

PRESS COVERAGE OF

THE INDONESIA - U.S.A. DEEP-SEA EXPLORATION OF THE SANGIHE TALAUD REGION (INDEX - SATAL 2010)

IN THE INDONESIAN MEDIA
JUNE - AUGUST, 2010
PUBLIC AFFAIRS SECTION
U.S. EMBASSY JAKARTA,
INDONESIA



C CONTENTS

PRINT ARTICLES

1. Observing the Darkness of the Sea (Kompas)	5
2. RI - U.S. Team Discovers 52 New Marine Species (The Jakarta Post)	6
3. Potential for AIDS Cure: Found New Species in 3,500 Meter Deep Sea Waters (Tribun Manado)	8
4. NOAA Index Satal 2010 Research Expedition Ends: Found 52 New Species from Deep Sea (Manado Pos)	9
5. Deep Sea Expedition: 52 Samples of Deep Sea Species Taken (Kompas)	10
6. Ocean Research (Investor Daily)	11
7. Little Hercules Uncovers Sangihe Talaud (Koran Tempo)	12
8. Underwater Robot with Camera (Koran Tempo)	13
9. RI - U.S. Scientists Disclose Deep Sea Mystery (The Jakarta Post)	14
10. Geothermal in Undersea Volcano at Sangihe Talaud (Koran Tempo)	15
11. Okeanos Explorer (Kompas)	16
12. RI - U.S. Research (Kompas)	17
13. RI, U.S. Team Find Volcano, Sea Creatures Near Sulawesi (The Jakarta Post)	18
14. Analyzing 'Chimneys' in Indonesian Deep Ocean (Koran Jakarta)	19
15. Volcano Under North Sulawesi Waters (Seputar Indonesia)	21
16. 400 Degrees Celsius Chimney Found Underwater (Kompas)	22
17. Baruna Jaya IV Starts Index Satal 2010 (Kompas)	23
18. Undersea Volcano Possesses High Biodiversity (Kompas)	24
19. RI - U.S. Group to Explore Undersea Volcanoes (The Jakarta Post)	25
20. Forty-two Scientists Research Deep Sea in Indonesia (Kompas)	26
21. Undersea Mission To Explore Depths Off Sulawesi (Jakarta Globe)	27
22. U.S., Indonesia Explore Uncharted Deep Sea (Jakarta Globe)	28
23. U.S., Indonesia Explore Uncharted Deep Sea (The Jakarta Post)	28

ONLINE ARTICLES

1. U.S. Research Ship Enters Indonesia (ANTARA News)	30
2. U.S. Research Ship Okeanos Enters Indonesia (koranbaru.com)	31
3. Tomorrow Okeanos Explorer Enters Indonesia (Krijogja.com)	32
4. U.S. Research Ship Starts Exploration of North Sulawesi Seas (Vibiz Daily)	33
5. U.S. Research Ship Okeanos Enters Indonesia (Media Indonesia Online)	34
6. U.S.'s Okeanos Explorer Researches North Sulawesi's Coral Reef (Sulut Online)	35

C O N T E N T S

ONLINE ARTICLES

7. U.S. Ambassador Boards Okeanos Ship in North Sulawesi (ANTARA News)	36
8. U.S. Ambassador Boards Okeanos Ship in North Sulawesi (Voice of Indonesia)	37
9. U.S. Ambassador Boards U.S. Research Ship Visiting North Sulawesi (Antasari.net)	38
10. U.S. Donates \$160 Million for Education in Indonesia (ANTARA News)	39
11. Index Satal Discovers Underwater Chimney (Republika Online)	40
12. RI, U.S. Launch Deep-sea Expedition (ANTARA News)	41
13. BPPT's <i>Baruna Jaya IV</i> to Conduct Research in Sangihe-Talaud (Tribun Manado Online)	42
14. RI and U.S. Explore Indonesian Waters (Vivanews.com)	43
15. Indonesia & U.S. Launches Deep Ocean Exploration (Vibiz Daily)	44
16. RI - U.S. Expedition Finds Huge Undersea Volcano (ANTARA News)	45
17. U.S. Research Vessel Cancels Visit to Maluku (ANTARA News)	46
18. Underwater Volcano Found in Kawio Island (Okezone.com)	47
19. Underwater Volcano Found in Sulawesi Sea (Detik.com)	48
20. Giant Underwater Volcano Found Under Sulawesi Sea (Vivanews.com)	49
21. U.S. Research Vessel <i>Okeanos</i> Cancels Visit to Maluku (TV One Online)	50
22. BPPT Vessel Replaces <i>Okeanos Explorer</i> to Maluku (Tribunnews.com)	51
23. <i>Okeanos</i> Not Coming to Maluku (Kompas.com)	52
24. Active Volcano Found Under North Sulawesi Sea (Media Indonesia Online)	53
25. <i>Okeanos Explorer</i> Cancels Maluku Visit (Antasari.net)	54
26. Underwater Volcano Found In Sangihe Talaud Sea (Tempointeraktif)	55
27. Tribal Community Fear 'A Second Freeport' in Sangihe Talaud (Tempointeraktif)	56
28. Deep-Sea Images Reveal Colorful Life Off Indonesia (Kompas.com)	57
29. Volcano Discovered Under Sangihe Seas (Media Indonesia Online)	58
30. Sangihe's 4000 Meter Depth Underwater Secret (ANTARA News)	59
31. Indonesian Ship Discovers 52 Marine Species (ANTARA News)	60
32. Sangihe's Seas 4,000 Meter Underwater Secret Uncovered (Nonblok.com)	61
33. INDEX SATAL 2010 Can Be An Investment For The Nation (Antara East Java)	62
34. Fifty-two New Marine Species Found (Warta Kota Live)	63
35. RI - U.S. Expand Cooperation In Maritime Exploration Technology (TVone Online)	64
36. Exploring NOAA'S <i>Okeanos Explorer</i> (Manado Post Online)	65
37. Obama Praises <i>Okeanos'</i> Successful Mission (Berita Manado)	66
38. Up to 40 New Plant, Animal Species Discovered in Indonesian Waters (Jakarta Globe Online)	67

C ONTENTS

ONLINE ARTICLES

39. Full-colored Underwater Images of Indonesian Seas (Bisnis Indonesia Online)	68
40. INDEX-SATAL 2010 Expedition Discovers New Species In Indonesian Waters (Kompasiana)	69
41. Scientists Mesmerized by Colorful Life Under Indonesian Waters (Inilah.com)	70
42. Fifty New Species Found In Indonesian Waters (Vivanews.com)	71

TV COVERAGE

1. Ship to Shore Video Conference and Coverage of Index-Satal 2010 Expedition (MetroTV)	72
2. Index-Satal 2010 Expedition Surveys Underwater Volcano (MetroTV)	72
3. Coverage of the INDEX-SATAL 2010, Quotes from Indonesian and U.S. Officials (MetroTV)	72
4. INDEX-SATAL 2010 Expedition (MetroTV)	72

PRINT ARTICLES

TITLE : "Observing the Darkness of the Sea"
DATE : August 16, 2010
SOURCE : Kompas
PAGE : 14



SUMMARY:

Kompas carried an extensive report on the ocean exploration conducted by the *Okeanos Explorer* research vessel. The *Okeanos Explorer* was a warship, which was modified into a research and explorer vessel by the U.S. National Oceanic and Atmospheric Administration (NOAA). The exploration was jointly conducted between Indonesia and its *Baruna Jaya IV* vessel, from June 24 until Aug. 8 under the name Index Satal (Indonesian Expedition Sangihe Talaud) 2010. Head of Ocean and Fishery Research Agency (BRKP) of the Ministry of Fishery and Maritime Affairs Gelwynn Jusuf said the U.S. and Indonesian governments decided to conduct research for three years from 2010 to 2012. Jusuf said the next research location would be decided in October 2010 and will approximately move to the eastern part of Sangihe Talaud. Former Head of BRKP Indroyono Soesilo, who is now Secretary to Coordinating Minister for People's Welfare, said the finding of marine biota in Sangihe Talaud indicated that the elements can be developed for medicinal purposes. "The compounds of ocean corals contain chemical elements that can be developed as medicine in the future," Soesilo said.

Photo caption: Dave Wright, ROV Technical Lead on the *U.S. Okeanos Explorer* on Sunday, Aug. 8, explained the process of *Little Hercules*, a vehicle that records objects in the deep sea. The *Okeanos Explorer* research vessel docked at Bitung Port, North Sulawesi at the completion of the sea expedition in Sangihe Talaud Index Satal 2010.

TITLE : "RI - U.S. Team Discovers 52 New Marine Species"
DATE : August 10, 2010
SOURCE : The Jakarta Post
PAGE : 3

FULL TRANSCRIPT :

The Jakarta Post

RI - US Team Discovers 52 New Marine Species

By Gracey Wakary

Manado - Sangihe Talaud, the two-month long deep-sea exploration project led by scientists from Indonesia and the US, officially ended Monday at Bitung Port in North Sulawesi.

Gellwyn Jusuf, the Indonesian representative of the Sangihe Talaud expedition, which was also called Index Satal, said he hoped the bilateral cooperation behind the team effort could be continued.

"This is our first deep-sea research with the NOAA Okeanos and supported by every relevant agency here in Indonesia," said Jusuf, who is also head of the Maritime Research and Fisheries Agency (BRKP).

"The maritime affairs and fishery minister hopes that this cooperative effort can put Indonesian researchers on par with international researchers. We hope this cooperation can be further sustained," he added.

The 2010 Index Satal, which lasted for two months, was a bilateral Indonesian-US research expedition intended to explore the fields of maritime biology, geology, oceanography, deep sea exploration technology and maritime information technology.

The expedition was expected to advance understanding of undersea ecosystems, particularly those associated with submarine volcanoes and hydrothermal vents.

The geographical area of operation for the research expedition was entirely within the Coral Triangle Region, the global heart of shallow-water marine biodiversity.

Scientists used a remotely operated vehicle to get a glimpse of deepwater biodiversity in the waters of Sangihe-Talaud region.

At the end of the expedition, 52 new species were discovered 300-2,000 meters beneath the ocean's surface, including fish, shrimp, coral and shells.

Researchers also identified six sea mounts near North Siau Island and two sea mounts near Bunaken.

“We found the sea mounts 700-1,600 meters below the sea,” said Indonesian deep sea research team leader Sugiarta Wirasantoso.

Secretary to the coordinating public welfare minister Indroyono Soesilo said the bilateral cooperation was of great advantage to Indonesia, especially in research and development and in exploring available natural marine resources.

“The deep-sea research expedition involving the research ship Baruna Jaya and the US’ NOAA Okeanos Explorer is the Indonesian people’s investment in exploring the diverse potential of the available undersea life which could be used for the sake of humanity,” said Soesilo.

Kristen Bauer, the US Consul General in Surabaya, also attended the closing ceremonies of the expedition, which is expected to be followed by another deep sea research voyage called Index Halmahera.

TITLE : "Potential for AIDS Cure: Found New Species in 3,500 Meter Deep Sea Waters"
DATE : August 9, 2010
SOURCE : Tribun Manado
PAGE : 16

Bisa Menjadi Obat AIDS

Temukan Spesies Baru di Kedalaman 3500 Meter

BITUNG, TRIBUN - Tim peneliti Amerika Serikat dan Indonesia menemukan spesies baru terumbu karang yang hidup di kedalaman laut 3500 meter. Penemuan ini sekaligus memunculkan hipotesis adanya kandungan senyawa terumbu karang yang bisa menjadi obat AIDS, kanker, infeksi, dan sebagainya.

Sekretaris Menteri Koordinator dan Kesejahteraan Rakyat, Indroyono Soesilo mewakili Pemerintah RI, pada penutupan misi laut di Pelabuhan Samudra Bitung, Minggu (8/8), mengatakan, terumbu karang ini melakukan kemutagensis sehingga tidak memerlukan cahaya matahari tetapi menyynrat kimia dari gunung api bawah laut.

52 Spesies Biota Laut

KAPAL riset Baruna Jaya IV menemukan 52 spesies biota laut di perairan laut dalam Kepulauan Sangihe-Talaud, Sulut.
 "Spesies biota laut ditemukan di kedalaman 300 meter hingga 1.000 meter di bawah permukaan laut," kata peneliti perikanan Kapal RI Baruna Jaya IV, Iwan Eka di Bitung, kemarin.
 Spesies biota laut yang diambil dengan menggunakan "botol" berwujud katanyan adalah jenis ikan dan koral (terumbu karang), siput, dan sebagainya. Beberapa biota laut yang diangkat dan diidakan sempat untuk spesies di laboratorium biologi kapal riset Baruna Jaya IV.
 "Penemuan biota laut yang unik ditemukan di antaranya adalah koral yang dapat hidup tanpa sinar matahari dan cara memperoleh makanannya dengan kemotaxis," kata Iwan menjelaskan.
 Iwan mengatakan, penemuan 52 spesies biota laut tersebut merupakan ekspedisi ilmiah dalam rangka memajukan bidang kelautan, teknologi dan pendidikan di laut dalam di Kepulauan Sangihe-Talaud dalam misi kegiatan INDEX SATAL 2010 (Indonesia-US Expedition Sangihe-Talaud 2010).
 "Okeanos Explorer meneliti pada kedalaman lebih dari 2.000 meter, sedangkan Baruna Jaya IV pada kedalaman sampai dengan 2.000 meter," katanya. (ANI)

Story Highlights

- Peneliti AS-Indonesia Deepul Gunung Api Bawah Laut di Sangihe
- Ikan tua yang hidup di kedalaman 800 meter dan udang di kedalaman 400 meter

Lanjutnya, penemuan ini sangat penting untuk ilmu pengetahuan sehingga bisa dijadikan obat-obatan. Karena terumbu karang mempunyai senyawa yang bisa membuat DNA hidup di kedalaman 3500 meter.

"Senyawa itu akan diberikan rumusan kimianya lalu dibuat sintesisnya bisa nanti jadi penemuan obat baru. Apakah anti-AIDS, antikanker, antibiotika dan sebagainya," kata dia.

Diketahui Kapal Okeanos Explorer dari National Oceanic

Atmospheric Administration (NOAA) dan Kapal Baruna Jaya IV dari Badan Penerapan dan Pengujian Teknologi (BPPT) telah berhasil melakukan pemetaan dan observasi di laut. Penelitian laut dalam di Sangihe dan Talaud dilakukan sejak 24 Juni hingga 7 Agustus 2010.

"Baruna Jaya IV dan Kapal Okeanos Explorer menorekkan gunung api bawah laut dan juga spesies terumbu karang yang hidup di kedalaman 3500 meter," katanya.

Banyaknya penemuan yang bermanfaat ini, kata Indroyono, maka ke depannya bagi Indonesia diperlukan pengembangan sumber daya manusia. Karena NOAA dan Indonesia telah bekerjasama sangat lama tidak hanya melakukan penelitian laut dalam tetapi juga pemulih bencana tsunami di Selat Makassar dan Samudra Hindia.

Lalu pengolahannya dilakukan ahli dari 100 universitas di AS. Sehingga adanya kerja sama ini maka diharapkan ke depannya SDM dapat juga mengolah hasil temuan tersebut.
 "Penelitian di laut dalam adalah investasi bangsa Indonesia ke depan dalam menggali po-

tensi keragaman biota dan untuk mengetahui potensi kandungan biota laut yang dapat dikembangkan untuk pangan dan obat-obatan bagi masyarakat Indonesia dan dunia," jelas Indroyono.

Indonesia Explorer (Indes) Sangihe Talaud (Satal) 2010 mencakup beberapa aspek penelitian dan pemetaan teknologi dalam bidang biologi kelautan, geologi, oseanografi, teknologi eksplorasi laut dalam dan teknologi informasi kelautan.

Pada misi ini pula, Kapal Baruna Jaya IV mengambil sampel biota laut yang hidup di laut dalam. Seperti udang, ikan laut dalam, dan beberapa biota laut lainnya seperti ikan biota laut dalam yang hidup di kedalaman 800 meter, udang yang hidup di kedalaman 400 meter. Meski begitu menurut Iwan Eka, peneliti dari Kapal Baruna Jaya IV hingga saat ini belum diketahui mereka makan apa, bagaimana dia bertahan hidup dan lain-lain.

Sehingga nantinya, dibutuhkan penelitian yang lebih dalam dan memfokuskan sampel yang banyak. Biota laut ini pun belum diketahui apakah layak dikonsumsi atau tidak.
 "Saat ini baru ada tiga ikan yang dapat dikonsumsi dan saat ini ada dua sampelnya yaitu Chimera dan Chimera Platana dan Berychius Bery Platana. Mereka dimakan lebih gurih dari pada ikan yang lain," jelasnya. (ANI)



ARMADA PENELITIAN - Kapal Okeanos Explorer dari National Oceanic Atmospheric Administration (NOAA), armada yang mengangkut peneliti asal Amerika Serikat sedang lambat di Pelabuhan Samudra Bitung sebelum bertolak ke Sangihe dan Talaud untuk penelitian pada tanggal 23 Juni. Observasi yang dilakukan NOAA berhasil menemukan kehidupan bawah laut pada kedalaman hingga 3500 meter.

SUMMARY:

Secretary of Coordinating Minister for People's Welfare Indroyono indicated that the findings of a new coral species in 3,500 meter deep sea waters was very important for the possible discovery of new medicine for AIDS, cancer, and other diseases. Indroyono stated this at the closing ceremony of Index Satal 2010 on Sunday, Aug. 8. During its joint expedition, the *Okeanos Explorer* from NOAA and the *Baruna Jaya IV* from the National Agency for Technology Analysis and Application (BPPT) succeeded in making observations and mapping the deep sea.

