“Business and the Environment – Towards a Sustainable Future In Indonesia”

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Ladies & Gentlemen,

First of all I would like to thank Oxford University and Project Southeast Asia for inviting me as a speaker, especially to talk about a topic so dear to me: The environment and climate change and possible solutions to mitigate the damage from the latter.

I am here today to tell you that it is possible to embark upon and sustain a long-term program of bio-diverse reforestation, restore the habitat of endangered wildlife species, produce environmentally friendly energy and food, yet at the same time produce healthy profits and generate employment for large numbers of people with a living wage.

As some in the audience already know, I come from a country not particularly known for its stellar stewardship of the environment. The devastating forest fires of last year come to mind. In spite of numerous warnings beforehand of the oncoming El Niño and its adverse effects on the rainforest, the Indonesian Government was ill prepared, once again, to combat forest fires: there were not enough equipment with ill-trained, even completely-incompetent.

I must confess to all of you that I became a believer in human-induced climate change only nine years ago while still with investments in the oil

industry. Indeed I only terminated my involvement in the oil and gas business in the fall of 2014. My involvement in heavy “polluting” businesses dates from my investment and ownership of cement companies in 1988. My involvement in the palm oil industry dates from even earlier to 1983, whereas my involvement in the oil and petrochemical began later in 1993.

In 1997, my group acquired oil fields in Kazakhstan, followed by acquisitions in Azerbaijan, the United States, Brunei and Indonesia itself. I have since divested all the above except for palm oil and tin mining.

The point I am making is that although I have made and lost fortunes in these heavy “polluting” businesses, I have come to the conclusion that there is a very exciting future in investing in environmentally friendly business, at the same time restoring and protecting endangered wild life, while making a healthy profit. In my opinion, a sustainable environment can only be possible if it is financially profitable and supported by the local human population.

Climate change is nothing new and the deniers of climate change rightly point out that the earth’s climate has changed numerous times over the past 4.5 billion years up to the arrival of Homo sapiens. Indeed, evidence shows that carbon is currently being emitted naturally through cracks in the earth’s crust, for example, the Mid-Atlantic Ridge and the Sea of Cortez to name just two of few. It has recurred for the past thousands of years before the industrial revolution and the use of fossil fuels.

I have come to accept the conclusion of the overwhelming majority of scientists that the difference this time is that human activity has accelerated

the warming of the planet at such a rate that severely imperils the landscapes, seascapes, human and animal habitats.

My concern and passion for wildlife was the major catalyst for my "conversion" to the perils of climate change. I saw the continued destruction of animal habitat by natural causes, as well as forest fires and criminal corporate behavior and I searched for practical ways to not only protect, but also to restore animal habitat in the rain forests.

The problem of degraded and destroyed forest in Indonesia is daunting. Until recently I had thought it was hopeless. The latest figures in 2015 released by the Indonesian Ministry of the Environment and Forestry show that 88 million hectares is now classified as degraded or destroyed. This implies a rate of destruction of about two to three million hectares a year. At this rate Indonesia would become devoid of forest cover within next 25 years. Given this prospect, there is every reason for gloom and despair, especially given successive Indonesian governments seeming inability to stem the tide of destruction. Not only animals died of last year's smoke and fires. Many human beings, especially children and the elderly, died as well.

However, there is hope. There is light in this dark tunnel as new solutions present themselves. In 2008, I visited a remarkable project in East Kalimantan province called Semboja Lestari. This was the new site for an animal sanctuary and rehabilitation centre for orangutans and sun-bears. This by itself is nothing new as there are several other such sites doing much the same activities. Samboja Lestari, however, is unique in that the entire 1800 hectares (4500 acre) forest had been six years before a complete wasteland of wild grass and weeds, totally devoid of trees, water,

and both animal and human habitat. There were no birds and animals except for rats.

A group of wildlife enthusiasts, led by a remarkable and brilliant scientist by the name of Dr Willie Smits, started an experiment to restore the semblance of a rain forest by planting trees in a bio-diverse, polycultural manner, planting up to 1200 species of plants and trees. In other words, polyculture, not monoculture. The key was to plant numerous species of fruit trees to enable the sustained return of birds and mammals to the growing forest. When I first visited in 2008 Semboja Lestari was only in its sixth year of replanting. It has now been an unqualified success. The animals, birds and insects such as butterflies have returned to a forest which six years before was a barren inhospitable tropical desert. The rain since then has returned because the growing forest has caused moisture levels to increase dramatically.

I became a true believer as I saw the place grow over many visits in over the past eight years. It is now in its 14th year of restoration and growth. Restoring the rain forest over such a short period of time has now been proven possible. The accepted paradigm had been up to that time that reforestation would take decades. It would take decades of laborious, commercially unprofitable work to restore degraded rain forests. It would be akin to philanthropy and charity.

The science of fast bio-diverse multi species (polyculture) reforestation has now been proven by Semboja Lestari.

The question remains: How can we reforest 88 million hectares of degraded rain forest sustainably? It costs about $2500 – $2700 to reforest

a hectare of degraded land and we also have to make sure that returning wildlife would not fall prey to hungry and poor landless humans.

