



CALL TO ACT

Even as Singapore prioritises shoring up its defences against rising sea levels — a result of climate change — the city state has yet to establish a law on environmental impact assessment

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In 1983, work began on the Bukit Timah Expressway, a 10km highway that would significantly cut down the time it took to travel from the heart of Singapore, Bukit Timah, to the north. Owing to the hilly nature of the terrain — the route sliced through the Central Catchment Nature Reserve — explosives had to be used in part of the construction process.

Soon after the expressway was completed, in 1986, there were reports of roadkill in the area. After all, a major impact of splitting what was once a contiguous forest was the stranding of animals, such as the Lesser Mousedeer and Sunda Pangolin on one side, as they could not get over to the other side to find food or mates without becoming roadkill. That also contributed to a decline in biodiversity in the area. Eventually, the Eco-Link@BKE, a “highway crossing for wildlife”, was built and completed in 2013, at a cost of \$17 million. The bridge, which spans 50m across the six-lane dual carriageway, seems to be effective. The Na-

tional Parks Board has motion- and temperature-sensor cameras to track animal movement, and has recorded several species.

Five years later, however, reports of roadkill in the area have resurfaced, this time as a result of the Mandai project — billed as an eco-tourism complex. Work has been underway to expand the area from the existing space housing the zoo, Night Safari and River Safari to include a 17ha new Bird Park and a Rainforest Park. There will also be a luxury eco-resort operated by Banyan Tree Holdings, to be built on existing zoo land, when the whole development opens in 2023.

Last year, officials managing the Mandai project had to defend the developments in the face of reports of roadkill involving three rare native species — the sambar deer, pangolin and leopard cat.

To be sure, Mandai Park Holdings, a wholly-owned subsidiary of Temasek Holdings, which is the holding company for the parks, commissioned an environmental impact assessment (EIA) and gazetted the results in 2015. According to reports, plans for the Mandai project were adjusted twice — during the EIA process, and following a

public consultation in 2016.

Indeed, in a 2002 paper, environmental researchers Clive Briffett and Jamie Mackee suggested that the separation of Bukit Timah Nature Reserve from the Central Catchment Nature Reserve could have been avoided had laws requiring an EIA been in place.

An EIA is the most common tool used to manage potential environmental impacts arising from development and other building activities. It should comprehensively detail the impact a new development could have on the environment and surrounding communities, before work even begins, and provide recommendations to mitigate these effects. If done well, urban planners say, an EIA would help preserve biodiversity even in urban areas, and contribute to a more resilient and liveable environment — something for which Singapore has strived for decades. “This could help Singapore better adapt to climate change [risks] and reduce infrastructure capex in the long run to prepare for climate adaptation,” says Karthik Karkal, city planner and director of Ramboll Studio Dreiseitl.

Most countries have laws to dictate the types of projects that require an EIA, the

scope of the report and the need to present the results to the public, among other things. But, in practice, enforcement of those laws varies significantly across jurisdictions. One major issue is how an assessment runs the risk of being a long-drawn-out process that would in turn delay projects.

Hong Kong and Japan, for instance, have robust legislation. Laos and Cambodia have, in the best-case scenarios, loosely applied laws. In some jurisdictions, authorities have dragged their feet on implementing the environmental mitigation measures recommended by an EIA because of budget constraints or a change of government. In some Asian countries, in particular, there has often been limited public engagement, or poor impact prediction, despite EIA legislations.

EIA frameworks cover all nature reserves, nature areas and other sensitive natural areas, as well as marine and coastal zones. Developers planning projects close to these areas need to consult the government on their plans. EIA reports are assessed by technical agencies. The findings are made available to the public, unless there are area-specific reasons not to.

ALBERT CHUA / THE EDGE SINGAPORE



Work in progress on the expansion of the Mandai project

Robust EIA framework needed

Earlier this year, Member of Parliament Louis Ng pointed out the need for a more robust Environmental Impact Assessment framework. He offered five suggestions, covering the kinds of projects that need an EIA, mandatory adoption of the recommendations of the EIA, penalty for not adhering to the EIA recommendations for developers and making EIA reports public.

- Make EIAs mandatory for all construction works near national parks or nature reserves;
- Ensure that the recommendations in the EIA reports include a timeframe for the implementation of the recommendations;
- Introduce penalties for not implementing the recommendations in the EIA report within the timeframe indicated;
- Make the EIA report available to the public after removing sensitive data related to national security; and
- Mandate that EIA consultants file their final reports to the authorities rather than the developers to ensure their independence.