TITLE : "NOAA Index Satal 2010 Research Expedition Ends: Found 52 New Species from Deep Sea"

DATE : August 9, 2010

SOURCE : Manado Pos

PAGE : 1

Ekspedisi Riset NOAA Index Satal 2010 Berakhir

Temukan 52 Spesies Baru di Laut Dalam

Kolaborasi penelitian laut dalam antara pemerintah Indonesia dan Amerika Serikat telah berakhir Minggu (8/8) kemarin. Selama 46 hari penelitian, Okeanos Explorer dari National Oceanic Atmospheric Administration (NOAA) bersama Kapal RI Baruna Jaya IV menemukan banyak spesies baru di kedalaman hingga 3.500 meter bawah laut Sulawesi.

Laporan Hesty Sondakh, Bitung

WAJAH Dr Sugiarta ber-seri-seri selama acara penutupan Riset Indonesia-US Expedition Sangihe Talaud (INDEX-Satal)

2010, di Pelabuhan Bitung, kemarin. Ketua Tim Riset Indonesia ini sumringah lantaran penelitian mereka di perairan

sekitar Manado, Sitaro, Sangihe, dan Talaud berhasil temukan hal-hal yang tak dimiliki perairan lain.

"Banyak yang kita temukan dalam ekspedisi ini. Seperti spe-

Baca Temukan... Hal 11

BANYAK YANG BARU: Salah seorang peneliti Okeanos Explorer menjelaskan hasil temuan mereka kepada wartawan, di Kapal NOAA, kemarin.



TEMUKAN...

■ Sambungan dari Hal 1

sis yang hidup di kedalaman 3.500 meter. Selain itu, kita temukan banyak *seamounts* atau gunung berapi dalam laut, tapi yang aktif hanya ada dua," ujar Dr Sugiarta. Ada juga 52 spesies kemotintesis yang hidup dari mineral atau tidak dari cahaya matahari.

Riset yang dimulai sejak 24 Juni lalu itu dinamakan Indonesia-US Expedition Sangihe Talaud (INDEX-Satal) 2010. Eksplorasi yang menghasilkan pemetaan dan observasi di laut ini telah menghasilkan data secara komprehensif dari berbagai kedalaman yang diinkukan oleh kedua kapal penelitian ini. Kedua kapal ini pula bekerja saling melengkapi. Okeanos Explorer melakukan penelitian pada kedalaman lebih dari 2.000 meter dari permukaan laut sedangkan Baruna Jaya IV pada kedalaman hanya sampai dengan 2.000 meter.

Riset ini mencakup beberapa aspek penelitian dan pemanfaatan

teknologi dalam bidang biologi, kelautan, geologi, oseanografi, teknologi eksplorasi laut dalam, dan teknologi informasi kelautan. Dan beberapa hasil riset sementara dari ekspedisi ini adalah pemetaan biota, pemetaan fenomena geologi di daerah survey, penemuan basin, *trench* baru, gunung bawah laut baru (*seamounts*) sebagai gambaran topografi bawah laut dari hasil-hasil pemetaan batimetri dengan menggunakan teknologi *multibeam echo-sounder*.

Dua *seamounts* yang terdeteksi aktif itu, menurut Dr Pandu Wabuy, Kapten Kapal Baruna Jaya IV, berada di Barat Siau dengan ketinggian 1.600 meter dari permukaan laut (DPL) dan Utara Bunaken setinggi 2.300 meter DPL. "Sebenarnya ada banyak. Tapi yang terlihat aktif ada dua seamounts. Sedangkan yang 52 spesies baru yang kami temukan jenisnya antara lain ikan, udang hingga coral dan bebatuan," kata Dr Pandu, me-

ambahkan penjelasan Dr Sugiarta. Sementara, menurut Sekretaris Menkokesra Prof Dr Indroyono Soesilo, saat diwawancarai wartawan, hasil penelitian tersebut akan diteliti lebih lanjut oleh 100 universitas di Amerika. "Hasilnya di bawah 3.500 meter ada kehidupan. Di mana makhluk hidup cisitu hidup dari mineral. Dan ini bisa menjadi sumber pangan dan obat-obatan. Tapi perlu penelitian lebih lanjut," mantan Sekretaris Panitia Nasional World Ocean Conference (WOC) 2009 ini.

Wakil Pemerintah RI dalam Kerjasama Bilateral Penelitian RI-AS, Dr. Gellwyn Jusuf, Kepala Badan Riset Kelautan dan Perikanan (BRKP) menyimpulkan, kegiatan tersebut merupakan eksplorasi laut pertama yang didukung penuh oleh berbagai pihak secara inklusif untuk Indonesia. Ekspedisi penelitian ini sesuai dengan harapan Menteri Kelautan dan Perikanan RI tentang kesetaraan

para peneliti kelautan dan perikanan Indonesia bisa berdiri sejajar dengan para peneliti internasional. "Oleh sebab itu kerjasama semacam ini perlu dilanjutkan dan ditingkatkan. Saya sampaikan terimakasih sebanyak-banyaknya atas dukungan semua pihak," jelasnya.

Konsul Jendral Amerika di Surabaya Kristen F Baer dalam sambutannya menyampaikan kegembiraannya atas selesainya riset tersebut. "Saya sangat senang bisa merayakan hasil ekspedisi ini. Selamat atas keberhasilan bersama," kata Baer dengan Bahasa Indonesia yang lancar. "Kita beruntung upacara ini dilakukan di Sulu. Indah sekali. *The best country*. Semua begitu indah sekali. Hasil kerjasama kita sangat luar biasa," katanya. Menurut dia, semua dilakukan agar bumi menjadi lebih baik. "Pemerintah Amerika Serikat berharap, kerjasama ini bisa kita tingkatkan terlebih di bidang *scientist*," imbuh istri dari Tung Huynh ini. (***)

SUMMARY:

In their 46-day joint expedition, which ended on Sunday, Aug. 8, the *Okeanos Explorer* from NOAA and the *Baruna Jaya IV* from Indonesia found many new deep-sea species in North Sulawesi. Secretary of Coordinating Minister for People's Welfare Indroyono said that the findings would be researched further by 100 universities in the United States. Meanwhile, Head of Marine and Fishery Research Agency (BRKP) Gellwyn Jusuf disclosed that this was the first ocean exploration which had full support from all parties in Indonesia. Meanwhile, in her remarks U.S. Consul General in Surabaya Kristen Bauer expressed her excitement over the amazing result of the exploration and hoped to develop it further in the future.

TITLE : "Deep Sea Expedition: 52 Samples of Deep Sea Species Taken"

DATE : August 9, 2010

SOURCE : Kompas

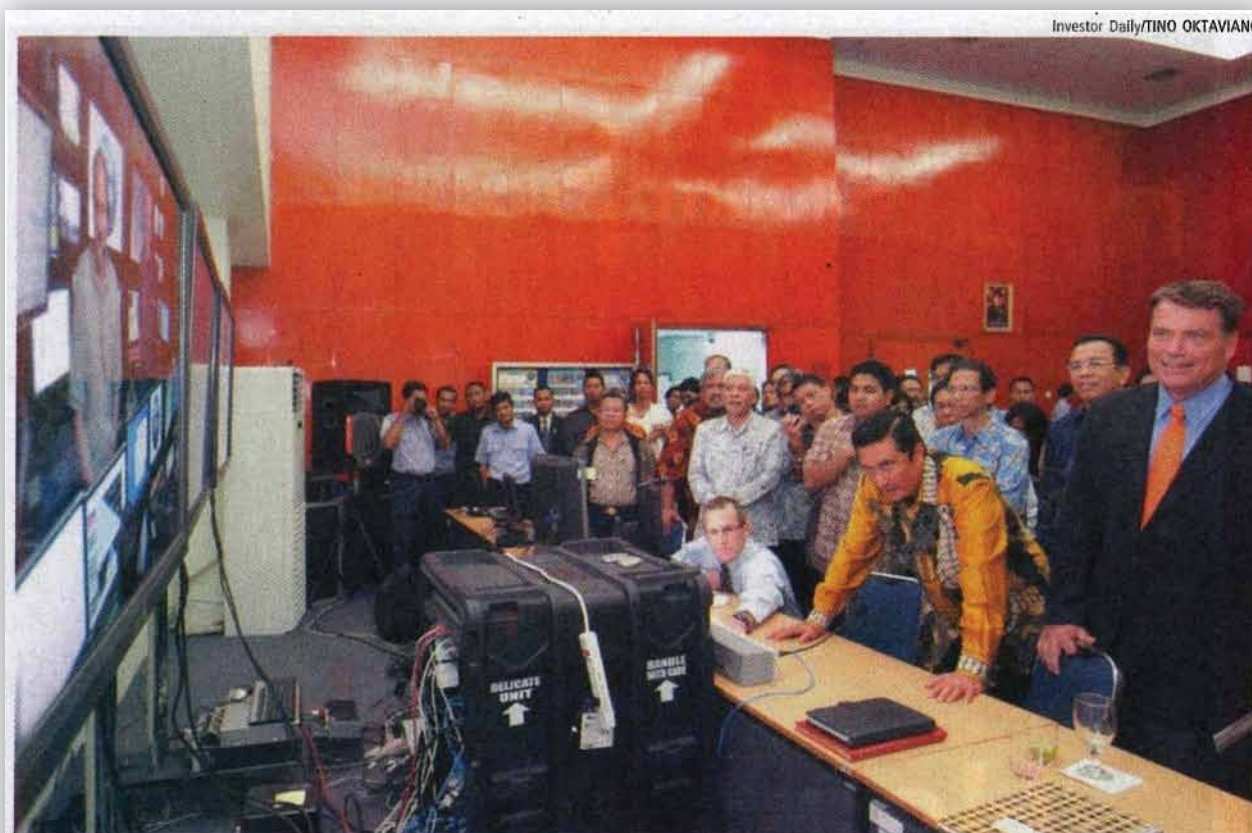
PAGE : 12



SUMMARY:

As many as 52 samples of sea species were taken by Indonesian researchers who were onboard the *Baruna Jaya IV* ship owned by the Indonesian Agency for the Assessment and Application of Technology (BPPT). Another research ship, the *Okeanos Explorer* from the United States, also took video documentation and pictures of hundreds of sea species and their habitat in waters 7,000 meters deep during the Index-Satal Expedition. "This is the result of research cooperation between Indonesia and the United States, which is still in its early stages, to explore the deep sea," said Larry Robison, the Conservation and Management Officer of the NOAA, on Sunday, Aug. 8 during the closing ceremony of the Index-Satal Expedition 2010 at the Bitung Port in North Sulawesi. Attending the closing ceremony were, among others, the U.S. Consul General Kristen Bauer, Head of BPPT Marzan Azis Iskandar, Head of Research on Fisheries and Maritime Affairs Gellwyn Yusuf and Head of Marine and Fisheries Office of North Sulawesi Province Xandramaya Lalu.

TITLE : "Ocean Research"
DATE : July 27, 2010
SOURCE : Investor Daily
PAGE : 30



Penelitian Kelautan

Menteri Kelautan dan Perikanan Fadel Muhammad (kedua dari kanan), bersama Duta Besar Amerika Serikat (AS) untuk Indonesia Cameron R Hume (kanan), berkomunikasi dengan kapal riset milik AS dari National Oceanic Atmospheric Administration (NOAA), *Okeanos Explorer*, di Kantor Badan Riset Kelautan dan Perikanan, Jakarta, Senin (26/7). Kapal NOAA *Okeanos Explorer*, sedang meneliti keadaan laut Sulut, terutama mengenai keberadaan terumbu karang di perairan laut Sangihe, Talaud dan Sitaro. Selain itu, mereka tertarik untuk meneliti keadaan gunung berapi Mahangetang. Hasil penelitian nantinya akan diberikan kepada pihak Indonesia, apa saja yang NOAA temukan di dasar laut, termasuk apabila dalam penelitian nanti terdapat kandungan minyak.

Photo caption: Ocean Research – Minister of Maritime and Fishery Affairs Fadel Muhammad (second from right) and U.S. Ambassador to Indonesia Cameron R. Hume (right) communicated with U.S. National Oceanic Atmospheric Administration (NOAA) research vessel *Okeanos Explorer* at the Office of Maritime and Fishery Research Agency (BRKP) in Jakarta Monday (7/26). The NOAA vessel *Okeanos Explorer* is conducting research in the North Sulawesi Sea on the existence of coral reefs in Sangihe Talaud and Sitaro waters. In addition, they are researching the Mahangetang volcano. The result of the research that NOAA finds will be given to Indonesia, including if the research finds a new source of oil reserves.

TITLE : "Little Hercules Uncovers Sangihe Talaud"
DATE : July 27, 2010
SOURCE : Koran Tempo
PAGE : A12

KORAN TEMPO
 SELASA, 27 JULI 2010
A12

100% KONTAK

LITTLE HERCULES MENGUAK SANGIHE TALAUD

Kapal Okeanos Explorer dan Baruna Jaya IV menjadi alat pembantu dalam misi ini. Di perairan Sangihe Talaud, sekitar 200 meter di bawah permukaan laut, kapal Okeanos Explorer dan Baruna Jaya IV pada kedalaman 6.000 meter menemukan aktivitas hidrotermal yang menghasilkan gas metana. Gas metana ini membentuk gelembung-gelembung yang bergerak ke atas. Di kedalaman 6.000 meter, kapal Okeanos Explorer dan Baruna Jaya IV menemukan aktivitas hidrotermal yang menghasilkan gas metana. Gas metana ini membentuk gelembung-gelembung yang bergerak ke atas. Di kedalaman 6.000 meter, kapal Okeanos Explorer dan Baruna Jaya IV menemukan aktivitas hidrotermal yang menghasilkan gas metana. Gas metana ini membentuk gelembung-gelembung yang bergerak ke atas.

ILMU & TEKNOLOGI
 Membuka Dunia Bawah Laut yang Tak Terlihat

Membuka dunia bawah laut yang tak terlihat adalah tugas yang berat. Untuk itu, kapal Okeanos Explorer dan Baruna Jaya IV melakukan misi ke Sangihe Talaud. Di kedalaman 6.000 meter, kapal Okeanos Explorer dan Baruna Jaya IV menemukan aktivitas hidrotermal yang menghasilkan gas metana. Gas metana ini membentuk gelembung-gelembung yang bergerak ke atas. Di kedalaman 6.000 meter, kapal Okeanos Explorer dan Baruna Jaya IV menemukan aktivitas hidrotermal yang menghasilkan gas metana. Gas metana ini membentuk gelembung-gelembung yang bergerak ke atas.

SUMMARY:

Okeanos Explorer and *Baruna Jaya IV* carried out underwater research at the depth of 6,000 meters. They found microbes similar to life on earth billions of years ago. Bubbles of gas came up at the depth of 6,000 underwater of Sangihe Talaud waters. The hydrothermal activity has formed a number of chimneys. Microorganisms move around the bubbles. All those living creatures were recorded directly by *Little Hercules*, an underwater robot or ROV belonging to the *Okeanos Explorer*. The exploration in the region is conducted from June 24 to August 10. The mission called Index-Satal 2010 is the implementation of an agreement signed by the Head of Agency for Marine and Fisheries Research, Gellwyn Jusuf, and U.S. Ambassador Cameron R Hume on May 26.

TITLE : "Underwater Robot with Camera"

DATE : July 27, 2010

SOURCE : Koran Tempo

PAGE : A12



SUMMARY:

Welcome aboard *Okeanos Explorer*, a ship equipped with state-of-the-art technology that is able to uncover the secret of underwater," said Captain Joe Pica to hundred of North Sulawesi's residents. The ship belongs to NOAA, and docked at Bitung port on Tuesday, last week. On its third floor there is a **telepresence** room that sends the result of underwater videos to Exploration Command Center (ECC) in Jakarta and Seattle, U.S.A. The room is used to control an ROV (remotely operated vehicle) that is operating undersea. The underwater robot, named **Little Hercules**, is able to dive up to depths of 7,000 meters. There are high-resolution cameras in every corner of **Little Hercules**. The cameras record miages and sound under the sea and send them to ECC.

TITLE : "RI - U.S. Scientists Disclose Deep Sea Mystery"
DATE : July 23, 2010
SOURCE : The Jakarta Post
PAGE : 5

NATIONAL

The Jakarta Post PAGE
Friday, July 23, 2010 5



By Bambang Nurbianto

Deeper explanation: US technology expert Webb Pinner tells visiting journalists about how pictures of organisms were taken from the deep sea in North Sulawesi, and shared with Exploration Command Centers in Jakarta and Washington almost in real time.

EXPEDITION

RI-US scientists disclose deep sea mystery

Bambang Nurbianto

THE JAKARTA POST/MANADO

Indonesian and American scientists have been discovering more about the Sangihe Talaud deep sea in North Sulawesi in their joint expedition with ships equipped by Remotely Operated Vehicles (ROV) to take cameras that can cover areas of 6,000 meters below sea level.

The high definition cameras taken by ROV operated from the US' Okeanos Explorer ship, have managed to record a wide variety of undiscovered critters, coral and sponges as well as organisms such as octopus, shrimps, snails, crabs, sting rays and urchins.

"The pictures of many unidentified organisms can be monitored from the Exploration Command Centers [ECC] in Jakarta and Seattle, Washington. They can be accessed through the Internet," US scientist Webb Pinner told the press, who visited the ship, owned by US National and Oceanic Atmospheric Administration, at Bitung seaport in Manado on Tuesday.

Pinner, who is responsible for Telepresence-sharing operations in real-time with those in ECCs, said that his team, consisting of 37 experts and technicians, confirmed the rich diversity of lives surrounding deep sea volcanoes in North Sulawesi waters, particularly in Sangihe Talaud.