The key is to plant commercially viable trees and plants to enable investors to make a decent profit within a reasonable timeframe while at the same time creating the conditions where humans living in the vicinity of the growing forest are incentivized to protect it by making a dignified living from the proceeds of the forest itself. In other words: Agro Forestry.

Indonesia is home to a unique remarkable plant called the palm sugar tree (Arenga Pinnata), which technically is not a tree (I leave it to the scientist and forestry experts here to explain!). The palm sugar tree has many unique characteristics the principal one being that it secretes a sugary juice which can processed into an ethanol (for energy) as well as a sugar well suited for those who suffer from diabetes because its glycemic index is under 30 whereas white refined sugar has an index above 60.

Studies have shown that a hectare of palm sugar forest can produce a minimum of three times more sugar than a hectare of cane sugar. A hectare of palm sugar forest can produce a minimum of 20 tons of ethanol compared to seven tons from a sugar cane plantation. And a palm sugar tree can secrete all year round 365 days a year, providing year round employment. The sugar cane plantation provides employment for only half a year for sugar cane farmers.

However, for me the most exciting feature is that the palm sugar tree can only grow well and secrete juice properly in a polyculture forest environment. In other words the tree thrives on diversity and stunts in uniformity. This is very great news for wildlife which needs fruit trees to

provide sustenance! Palm oil does not provide the sustenance needed for wildlife and is therefore the very antithesis of bio-diversity.

New technologies such as torrefection will produce black pellets from waste bio-mass (twigs, branches, leaves, palm oil waste bunches) that can be a substitute for coal. Torrefection is like roasting wood at very high temperatures, which produces black pellets with 95% of the calorific value of coal but without the carbon. When mixed with coal, the pellets enable power plants significantly to reduce carbon emissions.

Gas can also be produced by a new technology derived from torrefection that will enable the production of biodegradable plastics that do not compete with food, as do corn bioplastics. This new bio-mass gas technology can also produce jet fuel, LPG, LNG, fertilizers, etc, from a sustainable, perpetual undepleted resource: the palm sugar mixed-forest. A significant feature is that these can be economical at the equivalent price of $40-$50 per barrel of oil. In other words these bio-mass gas products can be produced at an affordable cost.

Another product from these mixed-forests is bio-char, which is a fertilizer medium produced from burning waste wood at certain temperatures. The result is an organic fertilizer, which tests have shown can increase productivity exponentially without the use of chemical fertilizer from fossil fuels.

The palm sugar forest can also absorb huge amounts of carbon from the atmosphere because the roots of the tree extend 12 meters into the soil, potentially enabling giga-tonnes of CO2 to be sequestered deep in the ground.

What are the advantages that Indonesia and other similar tropical countries have? In short, the following:

1) Sunshine all year round
2) Abundant and regular rainfall
3) Sizeable tracts of land
4) Large populations able to work and harvest palm sugar in mixed tropical rain forests

Because of these favourable factors Indonesia has the potential to reforest extensive tracts of degraded forest, produce sizeable amounts of undepleted energy and provide employment for huge numbers of people with a dignified way of life and a living wage.

McKinsey & Co, the renowned International consultancy, was recently commissioned by the Norwegian government to do a strategic review and due diligence on the palm sugar forest concept. They came to the conclusion not only were its objectives were feasible but also that it was financially viable with an IRR of more than 25% (p.a.).

McKinsey was so favourably impressed that they suggested that not should this model be applied to Indonesia, but that Nigeria should be considered as the next location for the palm sugar reforestation project.

The Tanzanian government has already expressed interest in applying the concept in restoring Tanzania's many deforested regions. But McKinsey suggested that Nigeria with a population projected to increase five-fold from 180 million today to 800 million people by 2100 and already importing food with a fast depleting forest and fossil-fuel resources, would be a prime candidate for this model of reforestation.

This is because the palm sugar reforestation model has as one of its many plants the Cassava, which in Africa as well as Indonesia is a food staple for many local populations.

According to calculations, we believe it is possible to replace Indonesia's current consumption of oil and oil products (1.6 million BOEpd) with 8 million hectares of palm sugar mixed-forest. Products from forests over and beyond eight million hectares could be used for export to countries determined to reduce their carbon emissions.

According to some estimates there are today some 1.2 billion hectares of degraded forest throughout the globe. Much of this is found in temperate zones where the climate is not suitable for growing palm sugar trees and the type of tropical forest fruit trees which support wildlife. However, at least 540 million hectares is found in the tropical zone and theoretically all this, except for peat soil, could accommodate mixed forests with palm sugar and fruit trees.

As can be seen, I have limited my discussion to my experience with forest and land environment. I have not delved into the very relevant topic of the marine environment.

In my opinion, given that the government does not have sufficient financial resources to act alone, the corporate sector has a very important role. Only this sector – working in conjunction with the government – can ensure that sufficient invesments are made in renewable energy. By finding the right formula for restoring the forest environment we can incentivize local populations to protect both the forest environment and its fauna. Self-

interest is always the most compelling reason to do anything, especially when it comes to doing the right thing.

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