

# Kampung Mumiang Community Fishery Management Report

January 2022

## 1. Community Fisheries Protocol Workshop, 23<sup>rd</sup> & 24<sup>th</sup> August 2021

Community representatives and household leaders organized a workshop to develop a fishery management approach following the completed construction of four units of fishery aggregating structures (FAS) in the village back in August 2021. The community learned various fishery management toolkits, fishery recovery initiatives and adopted the concept of Locally Managed Marine Areas into their effort to secure fisheries in the village.

Locally Managed Marine Areas is a concept by the LMMA network([Immanetwork.org](http://Immanetwork.org)) to sustain or recover fisheries in marine, coastal and freshwater ecosystems and been increasing popular approach among small scale fishing communities across the Asia Pacific region. The process is developed in a bottom-up approach and centered around the community's traditional knowledge of the aquatic ecosystem they live.

The first draft fishery management protocol incorporating the LMMA concept was completed in the workshop and addressed with all fisher groups for inputs before launching to mitigate conflict. The protocol is designed based on the traditional knowledge of the "Renggas"<sup>1</sup> of the Suluk People. The protocol covers approximately 1.5 square kilometers of the river channel in the village with four fish aggregating structures (FAS) deployed in suitable depths with 50-meter radius.

The community chose a Spiritual leader (Imam) to lead this fishery recovery to bind the community together in respecting the rules according to Islamic rituals and traditional beliefs.



Photo: LMMA workshop and development of draft fisheries Protocol, first Workshop.

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<sup>1</sup> Renggas are underwater structures consist of mangrove roots, fallen mangroves trees or sunken logs and structures in coastal mangrove estuarine areas when at suitable depths, it creates ideal conditions for schooling of fishes and crustaceans, creating a food chain and shelter for fish species. If undisturbed, these areas often create a spill over effects and allow certain species to grow to mature size to spawn or migrate to open seas. It is continuously practiced to catch by hook line or covered with nets to catch juveniles for rearing in cages.





## 2. Follow-up engagement, revision of Draft Fisheries Protocol, and training. 30<sup>th</sup> September 2021.

The project facilitated the follow-up process to collect feedback in the fisheries protocol, debate on the rules, decide launching dates and the length of closure of the sites and ongoing management once the FAS has been launched.



Photo: Engagement with all four village settlements in Mumiang



Photo: Fishfinder training with fishing groups in the village.

The community chosen sites based on their current knowledge of the riverbed and areas where they know fish tends to congregate. Locations of the fish aggregating structure(FAS) was also moved for concerns of strong tides and modifications to reinforce the structures underwater. The community is equipped with a transducer/fish finder to effectively monitor the FAS on monthly basis. This combined with their experience in fishing with hook and line and expertise in indentifying the composition of fish species surrounding an underwater structure helps to interpret what they see displayed in the monitor of the fishfinder.





### 3. Community Association Membership Drive, Final Community Fisheries Protocol Workshop, and Launching of Fish Aggregating Structures in Mumiang. October 2022.

The community finalized the fisheries management protocol in October following a series of workshops, engagements, and exposures. The protocol is known as ***Alutan Bai*** in Bahasa Suluk (Waters of Our Village), the aim is to allow fish stocks along the channel to recover to by designated no-take zone to promote the schooling of fish, shelter for juveniles and mature fishes and reduce the indiscriminate use of gill nets. This concept is similar to Tagal.

The first harvest will be done in March after the end of mass spawning events just after the end of the monsoon season. The community will record the data by using an Open Data Kit Platform to measure the ratio between mature sizes of snappers and juveniles.

Led by the village's Imam, the association held a prayer day at the mosque to bring good fortune for the community efforts and to bless the fish aggregating structures. The entire village celebrated the day by deploying the fish aggregating structure and organizing a feast at the Community Hall.

The community association also initiated a membership drive on the same day, which increased the number of registered members from 7 to 49 people.