The Ministry of National Development says the review of the EIA framework is ongoing and will be completed at year-end.

project developers to publish an EIA and engage environmental groups or the public. The quality of the EIA can vary, as it hinges on the expertise of the consultants that conduct the assessment, who in turn typically have to balance a budget set by developers, and the requirements of government agencies. At the same time, there are no laws governing consultants that conduct EIAs. Finally, there are no penalties for developers that eventually decide not to implement the recommendations under the EIAs — though one could argue that the penalty for environmental damage can be worked into contractual agreements between developers and contractors. Yet, this is all still discretionary.

"The difference with a law is there is an expectation and there is a baseline — rather than just gratitude that developers do an EIA," says a local lawyer who specialises in environmental issues. "Where there is a dispute, and the law is not complied with, people can mount a legal challenge."

Ultimately, the lack of a more robust framework can make it difficult for EIAs to be consistently effective. While Singapore has conducted EIAs since the 1980s, these reports were not always made public. Environmental groups say an EIA law or guidelines can ensure that due diligence and transparency are always upheld.

Most recently, nature groups have been able to point out flaws in the recent Mandai EIA, and they were able to work with the developer to mitigate environmental impact only because the developer made the report public and consulted these groups. Just as important, legislation around an EIA can also send a signal to developers, which may not have previously paid much attention in the past, that such an assessment is important.

Indeed, as Harvey Neo, senior fellow and head of programme at the Lee Kuan Yew Centre for Innovative Cities, Singapore University of Technology and Design, puts it, a developer's perspective and valuation of nature will always be inherently incompatible with that of conservationists. As such, legislation should take into account the arguments on all sides, to build a robust EIA framework, to facilitate an objective, informed assessment of a project's environmental impact.

Neo says: "If the pros and cons [of a project] are general, imprecise or inconsistent, decisionmakers may not have all the right information to make a decision."

Loose, lax practices

EIAs are typically based on standards set by international institutions such as the World Bank and the International Finance Corp. The scope of the report would be agreed

upon by government agencies, consultants and developers, however, and the developers pay for the report.

An EIA typically takes six to eight months to complete. Some could take up to 1½ years. The process involves consultants' carrying out the screening, scoping, data-collecting and analysis of impact as well as suggesting mitigation measures. As regulations on EIAs differ across the world, implementation of mitigation measures has been slow in many cases.

And there is no guideline or law on who are qualified to conduct such assessments, and how environmental impact is assessed. As such, much depends on the quality of the consultants, and their reporting. Further, environmental impact varies across different ecosystems, and the question is whether legislation should be broad enough to cover them all; overly broad guidelines may result in some developers' opting for EIA reports thin on details.

"This is an issue faced by EIA consultants in most parts of the world. It takes time for changes to be incorporated into the environment. For instance, to measure the impact of a dredging project, a consultant might count the amount of seagrass in the area after. But it takes two to three months before significant environmental impact kicks in. That may not be accounted for," says Siti Maryam Yaakub, head of department, ecological habitats and processes at DHI, a global consultant on water environments.

A Singapore-based EIA consultant who declined to be named says: "It all comes down to the integrity of the consultant. But how do you legislate that a consultant must be bothered enough to go beyond the bare minimum?"

Compounding the issue in Singapore is the lack of baseline data, which can make the EIA process costly and prolonged, as consultants have to collect primary data themselves. "The developers want cheaper and faster in every case. But we don't want to [become an agency that says] because you pay me, then I'll do it," says Tan Seng Chuan, director of Tembusu Consulting. The company has conducted EIAs for local private developers and government agencies. "Some consultants don't care. They will base their report on previously available data," he adds.

Tan calls for a more open data collection regime. "If we have more data, then the cost will come down. The developers will not balk [at the costs of an EIA]," he says. "There need to be some regulatory requirements for developers that need an EIA, to do it properly."

Environmental groups argue that one of the biggest problems arising from the lack of legislation or regulation is that developers do not adhere to the mitigation

measures or other recommendations in an EIA face no sanctions.

After questions were raised about roadkill in the Mandai area, Senior Parliamentary Secretary for National Development Sun Xueling said in Parliament in July that, while Mandai Park Development is responsible for implementing mitigation measures and has an Environmental Management and Monitoring Plan (EMMP) in place, there is no penalty imposed for its failure to implement those measures.

