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# Oil Palm and Orangutans: A Fresh Look and a New Idea

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*“Everyone knows that oil palm and orangutans are incompatible”. But history shows us that industry and even globally-known experts can get things wrong. With second-cycle replanting of palms ongoing in the half-million-hectare Kinabatangan landscape in eastern Sabah, we now know that a sparse population of orangutans has adapted to years of logging and agricultural development, by quietly living in residual degraded forest patches. Males routinely migrate through the plantations, usually undetected, between isolated smaller forests where females and offspring live. Damage done by orangutans to both mature palms and second planting is trivial, and wild orangutans are harmless to humans. But these orangutans today are at a critical tipping point and without the assistance of the large land owners in the region, their continued survival is not assured. Rather than continuing the old habit of translocating these orangutans elsewhere, a practice that we now know does not serve the species well, this paper argues to leave them where they are, and calls on oil palm growers to act as key partners to conserve this remarkable wild orangutan population. This way, the palm oil industry can and will play a role in sustaining the very species that it is accused, year after year, of driving to extinction. PONGO Alliance, a collaboration of conservation practitioners and visionary oil palm growers is at the forefront of this new paradigm.*

**Keywords :** Oil palm, orangutan, forest, Kinabatangan, partnership, PONGO Alliance.

“Heavier-than-air flying machines are impossible.” (Lord Kelvin, physicist, president, Royal Society, 1895). “Fooling around with alternating current is just a waste of time. Nobody will use it.” (Thomas Edison, 1889). “There is not the slightest indication that nuclear energy will ever be obtainable.” (Albert Einstein, 1932). “Palm oil is the greatest enemy of orang-utan and their continued survival in the wild” (Biruté Galdikas, Orangutan Foundation International, 2005). What do these statements have in common? They are the views held by experts in their field, at a particular time in history, when the array of available facts was limited and even the experts were hostage to their beliefs.

## BACKGROUND

In the early 1980s, one of the authors of this paper conducted field work in the approximately 500 000-hectare area between the Segaliud and Segama rivers in eastern Sabah, comprising the bulk of the Kinabatangan region and estimated there were at least 8 000 orangutans present and about 98 per cent of the area was forest-covered. That was a very different era from now.

Based on assessments of land suitability done in the 1970s by a joint British-Sabah government team, the Kinabatangan region was identified as a prime region for agricultural development. Accordingly, in 1978, the

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government accelerated a policy dating from the pre-independence British era to “alienate” land throughout the region, mainly through issuance of 99-year titles. This process continued for the next three decades. Export of logs and processed wood was already the basis of Sabah’s economy, and Kinabatangan had a history of commercial logging dating from the 1950s, so trees cut on the newly-titled lands simply fed into the same system. Initially, it was thought that rubber and rice would be major crops replacing the logged forests, but in fact neither crop was planted.

Instead, extraordinarily high market prices offered for cocoa beans in 1980 led many new landowners to opt for cocoa planting. But in 1983, a triple disaster struck. Global cocoa prices plummeted, Sabah growers were losing up to half their crop to the cocoa pod borer, and fire swept the land as a result of the severe 1982-1983 El Nino drought. However, a massive turnaround commenced in 1984. Heavy rains saw good plant growth, the price of palm oil doubled, and FELDA (Federal Land Development Authority) and other big Peninsular Malaysian oil palm growers realised that there was ample, fertile greenfield land becoming available in eastern Sabah. They jumped at the chance to expand oil palm plantations. With good palm oil prices, emerging road access and mills under construction, Sabah land owners jumped in tandem. Growable on drained swamps and steep slopes as well as on prime sites, oil palm was by 1985 clearly the golden crop for Kinabatangan, a situation that has sustained until today.

#### **ORANGUTANS IN THE KINABATANGAN LANDSCAPE**

Now, in 2020, barely 10 per cent of the land in this Kinabatangan landscape is still forested,

but all of that has experienced some degree of timber extraction; 90 per cent is under oil palm cultivation, much of that now undergoing second cycle replanting; and no more than about 800 or 10 per cent of the previous orangutan population live in this same landscape.

How did this loss of orangutans happen? Most importantly, orangutans are a wholly forest dependent species. That is, anywhere land is converted completely from forest to another use orangutans cannot survive, regardless of what that other land use is, be it oil palm, cocoa, rubber, timber trees or rice.

Therefore, as a consequence of development that happened between the late 1970s to the turn of the millennium, wild orangutans were progressively displaced. This led to them being killed outright, removed (translocated) and taken to often less suitable habitat, or - especially young animals - exploited in the pet or commercial animal trade. Also, some, usually females and dependent offspring, that survived the initial clear fell, then starved when their ancestral forest land was lost completely or too drastically reduced in size.

