# KAMPUNG DAGAT: RENEWABLE ENERGY FOR REMOTE FISHING COMMUNITIES.

Deep in the easternmost regions of Sabah, surrounded by mangrove wetlands and rich biodiversity, Kampung Dagat is one of many remote villages in the state.

Yet for all its remoteness, Kg. Dagat at first appears rather peculiarly modern. Rather than dispersed along the riverbank, its little wooden houses are neatly lined up in two rows hemmed in by privately-owned oil plantations by outsiders on their traditional areas.

*(Drone shot of Kg. Dagat hemmed in by oil plantations, photo credits to Forever Sabah)*

But Kg. Dagat is no longer what—or even where—it used to be. Due to lack of infrastructure, the village has moved from the other side of the Tabin River, to have better access to schools and development. But actual progress has staggered as they still lack electricity.

Located in the lower reaches of Segama River more than 100 kilometres out from Lahad Datu, Kg Dagat is officially home to 284 people—96% of whom are from the indigenous Tidung group. Currently, only 174 still reside in the village as the rest have migrated to towns and cities over the years, in search of better opportunities.

As is the case with many other indigenous groups, the Tidung have very strong connections to their territories and their ancestors that motivates Dagat residents. But to stay at home, the youth want to see jobs and access to electricity and telecommunications.

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*(Dagat fishers in Mangroves, photo credits to Forever Sabah)*

The people of Dagat sustain themselves largely on artisanal fisheries, a practice that has been passed down through generations. However, fisheries incomes are precarious. Industrial fishing from Sandakan and by illegal foreign fleets has pressed into traditional fishing grounds, and locals have also experimented with destructive methods like river trawling. Indeed, as global temperatures continue to rise, and with the damage to forest catchments upstream, sustaining traditional practices in modern contexts has become more challenging.

Fishers earn only a fraction of their usual selling price in urban markets and restaurants. Improving income while reducing fish catch means adding value. The people of Kg. Dagat have been innovative; for example using traditional prawn traps made from sustainable materials to catch only bigger prawns and directly selling their fish at sophisticated urban markets like KeTamu.

*(Freshwater Prawns caught by Dagat fishers, photo credits to Forever Sabah)*

And, women and youths are keen to explore other means to diversify their sources from downstream processing of fisheries products.

However, the community lacks the infrastructure to keep their catches fresh and cope with market trends. “Once we have made our catch, we have to immediately store it,” says local fisher Yamrin bin Ramsa. “But that requires a large amount of ice,” he added.

*(Putting bought ice into a cooler box of caught fish, photo credits to Forever Sabah)*

Without electricity, villages are unable to cost-effectively power refrigerators or ice machines. Instead, the people in Kg. Dagat turn to nearby villages or Lahad Datu to buy ice. Carrying it back to their village is a huge investment of time and energy and due to distance, much of it melts on the way.

*(Kg. Dagat communal generator, photo credits to Forever Sabah)*

Currently, Kg. Dagat’s main source of electricity is diesel generator, for which residents take turns to buy fuel. But a trip from Dagat to Lahad Datu takes around four hours as it requires travelling down the river and through the oil palm estates on Jalan Jeroco, notorious for its treacherous unpaved dirt road and accidents.

*(4x4 stuck on unpaved dirt road, photo credits to Forever Sabah)*

Ramsa shared his experience, saying, “When [using that road] in rainy weather to send kids to school or go to sell our fish, our car often gets stuck.” The community has no choice but to rely on 4x4 trucks for which a household would have to pay up to 9 years of loans.

Furthermore, diesel is expensive. According to Ramsa, the community can only cost-effectively power the generator for four hours of mostly evening usage. “In a month, we spend about RM350 to power the generator. That doesn’t include the cost of transporting it from town which is about RM70 back and forth.” Dagat local Jabrin bin Hussein adds that car maintenance is a huge burden as well. “In a month, the cost of repairs can accumulate around RM800 to RM900,” he shared. Hence, it’s too costly to power up communal ice machines and install home refrigerators with diesel generators.

That’s where renewable energy fits into the puzzle.

Kg Dagat is much too far from Sabah’s transmission lines to join the SESB grid. However, solar powered mini-grids would be able to fulfill the community’s need for ice and better preserve their catches. The advantages don’t end there.

*(Kg Dagat children studying at night, photo credits to Forever Sabah)*

In the current time of COVID-19 school closures, Dagat resident Andrapidah bin Putra believes that it would greatly benefit her children, “They are only able to study in the daytime.  One of the advantages [of solar power] is that they would then be able to study at night.”

Electricity would also assist with income diversification, like strengthening the Dagat Tabin Homestay ecotourism program established in 2005 for travelers looking to experience the

Dagat way of life. They are now well known for reserving certain mangrove areas for fee-paying sport fishers. Going green shows the awareness the community is gaining about the synergy between sustaining the environment and building livelihoods.

Accessible energy can allow new generations to stay rooted in their ancestral lands.

Through successful establishment of a solar mini-grid which the community themselves can learn to manage, we envision Kg. Dagat as a model for fishing communities across Sabah, empowering them to preserve their homelands, culture, and traditions for generations to come.

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