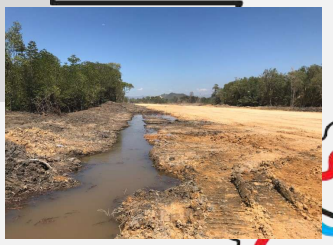
ENVISIONING INFRASTRUCTURE DEVELOPMENT
FOR A SUSTAINABLE FUTURE FOR SABAH

A STRATEGIC COLLABORATIVE ASSESSMENT OF INFRASTRUCTURE DEVELOPMENT: THE PAN BORNEO HIGHWAY CASE

HUMANS • HABITATS • HIGHWAYS

SOCIO-ECOLOGICALLY SENSITIVE & CRITICAL WILDLIFE STRETCHES OF THE PAN BORNEO HIGHWAY IN SABAH

PHASE 1 Northwest Sabah. New 2-lane road – destruction of mangroves, coastal hydrology, fisheries, wildlife eg proboscis monkeys, Kota Belud Bird Sanctuary. EIA approved only for WP10.



PHASE 1 Telupid area. 4-lane highway. Alignment through Tawai Class 1 Protection Forest Reserve would impact Bornean elephant movements, increasing human elephant conflict & road kills. No EIA as yet.

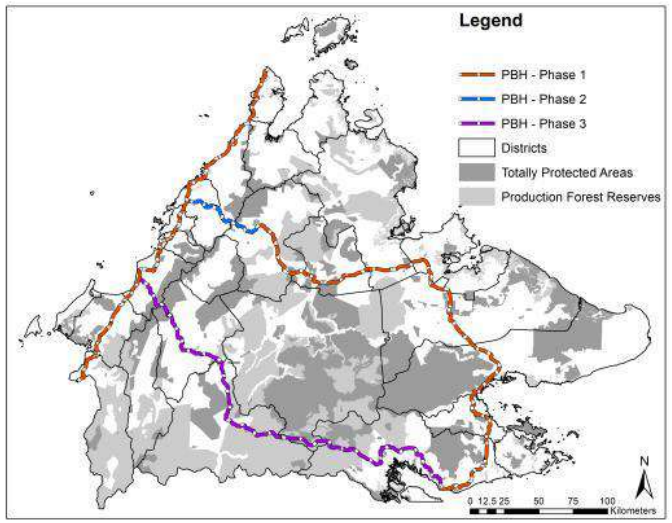
PHASE 1 Papar area. 4-lane highway. Work Package 5 - disruption of rice field hydrology & drainage & flooding

PHASE 1 Kinabatangan bridge stretch. 4-lane highway. Displacement of homes & villagers. No EIA as yet.

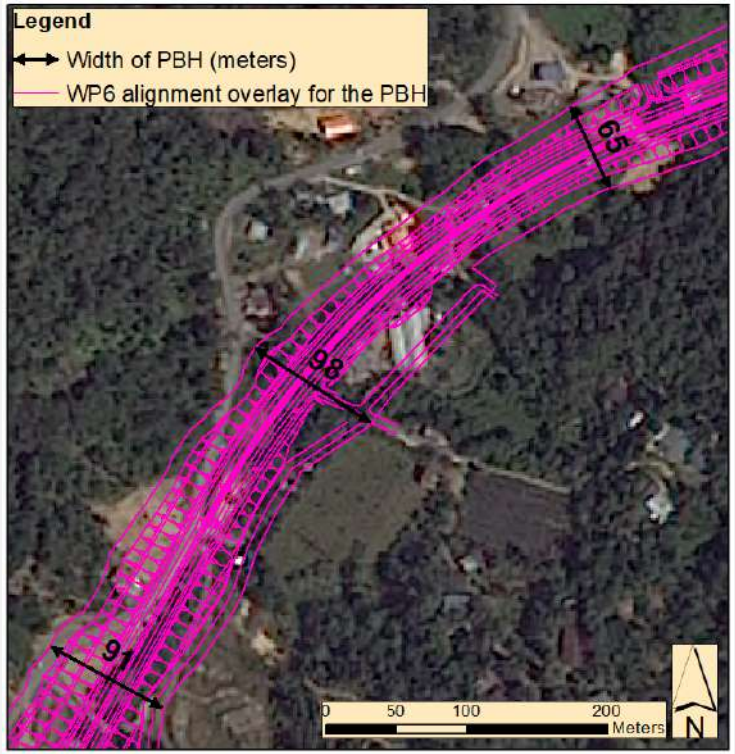
PHASE 3 Kalabakan – Sapulut. Existing road to be widened to a 4-lane highway, passing through 170km of known elephant habitat & forest reserves including Maliau Basin Buffer Zone 2. Will increase wildlife road kills, encroachment into protected areas & fragmentation of forest connectivity with Kalimantan & Heart of Borneo. No EIA.

