

**October 2025**

## **Data Collection and Biological Parameters of Octopus in Sulawesi**

### **Introduction**

Octopus (*Octopus cyanea*) fisheries data collection is implemented with the support of octopus fishers, community members, partners, and the Indonesia Research and Innovation Body (Badan Riset dan Inovasi Nasional/BRIN) (Table 1). The data collection's main purpose is to understand the octopus fisheries condition and trends across communities in Sulawesi. Partners train and work with community data collectors/enumerators to record octopus fisher's catch using KoboCollect. The collected data is sent into a database, validated by partners, and automatically analysed and visualised in an interactive dashboard.

Table 1 Octopus fisheries communities and partners list in Sulawesi

<b>No.</b>	<b>Province</b>	<b>Regency</b>	<b>District</b>	<b>Community</b>	<b>Supporting Partner</b>
1	Sulawesi Utara	Minahasa Utara	Likupang Barat	Bulutui	YAPEKA
2	Sulawesi Utara	Minahasa Utara	Likupang Barat	Gangga Satu	YAPEKA
3	Sulawesi Utara	Minahasa Utara	Likupang Timur	Likupang Dua	YAPEKA
4	Gorontalo	Pohuwato	Popayato	Torosiaje	JAPESDA
5	Sulawesi Tengah	Tojo Una-Una	Talatakko	Kadoda	JAPESDA
6	Sulawesi Tengah	Banggai	Luwuk Timur	Uwedikan	JAPESDA
7	Sulawesi Tengah	Banggai Kepulauan	Totikum Selatan	Kalumbatan	LINI
8	Sulawesi Tengah	Banggai Kepulauan	Totikum Selatan	Lobuton	LINI
9	Sulawesi Tengah	Banggai Laut	Banggai Utara	Popisi	LINI
10	Sulawesi Selatan	Kepulauan Selayar	Buki	Mekar Indah	LINI
11	Sulawesi Selatan	Kepulauan Selayar	Bontoharu	Kahu-Kahu	LINI
12	Sulawesi Tenggara	Wakatobi	Wangi-Wangi Selatan	Kapota	KOMANANGI

No.	Province	Regency	District	Community	Supporting Partner
13	Sulawesi Tenggara	Wakatobi	Wangi-Wangi Selatan	Kapota Utara	KOMANANGI
14	Sulawesi Tenggara	Wakatobi	Wangi-Wangi Selatan	Kabita	KOMANANGI
15	Sulawesi Tenggara	Wakatobi	Wangi-Wangi Selatan	Kabita Togo	KOMANANGI
16	Sulawesi Tenggara	Wakatobi	Kaledupa	Sombano	FORKANI
17	Sulawesi Tenggara	Wakatobi	Kaledupa Selatan	Tanomeha	FORKANI
18	Sulawesi Tenggara	Wakatobi	Kaledupa Selatan	Darawa	FORKANI
19	Sulawesi Tenggara	Wakatobi	Binongko	Kampo-Kampo	FONEB
20	Sulawesi Tenggara	Wakatobi	Binongko	Lagongga	FONEB

### Octopus Fisheries Across Sulawesi

The octopus fisheries data period is ranging from 01 January 2022 to 30 September 2025. During that period, there are 395,305kg of octopus recorded with a total value of IDR15,516,009,573 and the average percent mature catch of 81%. The average Catch per Unit of Effort (CPUE) is 4kg/trip and the fisher's average Income per Unit of Effort (IPUE) is IDR 135,377/trip.

Total landings of octopus spiked every March in 2022, March 2023, February 2024, and April 2025 (Figure 1). The octopus total landings trend shows a decreasing octopus production in Sulawesi when comparing production in 2022 with 2025.

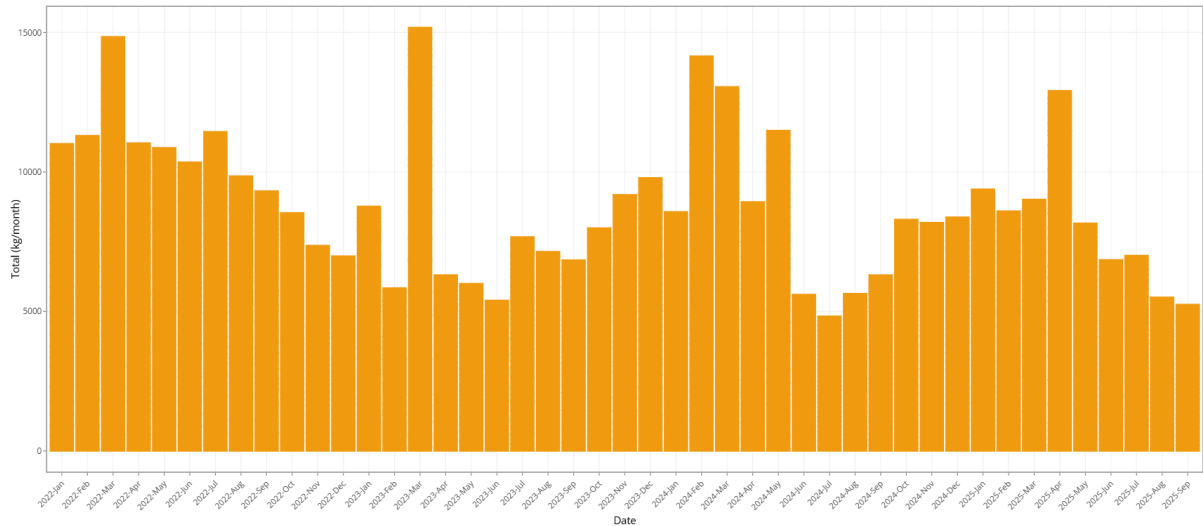


Figure 1 Total landings of octopus across 20 communities in Sulawesi from January 2022 to September 2025

The average CPUE in Figure 2 shows the octopus fisheries in Sulawesi were increasing until early 2025 but steadily decreasing throughout 2025 until September 2025. The average mature octopus catch in Figure 3 also shows a decreasing trend when comparing the average from 2022 to 2025. However, starting from early 2025, the trend is showing a steady increase of mature catch of octopus across 20 communities in Sulawesi.