Environmental groups acknowledge that implementing mitigation measures can be challenging. Subcontractors and contractors may not adhere to the environmental monitoring strategies: A member of Mandai's EMMP committee says it has caught some errant contractors. He adds that the monitoring committee has no actual authority over the project, only some measures of influence.

For its part, Mandai Park Development says it has been engaging with stakeholders, including local nature experts and communities, since the project's conceptual phase in 2015.

"As the project progresses, it is expected that unforeseen situations may arise that necessitate refinements and adaptive changes stated in the EIA Report. Any refinements are made in consultation with the relevant stakeholders and approved by government agencies," says a Mandai Park Development spokesperson.

When contacted, Mandai Park Holdings did not directly address its views on penalties for not implementing the EIA recommendations.

Picking battles

The call for laws around EIA by academics and environmental groups goes back to the 1980s. Members of Parliament, including Louis Ng, also founder of ACRES, former nominated member of parliament Geh Min and Workers Party's Chen Show Mao, have raised questions about the issue.

Engagement by environmental groups has been tense, though they have had victories. Some people have likened episodes in the 1990s and 2000s to "pulling teeth". In 1992, the government planned to build an 18-hole golf course on a large track of old secondary forest at Lower Peirce Reservoir. The EIA was not made public, so Nature Society (Singapore) conducted its own. It spent three months surveying animals and plants in the nature reserve. The report was submitted to the government with a forward by Singaporean veteran diplomat Tommy Koh. A campaign was mounted, gathering more than 25,000 signatures, and the project was eventually shelved.

In 2001, when intertidal zone Chek Jawa on Pulau Ubin was slated for reclamation, the Nature Society again asked for an EIA. Environmental groups say Chek Jawa is home to unique marine life that is not seen in the main island and reclamation would destroy the rare species endemic to the area. But the EIA was not made public. Environmental groups and volunteers started running public exhibitions and guided tours. At times, hundreds of people gathered at Chek Jawa. The project was eventually deferred.

Most recently, according to at least three separate sources *The Edge Singapore* spoke to, the new bird park at Mandai was designed with an open-air amphitheatre for bird performances. But nature groups collectively objected to it, explaining that the birds would escape and were likely to be attacked by the wild birds in the vicinity. Two sources said gamekeepers tried to justify the need for an open aviary, but the plans for an open aviary have since been shelved.

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Concern over impact of overzealous EIA laws

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"In the early days, it was public pressure that saved these areas. No matter who tries to take credit, it was the public [that saved them]," says Subaraj Rajathurai, wildlife consultant and founder of Strix Wildlife Consultancy. He has been involved in almost every fight to preserve the environment in Singapore.

The interaction with authorities is no longer as hostile today, Subaraj says. The authorities and developers do consult wildlife experts, though it is still an uphill struggle at times.

Nature groups have disputed the clarity of the Mandai and Cross Island Line EIA reports. They have argued that the impact has been downplayed, considering the Mandai project is adjacent to Singapore's largest nature reserve. These groups have also said the mitigation measures at Mandai to prevent roadkill have come in too late in the development; hoarding to prevent animals from wandering onto roads were still being put up even as roadkill of rare species was reported.

Environmental groups in Singapore are painfully aware of the position they are in and what they can do. An environmental lawyer also points out that if environmental groups appear too confrontational, there is a fear that they will not be consulted again. "If you make a public stance, the developer could get harder on you. Then, there is the thought [that] the developer could have [come to a compromise], but you went public. So, they wouldn't now," the lawyer says.

Subaraj says: "You have to pick your battles. Only bring things up if you think you can [bring about] change."

From environmental lawyers to nature groups and consultants, most have voiced



An elevated wildlife crossing being built across Mandai Lake Road

their support for laws or at least guidelines around EIAs. They say the idea is not to stop development or slow down economic prosperity, but to safeguard the due diligence and transparency of a process that is meant to ensure that the needs of all stakeholders are taken into account. Nature groups are also concerned that the discretionary approach could change as the authorities change.

Pricing Impact

In Singapore, major real estate developers such as **City Developments** and **CapitaLand** have taken the initiative to undertake some form of EIA. Smaller players are likely to see EIA as a cost, however — a "good-to-have" report, particularly if they are under

cost and time pressures. Developers such as these were unlikely to carry out an EIA without legislation.