On Tuesday, an Indonesian ship, Baruna Jaya IV, owned by Indonesia's Technology Application and Assessment Agency, with about 50 Indonesian experts and technicians on it, joined Okeanos Explorer to compete in the expedition scheduled to end on Aug 7.

The expedition was under the flag of the Indonesian-US-Deep-Sea Exploration of the Sangihe Talaud (Index Satal) 2010, which is a follow-up of an MoU signed by the US Ambassador to Indonesia Cameron R. Hume and the director general of research and the Maritime Affairs and Fisheries Ministry Gellwynn Jusuf in May.

Noorsalam Rahman Nganro, a biologist from the Bandung Institute of Technology, involved in the joint expedition, said the conventional

biological science only studies areas up to 200 meters below sea level. The ongoing research would likely contribute significantly to the progress of biological sciences, he said.

"This is a great leap in biological sciences. The finding will encourage scientists to further study those species and their ecosystems," said Noorsalam, adding the discovered species during the expedition were only a small part of the total number of deep sea lives, whose number could reach hundreds of thousands.

"We believe that so far only about 5 percent of sea resources have been explored. But the most important thing is not how many species we can find from the expedition, but how can we benefit from what we have found in the deep sea," Noorsalam told *The Jakarta Post*.

Santiago Harera, an expert with the Okeanos Explorer responsible for data collection, added that further research was needed to have a closer look at the great potential of deep-sea organisms and habitats, whose energy source came from deep-sea hydrothermal vents through chemosynthesis, instead of

the sun through photosynthesis for another organism.

"What we have now are only pictures. Studying samples of those organisms will help scientists discover more about the deep sea organism," he said.

Noorsalam said although exploitation of deep sea resources could not be implemented immediately, experts believed that those resources could be turned into resources with economic value, such as renewable energy resources, medicine and food resources.

"As we currently have experienced shortages of various resources from the land, it is time to turn to the sea, which may answer various food security challenges and energy shortages. But there is still a long way to and much work to do to discover more," he added.

Sugiarta Wirasantosa, an Indonesian coordinator of the expedition, said it was a great opportunity for Indonesian scientists to cooperate with their American counterpart, and the expedition was part of the mutual cooperation between the two parties.

TITLE : "Geothermal in Undersea Volcano at Sangihe Talaud"
DATE : July 21, 2010
SOURCE : Koran Tempo
PAGE : A12



SUMMARY:

An underwater volcano rising 3,400 meters was found at the seafloor of Sangihe Talaud islands, North Sulawesi. The discovery of the volcano was a result of joint research cooperation between the U.S. and Indonesia at the depth of 6,000 meters. "We name the underwater volcano 'Kawio Barat,'" said Sugiarta Wirasantosa, the coordinator of Indonesia's Deep Waters Research team, after holding a seminar on Indonesia-USA Expedition Sangihe Talaud 2010 in Manado yesterday. The underwater volcano contains several spots of geothermal sources, and thousands of unique species live there by eating bacteria around the volcano. Sugiarta added that the research, done for the first time, is the only research in the world using state-of-the-art technology with collaboration between the NOAA *Okeanos* ship and the *Baruna Jaya IV*, which belongs to Indonesian Maritime and Fisheries Research Agency.

TITLE : "Okeanos Explorer"
DATE : July 21, 2010
SOURCE : Kompas
PAGE : 13

Okeanos Explorer



KOMPAS/ LUCKY FRANZISKA

David Lavallo, ROV Operation Manager, menjelaskan *remotely-operated vehicle* (ROV) yang diberi nama Little Hercules di kapal Okeanos Explorer milik National Oceanic and Atmospheric Administration (NOAA) yang sandar di Pelabuhan Samudera, Bitung, Sulawesi Utara, Selasa (20/7). Kapal bekas angkatan laut ini satu-satunya kapal NOAA yang dilengkapi ROV dengan perlengkapan kamera *high definition* beresolusi tinggi. Kapal ini rencananya, Rabu (21/7), bersama kapal Baruna Jaya IV akan memetakan dasar laut dalam di perairan Sangihe-Talaud.

Photo caption: Okeanos Explorer – David Lavallo, ROV Operation Manager, explained the remotely operated vehicle (ROV) called *Little Hercules* on board *Okeanos Explorer* owned by the National Oceanic and Atmospheric Administration (NOAA) docking on Samudera Port, Bitung in North Sulawesi on Tuesday (7/20). The ex-navy ship is the only NOAA ship equipped with an ROV and high-definition cameras. The ship is scheduled to team up with the *Baruna Jaya IV* ship on Wednesday (7/21) to map the seabed near Sangihe Talaud.

TITLE : "RI - U.S. Research"

DATE : July 17, 2010

SOURCE : Kompas

PAGE : 14

Penelitian Indonesia-Amerika



AFP/NOAA OCEAN EXPLORER

National Oceanic and Atmospheric Administration (NOAA) Amerika Serikat, Kamis (15/7), memublikasikan gurita ungu yang ditemukan pada kedalaman sekitar 1.000 meter di sekitar tebing gunung bawah laut perairan Sangihe-Talaud, Sulawesi Utara. Foto diambil robot kapal selam dalam penelitian bersama ilmuwan Indonesia-Amerika di kawasan Sulawesi Utara.

Photo caption: U.S.-Indonesia Research – The National Oceanic and Atmospheric Administration (NOAA) published an illustration of a purple octopus found in the depth of 1,000 meters around the slope of underwater mountain in Sangihe Talaud waters in North Sulawesi. The picture was taken by a robotic submarine during a joint research project between Indonesian and American scientists in North Sulawesi.

TITLE : "RI, U.S. Team Find Volcano, Sea Creatures Near Sulawesi"

DATE : July, 14, 2010

SOURCE : The Jakarta Post

PAGE : 3

DEEP SEA EXPLORATION

RI, US team find volcano, sea creatures near Sulawesi

**Mustaqim Adamrah
and Mathew MacLachlan**

THE JAKARTA POST/JAKARTA

Indonesian and American scientists on a joint expedition to explore the ocean depths near the Sangihe-Talaud Islands of North Sulawesi have discovered an undersea volcano and several new deep-sea creatures.

"We've found three mount-like structures in addition to one volcano," said Sugiarta Wirasantosa, the expedition's Indonesian science team coordinator.

The volcano showed hydrothermal activity and was spurting hot water, said Sugiarta, who is also a Maritime Affairs and Fisheries Ministry official.

The three unconfirmed mount-like structures, which indicate previous geological activity, may be inactive volcanoes, Sugiarta said.

The scientists have also identified living creatures in addition to the undersea volcano, he added.

"There are also lots of living creatures, such as crustaceans, fish and coral. I think they are exotic because this is the first time I have ever seen such species," Sugiarta said.

The discoveries were all made in the ocean depths west of the Kawio Islands, Sugiarta added.

The discovery of undersea life in the area proves the presence of organisms that can live under "extreme conditions", said Anang Nugroho, the Fisheries and Maritime Affairs Ministry's head of international and institutional cooperation.

"These creatures can live under very high pressure and low temperatures and may lead to developments which can help other creatures to survive in extreme environments through genetic engineering," he said.

The expedition, which began on June 24 and is expected to continue for a month, involves 32 Indonesian scientists and 12 US scientists from different fields.

Using two vessels — the Okeanos Explorer from the US and the Ba-

runa Jaya IV from Indonesia — the scientists are trying to uncover mysteries 5,000 meters beneath the sea.

The expedition also aims to advance knowledge of tsunami formation and development through high-resolution mapping of the ocean floor, which will allow scientists to develop more accurate models to forecast earthquake-spawned waves.

The expedition will also provide new information on deep ocean volcanically-derived gasses, such as carbon dioxide, that have a role in climate, says an expedition scientist.

"It's very much like solving a puzzle," said Jim Holden, a US microbiologist from the University of Massachusetts.

Indonesian and US scientists want to inspire teachers to create a greater awareness of marine issues in students.

The US has developed an expedition-specific curriculum in both Indonesian and English to encourage more classroom discussions of the mostly-unexplored ocean depths.

TITLE : "Analyzing 'Chimneys' in Indonesian Deep Ocean"
DATE : July 13, 2010
SOURCE : Koran Jakarta
PAGE : 22

Meneliti "Cerobong Asap" di Laut Dalam Indonesia

Dalam ekspedisi Indonesia Explorer dan wilayah Sangihe Talaud 2010, kolaborasi riset ilmuwan Indonesia - Amerika menemukan banyak "cerobong asap" di dalam laut. "Cerobong asap" itu mengandung mineral-mineral berharga.

Pada Selasa, (6/7), kapal riset Barusa Jaya IV milik Badan Pengkajian dan Penerapan Teknologi (BPPT) berlabuh di Pelabuhan Tanjung Priuk, Jakarta Utara, menampung periset Sangihe Talaud, Sulawesi Utara. Kapal itu menampung 20 peneliti dari berbagai instansi di Indonesia, tiga peneliti Amerika Serikat (AS), dan 32 penumpang lainnya.

Konsep penumpang kapal tersebut bergeser untuk menjelajahi laut dalam bernama para peneliti AS yang menggunakan kapal riset Okanus Explorer milik National Oceanic and Atmospheric Administration (NOAA). Kapal Okanus Explorer tiba di perairan Indonesia sejak Minggu (20/6) dan berlayar selama Barusa Jaya IV melakukan kelengkapan penelitian mulai Rabu (14/7).

Kelengkapan penelitian dalam ekspedisi Indonesia Explorer dan wilayah Sangihe Talaud 2010 (Index Natal 2010), menunjukkan penelitian pada beberapa bidang, yaitu bidang hidrotermal, geologi laut, biologi, habitat laut dan perikanan, oseanografi hidrografi, Bura dan fauna laut dalam, serta teknologi informasi kelautan.

Sugarta Wiranastana, ketua tim peneliti Indonesia, menjelaskan ekspedisi Indonesia Explorer dan wilayah Sangihe Talaud. Para peneliti tertarik untuk mengungkap wilayah itu karena secara tektonik Sangihe Talaud berada pada arus aliran subduksi dan pertemuan jalur gempa wilayah itu dan Pasifik.

Hal lain yang menarik, perairan Sangihe Talaud merupakan wilayah pertemuan dua jalur gunung api besar di dunia. Letih dari itu, para peneliti dunia merasa penasaran karena perairan tersebut memang belum banyak dieksplorasi, terutama perairan yang terkandung di dalamnya. Bure survei akan dilakukan dari utara Manado hingga pertemuan arus Indonesia dengan Filipina.

Adapun kegiatan penelitian dipusatkan selama 30 hari, mulai 6 Juli sampai 9 Agustus 2010.

Untuk menunjang kegiatan survei tersebut, Barusa Jaya IV dilengkapi berbagai jenis peralatan. Beberapa di antaranya yaitu multibeam echosound (MBE), sidescan sonar, profiler (CTD), Seafloor 811 dan Red Sea 911 dan CTD dan Red Sea 882-21, hull mounted acoustic doppler current profiler (ADCP), profiler dan laser sonar, automatic net monitoring system (ANMS), serta kamera video laut dalam. "Seperti peralatan tersebut akan digunakan untuk melakukan riset di wilayah yang sebelumnya tidak diteliti," kata Sugarta.



MENGANDUNG MINERAL | Para ilmuwan menemukan banyak lubang hidrotermal di kedalaman laut. Pada lubang tersebut terkandung mineral-mineral yang berharga, seperti belerang, emas, perak, dan tembaga.

Apabila Barusa Jaya IV dipukul untuk mengeksplorasi perairan di sekitar Okanus Explorer bergeser ke selatan 2.500 sampai 6.000 meter. Kapal tersebut telah melakukan riset lebih dulu sejak Jumat, (23/6). Dalam ekspedisi awal, Okanus Explorer menjelajahi wilayah perairan selatan barat Pulau Kaituma, yaitu pulau terluar Indonesia yang berbatasan dengan Filipina.

Para peneliti yang termasuk ke dalam wilayah Kabupaten Kepulauan Sangihe dan terletak di Laut Talaud tersebut, para ilmuwan AS bernama tiga ilmuwan Indonesia menemukan banyak sekali "cerobong asap" (hydrothermal). "Chimney" ini ditemukan di sekitar gunung api bawah laut bernama Gunung Kawio.

Puncak gunung tersebut berada di kedalaman 1.500 meter dari permukaan laut. Gunung ini legak berdiri setinggi 3.500 meter, terbitur dari dasar laut sedalam kurang lebih 3.000 meter. "Kalau di dasar Gunung Kawio itu mirip dengan Gunung Semeru yang memiliki ketinggian sekitar 3.700 meter dari permukaan laut," papar Sugarta.

Lubang Hidrotermal
 Berdasarkan kajian NOAA, pertemuan laut terbentuk oleh dua lempeng yang menyempit dan bergerak. Sedangkan lubang-lubang hidrotermal yang terkandung di dalamnya terbentuk ketika air laut dingin menyusut memunculkan kubah Bumi melalui rekresi di dasar laut.

Takala bergerak lebih dalam memunculkan kerak air laut diproseskan oleh batuan yang



Chimney di dalam laut

terbentuk. Dengan sifatnya, suhu, belerang dan logam seperti tembaga, seng, dan besi larut dari batuan di sekitarnya kemudian masuk ke dalam cairan panas itu. Akhirnya, cairan yang kaya mineral itu terdorong ke atas dan menyempit dari bukaan di dasar laut.

Suhu permukaan cairan dapat mencapai 400 derajat Celsius dan mengandung hidrogen sulfida. Ketika cairan hidrotermal panas bertemu dengan air laut dingin, mineral di dalam cairan panas terendap. Endapan partikel ini menyebarkan cairan terlihat seperti asap sehingga disebut chimney. Ada juga yang menyebut cairan itu sebagai perok hidrogen atau putih karena mengkilapkan asap. Warna asap putih atau hitam tersebut bergantung pada jenis mineral dalam cairan.

Yudi Surachman, Direktur Pusat Teknologi Sumber Daya Mi-

neral BPPT, mengungkapkan chimney di sekitar Gunung Kawio yang diduga masih aktif ini merupakan penemuan kali pertama di Indonesia. Chimney tersebut memiliki kesamaan dengan chimney hasil penemuan para ilmuwan Jepang di perairan Negeri Sakura tersebut.

Di Jepang, kata Yudi, chimney telah teridentifikasi sejak tahun 1970-an. Saat itu merupakan penemuan kali pertama di Indonesia. Chimney tersebut memiliki kesamaan dengan chimney hasil penemuan para ilmuwan Jepang di perairan Negeri Sakura tersebut.

Di Jepang, kata Yudi, chimney telah teridentifikasi sejak tahun 1970-an. Saat itu merupakan penemuan kali pertama di Indonesia. Chimney tersebut memiliki kesamaan dengan chimney hasil penemuan para ilmuwan Jepang di perairan Negeri Sakura tersebut.

Peralatan yang digunakan Okanus Explorer untuk meneliti area dasar laut yang memiliki aliran cairan aktif dari sistem hidrotermal adalah CTD Seafloor 911, Membrane Deep Seafloor, peneliti dari NOAA, selain menggunakan



Chimney di dalam laut

salinitas dan suhu. CTD memiliki sensor untuk mengukur partikel tersuspensi dan potensial oksidasi maupun reduksi.

Sensor tersebut sangat peka dan sangat penting untuk mendeteksi semesta zat kimia dan partikel di dalam air. Hasil CTD berguna untuk menentukan arah mana saja yang potensialnya paling tinggi untuk dieksplorasi. (Dokumentasi Okanus Explorer dan Wilayah Sangihe Talaud 2010)

kapal juga dilengkapi sistem pemetaan bawah laut (bathymetry) menggunakan sonar bergeser Ekman. Alat itu mampu mengungkap daerah dasar laut yang cukup luas dan menunjukkan peta dengan resolusi tinggi. Dengan berbagai peta itu peneliti dapat mengidentifikasi setiap fitur seperti lereng gunung api laut.

penelitian lain, atau saat.

"Berkaitan data hasil ekspedisi tersebut dikirim secara langsung melalui satelit ke Kantor Balai Riset Kelautan dan Perikanan, Arco, Jakarta. Selain itu, data juga dikirim ke kantor NOAA Amerika," ujar Gebeyo Yusuf, Kepala Bi dan Riset Kelautan dan Perikanan (BRKP), Kementerian Kelautan dan Perikanan (KKP).

Untuk membayai ekspedisi tersebut, pihak AS menyuntikkan dana sebesar 7 juta dollar AS atau sekitar 6,3 miliar rupiah, sedangkan pihak Indonesia mengeluarkan biaya 1,2 miliar rupiah. "Dalam ekspedisi ini kami berharap jangan hanya beasiswa mahasiswa saja. Pasangit manfaat yang kita peroleh untuk pengembangan ilmu pengetahuan pada masa sekarang dan akan datang jauh lebih besar dari dana yang akan digunakan," pungkas Gebeyo. www.L-2

SUMMARY:

In Indonesian Exploration Sangihe Talaud (Index Satal) 2010, the joint Indonesia - U.S. exploration, the Indonesian and U.S. scientists found "chimneys" in a deep ocean, and believed that the chimneys contain valuable mineral resources. The exploration focuses on researches on hydrothermal holes, sea geology, biology, sea habitat and fishery, oceanography, hydrography, deep-sea flora and fauna, and ocean information technology. Sugiarta Wirasantosa, head of the Indonesian team of the exploration, said researchers are interested in the Sangihe Talaud area because tectonically, the area is situated in double seduction layer and is an earthquake-intersection area of the East and Pacific areas. The exploration has started since July 6 and will run until August 9, 2010. Indonesia, through the National Agency for Technology Analysis and Application (BPPT), has deployed the *Baruna Jaya IV* research vessel since July 6 to the Sangihe Talaud waters. Meanwhile, the U.S. through the National Oceanic and Atmospheric Agency (NOAA) has deployed *Okeanos Explorer* research vessel and has been in Indonesia since June 20. The two ships will meet on Wednesday (7/14).