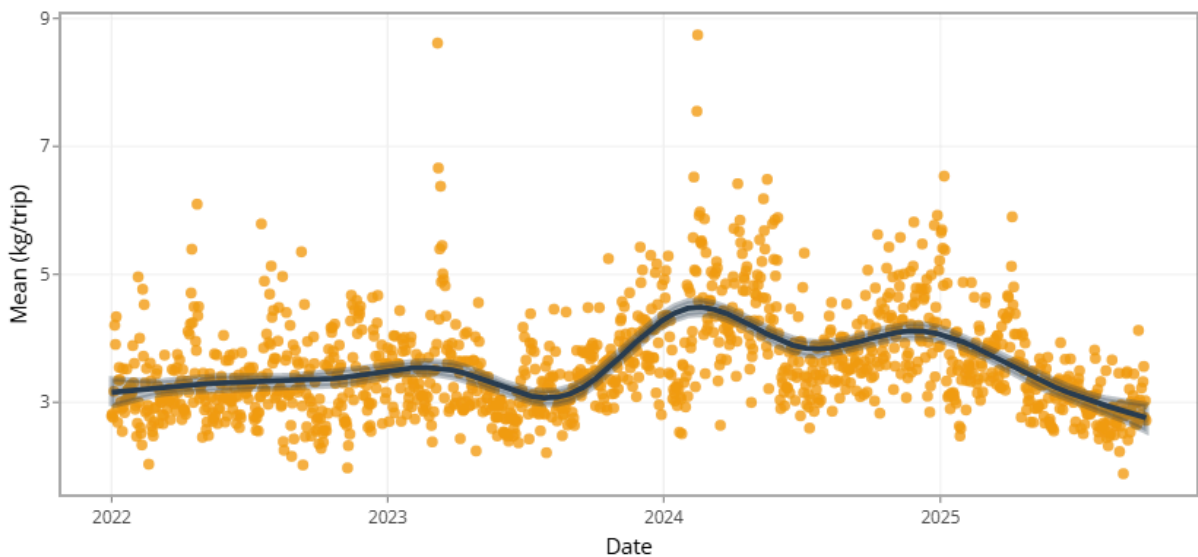


Figure 2 Mean catch per unit of effort (CPUE) of octopus across 20 communities in Sulawesi from January 2022 to September 2025

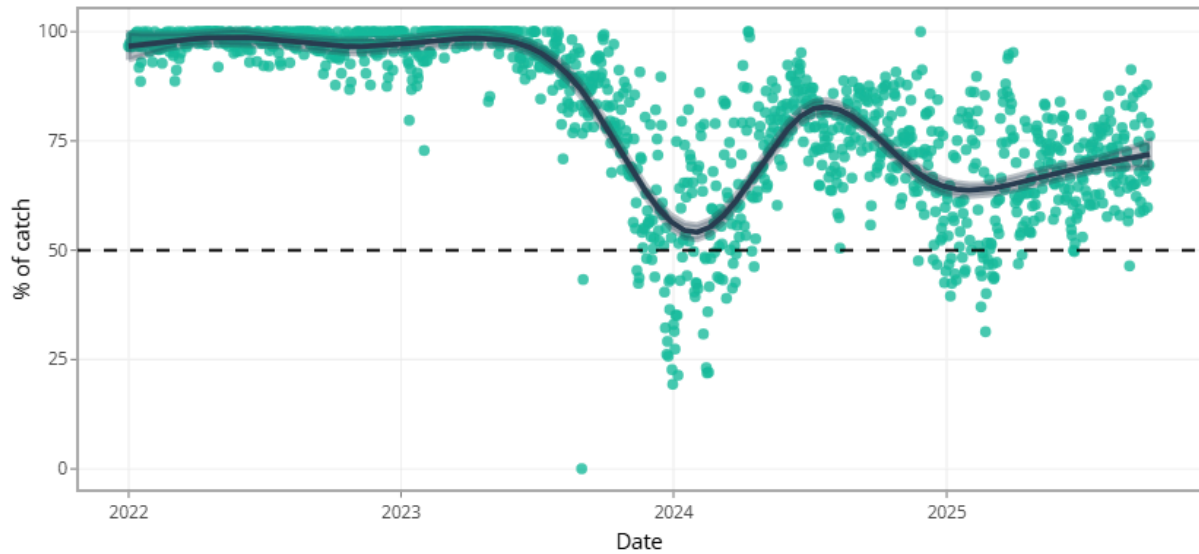


Figure 3 Mean percentage of mature octopus caught across 20 communities in Sulawesi from January 2022 to September 2025. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

### **Octopus Fisheries in Minahasa Utara**

The octopus fisheries data collected in Minahasa Utara is ranging from 01 January 2022 to 30 September 2025. Data is collected from three communities, namely Gangga Satu, Bulutui, and Likupang Dua. The fisher's total landings recorded is 74,287kg and the fisher's total income recorded is IDR2,277,157,317 with the average percentage of mature octopus caught is 96%. Fisher's average CPUE is 4kg/trip and the average IPUE is IDR131,000/trip.

The total landing trend of octopus fisheries in the three communities in Minahasa Utara has fluctuated over the years (Figure 4). There were declines from December 2022 to February 2023, but it increased in March 2023 and spiked in October 2024. The total landings were showing an increase until April 2025 then decrease until September 2025.

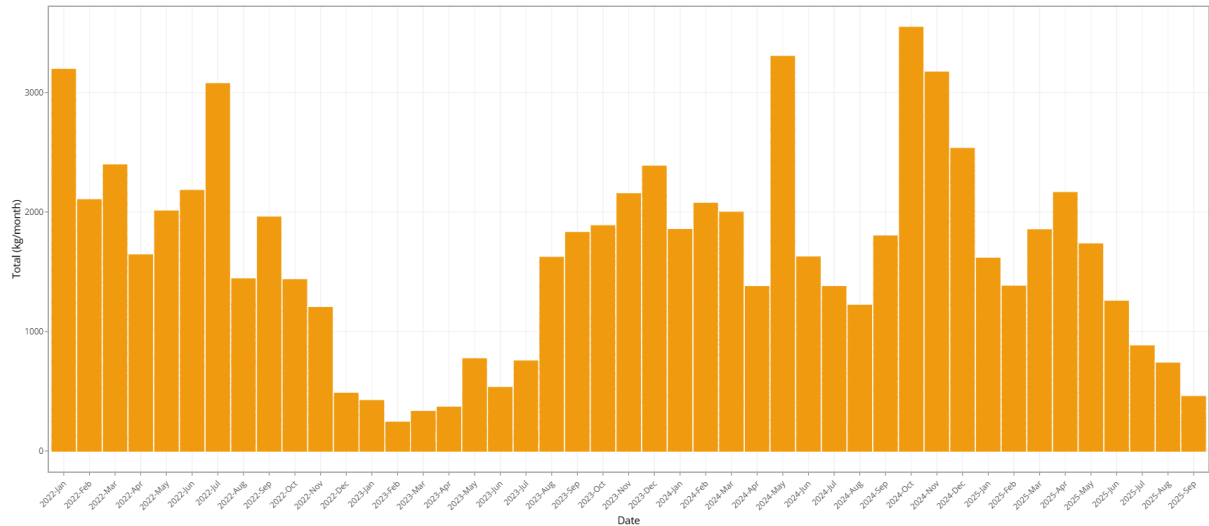


Figure 4 Total landings of octopus in Likupang Dua, Bulutui, and Gangga Satu from January 2022 to September 2025

The trends of CPUE in three communities in Minahasa Utara are relatively stable from January 2022 to September 2025 (Figure 5). A slight decreasing trend is observed in the percentage of mature octopus caught (Figure 6), however, the trend is still above the 50% limit, showing a relatively healthy octopus fishery.