IMPACT OF THE PAN BORNEO HIGHWAY ON DWELLINGS

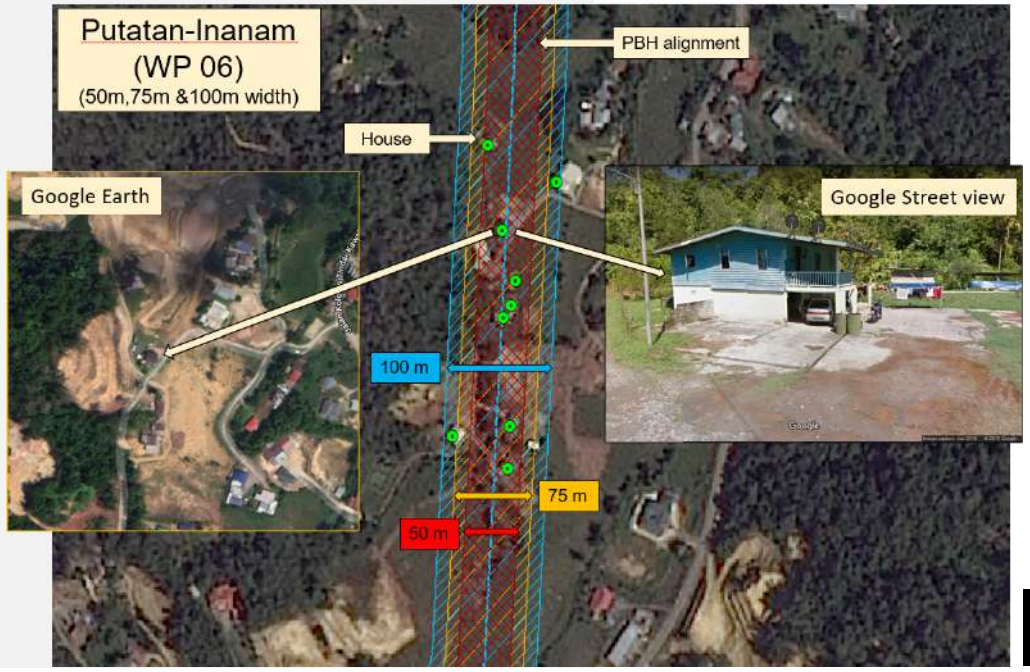
(1) Identified PBH alignment
- Borneo Highway PDP website
- Sabah Structure Plan 2033
- EIAs
- Google Earth



(2) Width calculations of the PBH
- Based on alignment data WP06 (22.5km)
- Width calculations every 250m
- Min 50.5m, Max 306.8m, Mean 84.8m, Median 71.9m