By the time remaining discontinuous forest fragments were legislated as the Kinabatangan Wildlife Sanctuary in 2005, orangutan numbers had dwindled to around 1 000. Current practice remains as previously to remove (translocate) orangutans if they are detected in agricultural lands. Thus, the local population trend continues to be a negative one, albeit at a lower rate, to about 800 individuals today.

The remaining forested land in Kinabatangan today includes about 26 000 hectares of wildlife sanctuary, mostly under logged forest cover, which is divided by roads, plantations and rivers into 22 locations. In addition, there are about 18 000 hectares of Forest Reserves, other than mangroves, also divided by roads, plantations and rivers into 26 locations. In addition to that,



there are several hundreds of similarly-fragmented small patches of residual forest (between <1 ha to > 2,000 ha in size) on privately-owned lands.

Over thirty peer-reviewed publications have appeared in the past two decades, that have addressed census, survey methods, and implications of land use change on orangutans in Borneo, including Kinabatangan. But three fundamental findings on wild orangutans, have perhaps been overlooked:

- (i) orangutans require a distinctive array of food plants, none of which are timber trees;
- (ii) that primary forest structure may not play a key role in the orangutan carrying capacity of an area; and, last but by no means least
- (iii) all other factors being equal, the highest natural population densities of orangutans occur in floodplains and extreme lowlands.

#### **ORANGUTANS AND OIL PALM? HOW DO THEY DO IT?**

Most people are surprised to learn that wild orangutans can still be found throughout much of the Kinabatangan region. As the period of replanting of old oil palms in the Kinabatangan region of Sabah is now ongoing, unexpected and interesting things have emerged about orangutans based on our first year of collaboration with visionary oil palm growers in the region. The gist is that some female orangutans, those that survived loss of their forest homes in the 1980s and 1990s, are living a healthy life in isolated patches of forest and belukar, in many although not all parts of Kinabatangan. They are difficult to see, because they hide from humans and survive on key plants that can still be found within their

small “home ranges”, which they know intimately. Most of them are also raising offspring in these circumstances as well.

And how does that happen? Because some males also survived decades ago. But they have a different lifestyle. They range over large areas, travelling through oil palm monoculture, feeding in a more ad hoc fashion, *en route* between the forest and belukar patches where females still live. Their purpose, of course, is to mate with the females, so they are not wandering at random! Both female and male orangutans in plantations are sometimes seen by harvesters and other workers, but rarely by managerial staff, because wild orangutans in these circumstances fear humans, and are seen purely by luck. The ones that survive are those that are most savvy and cautious, that stay still and hide whenever humans are nearby.

Let us be clear, again. Orangutans need forest and they prefer large tracts of forest far from people. But as land use changed markedly from the 1970s to 2000s in Kinabatangan, some orangutans found themselves trapped in patches of forest that range from a few hectares to over 2 000 hectares, on both government and company-owned lands. These orangutans survived and are reproducing. This finding reveals something very fundamental : a wild self-sustaining population of orangutans can live in a landscape of oil palm if it also includes multiple patches of forests on both government-protected and private-company administered land.

This is not surprising, because just as there is optimal density of oil palms in a unit area, orangutans require a fixed amount of forest and there are just about enough fragments left to support a small but still viable population. But these orangutans today are at a critical tipping point and without the assistance of the large land owners in the region, their continued survival is not assured.



## A CHOICE EMERGES

So now we have a choice. One choice is to just quietly let the *status quo* be. That is, let the gradual but still progressive decline continue, as the scattered population of wild orangutans in Kinabatangan region drifts to extinction. We feel this default position would be a shame.

The orangutan is a highly intelligent great ape species and the only one in Asia. Orangutans do not live in larger groups concentrated in one place in the way that humans, chimpanzees, bonobos and gorillas do, but in highly diffuse communities that function across wide distances. Female orangutans in particular, live on their matrilineal ancestral land where they know food is available. They do not want to go to someone else's area, because that is risky, as there may not be enough food, and any orangutans already there are not happy to share what they have.

Together with oil palm grower partners in Kinabatangan, we have learnt over the past year:

- (i) A few females have survived within isolated forest patches in some places in the plantation landscape and are even raising healthy offspring, and
- (ii) Male orangutans in the region can and do routinely cross plantations, mostly undetected, without the benefit of prescribed corridors to reach these females.

Males appear able to do this by using remaining natural navigational aids such as streams, rocky hills and other unplanted areas. These normal male migration patterns need to be supported to maintain the required social spacing adult male orangutans require and prevent inbreeding in the future. However, it appears as long as free and unharnessed access across estates can be assured, an

extensive forested corridor network may not be necessary, at least in Kinabatangan.