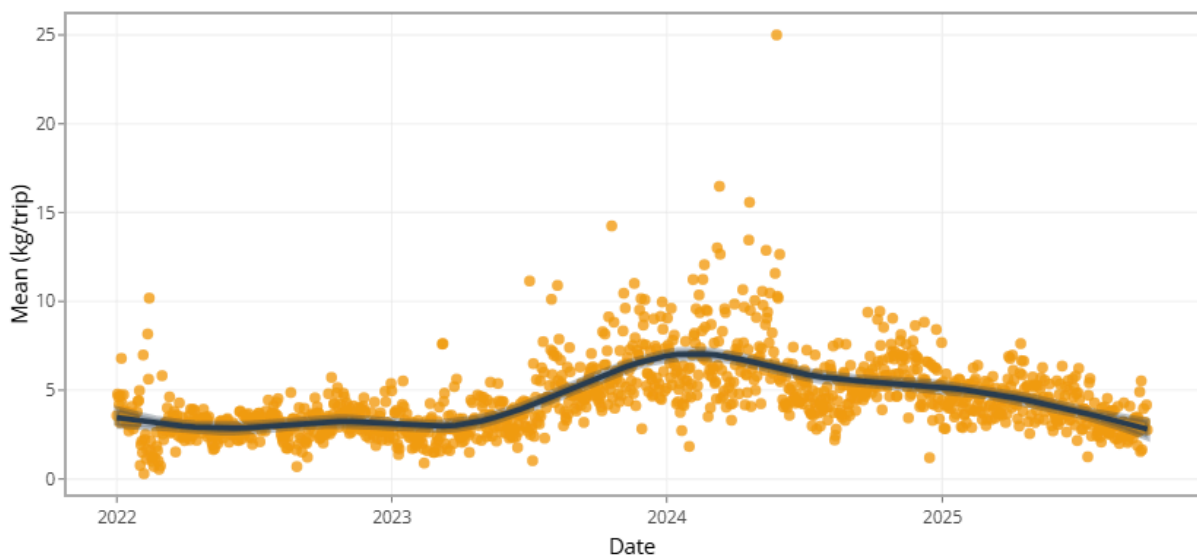


Figure 5 Mean catch per unit of effort (CPUE) of octopus in Likupang Dua, Bulutui, and Gangga Satu from January 2022 to September 2025

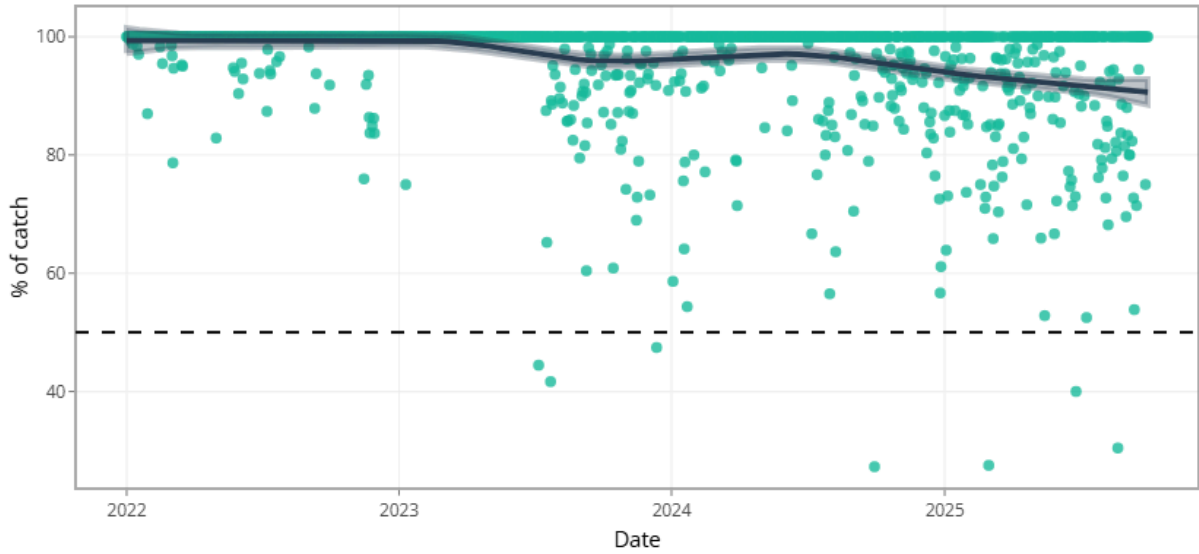


Figure 6 Mean percentage of mature octopus caught in Likupang Dua, Bulutui, and Gangga Satu from January 2022 to September 2025. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

### Octopus Fisheries in Pohuwato

The octopus fisheries data collected in Pohuwato is ranging from 01 January 2022 to 30 September 2025. Data is collected from Torosiaje Village. The fisher's total landings recorded is 44,878kg and the fisher's total income recorded is IDR1,947,999,147 with the average percent mature octopus caught is 88%. Fisher's average CPUE is 5kg/trip and the average IPUE is IDR208,147/trip.

The decline of the total landing trend of octopus fisheries in Torosiaje started in August 2022. The trend fluctuates along the months with an observable decline in December 2023, then gradually increasing until September 2025.

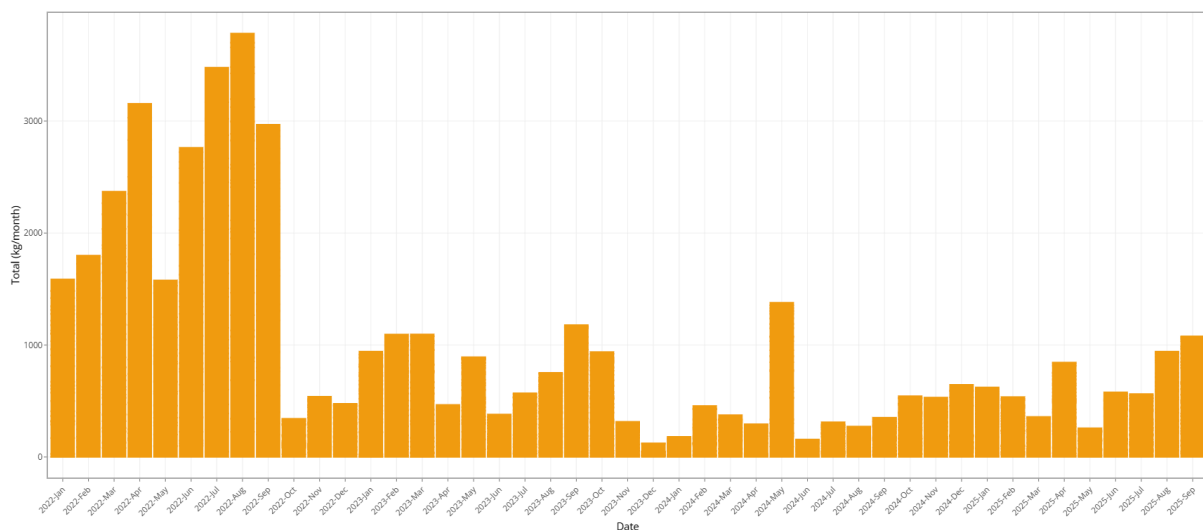


Figure 7 Total landings of octopus in Torosiaje from January 2022 to September 2025

The trend of CPUE in Torosiaje is stable from January 2022 to September 2025. However, the percentage of mature octopus caught is also showing a declining trend with data points variation that fluctuates along the 50% limit reference point.