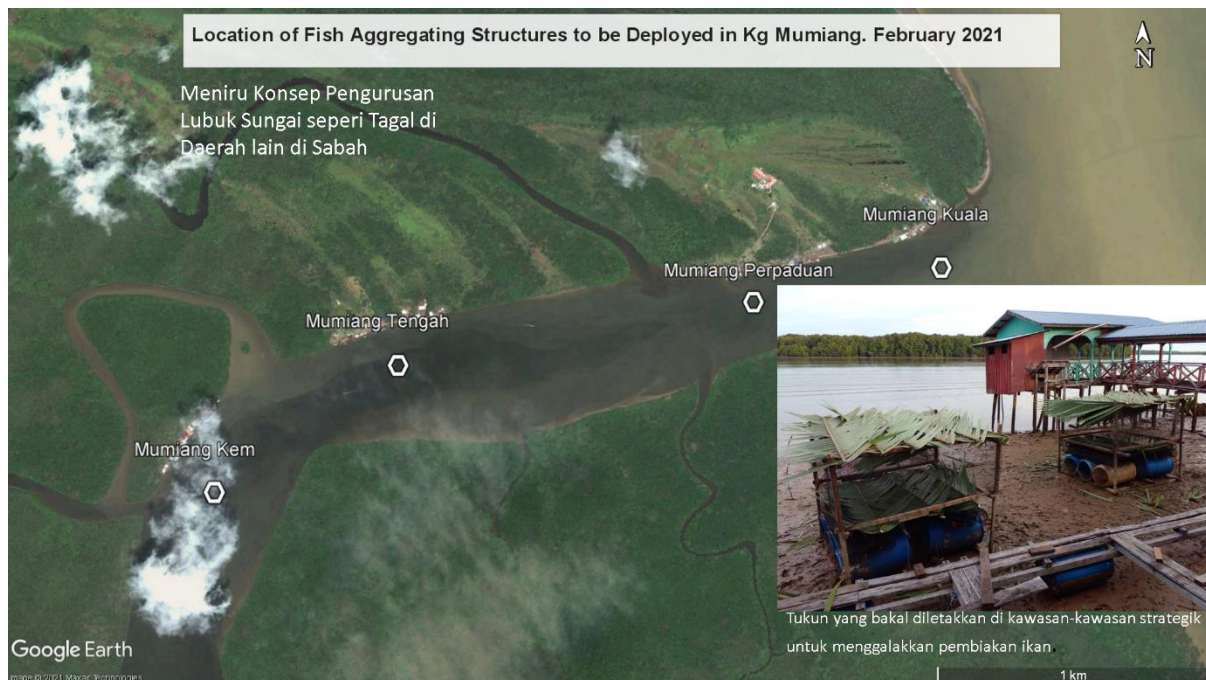
Top: A thanksgiving prayer which signify the launching of the FAS finalizing the community fishery management protocol.



Top: Gotong royong effort to deploy the FAS in Mumiang.

#### 4. Monitoring of Fish Aggregating Structures.

The monitoring of the fish aggregating structures was done once in 2 weeks to study the presence of fish and for the community to learn to interpret the images displayed in the device. From all four units of FAS, the unit in Mumiang Kem has displayed the most promising results in the last 2 months. Further explanation according to the images and interpretations below for each site.



Top: Map of four FAS deployed in each village settlement

#### FAS in Mumiang Kem

The FAS in Mumiang Kem is deployed at a depth of 4 meters and located on solid and rocky surfacem and free from mud and siltation and is not affected by strong tides. The size of the FAS is 2 meters tall by 2 meters wide and 2 meters long built with 2 by 2 inch belian timber, and fitted with drums, mesh all bolted together and reinforced with Nibung poles.

**LOKASI 1 : BAHAGIAN KEM – MUARA SUBA' PO'**

Rasional pemilihan lokasi :

- Kedalaman air yang melebihi 15' adalah bersesuaian dengan saiz tukun (7'x7'x7')
- Lokasi yang berhampiran kampung dan memudahkan pengawasan daripada pencerobohan
- Kedudukan di luar laluan pagung (nipah hanyut)
- Lokasi berbatu di dasarnya dan air berpusar menjadikan ia berpotensi besar untuk didiami hidupan laut