TITLE : "Volcano Under North Sulawesi Waters"
DATE : July 13, 2010
SOURCE : Seputar Indonesia
PAGE : 16

Gunung Api di Bawah Perairan Sulut

Ekspedisi Peneliti Indonesia-AS Perkiraan Tingginya 10.000 Kaki

Sinta 7/12/10 p. 12

JAKARTA (SI)— Pekan pertama ekspedisi bersama Indonesia-Amerika Serikat di lautan dalam wilayah Sulawesi Utara (Sulut) berhasil memetakan sebuah gunung berapi bawah laut.

Penemuan gunung berapi tersebut berhasil dipetakan oleh sensor multibeam kapal penelitian *Okeanos* milik NOAA. Sementara kamera yang dikendalikan dari jarak jauh oleh kapal tersebut mengambil gambar dengan definisi tinggi kawasan Kawio Barat yang mengacu pada wilayah perairan barat Kepulauan Kawio.

Para ilmuwan memilih Kawio Barat sebagai target pertama untuk ekspedisi ini berdasarkan informasi dan data satelit yang dikumpulkan oleh sebuah tim gabungan Indonesia-Australia pada 2004 lalu. Unsur-unsur bawah laut yang bertimpah menjadi target awal untuk menyerasikan perangkap dan teknologi di dalam kapal

yang digunakan dalam pelayaran pertama ini.

Para ilmuwan ekspedisi ini berharap peta dan video yang dihasilkan membuka jalan bagi para peneliti lain untuk menindaklanjuti temuan awal yang mereka peroleh. Menurut Jim Holden, ketua ilmuwan AS untuk misi awal ekspedisi ini berangkat, gunung tersebut terletak di kedalaman lebih dari 10.000 kaki.

"Ini adalah sebuah gunung berapi yang besar dan lebih tinggi daripada semua gunung di Indonesia kecuali tiga atau empat lainnya. Dan menjulang lebih dari 10.000 kaki dari dasar laut di dalam perairan," kata Holden seperti dikutip siaran pers Kedutaan Besar AS di

Jakarta yang diterima harian *Sepatu* *Indonesia*, kemarin.

Holden merupakan ahli mikrobiologi dari University of Massachusetts di Amherst yang turut serta dalam ekspedisi dari Exploration Command Center di Jakarta. "Semakin kita mengenal unsur-unsur di bawah laut dan komunitas makhluk hidup yang menopangnya, semakin kita dapat mengelola dan melindungi lautan dan sumber daya secara lebih baik," ujarnya.

Banyak ilmuwan yang bekerja dari wilayah pesisir dengan menggunakan model eksplorasi lautan menggunakan siaran video langsung jarak jauh (telepresence). Holden dan para ilmuwan lainnya di Exploration Command Center di Jakarta dan Seattle terhubung dengan *Okeanos Explorer* secara langsung melalui satelit dan jalur internet berkecepatan tinggi. Mereka dapat terhubung dengan awak kapal untuk memantau jejak

nya ekspedisi.

Para ilmuwan Indonesia dan AS yakin bahwa dengan menyelidiki lautan yang belum pernah terekspansi sebelumnya, akan banyak fenomena baru bisa diperoleh. Selain itu informasi yang didapat untuk menarab pemahaman tentang ekosistem dan pengasaman laut serta dampak perubahan iklim.

"Termasuk ionmanan pangan dan perlindungan ekosistem laut untuk mendukung perikanan," kata Sugiarta Wirasantosa, ilmuwan utama Indonesia untuk ekspedisi bersama dan ketua tim periset Indonesia pada Badan Riset Kelautan dan Perikanan. "Untuk memahami dan mengelola hal-hal seperti itu, kita harus lebih dalam melakukan eksplorasi. Itulah alasan mengapa ekspedisi ini begitu penting," ujarnya.

Sejauh ini, *Okeanos Explorer* telah memetakan 2.400 mil persegi dasar laut di Indonesia, wilayah

yang luasnya setara dengan luas Delaware. Pada pertengahan Juli, kapal riset dan perikanan milik Indonesia, *Baruna Jaya IV* akan memetakan lebih banyak dasar laut dan memetakan perlatan di kepulauan Kawio sebelum kedua kapal bertemu di pelabuhan Bitung.

Keduanya akan diberangkatkan kembali pada 21 Juli untuk terus mengeksplorasi lebih banyak lagi lautan yang belum terjamah dekat gugus kepulauan Sangihe dan Talaud. Ekspedisi tersebut akan selesai pada 14 Agustus 2010.

"Ini sangat mirip seperti memecahkan teka-teki," ujar Holden. "Pertama-tama kami memetakan dasar laut, dan jika kami melihat sesuatu yang menarik, ilmuwan yang berada di darat dan staf yang berada di kapal menghentikan kapal untuk meletakkan lebih banyak alat sensor dan sistem di air," ungkapnya.

Investigasi pendahuluan ini

mencakup pemetaan robot bawah air yang dinamai ROV (remote-operated vehicle), di mana seorang pilot yang berada di kapal mengendalikan ROV yang berada jauh di bawah laut. ROV merupakan sebuah sistem berbadan dua yang dapat mencapai hingga kedalaman 13.000 kaki. Dia adalah lampu dan kamera video berdefinisi tinggi di kedua instrumen diayakakan akan dapat dilihat langsung oleh ilmuwan di darat.

Ekspedisi pertama ini dilapakan di oceanexplorer.noaa.gov dimana sebagian besar situs tersebut ditulis dalam bahasa Inggris dan bahasa Indonesia. Situs tersebut memuat catatan harian dari para ilmuwan bali yang berada di laut maupun di darat, gambar-gambar dari ekspedisi, dan rencana pelajaran pendidikan ekspedisi yang sejalan dengan standar perguruan pendidikan nasional AS.

(dodi supriyadi)

SUMMARY:

In the first week of a joint Indonesia - U.S. exploration of the deep ocean north of Sulawesi, Indonesia, NOAA Ship *Okeanos Explorer*'s built-in multibeam sonar mapped a huge undersea volcano while cameras on the ship's remotely-operated vehicle took high-definition images of the feature called Kawio Barat, referring to the ocean area west of Kawio Islands. "This is a huge undersea volcano, taller than all but three or four mountains in Indonesia, and rising more than ten thousand feet from the seafloor in water more than eighteen thousand feet deep," said Jim Holden, U.S. chief scientist for the first leg of the joint expedition and a microbiologist from the University of Massachusetts in Amherst, who is operating from an Exploration Command Center in Jakarta, Indonesia. Indonesian and U.S. scientists believe that investigating previously unexplored ocean areas will yield new phenomena and provide information that will improve our understanding of ocean ecosystems, ocean acidification and climate change impacts. Thus far, *Okeanos Explorer* has mapped 2,400 square miles of the Indonesian seafloor, an area equal to the size of Delaware. In mid-July, the Indonesian research and fisheries vessel *Baruna Jaya IV* will map more of the seafloor and deploy instruments within the Kawio Islands before both ships meet in the Indonesian Port of Bitung. They will redeploy on July 21 to continue exploring more of the uncharted ocean near the island chains of Sangihe and Talaud. The expedition concludes on August 14.

TITLE : "400 Degrees Celsius Chimney Found Underwater"

DATE : July 12, 2010

SOURCE : Kompas

PAGE : 13



SUMMARY:

The Indonesian team of INDEX/SATAL Expedition 2010, a scientific cooperation between Indonesia and the U.S., identified some of their findings. Among the findings is volcano chimney at underwater with temperature between 300 and 400 degrees Celsius. The expedition began on July and is ongoing until August 10, 2010. The activity involved 32 Indonesian scientists and 12 American scientists analyzing the results of underwater exploration using *Okeanos Explorer* ship. "There is volcanic activity in the Sangihe Talaud waters, but we haven't identified how active the volcano is," said Sugiarta Wirasantosa, the expedition's Indonesian team head, in Jakarta on Sunday.

TITLE : "Baruna Jaya IV Starts Index Satal 2010"

DATE : July 6, 2010

SOURCE : Kompas

PAGE : 12

LANGKAN

Kapal Baruna Jaya IV Jalani Ekspedisi Index Satal 2010

Kapal Baruna Jaya IV akan bertolak dari Pelabuhan Tanjung Priok, Jakarta, Selasa (6/7), untuk menjalani Ekspedisi Indonesia Exploration Sangihe Talaud atau Index Satal. Kapal milik Badan Pengkajian dan Penerapan Teknologi (BPPT) akan berlayar selama 35 hari hingga 9 Agustus 2010. Direktur Teknologi Pengembangan Sumber Daya Alam Ridwan Jamaluddin pada Senin (5/7) menjelaskan, dalam ekspedisi Index Satal 2010, kapal riset tersebut akan melakukan survei batimetri hingga kedalaman 2.500 meter dan mengambil sampel air serta biota laut di kedalaman itu. Ekspedisi itu juga melibatkan kapal riset milik National Oceanic and Atmospheric Administration (NOAA) AS, *Okeanos Explorer*, yang berada di perairan Sangihe Talaud sejak akhir Juni lalu. Dalam survei di kedalaman 1.000 hingga 6.000 meter itu, *Okeanos Explorer* menemukan sejumlah biota laut unik dan terobosan gas di dasar laut yang disebut cerobong asap di kedalaman perairan Sangihe Talaud. (YUN)

SUMMARY:

Baruna Jaya IV research vessel left the Tanjung Priok Port on Tuesday to start the Indonesian Expedition Sangihe Talaut (Index/Satal) 2010. The BPPT owned vessel will sail for 35 days until August 9, 2010. The expedition will involve the research vessel owned by the U.S. National Oceanic and Atmospheric Administration (NOAA), *Okeanos Explorer*, which has been in Sangihe Talaud waters since the end of June.

TITLE : "Undersea Volcano Possesses High Biodiversity"

DATE : June 24, 2010

SOURCE : Kompas

PAGE : 12

EKSPEDISI KELAUTAN

*Kompas 6/24
p.12*

Gunung Api Bawah Laut Miliki Biodiversitas Tinggi

JAKARTA, KOMPAS — Gunung api bawah laut di perairan Sangihe Talaud, Sulawesi Utara, memiliki keunikan, berada di kawasan segitiga terumbu karang dengan biodiversitas atau keanekaragaman hayati paling tinggi.

Mengetahui kandungan mineral dan pengaruh gunung api terhadap lingkungan di sekitarnya itu menjadi tujuan Indonesia Ekspedisi Sangihe Talaud (Index/Satal) 2010 yang merupakan kerja sama riset Indonesia-Amerika Serikat.

"Gunung api bawah laut itu diduga terletak di daerah cekungan dengan kedalaman sampai 6.000 meter. Keberadaan serta pengaruh terhadap lingkungan di sekitarnya belum diketahui," kata Ketua Tim Riset Indonesia dalam Index/Satal 2010 Sugiarta Wirasantosa, Rabu (23/6) di Bitung, Sulawesi Utara, ketika dihubungi dari Jakarta.

Menurut Sugiarta, wilayah Indonesia timur sebagai lokasi pertemuan lempeng kerak bumi ini ditengarai terdapat beberapa gunung api bawah laut. Tetapi, kawasan itu sekaligus kaya dengan biodiversitas lautnya.

600 spesies

Segitiga terumbu karang berada di kawasan Asia Tenggara hingga Pasifik Barat diperkirakan

memiliki lebih dari 600 spesies terumbu karang. Di wilayah perairan itu pula terdapat lebih dari 3.000 spesies ikan.

"Biodiversitas yang tinggi itu tidak terlepas dari keberadaan gunung-gunung api bawah laut," kata Sugiarta.

Kepala Pusat Riset Wilayah Laut dan Sumber Daya Non-hayati pada Badan Riset Kelautan dan Perikanan Budi Sulistyو mengatakan, kapal Okeanos Explorer milik Amerika Serikat yang akan digunakan untuk penelitian sudah bersandar di Bitung sejak 20 Juni 2010. Pada Kamis ini kapal berangkat menuju perairan Sangihe Talaud.

"Riset yang dikembangkan pertama kali adalah mengetahui batimetri atau lapisan pada permukaan dasar laut," kata Budi.

Menurut dia, dari hasil batimetri diketahui lokasi gunung api bawah laut. Selanjutnya, gunung api bawah laut ini dikaji dari sisi lingkungannya, biota, maupun kandungan mineral.

Kapal Baruna Jaya IV milik Badan Pengkajian dan Penerapan Teknologi (BPPT) akan menyusul pada 6 Juli 2010. Kapal riset BPPT tersebut akan mengambil beberapa sampel yang dimungkinkan untuk diambil dari bawah laut untuk dianalisis lebih lanjut. (NAW)

SUMMARY:

The undersea volcano in Sangihe Talaud waters in North Sulawesi is unique and possesses high biodiversity. The mineral assets and the impact of the undersea volcano is the purpose of the Indonesia Expedition Sangihe Talaud (Index/Satal) 2010, which is a research cooperation between Indonesia and the United States. "The volcano is located in basin of 6,000 meter depth and the impact is still unknown," said Index/Satal 2010 Indonesian Research Team Head, Sugiarta Wirasantosa on Wednesday (6/23) in Bitung, North Sulawesi. Ocean and Non Biological Resources Research Center Head of Ocean and Fishery Research Agency (BRKP) Budi Sulistyو said the American *Okeanos Explorer*, the vessel which will be used in the research, docked in Bitung on June 20, 2010 and today the vessel will depart to Sangihe Talaud

TITLE : "RI - U.S. Group to Explore Undersea Volcanoes"

DATE : June 24, 2010

SOURCE : The Jakarta Post

PAGE : 16

FULL TRANSCRIPT :

The Jakarta Post

RI-US Group to Explore Undersea Volcanoes

By Mustaqim Adamrah

Indonesian and US scientists have begun joint deep-sea explorations in the Sangihe-Talaud Islands of North Sulawesi today to study submarine volcanoes and their surrounding environments.

An Indonesian Maritime Affairs and Fisheries Ministry official and coordinator of the Indonesian scientists, Sugiarta Wirasantosa, on Wednesday said the explorations were necessary because Indonesian waters largely remained a mystery to scientists.

Deep sea studies had been conducted on between 10 and 15 percent of Indonesia's waters, he said, which covered an area more than twice the size its land territories, and these studies were limited to several areas.

"This time we are going to explore the deep sea up to 5,000 meters below sea level and learn about predominantly submarine volcanoes, their environment and biota," Sugiarta told The Jakarta Post.

"We still have sketchy idea about what goes on under the sea, for example volcanic activity, earthquakes and creatures living there. There are so many aspects to learn about," he said.

The explorations, which will take a month, involve around 32 Indonesian scientists and 12 US scientists from different fields, including biology, chemistry, ocean geology, volcanology, oceanography, geodesy and fishery.

The Indonesian scientists come from the Maritime Affairs and Fisheries Ministry, the Agency for Assessment and Application of Technology (BPPT) in Jakarta, the Indonesian Institute of Sciences (LIPI) in Jakarta, the Marine Geology Research and Development Center in West Java's Bandung, the Bandung Institute of Technology (ITB) and Sam Ratulangi University in North Sulawesi.

Sugiarta said the group would be using two vessels — the Okeanos Explorer of the US and the Baruna Jaya IV of Indonesia.

"Baruna Jaya will take the samples we need for research," said Sugiarta.

"All samples collected will be reviewed here in Indonesia."

Indonesia would benefit from not only technology, but also the latest developments in science from the Indonesia-US cooperation, Sugiarta said.

From Washington, Craig McLean, the official responsible for the execution of ocean exploration at the US National Oceanic and Atmospheric Administration, told the Associated Press that the explorations would allow scientists to better understand the formation and process of tsunamis through a high-resolution map of the ocean floor.

TITLE : "Forty-two Scientists Research Deep Sea in Indonesia"

DATE : June 19, 2010

SOURCE : Kompas

PAGE : 12

42 Ilmuwan Teliti Laut Dalam Indonesia

Sampel Tak Boleh Dibawa ke Luar Indonesia

JAKARTA, KOMPAS — Sebanyak 32 ilmuwan Indonesia dan 12 ilmuwan Amerika Serikat melakukan riset laut dalam di sekitar perairan Sangihe-Talaud, Sulawesi Utara. Riset sampai kedalaman 6.000 meter ini menggunakan kapal riset *Okeanos Explorer* milik Amerika Serikat.

Kapal itu, Jumat (18/6), mulai memasuki wilayah perairan Indonesia dari Samudra Pasifik.

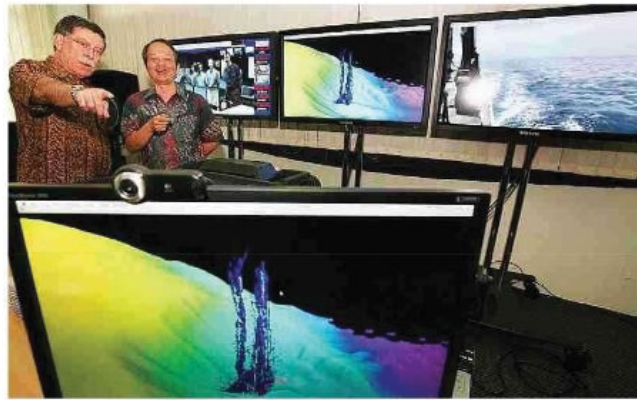
Para ilmuwan yang terlibat dalam ekspedisi itu berasal dari berbagai disiplin ilmu, seperti geologi, oseanografi, biologi kelautan, hidrotermal, dan pemetaan dasar laut atau batimetri. Penelitian itu juga didukung 40 teknisi kapal riset *Okeanos Explorer*.

