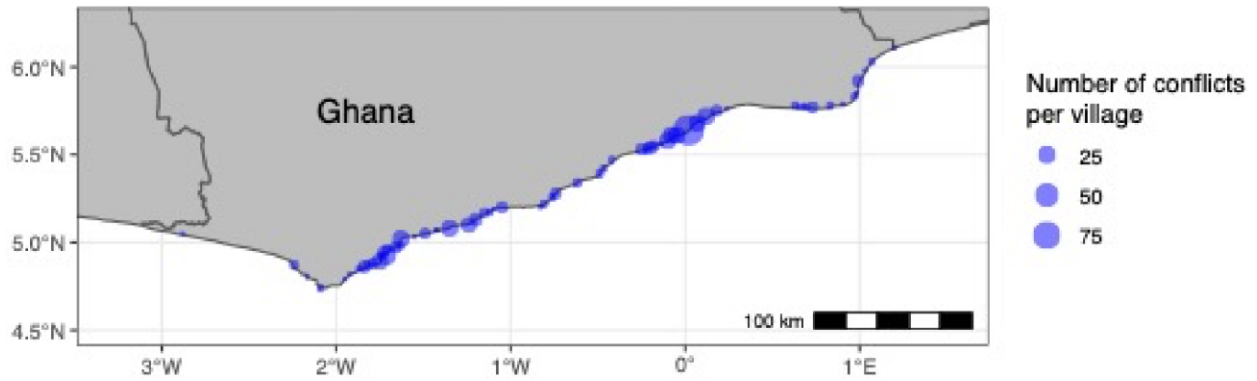
Incident at Sea Database		
Field	Range	Notes
Conflict Code	TA/TM + numerical	TA indicates records found in Takoradi, TM indicates records found in Tema, and numerical is arbitrary unique ID
Date	1985-2014	Dates with limited resolution (e.g. only month or year) were only included in analyses of available information
Time	00:00-23:00	Transformed to 24-hour clock time
Depth	10m-91m	Transformed to meters from abesem, feet, and fathoms
Incident location	<ol style="list-style-type: none"> <li>1. Aboadze</li> <li>2. Abuesi</li> <li>3. Accra</li> <li>4. Ada</li> <li>5. Adina</li> <li>6. Adjoa</li> <li>7. Aflao</li> <li>8. Ahwiam</li> <li>9. Ampatano</li> <li>10. Ampenyi</li> <li>11. Anloga</li> <li>12. Anomabo</li> <li>13. Apam</li> <li>14. Ashamang</li> <li>15. Atiteti</li> <li>16. Atorkor</li> <li>17. Axim</li> <li>18. Azizanya</li> <li>19. Biriwa</li> <li>20. Blekusu</li> <li>21. Brenu Akyinim</li> <li>22. Butre</li> <li>23. Cape Coast</li> <li>24. Cape Three Points</li> <li>25. Chorkor</li> <li>26. Dixcove</li> <li>27. Egya</li> <li>28. Elmina</li> <li>29. Fete</li> <li>30. Funko</li> <li>31. Fuveme</li> <li>32. Half Assini</li> <li>33. Kafudzidzi</li> <li>34. Keta</li> <li>35. Komenda</li> <li>36. Korle Gonno</li> <li>37. Kpone</li> <li>38. Labadi</li> <li>39. Miamia</li> <li>40. Moree</li> <li>41. Mumford</li> <li>42. New Amanful</li> <li>43. Ngyiresia</li> <li>44. Ningo</li> <li>45. Nkotompo</li> <li>46. Nungua</li> <li>47. Nyanyano</li> <li>48. Osu</li> <li>49. Otuam</li> <li>50. Prampram</li> <li>51. Sakumono</li> <li>52. Saltpond</li> <li>53. Sarfa</li> <li>54. Sekondi</li> <li>55. Senya Beraku</li> <li>56. Shama</li> <li>57. Takoradi</li> <li>58. Tegbi</li> <li>59. Tema</li> <li>60. Teshie</li> <li>61. Volta Estuary</li> <li>62. Winneba</li> <li>63. Woe</li> </ol>	Refers to associated village waters where incident occurred

**Table A1.2:** Sample of information included in records of conflicts between small-scale and industrial vessels in Ghana, as documented in reports.