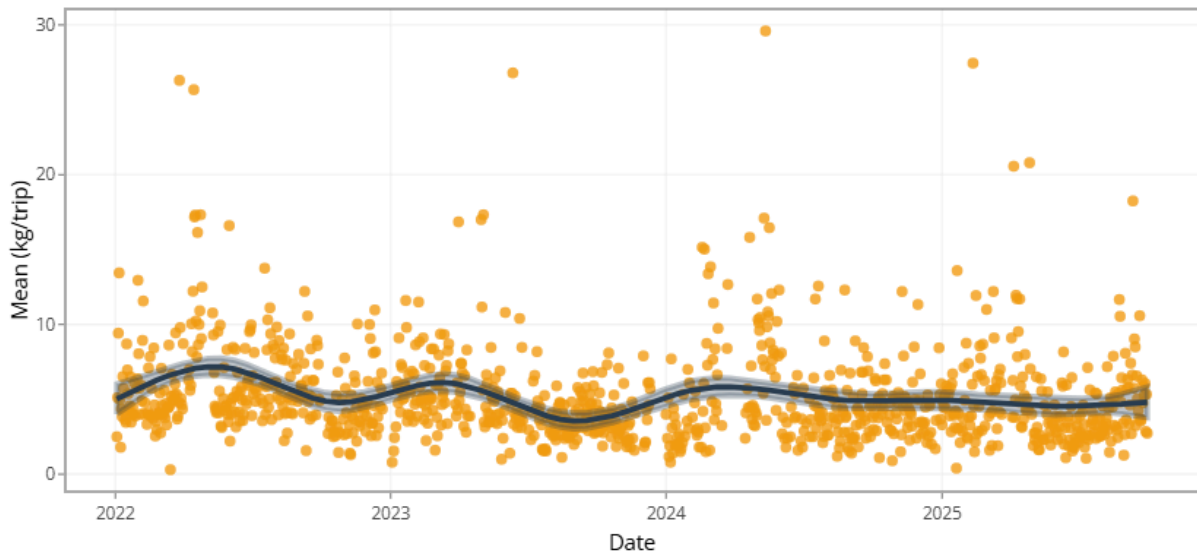


Figure 8 Mean catch per unit of effort (CPUE) of octopus in Torosiaje from January 2022 to September 2025

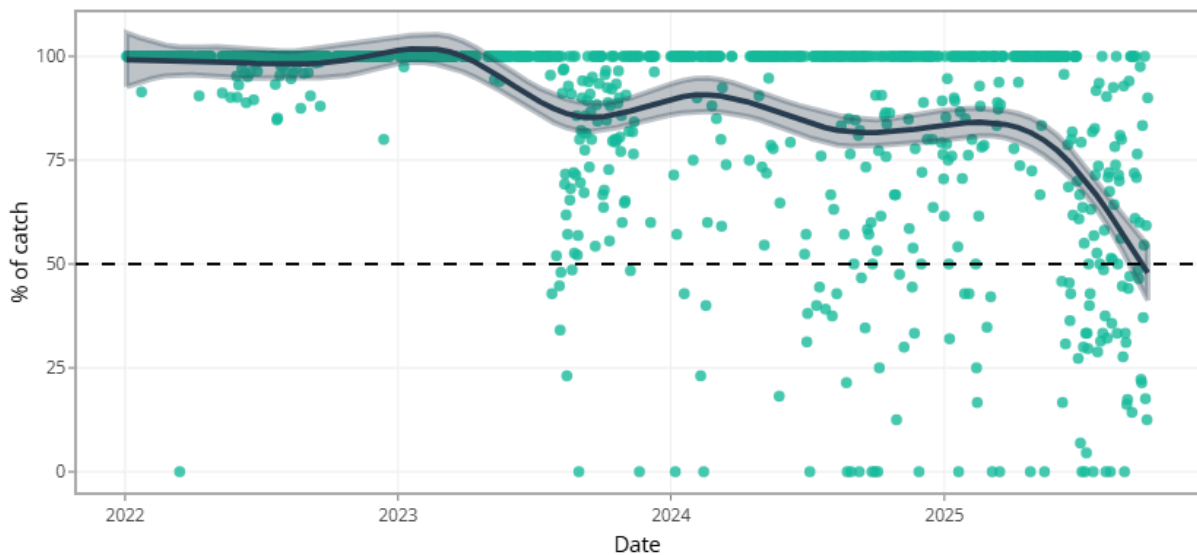


Figure 9 Mean percentage of mature octopus caught in Torosiaje from January 2022 to September 2025. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

## Octopus Fisheries in Tojo Una-Una

The octopus fisheries data collected in Tojo Una-Una is ranging from 01 January 2022 to 30 September 2025. Data is collected from Kadoda Village. The fisher's total landings recorded is 17,330kg and the fisher's total income recorded is IDR703,996,302 with the average percent mature octopus caught is 73%. Fisher's average CPUE is 2kg/trip and the average IPUE is IDR93,642/trip.

The total landing trend of octopus fisheries in Kadoda reached a sudden spike in January 2023, then decreased in the next month. Starting from March 2023, the total landings showed a decreasing trend until August 2024 then increasing gradually until September 2025 (Figure 10).

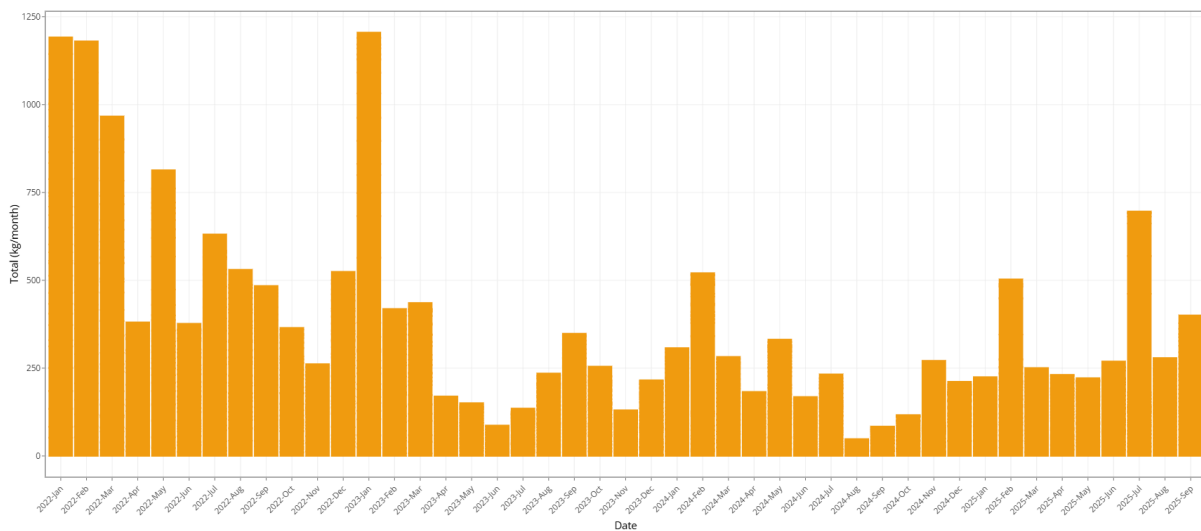


Figure 10 Total landings of octopus in Kadoda from January 2022 to September 2025

The CPUE in Kadoda was in decline during mid-year 2023, then it showed a slight increase at early 2024 then stabilised until September 2025 (Figure 11). On the other hand, the percentage of mature octopus caught is showing a stable trend from January 2022 to early 2023, then decreasing until early 2024. The mature catch trend stabilised from early 2024 to September 2025, with slight fluctuation ranging between 50%–60% (Figure 12).