Kegiatan riset ini bernama Ekspedisi Indonesia Exploration Sangihe-Talaud (Index/Satal) 2010. Ekspedisi Index/Satal 2010 direncanakan berlangsung hingga 10 Agustus 2010.

"Ekosistem baru gunung api bawah laut di perairan Sangihe dan Talaud, Sulawesi Utara, sangat unik dan menarik sehingga menjadi obyek utama riset," kata Waldi Ketua Tim Periset Ekspedisi Index/Satal 2010 Sugiarta Wirasantosa dalam konferensi pers, Jumat di Jakarta.

Tempat di Indonesia

Sugiarta mengatakan, *Okeanos Explorer* tidak boleh membawa sampel dari hasil eksplorasi ke



Ketua Tim Periset Eksplorasi Index/Satal 2010 Stephen R. Hammond (kiri) memperlihatkan video streaming kegiatan dari atas kapal *Okeanos Explorer* kepada peneliti bidang kebumihutan dan kelautan Badan Riset Kelautan dan Perikanan Kementerian Kelautan dan Perikanan Indonesia Sugiarta Wirasantosa di Gedung Badan Riset Kelautan dan Perikanan, Ancol, Jakarta, Jumat (18/6).

luar wilayah Indonesia. Semua sampel akan tetap berada di Indonesia. Oleh karena itu, pengumpulan sampel akan dilakukan Kapal Baruna Jaya IV milik Badan Pengkajian dan Penerapan Teknologi.

Semua sampel selanjutnya dibawa ke darat, tepatnya ke pusat komando penelitian di Kantor Badan Riset Kelautan dan Perikanan Departemen Kelautan dan Perikanan di Ancol, Jakarta Utara. Pusat komando tersebut sekaligus menjadi tempat penelitian para ilmuwan.

"Jadi, para ilmuwan pada ekspedisi ini tidak harus berpental para awak kapal riset ke laut untuk mengambil sampel," kata Sugiarta. Pusat komando serupa

juga dibuat di Seattle, Amerika Serikat.

Menurut Kepala Pusat Riset Wilayah Laut dan Sumber Daya Nonhayati Badan Riset Kelautan dan Perikanan Budi Sulisty, masyarakat dapat mengakses informasi hasil penjelajahan laut dalam Kapal *Okeanos Explorer* tersebut.

Pemanasan global

Ketua Tim Periset Eksplorasi Index/Satal 2010 Stephen R. Hammond dari Nasional Administrasi Kelautan dan Atmosfer (National Oceanic and Atmospheric Administration/NOAA) AS menguraikan beberapa manfaat dari kerja sama riset ini. "Pemahaman laut yang luas di

Indonesia juga penting untuk memahami fenomena pemanasan global," ujar dia.

Penjelajahan laut dalam, khususnya di perairan Sangihe-Talaud, memungkinkan untuk mengetahui keragaman hayati di dalam ekosistemnya. Sangat dimungkinkan pula ditemukan berbagai spesies baru. Informasi mengenai lempeng bumi di laut dalam juga bermanfaat untuk meramalkan kejadian gempa dan tsunami.

Kepala Badan Riset Kelautan dan Perikanan Departemen Kelautan dan Perikanan Gellwry Yusuf mengatakan, Ekspedisi Index/Satal 2010 memiliki peluang untuk dikembangkan dalam jangka panjang (NOAW).

SUMMARY:

As many as 32 Indonesian scientists and 12 American scientists will conduct oceanic research in the Sangihe Talaud waters in North Sulawesi. The research will explore depths up to 6,000 meters using the American *Okeanos* research vessel. The vessel entered Indonesian waters on Friday (6/18). Scientists involved in the research come from different maritime fields. The expedition will be named Indonesia Exploration Sangihe-Talaud (Index/Satal) 2010 and will run until August 10, 2010. Index/Satal 2010 Deputy Head Researcher, Sugiarta Wirasantosa said the results of the exploration cannot be taken outside the Indonesian territory. The samples will stay in Indonesia and will be collected and submitted to the *Baruna Jaya IV* research vessel, owned by Technology Application and Research Agency (BPPT) and taken to Maritime and Fishery Research Agency (BRKP) of the Maritime and Fishery Ministry (DKP). BRKP will serve as center of research command for the scientists.

TITLE : "Undersea Mission to Explore Depths Off Sulawesi"

DATE : June 18, 2010

SOURCE : Jakarta Globe

PAGE : A5

FULL TRANSCRIPT :



Undersea Mission to Explore Depths Off Sulawesi

By Ismira Lutfia

The nation's maritime agency on Friday launched a joint mission with the United States to provide real-time data and images from the sea bed off the Sangihe and Talaud islands off North Sulawesi.

The mission, set up by the Maritime Affairs and Fisheries Ministry (BKRP) will gather information over the next 40 days using a remote-control vehicle guided by the Okeanos Explorer research vessel, owned by the US National Oceanic and Atmospheric Administration.

The Okeanos, which entered Indonesian waters on Friday, will carry out the deep-sea survey, dubbed the Indonesia-USA Deep-Sea Exploration of the Sangihe Talaud Region (Index), together with the BKRP's Baruna Jaya IV research vessel, which will carry 35 Indonesian scientists.

"We've been preparing for this joint exploration for some time, and Index 2010 will be the first in a series of explorations we expect to conduct over the next three years," BKRP head Gellwynn Jusuf said. Future exploration will focus on other maritime areas.

The mission's lead Indonesian researcher, Sugiarta Wirasantosa, said the main objective was to scout locations for further exploration, including deep-sea hydrothermal vents, coral reefs, seep sites and fish habitats.

The exploration area is located on the Wallace Line, an imaginary biological boundary separating the faunal zones of Australia and Southeast Asia.

"We want to find out if the line also separates the underwater zones," Sugiarta said.

Steve Hammond, the chief NOAA scientist for the mission, said researchers would focus on the undersea ecosystem and deep-sea volcanic activity.

The sea bed around the islands runs from 300 meters to 6,000 meters in depth, and extreme conditions there have fostered an evolutionary niche with unique deep-water crustaceans living in the 400-degree-Celsius heat generated by hydrothermal vents.

TITLE : "U.S., Indonesia Explore Uncharted Deep Sea"

DATE : June 22, 2010

SOURCE : The Jakarta Post ,page 5
Jakarta Globe ,page C5

FULL TRANSCRIPT :

US, Indonesia Explore Uncharted Deep Sea

By Foster Klug

A deep-sea expedition by the United States and Indonesia sets off this week to explore one of the world's last frontiers, an adventure that researchers hope could lead to cures for diseases and help in predicting deadly tsunamis.

Scientists portray the trip to Indonesian waters as a throwback to a time when explorers blazed new trails into unknown territory.

The expedition, which is set to begin Thursday and wrap up in early August, is the maiden voyage for a high-tech U.S. science ship and the first joint deep-sea exploration by Indonesia and the United States.

Scientists will use a powerful sonar mapping system and a robotic vehicle equipped with high-definition video cameras to explore hundreds of square miles (kilometers) north of the Indonesian archipelago, providing an extraordinary glimpse of one of the globe's most diverse, complex and little-known marine ecosystems.

"The world's oceans are great mysteries to us, but there are few greater mysteries than this area in Indonesia that we're going to be exploring," Craig McLean, the official responsible for the execution of ocean exploration at the U.S. National Oceanic and Atmospheric Administration, said in an interview.

Indeed, while a dozen men have been to the moon and back, only two have explored the deepest ocean and returned to tell the tale. This voyage won't be adding to that list; an unmanned, remote-controlled vessel will be exploring the deep sea.

But it will illuminate a little known part of the world.

Probing the ocean's depths is a costly, and potentially dangerous, affair, with only a relatively small number of countries and research centers investing in the effort. NOAA takes part in several international missions a year, but officials describe this one as its most complex.

A major goal is to create a high-resolution map of the ocean floor that will allow scientists to better understand how tsunamis form and spread and to make more accurate models to forecast earthquake-spawned waves in the future. The region straddles a series of fault lines, making it very seismically active. In 2004, a tsunami off Indonesia's western coast killed more than 230,000 people in a dozen countries.

Indonesia's Minister for Marine Affairs and Fisheries Fadel Muhammad said scientists also want to explore ecosystems living around underwater volcanos, some of which remain active.

Oceans cover about 70 percent of the earth's surface, but little is known about the sea floor. And not just remote parts of the Pacific; U.S. officials say they've only mapped a small part of the exclusive economic zone that extends into waters off the American shore. "There actually is a reasonable degree of artistic fiction included in most world maps that portray the ocean," McLean said. "Our job, among many, is to fill in those blanks."

The exploration might even point the way to cures for human diseases. Though not a dedicated research trip designed to snap up thousands of samples of plants and sea animals, Indonesian scientists will collect specimens that could have medicinal qualities, such as attacking harmful bacteria or fighting the spread of cancer cells. An example of such a compound is discodermolide, a potential cancer drug extracted from a deep-water sponge.

Scientists from both sides say this venture is mostly about exploration, meaning they will allow their curiosity to guide them.

The United States will send scientists and a converted U.S. Navy ship, the Okeanos Explorer, to Indonesian waters. Indonesia's contribution is a research vessel, the Baruna Jaya IV, which will collect specimens that, together with all rights for future use, will remain in the country. The United States hopes to join in collections at a future date.

The Okeanos comes equipped with a multi-beam sonar mapping system that can generate high-resolution, wide-angle images in very deep water.

It also has a remote-controlled robotic vehicle, about as big as a small-sized sports-utility-vehicle, that's attached to the ship by a cable and capable of operating at depths more than twice the mile-deep (one-and-a-half-kilometer-deep) oil spill in the Gulf of Mexico. It has chemical sensors, movable arms, high-definition video cameras and a strong lighting system. Images will be transmitted to the ship by fiber-optic cables, beamed to a satellite and then sent to scientists on shore watching on plasma TV screens.

John McDonough, deputy director of the NOAA office of ocean exploration and research, said these scientists can contribute to the expedition by asking the pilot on the ship steering the robotic vehicle to pursue whatever strikes their fancy. "The real objective here is to find something of interest that the science communities will want to come back to," McDonough said. "It's really establishing a sense of place."

Associated Press writers Robin McDowell in Jakarta, Indonesia, and Randolph E. Schmid in Washington contributed to this story.

ONLINE ARTICLES

TITLE : "U.S. Research Ship Enters Indonesia"

DATE : June 17, 2010

SOURCE : Antara, Indonesian News Agency

LINK : <http://www.antaraneews.com/berita/1276741833/kapal-riset-as-oceanos-masuki-indonesia>



SUMMARY:

The *Okeanos Explorer*, an American research ship from the National Oceanic Atmospheric Administration (NOAA) will enter Indonesian waters on Friday (6/18). "The ship, along with the Indonesian vessel from the Agency for Assessment and Application of Technology (BPPT), **Baruna Jaya IV**, will collaborate to explore the Sangihe-Talaud waters in North Sulawesi," said Head of Corporate Branding and Marine Communication at Conservation International (CI), Elshinta Suyoso-Marsden, on Thursday. The joint exploration, she said, is part of a long-term RI-U.S. partnership to promote marine technology, education and science to improve the world's economic and environmental condition.

The *Okeanos* will also send data obtained through real-time deep sea exploration, in the form of live footage and other data, directly to experts, researchers and scientists watching at the Expedition Command Centers (ECC) in Jakarta and Seattle. The Jakarta ECC will be inaugurated by the Head of the Ministry of Marine and Fisheries Affairs' Marine and Fishery Research Center (BRKP). The U.S. Ambassador to Indonesia Cameron Hume, as well as research partners from other scientific research institutions, are scheduled to attend the event. Meanwhile, seven U.S. scientists are also involved in this project, including: NOAA's Chief Scientist, Stephen Randolph Hammond, NOAA's Adjunct Faculty for Coral Reef Ecosystem Division, Russell Eugene Brainard, Patricia Barb Fryer from the University of Hawaii's Hawaii Institute of Geophysics and Planetology; and James Francis Holden from University of Massachussets' Department of Microbiology, Timothy Mitchell Shank from Woods Hole Oceanographic Institution's Biology Department, Verena Julia Tunncliffe from University of Victoria, Canada and Laurence Alan Mayer, from University of New Hampshire's Hydrographic Center.

TITLE : "U.S. Research Ship Okeanos Enters Indonesia"
DATE : June 17, 2010
SOURCE : Koranbaru.com
LINK : <http://koranbaru.com/kapal-riset-as-okeanos-masuki-indonesia/>

Koran Baru

SUMMARY:

The *Okeanos Explorer*, an American research ship from the National Oceanic Atmospheric Administration (NOAA) will enter Indonesian waters on Friday (6/18). "The ship, along with the Indonesian vessel from the Agency for Assessment and Application of Technology (BPPT), *Baruna Jaya IV*, will collaborate to explore the Sangihe-Talaud waters in North Sulawesi," said Head of Corporate Branding and Marine Communication at Conservation International (CI), Elshinta Suyoso-Marsden, on Thursday. The joint exploration, she said, is part of a long-term RI-U.S. partnership to promote marine technology, education and science to improve the world's economic and environmental condition.

The *Okeanos* will also send data obtained through real-time deep sea exploration, in the form of live footage and other data, directly to experts, researchers and scientists watching at the Expedition Command Centers (ECC) in Jakarta and Seattle. The Jakarta ECC will be inaugurated by the Head of the Ministry of Marine and Fisheries Affairs' Marine and Fishery Research Center (BRKP). The U.S. Ambassador to Indonesia Cameron Hume, as well as research partners from other scientific research institutions, are scheduled to attend the event. Meanwhile, seven U.S. scientists are also involved in this project, including: NOAA's Chief Scientist, Stephen Randolph Hammond, NOAA's Adjunct Faculty for Coral Reef Ecosystem Division, Russell Eugene Brainard, Patricia Barb Fryer from the University of Hawaii's Hawaii Institute of Geophysics and Planetology; and James Francis Holden from University of Massachusetts' Department of Microbiology, Timothy Mitchell Shank from Woods Hole Oceanographic Institution's Biology Department, Verena Julia Tunncliffe from University of Victoria, Canada and Laurence Alan Mayer, from University of New Hampshire's Hydrographic Center. (Source: Antara)

TITLE : "Tomorrow Okeanos Explorer Enters Indonesia"
DATE : June 17, 2010
SOURCE : Krjogja.com
LINK : <http://www.krjogja.com/news/detail/37376/Besok..Okeanos.Explorer.Akan.Datang.ke.Indonesia..html>



SUMMARY:

The *Okeanos Explorer*, an American research ship from the National Oceanic Atmospheric Administration (NOAA) will enter Indonesian waters on Friday (6/18). "The ship, along with the Indonesian vessel from the Agency for Assessment and Application of Technology (BPPT), *Baruna Jaya IV*, will collaborate to explore the Sangihe-Talaud waters in North Sulawesi," said Head of Corporate Branding and Marine Communication at Conservation International (CI), Elshinta Suyoso-Marsden, on Thursday. The joint exploration, she said, is part of a long-term RI-U.S. partnership to promote marine technology, education and science to improve the world's economic and environmental condition.

The *Okeanos* will also send data obtained through real-time deep sea exploration, in the form of live footage and other data, directly to experts, researchers and scientists watching at the Expedition Command Centers (ECC) in Jakarta and Seattle. The Jakarta ECC will be inaugurated by the Head of the Ministry of Marine and Fisheries Affairs' Marine and Fishery Research Center (BRKP). The U.S. Ambassador to Indonesia Cameron Hume, as well as research partners from other scientific research institutions, are scheduled to attend the event. Meanwhile, seven U.S. scientists are also involved in this project, including: NOAA's Chief Scientist, Stephen Randolph Hammond, NOAA's Adjunct Faculty for Coral Reef Ecosystem Division, Russell Eugene Brainard, Patricia Barb Fryer from the University of Hawaii's Hawaii Institute of Geophysics and Planetology; and James Francis Holden from University of Massachusetts' Department of Microbiology, Timothy Mitchell Shank from Woods Hole Oceanographic Institution's Biology Department, Verena Julia Tunnicliffe from University of Victoria, Canada and Laurence Alan Mayer, from University of New Hampshire's Hydrographic Center. (Source: Antara)

TITLE : "U.S. Research Ship Starts Exploration of North Sulawesi Seas"
DATE : June 17, 2010
SOURCE : Vibiz Daily
LINK : http://www.vibizdaily.com/detail/Bisnis/2010/06/17/kapal_riset_as_mulai_eksplorasi_laut_sulut

VIBIZDAILY.COM

SUMMARY:

The *Okeanos Explorer*, an American research ship from the National Oceanic Atmospheric Administration (NOAA) will enter Indonesian waters on Friday (6/18). "The ship, along with the Indonesian vessel from the Agency for Assessment and Application of Technology (BPPT), *Baruna Jaya IV*, will collaborate to explore the Sangihe-Talaud waters in North Sulawesi," said Head of Corporate Branding and Marine Communication at Conservation International (CI), Elshinta Suyoso-Marsden, on Thursday. The joint exploration, she said, is part of a long-term RI-U.S. partnership to promote marine technology, education and science to improve the world's economic and environmental condition.