At the same time, however, industry insiders worry that overzealous EIA laws would result in higher costs, project delays and unnecessary hurdles to economic development. "The development had to take a certain pace, and development had to be done in a certain format. So that, overall, you're able to contribute to your presence in the region, within Singapore," says Ramboll's Karkal. "Being a city state, there is also the [element of] what services you offer to your citizens and how you manage national expectations about being a country. So, there are many considerations.

"EIA is probably something that would

have been great, but couldn't have been made mandatory because of all the conditions [in the past]."

Yet, there is growing concern that states, and developers, are not accounting for the externalities of their development activities, from carbon footprint to the loss of biodiversity. These are also areas that are difficult to price objectively.

"EIA is extremely tough to do because everyone has different expectations," says Kuan Chee Yung, senior vice-president at CPG Consultants. The subsidiary of CPG Corp provides development and management services for the infrastructure industry. "Developers have two problems. The land you buy is very expensive. So, the capital that is left to regenerate nature is usually [restricted]." Kuan argues that more research on how to preserve and regenerate the natural environment needs to be done, and that could help mitigate environmental harm during development.

Other experts say that developing methodologies to price environmental impact and biodiversity loss would be more effective than EIAs to ensure developers comply with better environmental practices.

Whatever the case, a robust EIA framework would certainly benefit a city state striving to be a garden city. Ramboll's Karkal says: "I am a planner, I sell Singapore so I can get projects. Internally, people are hugely knowledgeable and concerned, and for the right reasons. There's enough development that's happened here.

"Now, the development has to be very balanced because, externally, Singapore wants to become a role model. It is a [difficult] job, balancing the requirements of the thresholds of nature and also economic development." ■

MARKETdiary

Monday, Sept 30

Singapore

Bank Loans & Advances
Money Supply M1 (y-o-y, Aug)
Money Supply M2 (y-o-y, Aug)
Eindec Corp Ltd EGM
LionGold Corp Ltd EGM
Tianjin Zhong Xin Pharm Group EGM
TEE Land Ltd AGM
USP Group Ltd AGM

Tuesday, Oct 1

Singapore

MTQ Corp Ltd EGM

Wednesday, Oct 2

Singapore

US MBA Mortgage Applications

Thursday, Oct 3

Singapore

Purchasing Managers Index (Sept)
Electronics Sector Index (Sept)
Singapore Exchange Ltd AGM

Friday, Oct 4

Singapore

US Trade Balance (Aug)

LISTINGS

Monday, Sept 23 to Tuesday, Oct 1

Topic: 10th Global Corporate Governance Week

Highlights: Topical corporate governance issues, trends, developments and best practices will be discussed at the conference, forums and workshops. Public-listed companies that have demonstrated exemplary corporate governance and transparency practices will be recognised at Investors' Choice Awards.

Organiser: Securities Investors Association Singapore

Tel: 6227 2683

Email: cgweek@sisas.org.sg

Website: sisas.org.sg/cgweek2019/index.php

Monday, Sept 30

Topic: Investor Week 2019 – Dealing with Financial Institutions

Highlights: Learn about the rights and responsibilities you have when dealing with financial institutions, what products they can offer and what advice they can give; learn the importance of risk profiling, setting investment objectives and the length of your investment horizon, and how this information is used to identify suitable products or help construct your investment portfolio

Time: 7pm to 8:30pm

Venue: Programme Zone, Central Public Library, 100 Victoria Street, B1-01

Organiser: Singapore Exchange

Tel: 6327 5438

Email: register@sgxacademy.com

Tuesday, Oct 1

Topic: World Investor Week 2019 – Building a Portfolio

Highlights: Gain an understanding of how to build portfolios for individuals with different risk profiles, and the benchmarks that can be used; get advice on how to construct a diversified portfolio with limited capital

Time: 7pm to 8:30pm

Venue: Programme Zone, Central Public Library,

100 Victoria Street, B1-01

Organiser: SGX

Tel: 6327 5438

Email: register@sgxacademy.com

Wednesday, Oct 2

Topic: Getting Started on Forex Trading

Highlights: With the goal to help attendees understand the basics of forex trading, this engaging seminar will be especially beneficial to novice traders. Forex trading is classified as a high-risk investment but, when equipped with the right foundation, traders will be able to navigate market changes with ease.

Time: 7pm to 8pm

Venue: PhillipCapital – Presentation Room, Raffles City Tower, Level 6, 250 North Bridge Road

Organiser: Phillip Futures Pte Ltd

Tel: 6538 0500

Registration: www.phillipfutures.com.sg/investors/education/

seminars-events/register/443

– Compiled by Rahayu Mohamad