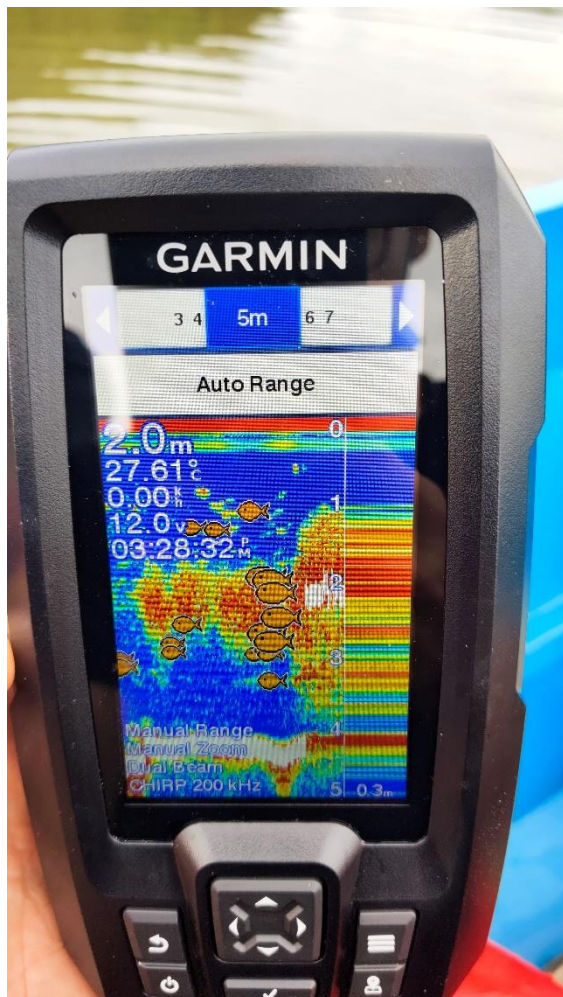
**Tukun Mumiang Kem**  
Latitude: 3.708117°  
Longitude: 113.30562°

Google Earth

**Nota :** Suba' Po' bermaksud Sungai Kapal. Dipercayai pulau kecil di muara sungai ini adalah sebahagian daripada kapal layar yang terbelah dua. Kedalam 6 Meter