The *Okeanos* will also send data obtained through real-time deep sea exploration, in the form of live footage and other data, directly to experts, researchers and scientists watching at the Expedition Command Centers (ECC) in Jakarta and Seattle. The Jakarta ECC will be inaugurated by the Head of the Ministry of Marine and Fisheries Affairs' Marine and Fishery Research Center (BRKP). The U.S. Ambassador to Indonesia Cameron Hume, as well as research partners from other scientific research institutions, are scheduled to attend the event. Meanwhile, seven U.S. scientists are also involved in this project, including: NOAA's Chief Scientist, Stephen Randolph Hammond, NOAA's Adjunct Faculty for Coral Reef Ecosystem Division, Russell Eugene Brainard, Patricia Barb Fryer from the University of Hawaii's Hawaii Institute of Geophysics and Planetology; and James Francis Holden from University of Massachusetts' Department of Microbiology, Timothy Mitchell Shank from Woods Hole Oceanographic Institution's Biology Department, Verena Julia Tunnicliffe from University of Victoria, Canada and Laurence Alan Mayer, from University of New Hampshire's Hydrographic Center. (Source: Antara)

TITLE : "U.S. Research Ship Okeanos Enters Indonesia"
DATE : June 17, 2010
SOURCE : Media Indonesia Online
LINK : <http://www.mediaindonesia.com/read/2010/06/17/149539/92/14/Kapal-Riset-AS-Mulai-Masuki-Indonesia>



SUMMARY:

The *Okeanos Explorer*, an American research ship from the National Oceanic Atmospheric Administration (NOAA) will enter Indonesian waters on Friday (6/18). "The ship, along with the Indonesian vessel from the Agency for Assessment and Application of Technology (BPPT), *Baruna Jaya IV*, will collaborate to explore the Sangihe-Talaud waters in North Sulawesi," said Head of Corporate Branding and Marine Communication at Conservation International (CI), Elshinta Suyoso-Marsden, on Thursday. The joint exploration, she said, is part of a long-term RI-U.S. partnership to promote marine technology, education and science to improve the world's economic and environmental condition.

The *Okeanos* will also send data obtained through real-time deep sea exploration, in the form of live footage and other data, directly to experts, researchers and scientists watching at the Expedition Command Centers (ECC) in Jakarta and Seattle. The Jakarta ECC will be inaugurated by the Head of the Ministry of Marine and Fisheries Affairs' Marine and Fishery Research Center (BRKP). The U.S. Ambassador to Indonesia Cameron Hume, as well as research partners from other scientific research institutions, are scheduled to attend the event. Meanwhile, seven U.S. scientists are also involved in this project, including: NOAA's Chief Scientist, Stephen Randolph Hammond, NOAA's Adjunct Faculty for Coral Reef Ecosystem Division, Russell Eugene Brainard, Patricia Barb Fryer from the University of Hawaii's Hawaii Institute of Geophysics and Planetology; and James Francis Holden from University of Massachusetts' Department of Microbiology, Timothy Mitchell Shank from Woods Hole Oceanographic Institution's Biology Department, Verena Julia Tunnicliffe from University of Victoria, Canada and Laurence Alan Mayer, from University of New Hampshire's Hydrographic Center. (Source: Antara)

TITLE : "U.S.'s Okeanos Explorer Researches North Sulawesi's Coral Reef"
DATE : June 23, 2010
SOURCE : Sulut Online
LINK : <http://sulutonline.com/berita/482-kapal-okeanos-explorerer-milik-as-teliti-terumbu-karang-sulut.html>

SulutOnline

SUMMARY:

The *Okeanos Explorer*, an American research ship from the National Oceanic Atmospheric Administration (NOAA), along with the Indonesian vessel *Baruna Jaya IV* from the Agency for Assessment and Application of Technology (BPPT), will collaborate to explore the Sangihe-Talaud waters in North Sulawesi. "They are very interested in mapping the Mahangentang underwater volcano," the Governor of North Sulawesi Dr. Sinyo Harry Sarundajang told reporters on Wednesday, June 23 after a meeting with the U.S. ship's crew, accompanied by U.S. Ambassador Cameron R. Hume at the Bitung Port where the ship has been docked since last week. The meeting was followed with a tour of the ship for the governor and his senior staff.

TITLE : "U.S. Ambassador Boards Okeanos Ship in North Sulawesi"
DATE : June 23, 2010
SOURCE : Antara, Indonesian News Agency
LINK : <http://www.antaranews.com/berita/1277288054/dubes-as-tumpangi-kapal-okeanos-kunjungi-sulut>



SUMMARY:

The U.S. Ambassador to Indonesia Cameron R. Hume, on Wednesday, toured the U.S. research vessel *Okeanos Explorer*, which is currently visiting North Sulawesi for marine research. During his tour, Ambassador Hume was accompanied by the U.S. Consul General in Surabaya Caryn McLelland and was welcomed directly by the Governor of North Sulawesi S.H. Sarundajang at the Bitung International Sea Port. During the visit, the governor stated that the ship will be in North Sulawesi waters for one month of research, which will be shared with the Indonesian government. "North Sulawesi Province is proud and grateful to the United States for its role in exploring our natural potential," he said. The research is part of a joint cooperation between the U.S. National Oceanic and Atmospheric Administration (NOAA) and Indonesia's Ministry of Marine and Fisheries. "The U.S. team will be supported by the *Baruna Jaya IV*, a research vessel from the Agency for the Application of Technology (BPPT)," said the head of North Sulawesi's Marine and Fisheries Agency, Xandramaya, during the event. He added that the cooperation is a follow-up to the long-term marine science, technology and education partnership between the United States and Indonesia, which was established during the 2009 World Ocean Conference in Manado, North Sulawesi.



Photo caption: The U.S. Ambassador to Indonesia Cameron R. Hume (left) chatting with the Governor of North Sulawesi S.H. Sarundajang (right) on board the U.S. research vessel *Okeanos Explorer* in Bitung, North Sulawesi on Wednesday, June 23.

TITLE : "U.S. Ambassador Boards Okeanos Ship in North Sulawesi"
DATE : June 24, 2010
SOURCE : Voice of Indonesia
LINK : <http://id.voi.co.id/berita-indonesia/lingkungan-hidup/4611-dubes-as-tumpang-kapal-okeanos-kunjungi-sulut.html>



SUMMARY:

The U.S. Ambassador to Indonesia, Cameron R. Hume, on Wednesday, toured the U.S. research vessel, *Okeanos Explorer*, which is currently visiting North Sulawesi for marine research. During his tour, Ambassador Hume was accompanied by the U.S. Consul General in Surabaya, Caryn McLelland and welcomed directly by the Governor of North Sulawesi, S.H. Sarundajang at the Bitung International Sea Port. During the occasion, the governor stated that the ship will be in North Sulawesi waters for one month for their research, which will be shared with the Indonesian government. "North Sulawesi Province is proud and grateful to the U.S. for its role in exploring our natural potentials," he said. The research is part of a joint cooperation between the U.S. National Oceanic and Atmospheric Administration (NOAA) and Indonesia's Ministry of Marine and Fisheries, "The U.S. team will be supported by the Baruna Jaya IV, a research vessel from the BPPT (Agency for the Application of Technology)," said the head of North Sulawesi's Marine and Fisheries Agency, Xandramaya, during the event, adding that the cooperation is a follow-up to the long-term marine science, technology and education partnership between the U.S. and Indonesia which was established during the 2009 World Ocean Conference in Manado, North Sulawesi. (Source: Antara)

TITLE : "U.S. Ambassador Boards U.S. Research Ship Visiting North Sulawesi"

DATE : June 24, 2010

SOURCE : [Antasari.net](http://antasari.net)

LINK : <http://antasari.net/dubes-as-tumpangi-kapal-okeanos-kunjungi-sulut/>

ANTASARI.NET

SUMMARY:

The U.S. Ambassador to Indonesia, Cameron R. Hume, on Wednesday, toured the U.S. research vessel, *Okeanos Explorer*, which is currently visiting North Sulawesi for marine research. During his tour, Ambassador Hume was accompanied by the U.S. Consul General in Surabaya, Caryn McLelland and welcomed directly by the Governor of North Sulawesi, S.H. Sarundajang at the Bitung International Sea Port. During the occasion, the governor stated that the ship will be in North Sulawesi waters for one month for their research, which will be shared with the Indonesian government. "North Sulawesi Province is proud and grateful to the U.S. for its role in exploring our natural potentials," he said. The research is part of a joint cooperation between the U.S. National Oceanic and Atmospheric Administration (NOAA) and Indonesia's Ministry of Marine and Fisheries, "The U.S. team will be supported by the Baruna Jaya IV, a research vessel from the BPPT (Agency for the Application of Technology)," said the head of North Sulawesi's Marine and Fisheries Agency, Xandramaya, during the event, adding that the cooperation is a follow-up to the long-term marine science, technology and education partnership between the U.S. and Indonesia which was established during the 2009 World Ocean Conference in Manado, North Sulawesi. (Source: Antara)

TITLE : "U.S. Donates \$160 Million for Education in Indonesia"
DATE : July 2, 2010
SOURCE : Antara, Indonesian News Agency
LINK : <http://www.antarane.ws.com/berita/1278035711/as-bantu-pendidikan-indonesia-160-juta-dolar>



SUMMARY:

The U.S. Ambassador to Indonesia, Cameron R. Hume, during the U.S. Consulate General in Surabaya's Independence Day celebrations, pledged that the United States will give a \$160 million grant to improve education in Indonesia. Ambassador Hume also mentioned several educational and research programs that the United States is currently collaborating on with Indonesia. "The newest [collaboration] is the visit by the U.S. marine exploration vessel, *Okeanos Explorer*, which is now visiting North Sulawesi waters at the request of the Indonesian Government for research cooperation," said the ambassador. The U.S.-Indonesian joint exploration has resulted in amazing underwater images which can be accessed through the internet. "I have seen the images myself; there are pictures of corals from 2.5 kilometers below the surface as well as an underwater volcano. All of them are beautiful," he said.

TITLE : "Index Satal Discovers Underwater Chimney"
DATE : July 5, 2010
SOURCE : **Republika Online**
LINK : <http://www.republika.co.id/berita/breaking-news/lingkungan/10/07/05/123326-index-satal-temukan-cerobong-asap-bawah-laut>



SUMMARY:

The Sangihe Talaud (INDEX SATAL 2010) expedition by the U.S. research vessel *Okeanos Explorer* has uncovered several unique marine species and underwater "chimneys" in the waters of Sangihe Talaud. "I have been a marine researcher for 22 years, but this is the first time that I have seen such a unique species," said Dr. Jim Holden, a representative from the U.S. National Oceanography and Atmospheric Agency during the send off ceremony for the *Baruna Jaya IV* research ship in Tanjung Priok Port, Jakarta, on Monday. The *Baruna Jaya IV* is an Indonesian Agency for the Research and Implementation of Technology (BPPT) research vessel that will accompany the *Okeanos* during its expedition. The send off ceremony was also attended by the U.S. Ambassador to Indonesia Cameron R. Hume, the Indonesian Ministry of Marine and Fisheries Affairs' Head of Research Gelwyn Yusuf, and the Deputy Head of BPPT for Natural Resources Ridwan Djamiluddin.

TITLE : "RI, U.S. Launch Deep-sea Expedition"

DATE : July 9, 2010

SOURCE : Antara, Indonesian News Agency

LINK : <http://www.antaraneews.com/en/news/1278666870/ri-us-launch-deep-sea-expedition>



SUMMARY:

The Republic of Indonesia and the United States have launched their first joint expedition to explore unknown deep-sea areas in Indonesian waters. The joint expedition will be the maiden voyage of the U.S. National Oceanic and Atmospheric Administration's (NOAA) research ship, the *Okeanos Explorer*, which will send underwater live images and other data to scientists at two onshore Exploration Command Centers (ECC) located in both Indonesia and the United States, stated the U.S. Embassy in Jakarta through its official website on Friday. "On behalf of all Indonesians, I am very pleased to welcome the *Okeanos Explorer* to Indonesia," said Minister for Marine Affairs and Fisheries Fadel Muhammad. "We look forward to the weeks ahead when live images and other data will be transmitted from sea to Indonesian and U.S. scientists standing watch ashore, both here in Jakarta and in Seattle. I expect our joint work will reveal secrets hidden in the deep sea that will promote knowledge and create new understanding of the importance of the oceans and seas to all life," he said. This partnership in ocean exploration is an example of the cooperative ventures in science and technology that President Obama called for in his remarks at Cairo University in 2009, encouraging stronger scientific ties between the U.S. and Southeast Asia, Africa, and the Middle East. "NOAA welcomes the chance to work with our Indonesian partners on this first expedition of the *Okeanos Explorer*, America's ship for ocean exploration," said Jane Lubchenco, Ph.D., Under Secretary of Commerce for Oceans and Atmosphere and NOAA Administrator. "Indonesian waters are home to more marine biodiversity than anyplace else in the world. We explore together to better understand, use, and protect the ocean and its resources," she said.

TITLE : "BPPT's *Baruna Jaya IV* to Conduct Research in Sangihe-Talaud"

DATE : July 9, 2010

SOURCE : Tribun Manado Online

LINK : <http://www.tribunmanado.co.id/read/artikel/6862>

SUMMARY:

The Agency for Assessment and Application of Technology's (BPPT) research ship, *Baruna Jaya IV*, is currently heading out to Sangihe-Talaud waters as a part of the INDEX SATAL 2010, Indonesia-U.S. joint exploration expedition. According to the ship's captain, Yudi Anantasena, the *Baruna Jaya IV* will work together with the U.S. National Oceanic and Atmospheric Administration's (NOAA) research ship, *Okeanos Explorer*, which is already at the exploration area.

TITLE : "RI and U.S. Explores Indonesian Waters"

DATE : July 11, 2010

SOURCE : [Vivanews.com](http://vivanews.com)

LINK : <http://teknologi.vivanews.com/news/read/163694-ri--as-teliti-kelautan-indonesia>



SUMMARY:

The Republic of Indonesia and the United States have launched their first joint expedition to explore unknown deep-sea areas in Indonesian waters. The joint expedition will be the maiden voyage of the U.S. National Oceanic and Atmospheric Administration's (NOAA) research ship, the *Okeanos Explorer*, which will send underwater live images and other data to scientists at two onshore Exploration Command Centers (ECC) located in both Indonesia and the United States, stated the U.S. Embassy in Jakarta through its official website on Friday. Explorers expect discoveries that will advance the understanding of undersea ecosystems and volcanic hydrothermal vent activity where biologically unique communities typically are found. Discoveries could also advance understanding of ocean acidification processes and provide new information on deep ocean volcanically-derived gasses such as carbon dioxide that have a role in climate and ecosystem variability.

TITLE : "Indonesia & U.S. Launches Deep Ocean Exploration"

DATE : July 12, 2010

SOURCE : Vibiz Daily

LINK : http://vibizdaily.com/embassy/detail/2010/07/12/indonesia_dan_as_luncurkan_ekspedisi_laut_dalam

The logo for Vibiz Daily, featuring the word "VIBIZ" in blue and "DAILY.COM" in red, with a green background behind the text.

SUMMARY:

The Republic of Indonesia and the United States have launched their first joint expedition to explore unknown deep-sea areas in Indonesian waters. The joint expedition will be the maiden voyage of the U.S. National Oceanic and Atmospheric Administration's (NOAA) research ship, the *Okeanos Explorer*, which will send underwater live images and other data to scientists at two onshore Exploration Command Centers (ECC) located in both Indonesia and the United States, stated the U.S. Embassy in Jakarta through its official website on Friday. "On behalf of all Indonesians, I am very pleased to welcome the *Okeanos Explorer* to Indonesia," said Minister for Marine Affairs and Fisheries Fadel Muhammad. This partnership in ocean exploration is an example of the cooperative ventures in science and technology that President Obama called for in his remarks at Cairo University in 2009, encouraging stronger scientific ties between the U.S. and Southeast Asia, Africa, and the Middle East. "NOAA welcomes the chance to work with our Indonesian partners on this first expedition of the *Okeanos Explorer*, America's ship for ocean exploration," said Jane Lubchenco, Ph.D., Under Secretary of Commerce for Oceans and Atmosphere and NOAA Administrator. "Indonesian waters are home to more marine biodiversity than anyplace else in the world. We explore together to better understand, use, and protect the ocean and its resources," she said.

TITLE : "RI-U.S. Expedition Finds Huge Undersea Volcano"
DATE : July 14, 2010
SOURCE : Antara, Indonesian News Agency
LINK : <http://www.embassyofindonesia.org/news/2010/07/news042.htm>



SUMMARY:

The U.S. National Oceanic and Atmospheric Administration's (NOAA) research vessel *Okeanos Explorer*, through its multi-beam sonar, has successfully mapped a huge underwater volcano in the first week of an Indonesian – U.S. joint deep sea exploration of North Sulawesi waters. Cameras on the ship's remotely-operated vehicle also took high-definition images of the volcano, called Kawio Barat, referring to the ocean area west of Kawio Islands, the U.S. Embassy in Jakarta said on its official website on Wednesday. Scientists chose Kawio Barat as the first target for the expedition based on satellite information and data collected by a joint Indonesian-Australian team in 2004. "This is a huge undersea volcano, taller than all but three or four mountains in Indonesia, and rising more than 10,000 feet from the seafloor in water more than 18,000 feet deep," said Jim Holden, US chief scientist for the first leg of the joint expedition and a microbiologist from the University of Massachusetts in Amherst, who is operating from an Exploration Command Center in Jakarta, Indonesia. In a new model of exploring the ocean through telepresence, most scientists work from shore. Holden and other scientists at the Exploration Command Centers in Jakarta and Seattle are connected to *Okeanos Explorer* live via satellite and high-speed Internet pathways, and can interact with shipboard personnel to guide the expedition. So far the *Okeanos Explorer* has mapped 2,400 square miles of the Indonesian seafloor, an area equal to the size of Delaware. In mid-July, the Indonesian research and fisheries vessel *Baruna Jaya IV* will map more of the seafloor and deploy instruments within the Kawio Islands before both ships meet in the Indonesian port of Bitung. They will redeploy on July 21 to continue exploring more of the uncharted ocean near the island chains of Sangihe and Talaud. The expedition concludes on August 14.