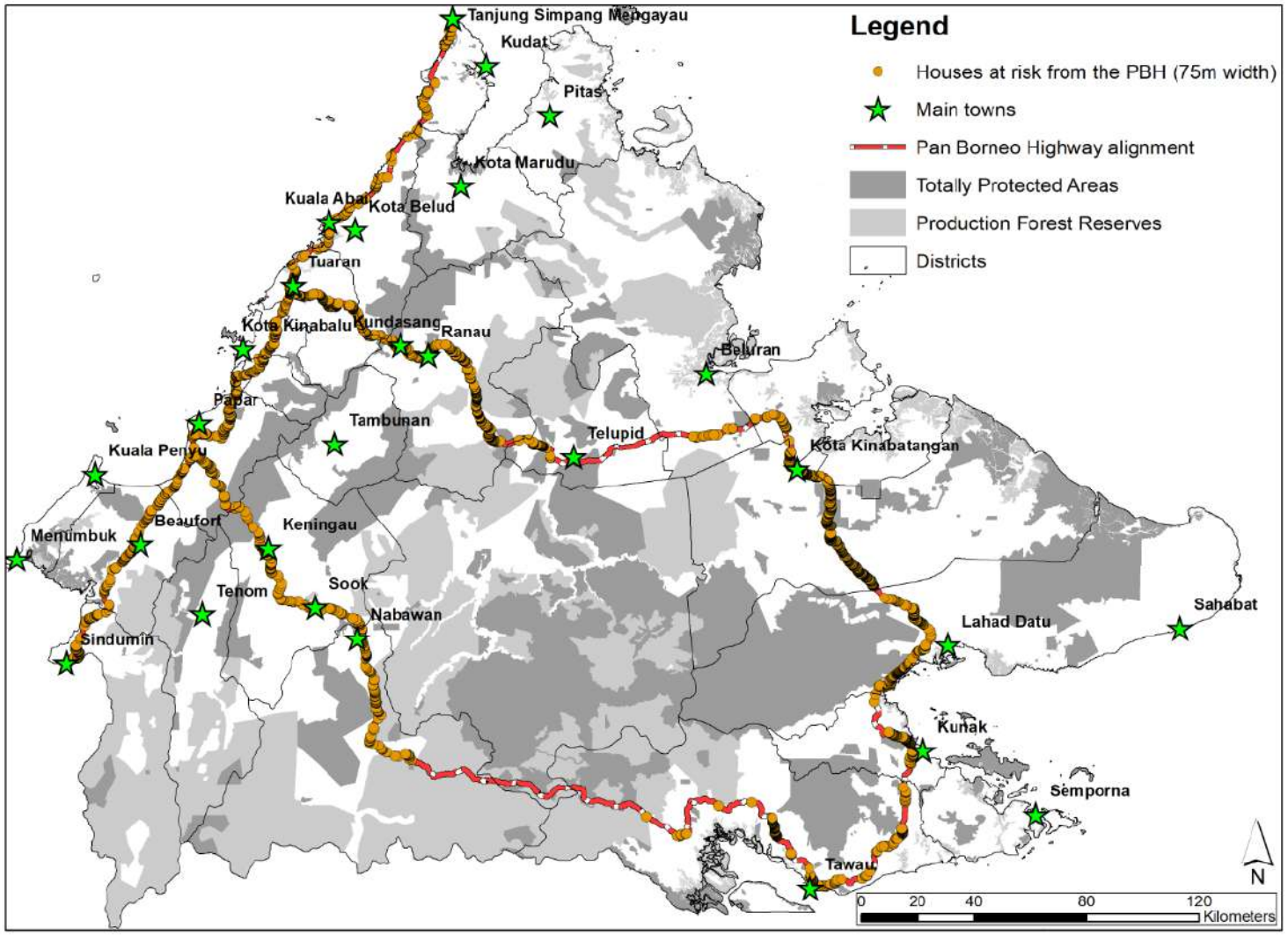
(3) Number of dwellings within 3 width scenarios
- 50m, 75m and 100m width scenarios
- All dwellings identified within these 3 scenarios
- High resolution imagery, Google Earth, Street view used



IMPACT OF THE PAN BORNEO HIGHWAY ON DWELLINGS

- Loss of homes (ranging from 1,712 to 7,093 dwellings lost for all phases)
- Loss of lands (ranging from 678 to 1,809 ha of NT, and more lands under NCR)
- Loss of parts or entire villages (ranging from 65 to 93 villages impacted)

	Dwellings in 50m	Dwellings in 75m	Dwellings in 100m width
All phases	**1,712**	**4,372**	**7,093**
Phase 1 (750 km)	1,233	3,006	4,851
Phase 2 (83 km)	292	628	867
Phase 3 (394 km)	187	738	1,375



