

Adapting to Global Climate Change: The Role and Potential of Indonesia's Marine Resources

A Joint Open Forum

Prof. Dr. Indroyono Soesilo

Fulbright Distinguished Scholar and Executive Secretary/Deputy Senior Minister to the Coordinating Ministry for People's Welfare of the Republic of Indonesia



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Introduction

Dr. Soesilo is currently the Executive Secretary/Deputy Senior Minister to the Coordinating Ministry for People's Welfare of the Republic of Indonesia and has previously assumed numerous prominent positions within the Indonesian Government. In 2009, Dr. Soesilo was awarded the Bintang Mahaputra Pratama Medal, one of Indonesia's highest distinguished awards, for his dedication and service to the people of Indonesia. He has received other awards and recognition from the United States, Canada, and Japan. Dr. Soesilo received an engineering degree in Geology from Institut Teknologi Bandung (ITB – Indonesia) in 1977, a Master of Science in Remote Sensing for Natural Resources from the University of Michigan, Ann Arbor (1981), and a PhD in Geologic Remote Sensing from the University of Iowa – Iowa City (1987).

Indonesian Marine and Fisheries Resource Potential

On October 15 the United States-Indonesia Society and Partnership for International Strategies in Asia (PISA) welcomed Dr. Indroyono Soesilo to speak about the challenges in coping with global climate change issues in Indonesia, particularly as they relate to the country's marine resource potential. Dr. Soesilo discussed the Government of Indonesia's Master Plan to Accelerate the Economic Development in Indonesia (MP3EI), and how it will speed up the development of fishing and offshore mining industries in the selected Economic Corridors, as well as other tasks to strengthen the institutional capacity to anticipate the emergence of natural disasters in the coastal areas. He addressed the role of international cooperation and people-to-people contacts in the effort to sustainably develop Indonesia's marine resource potential and to mitigate the impact of global climate change.

Dr. Soesilo's talk was part of a lecture series in the United States to commemorate the 60th Anniversary of the Fulbright program in Indonesia and the 20th Anniversary of AMINEF (the American Indonesian Exchange Foundation).

Remarks by Dr. Soesilo

Before 1957 Indonesia's maritime territory extended only three miles from the shore. But in December of 1957 the 12-mile Archipelagic Nation Concept was declared, which was later recognized by the UN Convention of the Law of the Sea in 1982. Since then, all resources and economic matters within 12 miles of every island or point of land in Indonesia became the jurisdiction of Indonesia. From this historical platform, Dr. Soesilo began his presentation on the potential of Indonesia's marine resources within that boundary and how Indonesia is currently adapting to global climate change.

Indonesian waters possess a high resource potential. Fisheries bring in \$31 billion a year. Coastal resources, marine biotechnology, marine tourism, and offshore oil and gas account for another \$105 billion in revenue. Dr. Soesilo believes this number could drastically increase as Indonesia increases the number of fisheries and as it discovers more underwater resource deposits. Also the revenue will increase as Indonesia works to mitigate piracy, illegal fishing, fish bombing, and illegal sea-sand exports—all of which he detailed as one of the key problems facing Indonesian marine life today.

Because of issues such as illegal high-frequency fishing and climate change, marine life in the archipelago is dying or being extracted at an unsustainable rate. By cracking down on illegal fishing, attempting to mitigate climate change, and by investing heavily in marine, pond, and freshwater aquaculture sustainability can be achieved. The tropical Indonesian climate is ideal for rapid aquaculture growth, and Dr. Soesilo praised the already existing efforts in North Bali to farm eatable fish, seaweed, and advances in the field of biotechnology and research.

In addition to cultivating aquaculture, Indonesia can tap into more of its non-living resource potential that exists in plenty due to tectonic collisions that formed the islands of Indonesia. Undrilled oil wells, underwater volcanoes, and hydrothermal mineral deposits possess a great potential for oil, gold, silver, copper, and zinc extraction.

Climate change was another important topic of Dr. Soesilo's presentation. He made it clear that the changing temperature in the Indian and Pacific oceans dictate how much water flow passes between the two bodies of water through the Indonesian islands. Decreased ocean flow between the two oceans causes depleted chlorophyll, failed harvests, increased cases of dengue fever, forest fires, coral bleaching, and depleted production in capture-fisheries. Global warming affects Indonesia differently than other countries for as the glaciers melt, some of Indonesia's islands will disappear under rising ocean levels. By 2030 as many as 2,000 islands in Indonesia could be submerged, which would create complicating issues with Indonesia's maritime borders. Even if global warming affects Indonesia more seriously than many countries, the solution is a global matter. This is a problem that requires a multilateral commitment to minimize emissions, preserve CO2 consuming forests, and protect the environment.