TITLE : "U.S. Research Vessel Cancels Visit to Maluku"

DATE : July 14, 2010

SOURCE : Antara, Indonesian News Agency

LINK : <http://www.antaraneews.com/berita/1279085851/kapal-peneliti-as-batal-ke-maluku>



SUMMARY:

The U.S. research vessel *Okeanos Explorer*, which is currently operating in Indonesian waters, has canceled a plan to research sea conditions and marine biology in Maluku province due to tight schedules, the Ministry of Marine and Fishery Affairs' Director General of Resources Supervision and Control, Aji Soelarlo, said in Ambon on Wednesday. "The research locations for the *Okeanos Explorer* have been scheduled too tightly, there is no longer any room for Maluku," he told Antara news agency.

Aji said the Minister of Marine and Fishery Affairs, Fadel Muhammad, coordinated on the locations that the *Okeanos Explorer*, which left the United States on June 2010, will conduct its researches in Indonesian waters, but Maluku has been dropped as a research location. "Instead, the research work in Maluku will be carried out by a research vessel from the BPPT (Agency for Assessment and Application of Technology)," Aji said.

TITLE : "Underwater Volcano Found in Kawio Island"
DATE : July 12, 2010
SOURCE : Okezone.com
LINK : <http://techno.okezone.com/read/2010/07/12/56/352163/gunung-api-bawah-laut-ditemukan-di-pulau-kawio>



SUMMARY:

The U.S. National Oceanic and Atmospheric Administration's (NOAA) research vessel *Okeanos Explorer*, through its multi-beam sonar, has successfully mapped a huge underwater volcano in the first week of an Indonesian – U.S. joint deep sea exploration of North Sulawesi waters. "This is a huge undersea volcano, taller than all but three or four mountains in Indonesia, and rising more than 10,000 feet from the seafloor in water more than 18,000 feet deep," said Jim Holden, US chief scientist for the first leg of the joint expedition and a microbiologist from the University of Massachusetts in Amherst, who is operating from an Exploration Command Center in Jakarta, Indonesia. In a new model of exploring the ocean through telepresence, most scientists work from shore. Holden and other scientists at the Exploration Command Centers in Jakarta and Seattle are connected to *Okeanos Explorer* live via satellite and high-speed Internet pathways, and can interact with shipboard personnel to guide the expedition. So far the *Okeanos Explorer* has mapped 2,400 square miles of the Indonesian seafloor, an area equal to the size of Delaware. In mid-July, the Indonesian research and fisheries vessel *Baruna Jaya IV* will map more of the seafloor and deploy instruments within the Kawio Islands before both ships meet in the Indonesian port of Bitung. They will redeploy on July 21 to continue exploring more of the uncharted ocean near the island chains of Sangihe and Talaud. The expedition concludes on August 14. (Source: Antara)

TITLE : "Underwater Volcano Found in Sulawesi Sea"
DATE : July 12, 2010
SOURCE : Detik.com
LINK : <http://us.detiknews.com/read/2010/07/12/165445/1397755/10/gunung-berapi-bawah-laut-ditemukan-di-laut-sulawesi>



SUMMARY:

The U.S. National Oceanic and Atmospheric Administration's (NOAA) research vessel *Okeanos Explorer*, through its multi-beam sonar, has successfully mapped a huge underwater volcano in the first week of an Indonesian – U.S. joint deep sea exploration of North Sulawesi waters. "This is a huge undersea volcano, taller than all but three or four mountains in Indonesia, and rising more than 10,000 feet from the seafloor in water more than 18,000 feet deep," said Jim Holden, US chief scientist for the first leg of the joint expedition and a microbiologist from the University of Massachusetts in Amherst, who is operating from an Exploration Command Center in Jakarta, Indonesia. In a new model of exploring the ocean through telepresence, most scientists work from shore. Holden and other scientists at the Exploration Command Centers in Jakarta and Seattle are connected to *Okeanos Explorer* live via satellite and high-speed Internet pathways, and can interact with shipboard personnel to guide the expedition. So far the *Okeanos Explorer* has mapped 2,400 square miles of the Indonesian seafloor, an area equal to the size of Delaware. In mid-July, the Indonesian research and fisheries vessel *Baruna Jaya IV* will map more of the seafloor and deploy instruments within the Kawio Islands before both ships meet in the Indonesian port of Bitung. They will redeploy on July 21 to continue exploring more of the uncharted ocean near the island chains of Sangihe and Talaud. The expedition concludes on August 14. (Source: Antara)

TITLE : "Giant Underwater Volcano Found Under Sulawesi Sea"

DATE : July 13, 2010

SOURCE : [Vivanews.com](http://vivanews.com)

LINK : <http://nasional.vivanews.com/news/read/164007-gunung-bawah-laut-raksasa-di-sulawesi>



SUMMARY:

The U.S. National Oceanic and Atmospheric Administration's (NOAA) research vessel *Okeanos Explorer*, through its multi-beam sonar, has successfully mapped a huge underwater volcano in the first week of an Indonesian – U.S. joint deep sea exploration of North Sulawesi waters. "This is a huge undersea volcano, taller than all but three or four mountains in Indonesia, and rising more than 10,000 feet from the seafloor in water more than 18,000 feet deep," said Jim Holden, US chief scientist for the first leg of the joint expedition and a microbiologist from the University of Massachusetts in Amherst, who is operating from an Exploration Command Center in Jakarta, Indonesia. In a new model of exploring the ocean through telepresence, most scientists work from shore. Holden and other scientists at the Exploration Command Centers in Jakarta and Seattle are connected to *Okeanos Explorer* live via satellite and high-speed Internet pathways, and can interact with shipboard personnel to guide the expedition. So far the *Okeanos Explorer* has mapped 2,400 square miles of the Indonesian seafloor, an area equal to the size of Delaware. In mid-July, the Indonesian research and fisheries vessel *Baruna Jaya IV* will map more of the seafloor and deploy instruments within the Kawio Islands before both ships meet in the Indonesian port of Bitung. They will redeploy on July 21 to continue exploring more of the uncharted ocean near the island chains of Sangihe and Talaud. The expedition concludes on August 14. (Source: Antara)

TITLE : "U.S. Research Vessel *Okeanos* Cancels Visit to Maluku"
DATE : July 14, 2010
SOURCE : TV One Online
LINK : http://nusantara.tvone.co.id/berita/view/41708/2010/07/14/kapal_peneliti_as_okeanos_explorer_batal_ke_maluku/



SUMMARY:

The U.S. research vessel *Okeanos Explorer*, which is currently operating in Indonesian waters, has canceled a plan to research sea conditions and marine biology in Maluku province due to tight schedules, the Ministry of Marine and Fishery Affairs' Director General of Resources Supervision and Control, Aji Soelarso, said in Ambon on Wednesday. "The research locations for the *Okeanos Explorer* have been scheduled too tightly, there is no longer any room for Maluku," he told Antara news agency.

Aji said the Minister of Marine and Fishery Affairs, Fadel Muhammad, coordinated on the locations that the *Okeanos Explorer*, which left the United States on June 2010, will conduct its researches in Indonesian waters, but Maluku has been dropped as a research location. "Instead, the research work in Maluku will be carried out by a research vessel from the BPPT (Agency for Assessment and Application of Technology)," Aji said. (Source: Antara)

TITLE : "BPPT Vessel Replaces Okeanos Explorer to Maluku"
DATE : July 14, 2010
SOURCE : [Tribunnews.com](http://www.tribunnews.com)
LINK : <http://www.tribunnews.com/2010/07/14/kapal-bppt-gantikan-okeanos-explorer-ke-maluku>



SUMMARY:

The U.S. research vessel *Okeanos Explorer*, which is currently operating in Indonesian waters, has canceled a plan to research sea conditions and marine biology in Maluku province due to tight schedules, the Ministry of Marine and Fishery Affairs' Director General of Resources Supervision and Control, Aji Soelerso, said in Ambon on Wednesday. "The research locations for the *Okeanos Explorer* have been scheduled too tightly, there is no longer any room for Maluku," he told Antara news agency.

Aji said the Minister of Marine and Fishery Affairs, Fadel Muhammad, coordinated on the locations that the *Okeanos Explorer*, which left the United States on June 2010, will conduct its researches in Indonesian waters, but Maluku has been dropped as a research location. "Instead, the research work in Maluku will be carried out by a research vessel from the BPPT (Agency for Assessment and Application of Technology)," Aji said. (Source: Antara)

TITLE : "Okeanos Not Coming to Maluku"
DATE : July 14, 2010
SOURCE : Kompas.com
LINK : <http://sains.kompas.com/read/2010/07/14/11355425/Okeanos.Explorer.Batal.ke.Maluku>

KOMPAS.com

SUMMARY:

The U.S. research vessel *Okeanos Explorer*,, which is currently operating in Indonesian waters, has canceled a plan to research sea conditions and marine biology in Maluku province due to tight schedules, the Ministry of Marine and Fishery Affairs' Director General of Resources Supervision and Control, Aji Soelerso, said in Ambon on Wednesday. "The research locations for the *Okeanos Explorer*, have been scheduled too tightly, there is no longer any room for Maluku," he told Antara news agency.

Aji said the Minister of Marine and Fishery Affairs, Fadel Muhammad, coordinated on the locations that the *Okeanos Explorer*, which left the United States on June 2010, will conduct its researches in Indonesian waters, but Maluku has been dropped as a research location. "Instead, the research work in Maluku will be carried out by a research vessel from the BPPT (Agency for Assessment and Application of Technology)," Aji said. (Source: Antara)

TITLE : "Active Volcano Found Under North Sulawesi Sea"
DATE : July 14, 2010
SOURCE : Media Indonesia Online
LINK : <http://www.mediaindonesia.com/read/2010/07/14/155560/128/101/Gunung-Berapi-Aktif-Ditemukan-di-Bawah-Perairan-Sulut>



SUMMARY:

The U.S. marine research ship *Okeanos Explorer* successfully mapped the crater of an active volcano located 2,000 meters under sea level in the waters of Indonesia's North Sulawesi province. The volcano has a height of 3,000 meters from the seabed, located in the Sangihe-Talaud waters. Researchers are still conducting further observation of the volcano with initial findings that the crater's heat was recorded at 400 degrees Celsius. Besides discovering the volcano crater, the U.S. marine research ship also identified that the liquid around the volcano contains certain metal, mineral and gas substances that heat up waters around the volcano up to four degrees Celsius. The operation of the ship follows the implementation of Indonesia-U.S. Cooperation in exploring Indonesia's waters.

TITLE : "Okeanos Explorer Cancels Maluku Visit"

DATE : July 15, 2010

SOURCE : [Antasari.net](http://antasari.net)

LINK : <http://antasari.net/kapal-okeanos-explorerer-batal-ke-maluku/>

ANTASARI.NET

SUMMARY:

The U.S. research vessel *Okeanos Explorer*, which is currently operating in Indonesian waters, has canceled a plan to research sea conditions and marine biology in Maluku province due to tight schedules, the Ministry of Marine and Fishery Affairs' Director General of Resources Supervision and Control, Aji Soelarso, said in Ambon on Wednesday. "The research locations for the *Okeanos Explorer* have been scheduled too tightly, there is no longer any room for Maluku," he told Antara news agency.

Aji said the Minister of Marine and Fishery Affairs, Fadel Muhammad, coordinated on the locations that the *Okeanos Explorer*, which left the United States on June 2010, will conduct its researches in Indonesian waters, but Maluku has been dropped as a research location. "Instead, the research work in Maluku will be carried out by a research vessel from the BPPT (Agency for Assessment and Application of Technology)," Aji said. (Source: Antara)

TITLE : "Underwater Volcano Found In Sangihe Talaud Sea"

DATE : July 19, 2010

SOURCE : Tempointeraktif

LINK : http://www.tempointeraktif.com/hg/nusa_lainnya/2010/07/19/brk,20100719-264637,id.html

TEMPO|interaktif

SUMMARY:

A team of Indonesian and U.S. researchers have discovered a 3,400 meter underwater volcano in the waters near the Sangihe Talaud Islands, North Sulawesi. "We call it Kawio Barat," said Sugiarta Wirasantosa, the coordinator of the Indonesian side of the team, during a seminar on the Indonesia Expedition - Sangihe Talaud 2010 (INDEX SATAL 2010) in Manado on Monday, July 19. According to Wirasantosa, the U.S. National Oceanography and Atmospheric Agency (NOAA) research vessel, *Okeanos Explorer* and its Indonesian research ship, *Baruna Jaya IV*, conducted surveys on the volcano which is located around 6,000 meters below sea level. During the surveys, high resolution images and data of the volcano, captured by the Okeanos' Remote Operated Vehicle (ROV), were sent live via satellite directly to researchers in Jakarta and America. "The satellite sends the video and audio directly to the Expedition Command Centers in Jakarta and Seattle, United States," said NOAA researcher Jeremy Potter. This is the first of such research collaborations between Indonesia and America and is part of the long term partnership between the two countries to promote marine science, technology and education, said Webb Pinner, another NOAA scientist currently working in the expedition.

TITLE : "Tribal Community Fear 'A Second Freeport' in Sangihe Talaud"

DATE : July 20, 2010

SOURCE : Tempointeraktif

LINK : http://www.tempointeraktif.com/hg/nusa_lainnya/2010/07/20/brk,20100720-264789,id.html

TEMPO|interaktif

SUMMARY:

The tribal community of Sangihe-Talaud islands in North Sulawesi has expressed their concern and demanded local involvement regarding a joint marine exploration in the region by the U.S. National Oceanic and Atmospheric Administration (NOAA) and the Indonesian Navy. Secretary of the Sangihe-Talaud Tribal Community Alliance, Martinus Taroreh, on Monday (20/7), said that the marine exploration on an undersea volcano in their region has sparked fear that it will spark more irresponsible mining activities in Indonesia. "This can turn into another case similar to what Freeport is doing in Papua, the difference is only that Sangihe-Talaud is located under the deep sea," he said. A coordinator for the Indonesia-U.S. Expedition Research Team, Sugiarta, responded that the community should not be afraid of the word "exploration," as The *Okeanos Explorer*, NOAA's research ship deployed for the expedition, is not in Indonesian waters to exploit the seabed for mining activities. "The joint inter-governmental expedition is entirely devoted to scientific purposes," he said.

TITLE : "Deep-Sea Images Reveal Colorful Life Off Indonesia"
DATE : July 26, 2010
SOURCE : Kompas.com
LINK : <http://english.kompas.com/read/2010/08/26/18511087/Deep-Sea.Images.Reveal.Colorful.Life.off.Indonesia>

KOMPAS.com

SUMMARY:

Scientists using cutting-edge technology to explore waters off Indonesia were wowed by colorful and diverse images of marine life on the ocean floor — including plate-sized sea spiders and flower-like sponges that appear to be carnivorous. They predicted Thursday that as many as 40 new plant and animal species may have been discovered during the three-week expedition that ended Aug. 14. More than 100 hours of video and 100,000 photographs, captured using a robotic vehicle with high-definition cameras, were piped to shore in real-time by satellite and high-speed Internet. The mission was carried out by the U.S. National Oceanic and Atmospheric Administration's ship, the *Okeanos Explorer*. An Indonesian vessel, the *Baruna Jaya IV*, also took part, collecting specimens that, together with all rights for future use, will remain in the country. Confirmation that a species is new involves a scientific peer review and other steps and can take years. (Source: AP)



(AP/NOAA Okeanos Explorer Program)

Photo caption: This image provided by NOAA shows a close look one of the many interesting images collected by the Little Hercules ROV during the INDEX 2010 Exploration of the Sangihe Talaud Region off Indonesia in July. Scientists using cutting-edge technology to explore waters off Indonesia were wowed by colorful and diverse images of marine life on the ocean floor including plate-sized sea spiders and flower-like sponges that appear to be carnivorous. They predicted Thursday Aug. 26, 2010 that as many as 40 new plant and animal species may have been discovered during the three-week expedition that ended Aug. 14.

TITLE : "Volcano Discovered Under Sangihe Seas"

DATE : July 27, 2010

SOURCE : Media Indonesia Online

LINK : <http://www.mediaindonesia.com/read/2010/07/27/158103/92/14/Gunung-Api-Bawah-Laut-Ditemukan-di-Perairan-Sangihe>



SUMMARY:

A 3,200 meter underwater volcano was found in the waters of Sangihe Talaud in North Sulawesi by a joint Indonesian-U.S. marine research expedition. Based on observation by the U.S. vessel, *Okeanos Explorer* through its remote operated vehicle (ROV) on July 24, scientists have discovered that the volcano is still active. "We are using a sophisticated ROV with underwater cameras that can operate to a depth of 5,400 meters. The peak of the mountain was discovered at the depth of 1,900 meters below the surface, while the volcano's height itself is around 3,200 meters," said the Minister of Marine and Fisheries Affairs Fadel Muhammad. Besides the volcano, the expedition has also uncovered several new marine species which will be registered. The minister said that he hopes President Susilo Bambang Yudhoyono will name the newly discovered species. "This is the first marine research expedition that we have conducted with the United States and the results are astounding," said the minister.