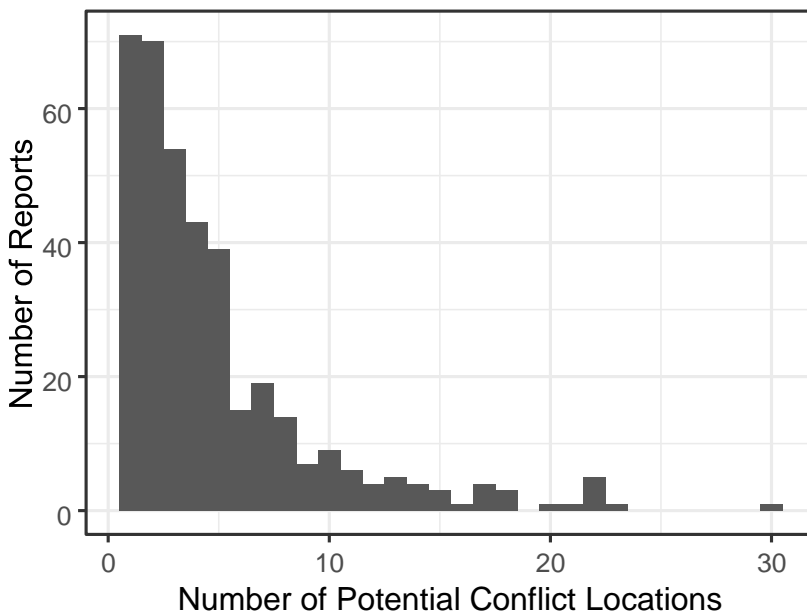
Case ID	Depth	Village Associated Waters	Other info
TA005	N/A	N/A	06/16/2007; "settled amicably"
TA019	16 fathoms	Ampatano	12/05/1994; damaged set net
TA143	14.5 fathoms	Aboadze	2/13/1999; damaged set net; "After casting our net we sighted a boat from East towards our net as Southwest. We have 8 markers on the net. All indications made to the boat to change her course failed. By then our second canoe was at where they were passing and they also told them that there is a net there so they should return but they failed and rather started throwing crabs at them. They run through the net and went away without minding us. After hauling our net we went home."
TM050	27 feet	Apam	12/19/2009; [vessel name] compensated the fishermen; damaged set net; Estimated costs GH 485.00
TM269	7.5 fathoms	Nungua	09/27/2000; 6:00:00 AM; damaged drift gillnet; "we made an attempt to chase the boat with paddles but since it could not yield any result we decided to come ashore and inform the chief fisherman"
TM728	N/A	N/A	03/20/1997; Estimated damages GH 3,662,530.00

**Table A1.3:** Information on the sources of data layers included in spatial analysis.

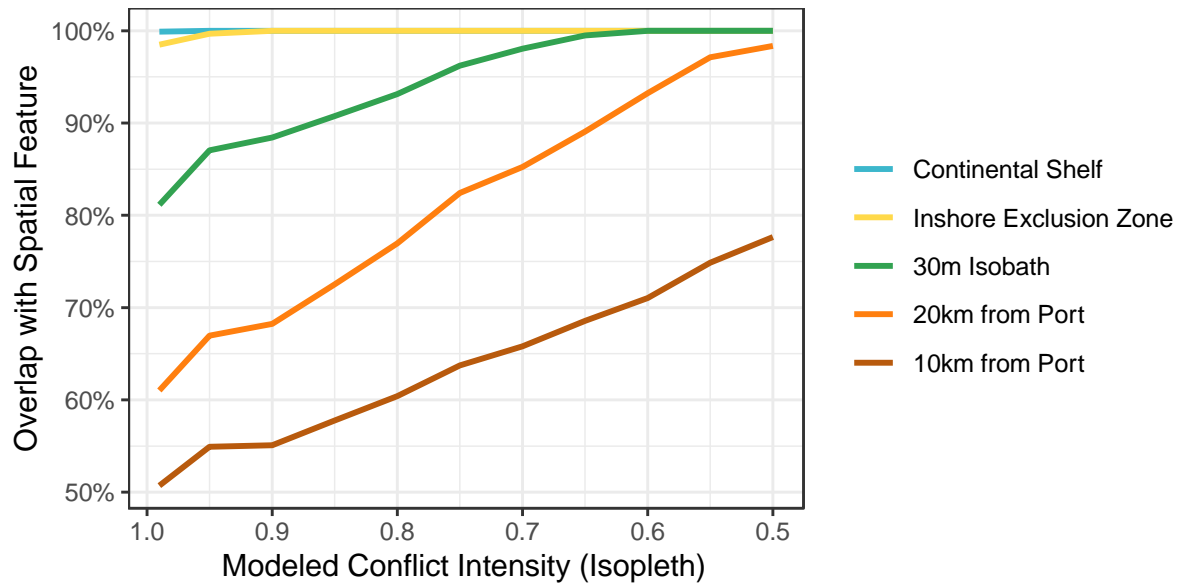
Layer	Data type	Data source
Exclusive Economic Zone (EEZ)	Shapefile	VLIZ (2014). Maritime Boundaries Geodatabase, version 8. Available online at <a href="http://www.marineregions.org/">http://www.marineregions.org/</a> . Consulted on 2016-05-25.
Village locations	Shapefile	Generated from conflict at sea database and Google maps (n=102)
Village seaspaces polygons	Shapefile	Generated by calculating midpoints between villages village locations connected to a polygon buffer layer 50 nm from the coastline
Bathymetry	Raster (30-arc second grid cells)	General Bathymetric Chart of the Oceans (GEBCO)
30-meter depth contour	Line shapefile	Hen Mpoano project
Inshore exclusion zone (IEZ)	Shapefile	Generated by determining the areas within Ghana's exclusive economic zone (EEZ) that meet either criteria: 1) within 6 nm from shore OR 2) less than 30 m depth



**Fig. A1.1:** Map of associated Ghanaian villages in whose waters conflicts occurred. The size of the point is indicative of the number of cases that were submitted for conflicts in those villages' waters. The map includes the n=380 conflicts included in this analysis.



**Fig A1.2:** Histogram of the number of potential conflict locations for all reports (n=380). Many reported conflicts had multiple potential locations, given that spatial information was not explicit, but rather included information on nearby village and water depth.



**Figure A1.3:** Spatial patterns of conflict between small-scale and industrial fishers in Ghana. This figure illustrates the relationship of conflict intensity (as estimated by calculating the 50%-99% isopleths at intervals of 5%) with spatial features of interest (continental shelf, IEZ, isobath, and port distance). Conflict intensity decreases as the isopleth percentage increases. Overlap on the y-axis corresponds to the percentage of each predicted conflict isopleth that falls within the polygon associated with each spatial feature.