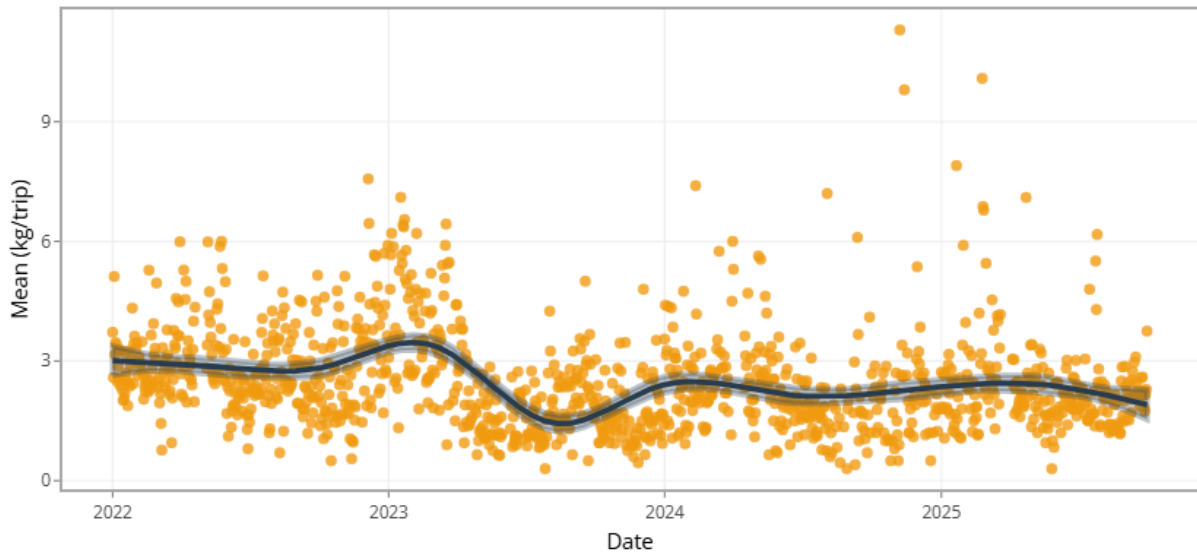


Figure 11 Mean catch per unit of effort (CPUE) of octopus in Kadoda from January 2022 to September 2025

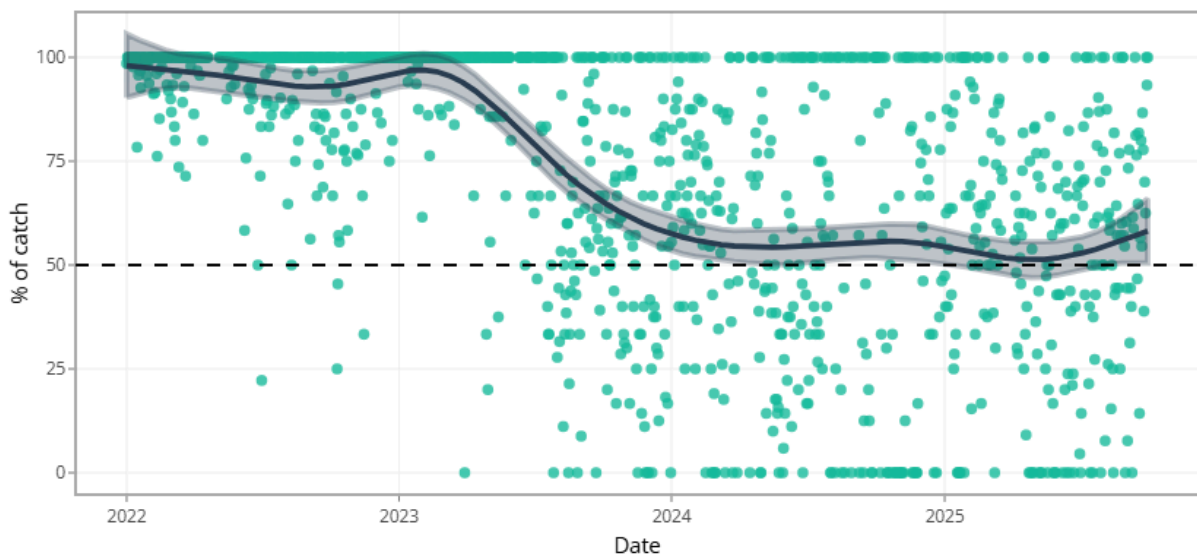


Figure 12 Mean percentage of mature octopus caught in Kadoda from January 2022 to September 2025. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

### Octopus Fisheries in Banggai

The octopus fisheries data collected in Banggai is ranging from 01 January 2022 to 27 September 2025. Data is collected from Uwedikan Village. The fisher's total landings recorded is 10,457kg and the fisher's total income recorded is IDR471,696,043 with an average per cent mature octopus caught is 96%. Fisher's average CPUE is 3kg/trip and the average IPUE is IDR143,668/trip.

The total landing trend of octopus fisheries in Uwedikan declined in November 2022 and remained stable until a sudden increase in March 2024. Then, from April 2024 to January 2025, the total landings showed a consistent declining trend with a few increasing spikes of total landings in February 2025, May 2025, and July 2025 (Figure 13).

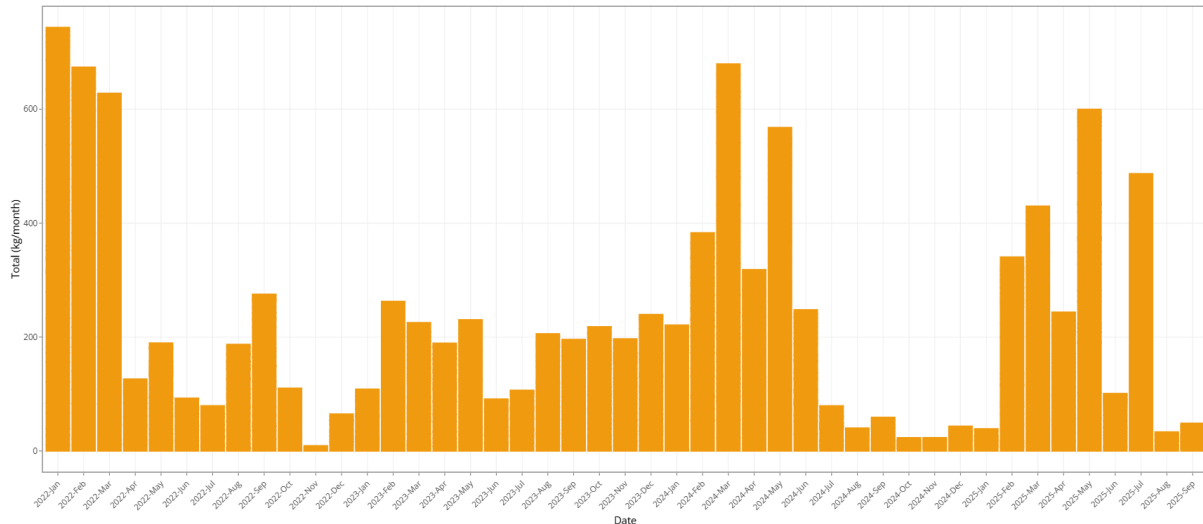


Figure 13 Total landings of octopus in Uwedikan from January 2022 to September 2025

The CPUE in Uwedikan showed no change in trend between January 2022 to September 2025 (Figure 14). The average percentage of mature octopus caught also shows a stable trend from January 2022 to September 2025 (Figure 15). From these two indicators, the octopus fisheries in Kadoda are relatively healthy.