Currently, the slow population decline we still observe in Kinabatangan is hastened by orangutan "rescues" that remove individual orangutans found in plantations and translocate them to other areas where their fate is unknown. Though this practice may appear altruistic, based on what we now understand of how the orangutan community is still functioning at the population level in the Kinabatangan landscape, this practice of continual removal is in fact a recipe for accelerated extinction.

The other choice is to decide and implement simple and low-cost policies aiming to make the Kinabatangan landscape friendly to orangutans, allowing a small and scattered but viable population to co-exist with humans and palm oil production. Who makes the choice? The answer is intriguing. No single institution can make the choice. There are too many landowners involved. Although the government of Sabah is the ultimate landowner, most of the region is on 99-year titles issued in the 1980s and 1990s. Exclusive government ownership, in the forms of Wildlife Sanctuary and Forest Reserve, applies to only about 9 per cent of the region's land area. Land title owners thus have the biggest say. And almost all land title owners are in the palm oil industry. The way forward is voluntary. And largely in the hands of the Malaysian palm oil industry.

## WHAT ARE THE RISKS?

What are the risks of each option? Doing nothing is low risk. Under this option, orangutans go extinct in Kinabatangan. No-one has to do anything. But if we think that keeping orangutans in the mixed oil palm and forest landscape is a worthwhile option, what



are the actual possible risks to individual growers and their workers? Firstly, to be clear, wild orangutans – including large males - are not aggressive by nature towards humans. They will always avoid humans, a species that they fear. A small percentage of orangutans may occasionally harm humans but only if they have spent many years in unnatural conditions, close to humans who provide them with food, and then those humans do not give food. Secondly, will orangutans kill newly planted oil palm seedlings? The answer is not 100 per cent no, but very close. This was largely a temporary phenomenon of the 1980s-1990s, when individual orangutans suddenly found their forest home gone, within the space of a few weeks, and the only edible materials in place were young palm shoots.

The current array of orangutans living wild in Kinabatangan do not seek out oil palm seedlings or any other type of seedling. It is not a normal part of their diet. They prefer fruits, leaves and other plant parts of mature, naturally growing trees and lianas. Do orangutans eat oil palm fruits? Yes, but in extremely tiny quantities. They do not generally eat only one type of food, and like most animals require a balanced diet based on a variety of different plant sources each day. So, palm fruit loss to orangutans is and always will be extremely trivial. Do orangutans damage older palms? Some individual orangutans sometimes sleep in the top of older palms, bending fronds to do so, but to date we have not seen a productive oil palm tree killed by an orangutan, and those palms used by orangutans as sleeping sites continue to bear fruits. Will orangutan numbers build up and become a problem if they are not removed from plantations? Definitely not.

Whatever is done to sustain wild orangutans in plantations, the numbers will

always remain very low. Orangutans have the slowest inter-birth interval of all animals : one baby per mature healthy female every seven to eight years, in all forests in Borneo and Sumatra, including Kinabatangan. Natural death rate will not be very different from the birth rate. Orangutan population density is low in natural forest (about 2 individuals per 100 hectares in the original Kinabatangan forests, much less in hill forests) and very low in plantations with scattered forest patches (our best guess now would probably be about 2 per 10,000 hectares). With a programme of planting orangutan food plants along riparian buffer zones, swamps, ridge tops and on steep slopes within plantations, the orangutan population density might rise over many decades, perhaps to about 5 per 10 000 hectares. Too low to present problems to oil palm growers but enough to sustain natural reproduction and a wild population in the long term. In summary, viewed in comparison to all the various factors that reduce oil palm fruit and crude palm oil (CPO) production, the adverse impact of the presence of orangutans is extremely trivial and, in the bigger picture context, zero.

#### **A POSITIVE SCENARIO AND NEW PARADIGM**

Assuming that we like the idea of going beyond our pre-existing obligation to this fully protected species, and choose to actively assist in sustaining orangutans in the mixed oil palm and forest landscape, what are the positive angles? The two main “pros” should be obvious. One is the ethical point of land owners, and a key industry, contributing voluntarily and directly to sustaining a healthy wild population of a rare species. The second, building on that, is to show that the palm oil industry can and will play a role in sustaining the very species that the



industry is accused, year after year, of driving to extinction. In the big picture, the palm oil industry will be helping to sustain a wild population of an iconic species, on multiple lands owned by its members. This really is a new paradigm, very different from giving money to other institutions to carry out projects over which the donor has little control, on other peoples' lands.