ALTERNATIVE ALIGNMENT TO MITIGATE THE IMPACT ON COMMUNITIES

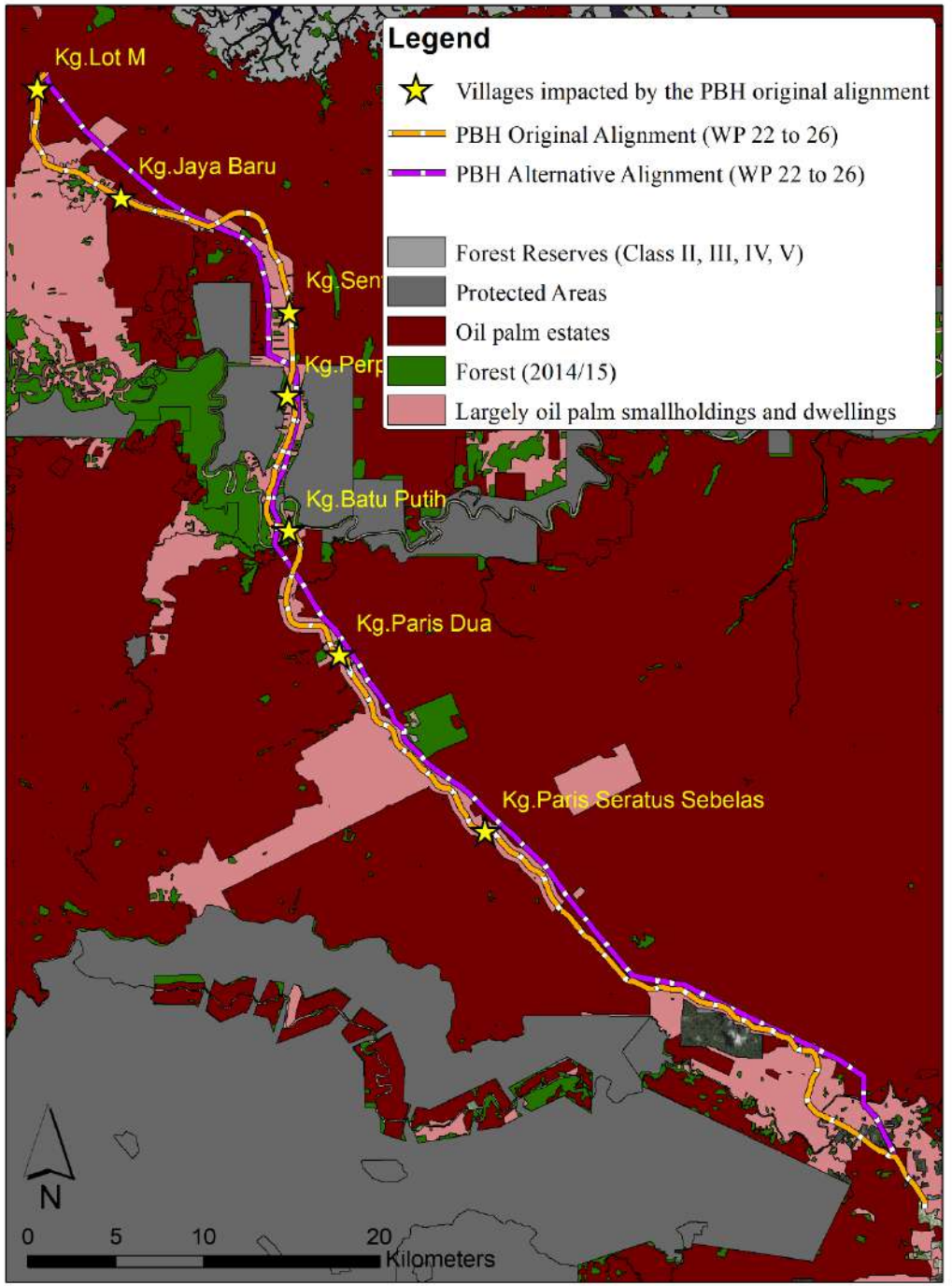
- Work Packages 22 to 26 in the Kinabatangan/Segama have not started construction and no EIA yet
- Identified an Alternative Alignment to reduce the impact on communities

Alternative Alignment:

- Is almost 8 km shorter
- Is located to the rear of community lands, largely follows electric pylons, and much of the Alternative Alignment would be in oil palm estate lands
- Will significantly reduce the number of dwellings lost to the PBH

	Dwellings in 50m width	Dwellings in 75m width	Dwellings in 100m width
PBH Original Alignment	247	832	1,281
Alternative Alignment	**11**	**18**	**59**
Difference between the two alignments	236	814	1,222

- Will allow the communities to persist *in situ*



ALTERNATIVE ALIGNMENTS TO MITIGATE THE IMPACT ON ELEPHANTS AND OTHER WILDLIFE

Route 1: is the current PBH alignment
- Work Package 31 and 32
- Cuts through Tawai Forest Reserve (Totally Protected Forest)
- Expand highway in Ulu Sapa Payau Forest Reserve
- Cuts through 30km of elephant range, including 'hotspot' areas
- 8 minor bridges

