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Sabah's power and water vulnerability

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Datuk Roger Chin

At dawn in Sandakan, the market was silent. Fishmongers poured melting ice over spoiled stock. Freezers had been dead for hours. Across town, a nurse in the hospital counted water jugs, working out how many hours the wards could last before taps ran dry.

This was mid-September in Sabah. Heavy rains and landslides knocked out two lifelines — a transmission tower and a raw water pipeline. In an instant, there was darkness and dry taps across the state.

Sandakan and five other districts lost power when a single 275kV tower fell in Penampang. Nearly 230,000 consumers were cut off. Without electricity, the Segaliud water plant could only run one of its two main pumps on generator power. Taps went dry on top of the blackout.

In Kota Kinabalu, a landslide ripped through the Moyog-Kasigui pipeline and crippled the Kasigui treatment plant. Overnight, the capital faced a 30 million-litre per day shortfall. Hospitals rationed. Hotels apologised to guests. Tankers lined neighbourhoods. Officials said repairs would take five to seven days.

None of this surprised Sabahans. September didn't expose a hidden weakness. It laid bare what people have always known – our utilities are brittle by design, and the smallest shock pushes them into collapse.

Living Without Safety Nets

Sabah's power and water systems are built without redundancy.

The Kolopis-Segaliud line is a single artery for the east coast. When Tower 5 toppled, the whole grid segment went down. The Moyog-Kasigui system provides nearly half of Kota Kinabalu's water. When that pipe snapped, the capital went dry.

There are no parallel pipelines. No looped grids. No alternate intakes. Just single lines stretched across unstable hills. When one fails, there is no fallback.

Sabahans live with this fragility. They endure rationing notices, hours-long blackouts, and "repair works" that take weeks. September was only the most dramatic example. The truth is simpler and more damning – this system is designed to break.

A Web of Interdependence

Utilities don't fail alone. They fail together.

When the power goes, water pumps stop. When water cuts hit, hospitals and factories scramble. Gas shortages ripple into electricity supply, which then ripples back into water.

This is what happened in Sandakan. The blackout paralysed the Segaliud water plant. In Kota Kinabalu, the water shortage forced hospitals to decide which wards would be supplied first. A blackout isn't just darkness. A broken pipe isn't just inconvenience. They are triggers that cascade across the web of daily life.

And this web — fragile, overstretched, exposed — is stretched over some of the most landslide-prone terrain in the country, now hammered by heavier storms than ever before.

Climate Change Has Moved the Goalposts

Sabah has always lived with floods and landslides. But climate change has moved the goalposts. Rainfall is heavier, slopes collapse faster and rivers rise higher. Disasters that used to be "once in a century" now come every few years.

But our infrastructure hasn't changed. Towers still stand on unstable slopes with shallow foundations. Pipelines still snake across hillsides with no protective cover. Treatment plants still depend on backup generators too weak to run at full capacity.

We are meeting 21st-century storms with 20th-century defences. Every downpour exposes that mismatch.

The Economic Cost of Fragility

Utilities fragility isn't just an inconvenience. It's an anchor holding Sabah back.

When Sandakan went dark, shops shuttered. Cold storage failed. Online transactions froze. Industry lost millions.

In Kota Kinabalu, the water shortage crippled hotels and restaurants. Small factories scaled down. Schools sent children home. Hospitals rationed. Tourism — the state's showcase sector — was left explaining

All it took for those on the West Coast to go without water for days and for the 230,000 people on East Coast to go without electricity was the collapse of a single electricity tower on the West Coast.

to visitors why they couldn't bathe.

Investors see this. Tourists feel it. A state that cannot guarantee power and water cannot grow. Sabah talks of downstream industries, global business services, and digital hubs. But no serious investor will anchor in a place where utilities fail every time it rains.

The Southern Link – A Blueprint for Resilience

This is why the Southern Link Project is so urgent. It is a second transmission route between Sabah's west and east coasts. If one line fails, the other carries the load.

The Southern Link is more than a power project. It is a blueprint for resilience — redundancy, backup, interconnection. If it had already been built, the mid-September blackout would likely have been far less widespread.

But resilience cannot stop at electricity. We need "Southern Links" for water and gas too.

For water – Kota Kinabalu cannot depend on Moyog alone. We need alternative intakes, parallel pipelines, and reservoirs closer to demand.

For gas – the warning signs are worse. The Trans-Sabah Gas Pipeline (TSGP) was cancelled, and in February 2025 the federal government confirmed it will not be revived. The Sabah–Sarawak Gas Pipeline (SSGP) has been plagued by soil movement; PETRONAS has announced plans to decommission sections of it, with work running until 2027. Without redundancy, Sabah's gas security is exposed.

The Southern Link shows what resilience looks like. Sabah needs that thinking across every lifeline.

What the Plans Say — and What They Don't

On paper, Sabah has master plans. But they stop short of redundancy.

SE-RAMP 2040, the Sabah Energy Roadmap, promises diversification, reserve margins, and renewables. Good ambitions. But it doesn't guarantee looped grids or backup gas lines. It secures capacity, not continuity.

The Sabah Water Resources Master Plan lays out catchment protection, new plants, and pipeline upgrades. The state is replacing about 1,200 km of ageing pipes. But there is no alternate intake for Kota Kinabalu if Moyog fails.

Program BALB promises 90% rural water coverage by 2035. The Public Accounts Committee has urged a proper master plan for rural supply. But coverage is not resilience.

In gas, billions are being invested at SOGIP, with major supply deals from Petronas. But these serve industry growth, not redundancy. With TSGP cancelled and SSGP partly decommissioned, Sabah's gas backbone remains fragile.

These plans expand service. But they do not secure it.

What Must Be Done

Sabah needs a utilities resilience master-plan — one that cuts across power, water, and gas. Expansion is not enough. Redundancy must be built in.

Short-term

- Equip treatment plants with backup power strong enough to run at full load.
- Stockpile spare towers, pipes, and pumps in strategic depots.
- Train rapid response teams to restore service in days, not months.

Medium-term

- Build the Southern Link for electricity.
- Construct alternate intakes and pipelines for Kota Kinabalu.
- Reinstate a gas transmission plan for the east coast, learning from the TSGP failure.
- Reinforce slopes and relocate towers and pipelines from high-risk zones.

Long-term

- Rewrite standards for climate extremes.
- Build looped grids and water grids, not single lines.
- Develop decentralised system - microgrids, local reservoirs, buffer storage.
- Establish a federal–state Utilities Resilience Commission with the mandate and funding to deliver.

This is not "gold plating." It is survival.

Politics and Dignity

Utilities fragility in Sabah is not fate. It is the result of politics.

For decades, federal budgets underfunded Sabah's infrastructure. State agencies patched holes instead of building resilience. Resilience was always called "too expensive." Then the rains came, and the bill was higher.

This is also about dignity. People in Kuala Lumpur don't wake up wondering if water will flow. They don't sit in the dark while hospitals ration electricity. Why should Sabahans accept less?

Utilities are not privileges. They are rights. To deny Sabah reliable power and water is to deny equality.

Never Again

Mid-September laid it bare. A toppled tower. A broken pipe. And Sabah was in crisis.

The Southern Link is critical. But unless water and gas get their own "Southern Links," Sabah will remain one landslide away from collapse.

The rains will come again. The question is whether leaders will still be patching, rationing, and apologising — or whether they will finally build the resilient systems Sabah deserves.

Fragility is not fate. It is a choice. And Sabah has been living with other people's choices for too long.