TITLE : "Sangihe's 4000 Meter Depth Underwater Secret"
DATE : July 28, 2010
SOURCE : Antara, Indonesian News Agency
LINK : <http://www.antaraneews.com/berita/1280293153/rahasia-4-ribu-meter-bawah-laut-sangihe>



SUMMARY:

A complete ecosystem has been uncovered 4,000 meters below the Sangihe Sea in North Sulawesi through the efforts of Indonesian and U.S. scientists working together in the Indonesia Expedition – Sangihe Talaud 2010 (INDEX SATAL 2010) expedition. For three months, 20 Indonesian and eight U.S. scientists from the National Oceanic and Atmospheric Agency (NOAA) plus ship crew members have been working hard to research underwater mountains in the region. Results of the expedition will be shared between the two countries, while high-definition images from the expedition can be enjoyed by the whole world through INDEX SATAL's official website. U.S. Ambassador to Indonesia Cameron R. Hume said he is really satisfied with the joint marine exploration that had resulted with several new discoveries. The ambassador mentioned that the cooperation was actually the first exploration conducted by NOAA's research vessel, *Okeanos Explorer*. "After some consideration we decided that Indonesia should be the location for its first exploration," said the ambassador, adding that the cooperation agreement was established at the sidelines of the 2009 World Oceans Conference in Manado.

TITLE : "Indonesian Ship Discovers 52 Marine Species"
DATE : August 8, 2010
SOURCE : Antara, Indonesian News Agency
LINK : <http://www.antaraneews.com/berita/1281271289/kapal-indonesia-temukan-52-spesies-biota-laut>



SUMMARY:

A team of scientists, aboard the Indonesian research vessel *Baruna Jaya IV*, has discovered 52 new marine species during a two-month deep sea exploration in the waters of the Sangihe-Talaud Islands, North Sulawesi. "The marine species were found at 300 meters to 1,000 meters below sea level," Iwan Eka, one of the researchers, said on Sunday. Eka added that the newly discovered species were gathered by using the research ship's trawl. The species mostly belonged to the fish and coral families. Several of the species were kept at the research vessel's wet laboratory as samples for further research. "Among the unique marine biota species are corals which can live without sunlight and receive nutrients through chemosynthesis," he said. The discovery of the species was part of a joint exploration to promote marine science and technology under the Indonesia-U.S. Expedition Sangihe-Talaud 2010 (INDEX SATAL 2010) mission. "We conducted the tandem exploration aboard the United State's *Okeanos Explorer* and the Indonesian research vessel *Baruna Jaya IV* for two months from June 24 to Aug. 7, 2010. The *Okeanos Explorer* conducted exploration at a depth of more than 2,000 meters and Baruna Java IV at a depth of up to 2,000 meters," he said.

TITLE : "Sangihe's Seas 4,000 Meter Underwater Secret Uncovered"
DATE : August 8, 2010
SOURCE : Nonblok.com
LINK : <http://www.nonblok.com/blokunik/unik/20100808/19922/rahasia.4.ribu.meter.bawah.laut.sangihe.terungkap>

SUMMARY:

A complete ecosystem has been uncovered 4,000 meters below the Sangihe Sea in North Sulawesi through the efforts of Indonesian and U.S. scientists working together in the Indonesia Expedition – Sangihe Talaud 2010 (INDEX SATAL 2010) expedition. For three months, 20 Indonesian and eight U.S scientist from the National Oceanic and Atmospheric Agency (NOAA) plus ship crew members have been working hard to research the underwater mountains of the region. Results of the expedition will be shared between the two countries, while high-definition images from the expedition can be enjoyed by the whole world through INDEX SATAL's official website. U.S Ambassador to Indonesia Cameron R. Hume said he is really satisfied with the joint marine exploration that had resulted with several new discoveries. The ambassador mentioned that the cooperation was actually the first exploration conducted by NOAA's research vessel, *Okeanos Explorer*. "After some consideration we decided that Indonesia should be the location for its first exploration," said the Ambassador, adding that the cooperation agreement was established at the sidelines of the 2009 World Oceans Conference in Manado. (Source Antara)

TITLE : "INDEX SATAL 2010 Can Be An Investment For The Nation"
DATE : August 8, 2010
SOURCE : Antara East Java
LINK : <http://www.antarajatim.com/lihat/berita/40013/index-satal-2010-bisa-dijadikan-investasi-bangsa>



SUMMARY:

The Indonesian - U.S. Expedition Sangihe-Talaud (INDEX SATAL 2010) could be an investment for Indonesia to utilize its marine biodiversity in the future. "This marine research can be an investment for Indonesia since it could uncover potential marine species that can be utilized for consumption or medicinal purposes for the people of Indonesia and the world," said the Secretary of the Coordinating Ministry of Public Welfare, Indroyono Soesilo, in Bitung, North Sulawesi. During the exploration, research ships from both countries, the U.S.' *Okeanos Explorer* and Indonesia's *Baruna Jaya IV*, have successfully worked together in mapping and gathering geological and biological data regarding the depths of the Sangihe-Talaud waters. "The results of INDEX SATAL 2010 are not only easily accessed in a short amount of time but in the long term, Indonesian researchers can also use it to focus their research to improve the welfare of the people as a whole," said Soesilo.

TITLE : "Fifty-two New Marine Species Found"

DATE : August 8, 2010

SOURCE : Warta Kota Live

LINK : <http://www.wartakotalive.com/detil/berita/28411/52-Spesies-Biota-Laut-Ditemukan>

WARTA KOTALIVE.com

SUMMARY:

The joint expedition of Indonesia and the United States has found 52 new species and eight sea mounts in deep waters in eastern Indonesia. The two-month expedition taking place in Sangihe Talaud of North Sulawesi ended on Monday. It is carried out by Indonesian scientist and the U.S. National Oceanic and Atmospheric Administration (NOAA) . The species were found at the depth between 300 to 2,000 meters beneath the ocean's surface. They include fish, shrimp, coral and shells. Researchers also identified six sea mounts near North Siau Island and two sea mounts near Bunaken. During the expedition, the scientists used a remotely operated vehicle to get a glimpse of deepwater biodiversity in the waters of Sangihe-Talaud region.

TITLE : "RI - US Expand Cooperation In Maritime Exploration Technology"
DATE : July 21, 2010
SOURCE : TVone Online
LINK : http://internasional.tvone.co.id/berita/view/42001/2010/07/21/rias_jalin_kerja_sama_eksplorasi_teknologi_laut/



SUMMARY:

The Republic of Indonesia and the United States have launched their first joint expedition to explore unknown deep-sea areas in Indonesian waters. The joint expedition will be the maiden voyage of the U.S. National Oceanic and Atmospheric Administration's (NOAA) research ship, the *Okeanos Explorer*, which will send underwater live images and other data to scientists at two onshore Exploration Command Centers (ECC) located in both Indonesia and the United States. "This cooperation is meant to advance marine science, technology and education," said the head of North Sulawesi's Marine and Fisheries Agency, Xandramaya, in Bitung, North Sulawesi on Wednesday, July 21, during an open ship event at the *Okeanos*. According to Xandramaya, the exploration is a follow-up of the May 26, 2010 signing of an implementation agreement signed by the head of Indonesia's Marine and Fisheries Research Agency (BRKP) Dr. Gellwynn Jusuf and U.S. Ambassador to Indonesia Cameron Hume.

TITLE : "Exploring NOAA'S Okeanos Explorer"

DATE : August 10, 2010

SOURCE : Manado Post Online

LINK : <http://www.manadopost.co.id/index.php?mib=berita.detail&id=72423>



SUMMARY:

Manado Post journalists, along with other reporters, had the honor to tour the U.S. National Oceanic and Atmospheric Administration's (NOAA) research vessel *Okeanos Explorer* currently docked at Bitung Port, North Sulawesi on Sunday, Aug. 8. The tour was guided by crew member Matthew O'Leary who welcomed the reporters to the 224 foot long by 43 foot wide ship. During the tour, O'Leary explained that the ship has just started its mission in the Pacific Ocean this year and has the capability to capture high-definition underwater images up to 4,000 meters below sea level through its remotely operated vehicle (ROV). The images can later be sent directly via satellite to be viewed live by scientists in other parts of the world. O'Leary also showed various parts of the ships to the reporters including the bridge, the galley and the research command center, as well as introducing the ship's other crew members and scientists.



Photo caption: After exploring: NOAA'S *Okeanos Explorer* docked at Bitung Port on Aug. 8 before continuing its voyage.

TITLE : "Obama Praises Okeanos' Successful Mission"

DATE : August 10, 2010

SOURCE : Berita Manado

LINK : <http://beritamanado.com/2010/08/10/obama-puji-keberhasilan-misi-okeanos/>



SUMMARY:

The Governor of North Sulawesi Dr. S.H. Sarundajang said that U.S. President Barack Obama has praised the Indonesia Expedition – Sangihe Talaud (INDEX SATAL 2010) marine research expedition by National Oceanic and Atmospheric Administration (NOAA) research ship *Okeanos Explorer*. According to the governor, the expedition has managed to discover 30 new marine species so far in the waters of Sangihe and Talaud islands. "President Obama through the U.S. Ambassador in Indonesia expressed his congratulations to the government and people of North Sulawesi. The mission has been a success due to the excellent cooperation between many parties," he said.

TITLE : "Up to 40 New Plant, Animal Species Discovered in Indonesian Waters"
DATE : August 26, 2010
SOURCE : Jakarta Globe Online
LINK : <http://www.thejakartaglobe.com/news/up-to-40-new-plant-animal-species-discovered-in-indonesian-waters/393021>

JakartaGlobe
Great Stories. Global News.

SUMMARY:

Scientists using cutting-edge technology to explore waters off Indonesia were wowed by colorful and diverse images of marine life on the ocean floor — including plate-sized sea spiders and flower-like sponges that appear to be carnivorous. They predicted Thursday that as many as 40 new plant and animal species may have been discovered during the three-week expedition that ended Aug. 14. More than 100 hours of video and 100,000 photographs, captured using a robotic vehicle with high-definition cameras, were piped to shore in real-time by satellite and high-speed Internet. Scientists used powerful sonar mapping system and the robotic vehicle to explore nearly 54,000 square kilometers of sea floor off northern Indonesia, at depths ranging from 240 meters to more than 1.6 kilometers. The mission was carried out by the U.S. National Oceanic and Atmospheric Administration's ship, the *Okeanos Explorer*. An Indonesian vessel, the *Baruna Jaya IV*, also took part, collecting specimens that, together with all rights for future use, will remain in the country. Confirmation that a species is new involves a scientific peer review and other steps and can take years. (Source: AP)



Photo caption: A deep-sea Chimaera, whose evolutionary lineage branched off from sharks nearly 400 million years ago. A United States and Indonesian underwater expedition may have uncovered as many as 40 new species. (AP Photo/NOAA Okeanos Explorer Program)

TITLE : "Full-colored Underwater Images Of Indonesian Seas"
DATE : August 26, 2010
SOURCE : Bisnis Indonesia Online
LINK : <http://web.bisnis.com/berita-populer/1id203933.html>



SUMMARY:

Scientists using cutting-edge technology to explore waters off Indonesia were wowed by colorful and diverse images of marine life on the ocean floor — including plate-sized sea spiders and flower-like sponges that appear to be carnivorous. They predicted Thursday that as many as 40 new plant and animal species may have been discovered during the three-week expedition that ended Aug. 14. More than 100 hours of video and 100,000 photographs, captured using a robotic vehicle with high-definition cameras, were piped to shore in real-time by satellite and high-speed Internet. The mission was carried out by the U.S. National Oceanic and Atmospheric Administration's ship, the *Okeanos Explorer*. An Indonesian vessel, the *Baruna Jaya IV*, also took part, collecting specimens that, together with all rights for future use, will remain in the country. Confirmation that a species is new involves a scientific peer review and other steps and can take years. (Source: AP)

TITLE : "INDEX-SATAL 2010 Expedition Discovers New Species In Indonesian Waters"
DATE : August 30, 2010
SOURCE : Kompasiana
LINK : <http://green.kompasiana.com/group/iklim/2010/08/30/ekpedisi-index-satal-2010-temukan-spesies-baru-di-laut-indonesia/>



SUMMARY:

The INDEX SATAL 2010 Expedition is the first Indonesia-U.S. joint marine research expedition conducted by two research ships, the U.S.' *Okeanos Explorer* and Indonesia's *Baruna Jaya IV*.

The expedition surveyed almost 21,000 miles of the ocean's floor in the waters around the Sangihe-Talaud islands. Through the collaboration between scientists and crew members of both countries, the research managed to discover over 50 new marine species and mapped the underwater geological formation of the area.

TITLE : "Scientists Mesmerized by Colorful Life Under Indonesian Waters"
DATE : August 27, 2010
SOURCE : Inilah.com
LINK : <http://www.inilah.com/news/read/teknologi/2010/08/27/774641/ilmuwan-terpesona-kehidupan-penuh-warna-laut-ri/>



SUMMARY:

Scientists using cutting-edge technology to explore waters off Indonesia were wowed by colorful and diverse images of marine life on the ocean floor — including plate-sized sea spiders and flower-like sponges that appear to be carnivorous. They predicted Thursday that as many as 40 new plant and animal species may have been discovered during the three-week expedition that ended Aug. 14. More than 100 hours of video and 100,000 photographs, captured using a robotic vehicle with high-definition cameras, were piped to shore in real-time by satellite and high-speed Internet. Scientists used powerful sonar mapping system and the robotic vehicle to explore nearly 54,000 square kilometers of sea floor off northern Indonesia, at depths ranging from 240 meters to more than 1.6 kilometers. The mission was carried out by the U.S. National Oceanic and Atmospheric Administration's ship, the *Okeanos Explorer*. An Indonesian vessel, the *Baruna Jaya IV*, also took part, collecting specimens that, together with all rights for future use, will remain in the country. Confirmation that a species is new involves a scientific peer review and other steps and can take years. The mission was carried out by the U.S. National Oceanic and Atmospheric Administration's ship, the *Okeanos Explorer*. An Indonesian vessel, the *Baruna Jaya IV*, also took part, collecting specimens that, together with all rights for future use, will remain in the country. (Source: AP)

TITLE : "Fifty New Species Found In Indonesian Waters"
DATE : August 27, 2010
SOURCE : [Vivanews.com](http://nasional.vivanews.com)
LINK : <http://nasional.vivanews.com/news/read/173684-ditemukan-50-species-baru-di-laut-indonesia>



SUMMARY:

Scientists using cutting-edge technology to explore waters off Indonesia were wowed by colorful and diverse images of marine life on the ocean floor — including plate-sized sea spiders and flower-like sponges that appear to be carnivorous. They predicted Thursday that as many as 50 new plant and animal species may have been discovered during the three-week expedition that ended Aug. 14. More than 100 hours of video and 100,000 photographs, captured using a robotic vehicle with high-definition cameras, were piped to shore in real-time by satellite and high-speed Internet. Verena Tunnicliffe, a professor at the University of Victoria in Canada, said the images provided an extraordinary glimpse into one of the globe's most complex and little-known marine ecosystems. "Stalked sea lilies once covered the ocean, shallow and deep, but now are rare," she said in a written statement. "I've only seen a few in my career. But on this expedition, I was amazed to see them in great diversity." Timothy Shank of the Woods Hole Oceanographic Institution in Massachusetts said his team has so far pored over more than 150,000 high-definition video framegrabs. "I now feel that there may be at least 40 new species of deep-water coral and at least 50 new species that include benthic shrimp, crabs, sponges, clams, barnacles, anemones and sea cucumbers," he said. Confirmation that a species is new involves a scientific peer review and other steps and can take years. The mission was carried out by the U.S. National Oceanic and Atmospheric Administration's ship, the *Okeanos Explorer*. An Indonesian vessel, the *Baruna Jaya IV*, also took part, collecting specimens that, together with all rights for future use, will remain in the country. (Source: AP)

TV COVERAGE

TOPIC : Ship to shore Video Conference and Coverage of Index-satal 2010 Expedition

DATE : July 14, 2010

SOURCE : Metro TV

Metro TV in its morning (Metro Pagi) and afternoon (Jakarta-Jakarta) news shows aired two minute reports from the Indonesian Ministry of Maritime and Fisheries Affairs' Maritime and Fisheries Research Office (BRKP) regarding the INDEX-SATAL 2010 expedition. The reports included direct video conference between the office and footage on the underwater research.

TOPIC : Index-Satal 2010 Expedition Surveys Underwater Volcano

DATE : July 15, 2010

SOURCE : Metro TV

Metro TV in its morning (Metro Pagi) and afternoon (Jakarta-Jakarta) news shows aired two minute reports regarding the INDEX-SATAL 2010 expedition, including images from the Okeanos Explorer of an underwater volcano which has been discovered in the North Sulawesi Sea.

TOPIC : Coverage of the INDEX-SATAL 2010, Quotes from Indonesian and U.S. Officials

DATE : July 16, 2010

SOURCE : Metro TV

Metro TV in its morning news show (Metro Pagi) aired a six-minute report on NOAA's research ship, the Okeanos Explorer and its mission in Indonesia. One of the ships senior researchers, Jeremy Potter, was quoted as of saying that the expedition has discovered many new marine species as well as mapping a 10,000 feet underwater volcano, one of the largest ever found. The report also included an interview with Dr. Wahyudi, a volcanologist from the Surabaya Institute of Technology (ITS).

TOPIC : INDEX-SATAL 2010 Expedition

TITLE : INSIDE (30-minute documentary show) & EXPEDITION (30-minute documentary show)

DATE : TBA

SOURCE : Metro TV



Embassy of the United States of America,
Jl. Medan Merdeka Selatan 3-5
Jakarta 10110 Indonesia