Route 4: best Alternative Alignment
- 8km shorter
- Avoids all Protected Areas
- Avoids elephant 'hotspots' and minimises going through known elephant range
- Mostly through oil palm estates
- 2 major, 3 minor bridges

Legend
- Villages
- Elephant locations from GPS collared elephants (DGFC) & field data (CERT)
- Route 1: PBH as current proposed alignment
- Route 2: PBH as initially planned along existing road
- Route 3: PBH new proposal to minimise risks with elephants and connect Telupid
- Route 4: PBH new proposal to minimise risks with elephants
- Totally Protected Forest Reserves
- Rivers

0 1 2 4 6 8 Kilometers

N

Stakeholders engaged
Jabatan Kerja Raya, Sabah Forestry Department, Environment Protection Department, PBH Project Delivery Partner, local communities

TAWAI FOREST RESERVE – RARE & ENDANGERED SPECIES

PAN BORNEO HIGHWAY WORK PACKAGE 10 PITURU – RAMP[illegible]

- Part of the proposed new 2-lane 124 km Serusup – Tg Simpang Mengayau stretch of the PBH – 'Kinabalu Gold Coast'
- WP10 will pass through 2 Mangrove Forest Reserves (Sulaman Lake & Abai) & Kota Belud Bird Sanctuary
- Mangrove destruction will affect fisheries (fish breeding grounds & nurseries) & coastal hydrology
- Hill cutting is causing erosion, sedimentation & water pollution, affecting the coastal area & fish abundance

Pollution of the sea from sedimentation at Kg Kastam - before & after PBH construction

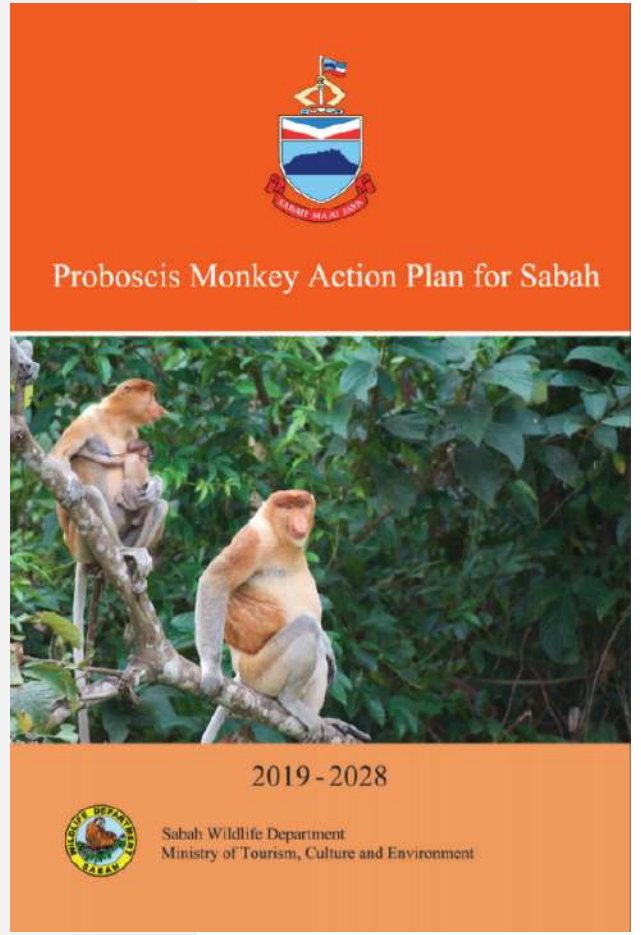
Mangroves dying due to road construction

PBH being constructed within a few metres of the sea near Kg Kastam

PAN BORNEO HIGHWAY WORK PACKAGE 10 PITURU – RAMPAYAN LAUT

Proboscis monkey populations (x) near Sg Wario

- At least 11 groups of proboscis monkeys will be affected, as well as fireflies, small-clawed otters, fruit bats & silvered leaf monkeys
- The EIA for this stretch of the PBH failed to report the presence of proboscis monkey populations, sea grass beds & the potential presence of dugong
- The EIA failed to give proper assessment of fragmentation of habitat & its effects on wildlife, & predictions on hydrology & natural tide movements that will affect mangroves
- If possible, the 2017 EIA for this project should be reviewed to incorporate the State Proboscis Monkey Action Plan 2018-2028 in order to conserve this endangered & endemic species
- Currently unprotected areas of mangrove should be protected as Class V Forest Reserves (priority Kota Belud Bird Sanctuary Kg Rampayan & Sg Wario areas)