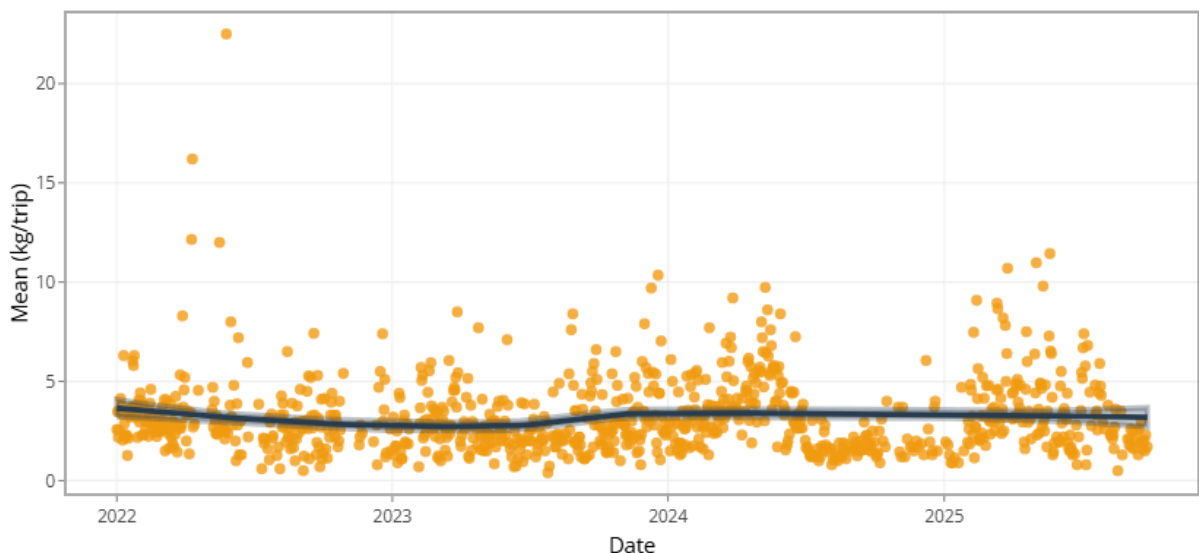


Figure 14 Mean catch per unit of effort (CPUE) of octopus in Uwedikan from January 2022 to September 2025

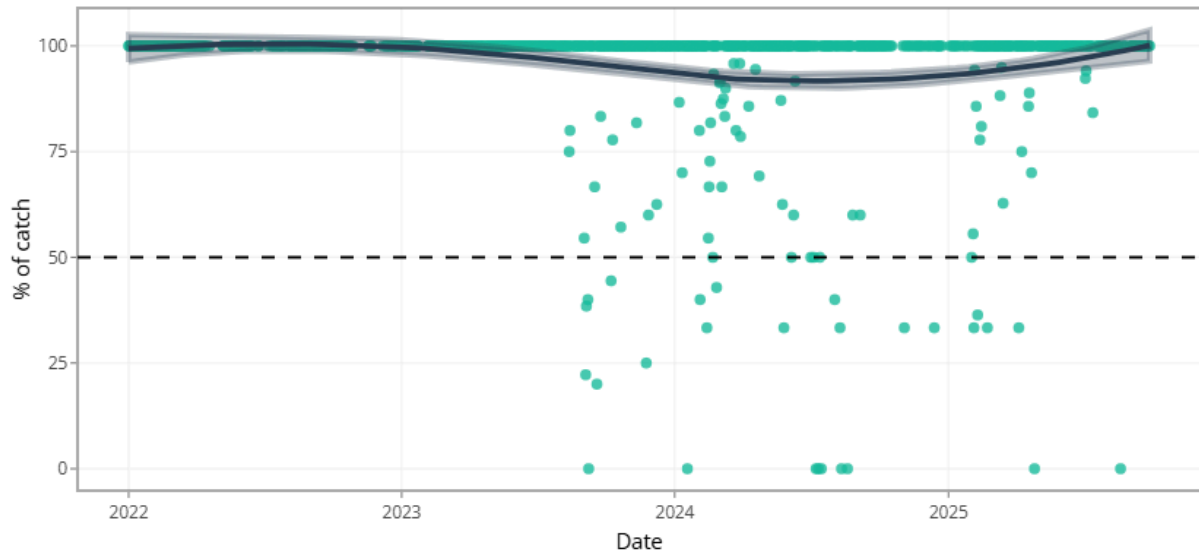


Figure 15 Mean percentage of mature octopus caught in Uwedikan from January 2022 to September 2025. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

### **Octopus Fisheries in Banggai Kepulauan**

The octopus fisheries data collected in Banggai Kepulauan is ranging from 01 January 2022 to 30 September 2025. Data is collected from two communities, namely Kalumbatan and Lobuton. The fisher's total landings recorded is 56,026kg and the fisher's total income recorded is IDR2,428,166,220 with the average percent mature octopus caught is 97%. Fisher's average CPUE is 4kg/trip and the average IPUE is IDR152,494/trip.

Total landings of octopus fisheries in Kalumbatan and Lobuton showed a fairly stable trend over the months. From January 2022 to September 2025, there are occasional spikes of monthly total landings, in May 2022, November 2023, May 2024, November 2024, and May 2025 (Figure 16).

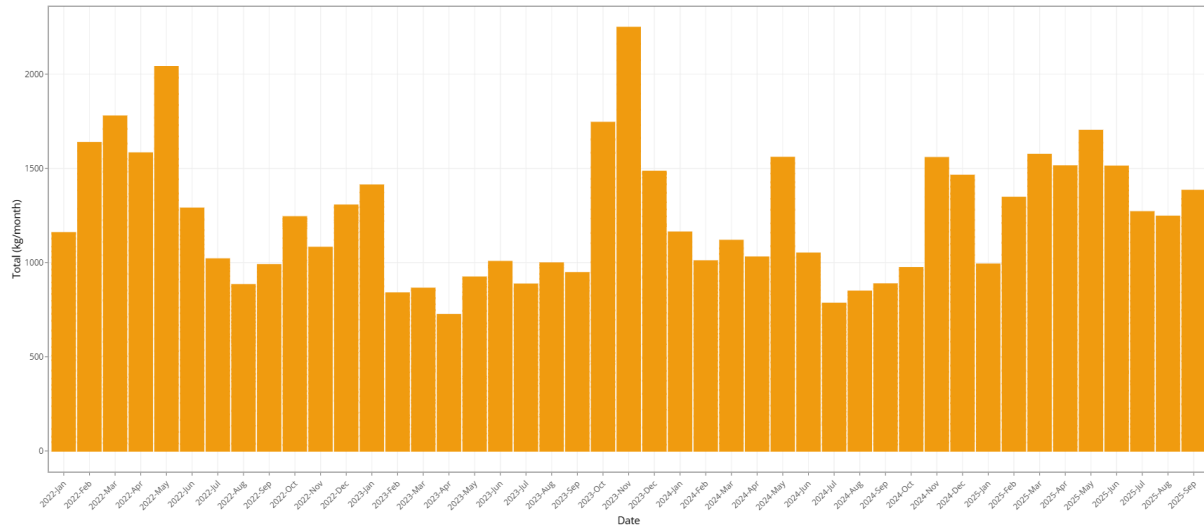


Figure 16 Total landings of octopus in Kalumbatan and Lobuton from January 2022 to September 2025