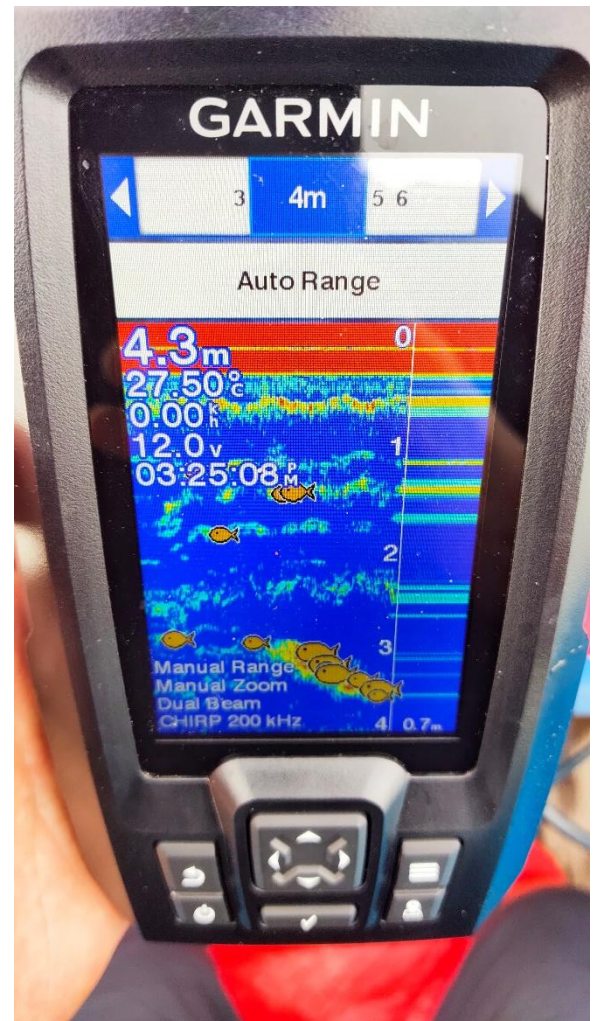




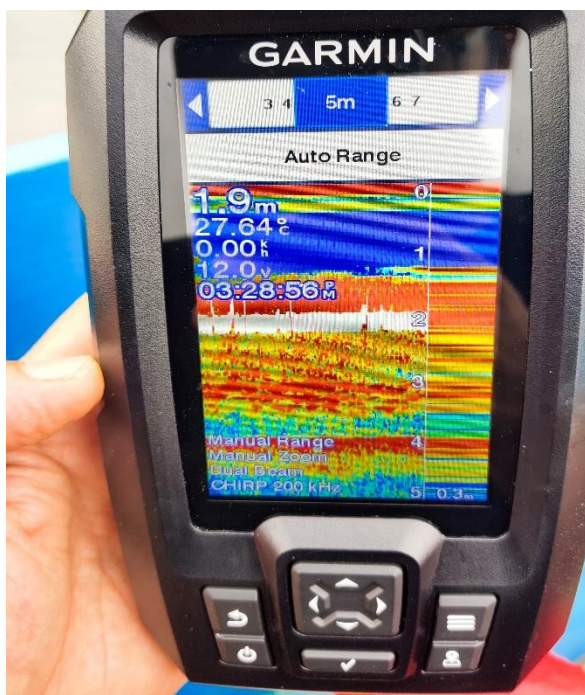


Left :After 1 month of the FAS deployed, images displayed from the fish finder shown positive results. The smaller icons on display indicates a school of baitfish seeking cover in the FAS. The larger icon around it are potentially bigger pelagics swimming around and preying on baitfish.

The 2.0 m depth displayed is the top of the FAS and the bottom white long white lines of the bottom of the river.

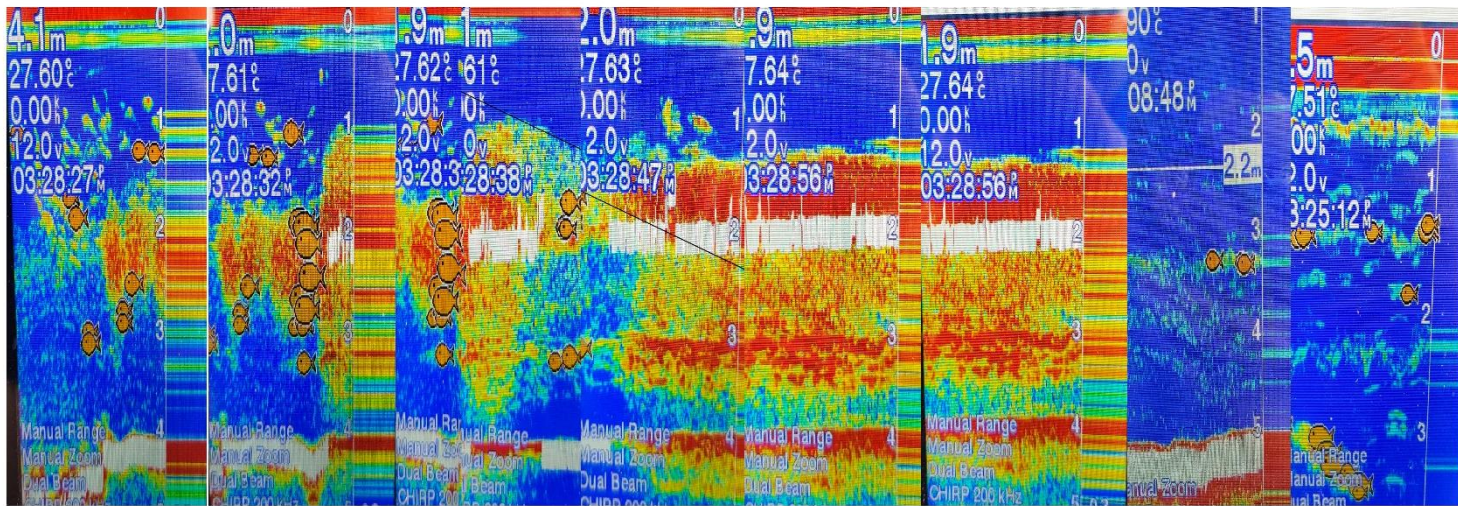


Right : schools of fish near the river bed are identified as a school of mixes fishes such as golden snapper and grouper estimated to be 300gram to 500 gram individuals seeking cover at the back of the FAS.



Left :Middle section of the FAS of the main structure is identified in this large red followed by white stripes. It is anticipated that large individual grouper will seek cover in the drums deep inside the FAS.