UNIVERSITY COLLEGE SABAH FOUNDATION STUDIES

Evaluation of water and soil quality at paddy field along the Pan Borneo Highway construction area

A Study on the Establishment of Pan Borneo Highway and Its Impact towards the Population of Threatened Species as a Result of Wildlife-Vehicle Collisions (photo credit: Wong Siew Te)

Linear landfill with no culverts severely disturbs natural landscape hydrology and causes livelihood loss when the forest dies off and paddy field deteriorates

Stakeholders engaged

UCSF, youth, local communities, public

UNIVERSITY COLLEGE SABAH FOUNDATION STUDIES

The Study on Effects of Highways on Bird communities in Kawang Forest Reserve, Papar & Ulu Kukut Forest Reserve, Kota Belud, Sabah

Indigenous Livelihood and Food Security in Proposed Pan Borneo Highway, Sabah

Implication of The Pan Borneo Highway on Gender equality and Sustainable Infrastructure: Case Studies in Kota Belud

Stakeholders engaged

UCSF, youth, local communities, public

SABAH'S ENVIRONMENTAL LAW AND POLICY

Federal government – main source of funds

Sabah Structure Plan 2033

*"…the **policy** and **general** proposals"* for development and land use. Gazetted into **law** in 2016 under Section 4C(2), ***Town and Country Planning Ordinance*** **(**governs planning permission).

Visions: *"A **natural environment** that protects, conserves and rehabilitates its terrestrial and marine **biodiversity and ecosystem**."* (Paragraph 2.3.1(a))

*"…world class tourism destination… **protection of the environment** as **key tourism assets**."* (Paragraph 3.2)

*"**Environmentally Sensitive Areas** (ESA) shall be **identified and integrated into** the **District and Local Plans** for better long-term management…"* (Paragraph 14.3.3)

Proposal EV2-7: *"Where a **highway cuts through** the **forest connectivity** particularly if it is a **national highway or strategic road**; an **overpass or underpass** type of design shall be constructed to minimise the ecological impacts.*

***Highways and roads** cutting through forest are regarded as one of the **leading causes of dissecting forest connectivity**… it is important for the State to consider implementing **road technologies** that can minimise the environment impact by highways and roads."*

EQA / EPE

Environmental Quality Act 1974 (federal) and **Environment Protection Enactment 2002** (state) require approval of environmental impact assessment report / proposal for mitigation, to *"prevent, mitigate or abate"* the adverse impacts, or adequate *"to protect the environment"*, and the impacts are *"not detrimental to the environment"*.

Director **shall not approve** EIA if it **does not adequately protect** environment. (EQA Section 34A; EPE Section 12(6))

*Incomplete EIA: **No** impact prediction on hydrology and natural tidal movement, **no** guidelines to prevent disturbance on the Mangroves. Geological and Hydrogeology Report exempted. *(See Tuaran-Kudat, earlier)*

*Wildlife populations **not** fully recorded. **No** consideration of *Proboscis Monkey populations*. *(See Tuaran-Kudat, earlier)*

*Residents who were later displaced were **not** consulted. *(See N. Abram, earlier)*

***No** consideration of SSP: The need to avoid dissecting forest connectivity, mitigate by constructing overpass / underpass. *(See N. Abram, Telupid Alternative, earlier)*

EIA process seems to **discourage**, not encourage, public participation: Not easily accessible, not enough publicity or long enough time for public comments (maximum 21 days).