The CPUE in Kalumbatan and Lobuton showed a stable trend from January 2022 to early 2025 with a slight decline until September 2025 (Figure 17). A mild decline was observed in the trend of average percentage of mature catch, specifically between mid 2024 to September 2025 (Figure 18).

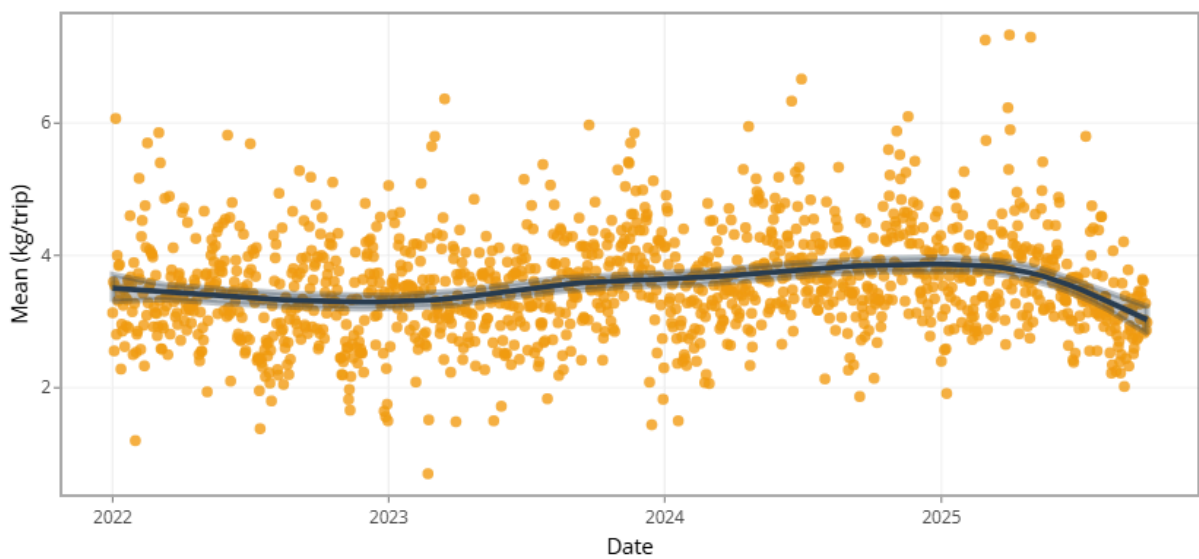


Figure 17 Mean catch per unit of effort (CPUE) of octopus in Kalumbatan and Lobuton from January 2022 to September 2025

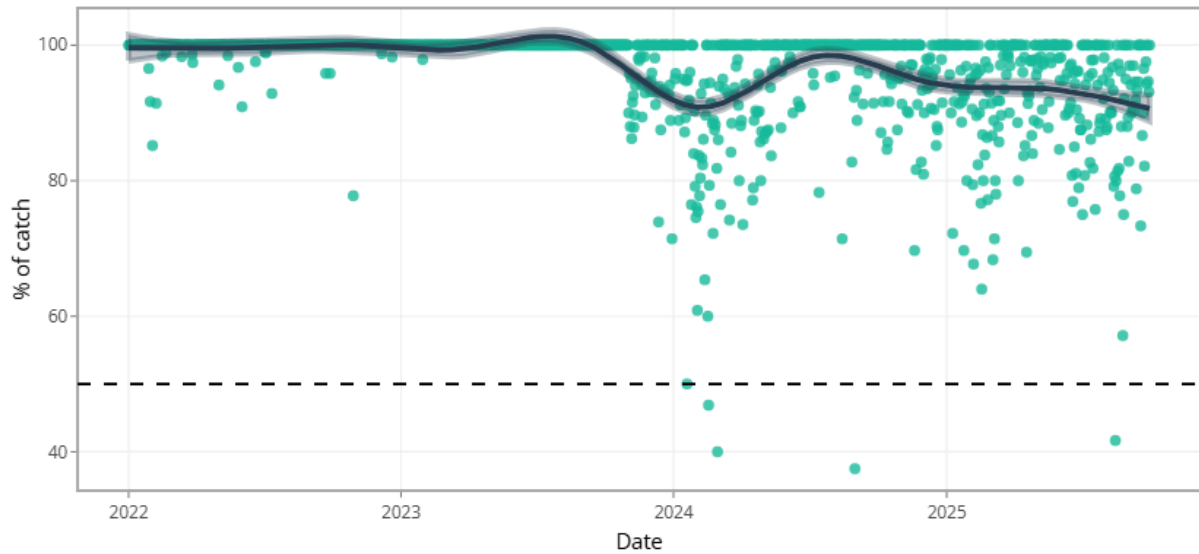


Figure 18 Mean percentage of mature octopus caught in Kalumbatan and Lobuton from January 2022 to September 2025. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

### **Octopus Fisheries in Banggai Laut**

The octopus fisheries data collected in Banggai Laut is ranging from 01 January 2022 to 30 September 2025. Data is collected from Popisi Village. The fisher's total landings recorded is 19,975kg and the fisher's total income recorded is IDR842,539,510 with an average percentage of mature octopus caught is 86%. Fisher's average CPUE is 3kg/trip and the average IPUE is IDR119,586/trip.

Total landings of octopus fisheries in Popisi showed a decreasing trend over the months. There is a sudden increase in April 2024 and then it continues to decrease in the following months. The total landings increased from September 2024 to April 2025, and then dropped again until July 2025. A slight increase of production is observed in August and September 2025 (Figure 19).