Comments, Questions, Answers

Q: If I may ask the first question, you did point out that there is some attention between the extensive marine and living and non-living resources that Indonesia can tap to become the seventh leading economy, but at the same time, if you look at aquaculture how can you have aquaculture at the same time that you protect mangrove forest and look forward to mitigation and maintaining the health of that biodiversity, how do you see that tension being resolved?

Thank you. I would like to mention that, yes, we are going to do environmentally friendly aquaculture. You are going to ask me how. I am very interested to mention to you the long coastline in our archipelago, Indonesia is number two in the world, and the number one longest coastline is Canada. But the difference is Canada is very cold so they won't be able to do anything with aquaculture, yet they have some small things on the West coast—but Indonesia has 81 thousand kilometers for eco-friendly aquaculture activities. Did I mention to you that aquaculture is not just developing fish, but also seaweed? Seaweed actually, you just put something [in the water], the nurturance will come from the sea, and in forty five days you harvest it—the seaweed has also absorbed CO2. In the world, in America and Europe, aquaculture is not a primary production activity because in your minds there is still a lot of fish in the ocean. But not anymore. You are going to move towards that direction. I have not seen many American aquaculture facilities yet. In Europe yes. It started in Norway, then Denmark, and now Germany and France. They are moving into this, and now we can learn from each other with these high tech things such as disease control. But I still have to find something from the U.S., I know there are some in Hawaii. This will be a sign looking forward, but it has to be eco-friendly. Everyone says this “you will destroy the environment by doing aquaculture” but I say to you “no”. For Indonesia, we

should do it because we have 81 thousand kilometers of coastline that can be used to do this.

Q: I would like to follow up on that answer, in my region of the U.S., New England, we have done pioneering work in deep sea aquaculture which is much more environmentally friendly, and I wonder to what degree the efforts might be in Indonesia to develop this also?

Are you from Maine? Now I would like to learn from you. Let me put it this way, the U.S. is now looking forward to working with Indonesia on aquaculture development, our team was already here last year. We are trying to work together in this area. Because if you want to provide in the years to come, provide nurturance in the ocean, it has to come through aquaculture. If you want to do 12 months a year of aquaculture, it is difficult to do in an area with four seasons. It has to be done in an area with a lot of sunshine, because you use a lot of photosynthesis, and I know that in the U.S. this can be done sometimes in Hawaii. Let's get together because, you know, you talk about lobster, what do you call it, soft shell shrimp, there is one sea food chain in the U.S. that wants to develop soft shell shrimp through aquaculture and sell in the U.S. market because you can eat the shell.

Q: You mention that Malaysia and Indonesia are partnering well with maritime preservation, but I am assuming that it is not all warm and fuzzy all the time, could you detail perhaps some of the interesting struggle because of the proximity between Malaysia and Indonesia as far as maritime borders particularly in the straight?

For that matter I think we can work together not in the boarder, which is one issue I would like to mention to you, but when we are conserving our resources we are not too strict on the boarder alone. What we are doing actually is seeing how big your plan is to increase protected areas, for example, and negotiating. This is between two countries, right. The other thing is you have to work with our own districts and local governments; we are the number two democracy in the world with a free economy, like you. Now for that matter we have to convince the local government because it's decentralized. When you talk about aquaculture, who provides permits? It's the local governments. We have 500 districts all over Indonesia who do this type of thing. So in relation to Malaysia, in doing this we are not talking about borders, we are asking six countries "How big are you planning to increase your marine protected areas in some period?" Like Indonesia, we are going to have 30 million hectares by the year 2020.

Q: I am interested in your carbon reduction goals and I wonder if you and your other partners in the coral triangle initiative meet your carbon reduction goals, do you think you can have a measurable impact if the United States does not follow suit or join in?

Yes, you should ask this question, just to put the same sequence on all six countries leads to a lot of discussion. So now, for example, the CTI (Coral Triangle Initiative) is now ready

for the first quarter of 2013, so this is the best idea recommended to you and you mention to us “yes we are going to preserve the coral with eco-friendly aquaculture”, and the reason I mention to you is that the U.S. contributed \$250 million dollars, and we are waiting to start, and one quarter of the money will be matched by the Global Foundation. The reason that I mention this to you is actually, when we start to do this, the six countries want to preserve the 75,000 square kilometers of the coral reef, the world will respond. They respond by donating and I want to thank the U.S. government in this area. We have just started in this area of preserving the seas. So if you are interested to join in this area of looking forward, there is no better or other place in the world that has this reserve, if you talk about the Great Barrier Reef, yes very nice, but the species are not very many. The coral species are not many and the fish are not many. So we must preserve this triangle because otherwise it will be gone forever.