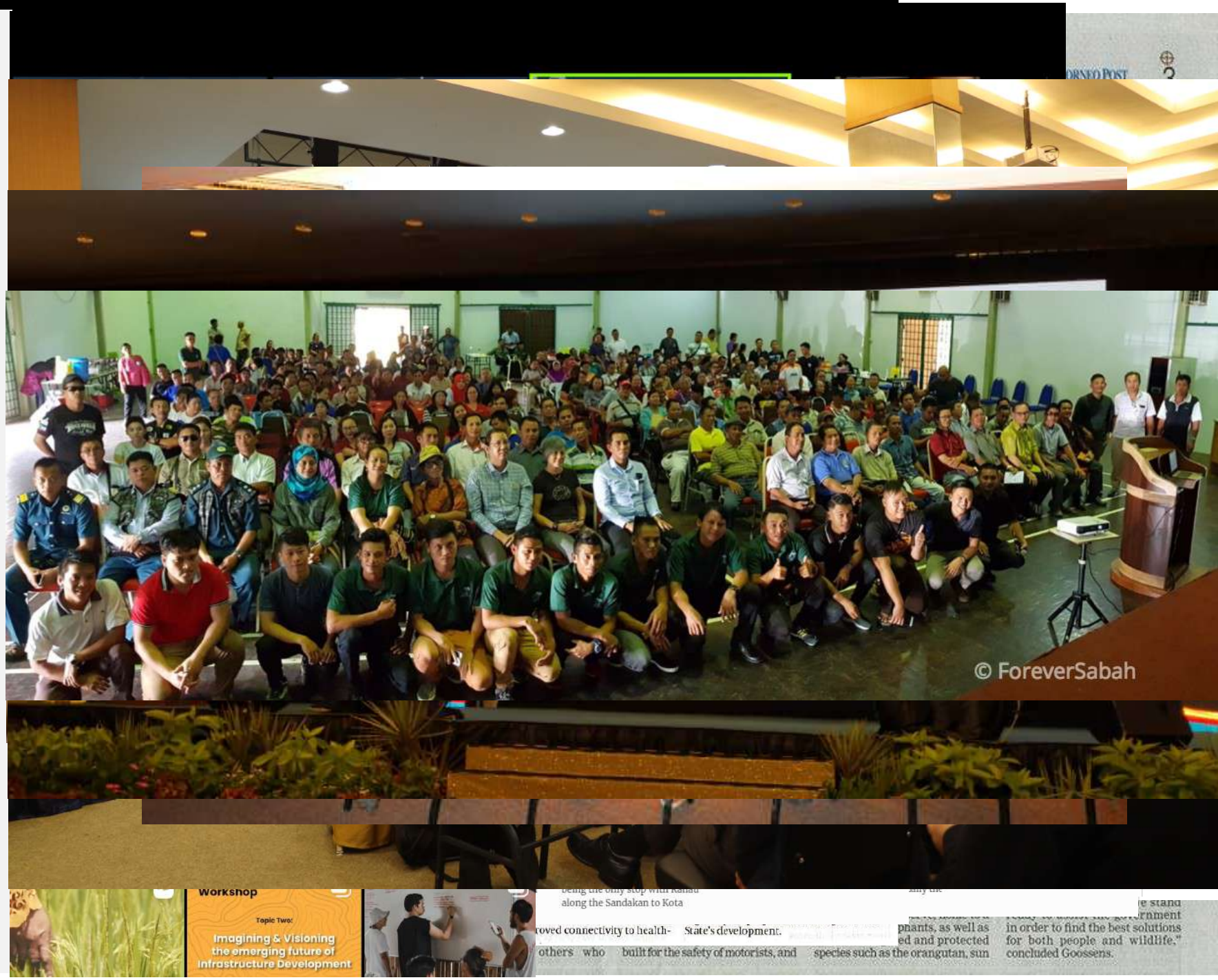
No Enforcement of proposed mitigation measures (e.g. base camp near waterways; bridge construction during rainy season). *(See Tuaran-Kudat, earlier)*

(Further on the EIA process, see "No Illusion about EIA Process", Borneo Post 2020.11.03, Daily Express 2020.11.08)

Major Infrastructure Projects in Sabah

COMMUNICATIONS

- Press articles in local & international media
- Historical Study On Roads series
- HHH Social Media
- Community-film “Our Road Our Say – Pan Borneo Highway Stories”
- Dialogues & Engagement with all sectors
- Regional collaboration with Indonesia and Papua New Guinea



MOVING FORWARD

- Full Strategic Collaborative Assessment Report out in March 2021
- Working with stakeholders on strengthening the EIA process
- Collaboration with Sarawak in Heart of Borneo context
- Interfacing with other infrastructure issues e.g. renewable energy for rural electrification
- Formation of a Joint Committee with key government agencies and NGOs to share data and enable dialogue for the benefit of decision-making processes (as recommended during the Inclusive Dialogue on Infrastructure Development in Sabah for the 12th Malaysia Plan Co-organised by Institute for Development Studies (Sabah) and Coalition 3H on 22 October 2019).


Humans
Habitats
Highways
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