Top : Stitched fishfinder images of FAS in Kg Mumiang Kem showing schooling of fish around the FAS. The community continuously monitor the FAS to study growth of fish congregation. By next year, the community will fish outside of the 50 meter radius to experiment the spill over effect from protecting this small area.

### FAS in Mumiang Tengah

#### LOKASI 2 : BAHAGIAN TENGAH – HADAPAN HAB PEMROSESAN HASIL LAUT KG. MUMIANG

Rasional pemilihan lokasi :

- Mudah dijaga
- Kedalaman yang sesuai
- Arus yg perlahan
- Kawasan lubuk ikan semulajadi

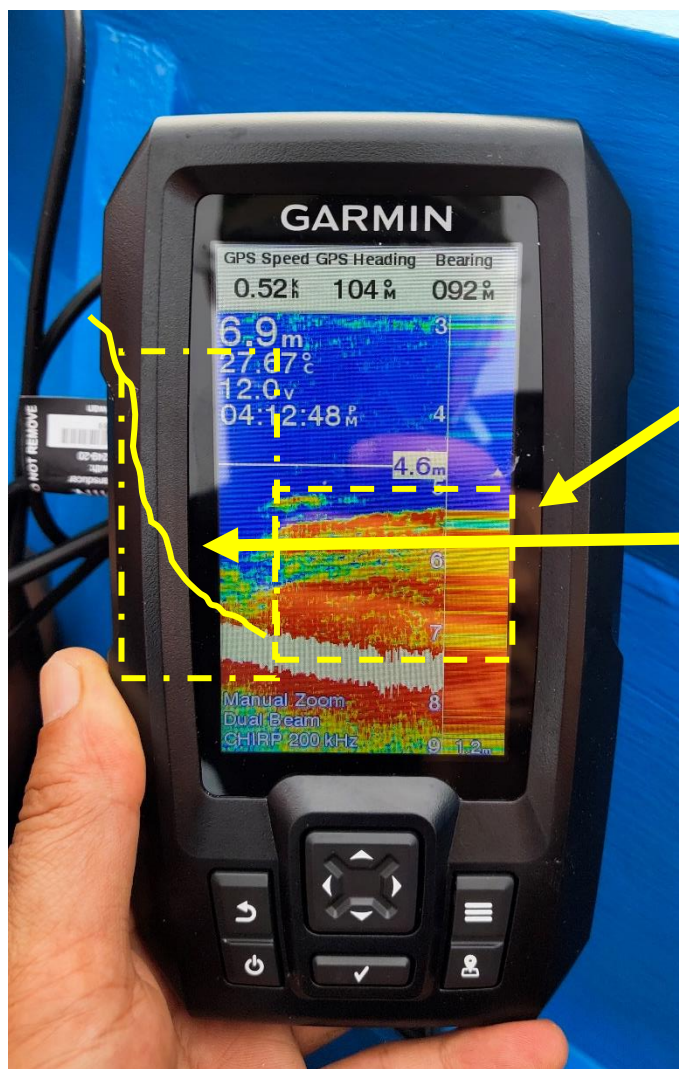
Nota : Kedalaman kedudukan tukun dalam air sekurang-kurangnya 4 meter ketika air surut

Kedalaman kawasan tukun 6 meter



The second FAS is located in Mumiang Tengah, which is the main village. The channel here is the most stable and ideal due its steep drop off from 2meters deep and drop to 6-8 meters creating an ideal condition for larger fish to seek shelter and prey of baitfish and shrimps on the bank.

However, monitoring that was done in the last 2 months have yet to show any significant indication of schooling of fish. According to the villages, deeper channel do contain fish however but take longer for fish to congregate.



The FAS of Mumiang Tengah at 6.9 meters deep sitting next to the drop zone.

The drop zone

### **FAS of Mumaing Perpaduan and Mumiang Kuala**

Both of the FAS are located close to the mouth of the estuary and was deployed by the community. However it was reported to have disappeared and efforts to find the structure has failed. Both FAS could have drifted to the sea due to strong tides flushing it out to the sea. It is also believed that the structure could have been pulled into the mud by the anchors. Together with the community we have also examined the river and learned that the area is not suitable for the FAS due to siltation and strong current during low tide.

The community has agreed to rebuild the FAS by using other materials with support from LEAP and redesign them to withstand the current.