So, what exactly needs to be done to help sustain a wild orangutan population in a mixed oil palm and forest landscape. There are four main elements. The first is to get a more detailed picture of the orangutans that are living outside Wildlife Sanctuary and Forest Reserves in the Kinabatangan region and work together to address potential barriers to co-existence. This is already underway and led by one of us, on the ground.

Secondly, the decision-makers in oil palm plantation companies can decide whether or not to support this new paradigm. If they decide yes, they have the opportunity to be contributing partners. If they decide no, nothing bad will happen to them, but they will not benefit either. Thirdly, for those that opt in to this new co-existence paradigm of orangutans and oil palm, they need to allow any orangutans that now live partly or entirely within their plantations to remain there, unmolested and not translocated. Essentially, that means requiring all staff and workers to leave orangutans alone, and emphasising that penalties are liable on those who do harm or remove these animals. This initiative is not about revisiting the past. If bad things happened to orangutans years ago, we no longer need to delve into that. Instead, we endeavour to work together to build a different future.

Fourthly, companies and plantations that want to help sustain the paradigm shift, should agree to a long-term programme of planting

and maintaining favoured orangutan food plants in riparian buffers, other buffer zones, conservation set-asides, abandoned swamp lands and steep slopes within the plantations. Such areas will represent a tiny percentage of productive oil palm land, but will have a disproportionately positive impact on the potential to sustain orangutans in the future. This activity can be used to help achieve both Malaysian Sustainable Palm Oil (MSPO) and Roundtable on Sustainable Palm Oil (RSPO) standards in relation to biodiversity conservation and water protection, and be more proactive and valuable than simply having passive "High Conservation Value (HCV)" sites. The restoration and enrichment planting can be anywhere, whether in designated "HCV" sites or not. This restoration work is already underway in lands managed by two pioneering plantation companies in the Kinabatangan landscape.

Experimental planting includes but is not limited to vegetative propagation of wild fig species (over 100 species in Sabah, with different fruiting cycles), planting native legume woody lianas whose leaves, stems and seeds are a major protein source for wild orangutans, and planting species that are tolerant of swamps and floods, native trees of species that tend not to fruit in the main fruiting peak period, and species that can thrive on rocky sites. Plantations that want to join this effort can experiment alone using a recommended species list we have developed, or receive planting materials from a nursery in Tabin Wildlife Reserve, operated by Borneo Rhino Alliance on behalf of PONGO Alliance. The condition is a commitment to maintain and monitor the plants to maturity, as far as reasonably possible, and accepting that there will be some mortality with experimental materials and methods.

## **PONGO ALLIANCE**

Does there not have to be some form of organisation to these efforts? Yes, and this is the job of PONGO Alliance ([www.pongoalliance.org](http://www.pongoalliance.org)), a partnership of visionary oil palm growers and conservation practitioners. PONGO Alliance is not a non-governmental organisation (NGO), consultancy or service provider but instead uses the accumulated skills of its cross disciplinary partners and skilled staff to collaboratively assist industry in achieving sustainability goals.

By working together, PONGO Alliance aims to create a paradigm shift in agricultural practice that reframes the oil palm industry as one that supports rather than destroys orangutan habitat.

PONGO Alliance engages industry with a holistic and non-judgemental partnership approach, working one-to-one, company by company and even estate by estate and, if requested, in confidence with company sustainability teams to reach and exceed certification targets in effective and documentable ways by providing:

- i. Scientific survey expertise and capacity building of company teams.
- ii. New and experimental restoration techniques and specific recommendations for enrichment of set-asides that support growth of plants that are useful to both wildlife and people.
- iii. Scientifically accurate but accessible outreach education materials to resolve misperceptions, mitigate conflict, improve knowledge and compliance of laws and foster co-existence with Asia's emblematic only Great Ape

species.

- iv. A forum for open dialogue between conservation practitioners and the oil palm Industry to mutual benefit.

Do join us!

PONGO Alliance partners as of April 2020: Aksenta, PT Austindo Nusantara Jaya, Borneo Rhino Alliance, Bumitama Agri Ltd, Bunge Lodders Croklaan, Copenhagen Zoo, HUTAN, Musim Mas, Orangutan Land Trust, Sawit Kinabalu, Sime Darby Plantation, South East Asia Rainforest Research Partnership, The Alliance for Preservation of Forests, Wilmar International Ltd.

## **CONCLUSION**

As the doom-and-gloom scenarios of wildlife extinctions build up, humans can no longer rely on a few government-managed "protected areas" to save all species. Business and industry can play a role, especially where they have control over lands where endangered wildlife species still exist. The palm oil industry has a great chance to show its mettle by allowing and supporting coexistence of orangutans in the Kinabatangan landscape of Sabah.

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