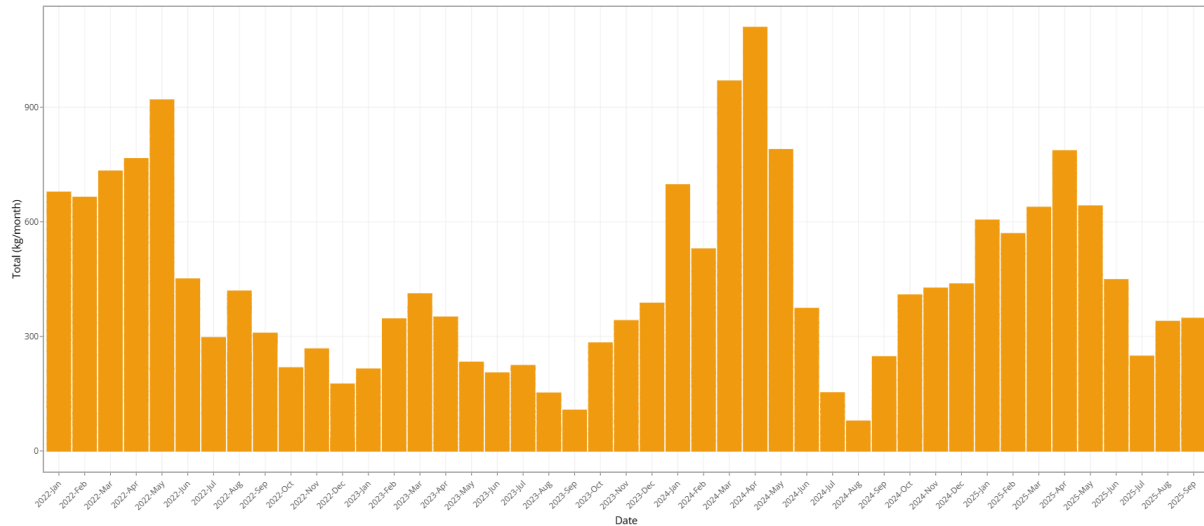


Figure 19 Total landings of octopus in Popisi from January 2022 to September 2025

Contrary to the fluctuation shown by the total landings trend, the CPUE in Popisi showed a stable trend between January 2022 to September 2025 (Figure 20). The mean percentage of mature octopus is showing a declining trend with notable fluctuation from early 2024 to September 2025 (Figure 21).

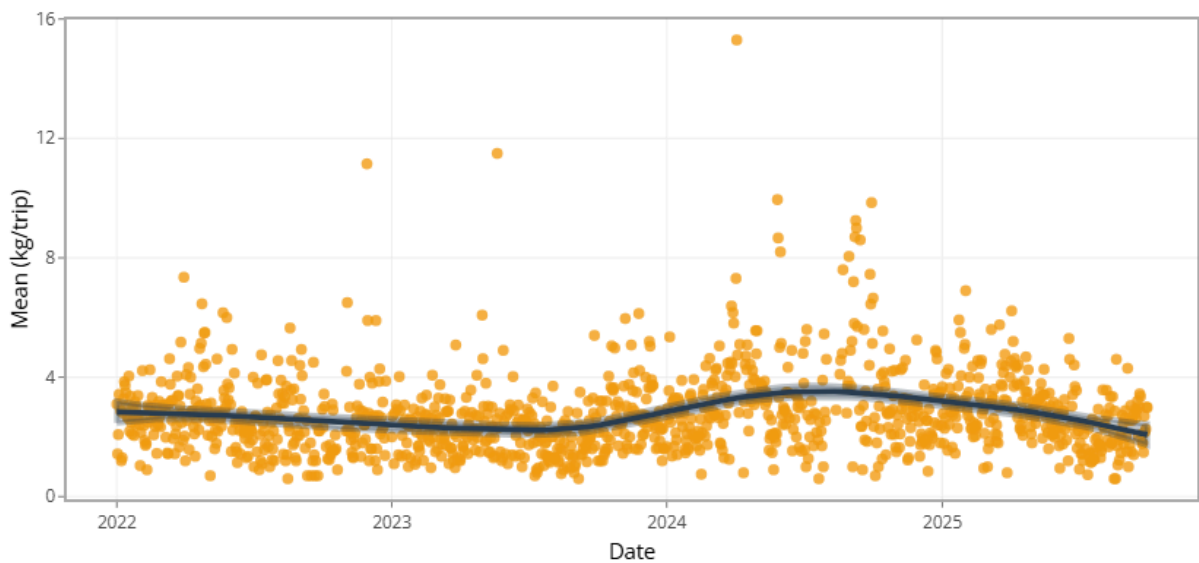


Figure 20 Mean catch per unit of effort (CPUE) of octopus in Popisi from January 2022 to September 2025

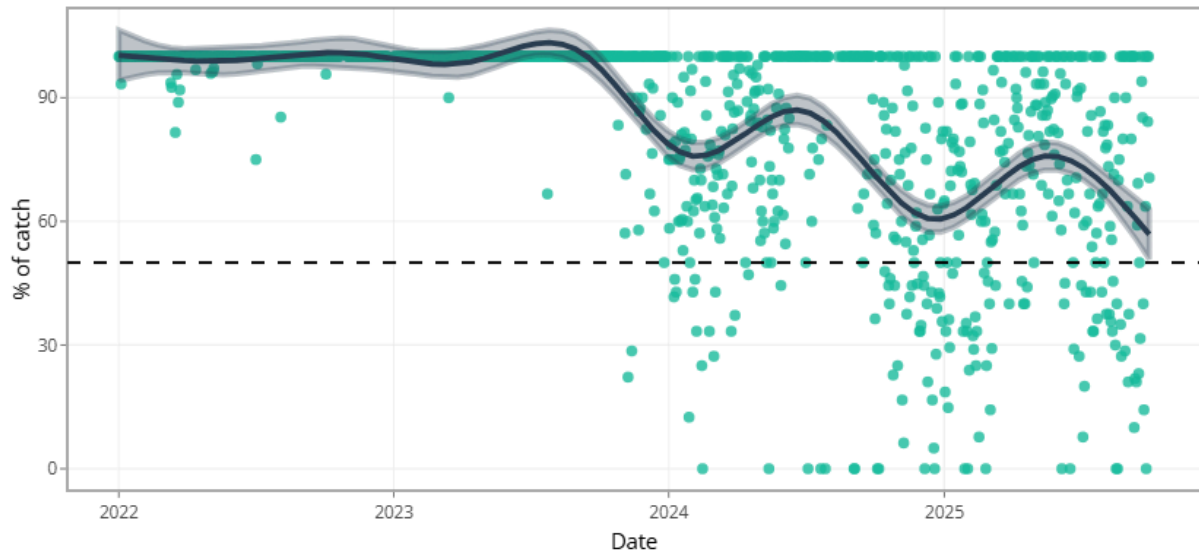


Figure 21 Mean percentage of mature octopus caught in Popisi from January 2022 to September 2025. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

### **Octopus Fisheries in Kepulauan Selayar**

The octopus fisheries data collected in Kepulauan Selayar is ranging from 01 January 2022 to 30 September 2025. Data is collected from two communities, Mekar Indah and Kahu-Kahu. The fisher's total landings recorded is 134,771kg and the fisher's total income recorded is IDR5,505,842,670 with the average percent mature octopus caught is 65%. Fisher's average CPUE is 3kg/trip and the average IPUE is IDR115,561/trip.

Total landings of octopus fisheries in Mekar Indah and Kahu-Kahu showed a stable trend from 2022 to September 2023 with a sudden increase in March 2023. From October 2023 to August 2024 the trend underwent a slight decline with a sudden increase in February 2024. From March to June 2024, the total landings decreased and then fluctuated in a stable trend until September 2025 with a spike in April 2025 (Figure 22).

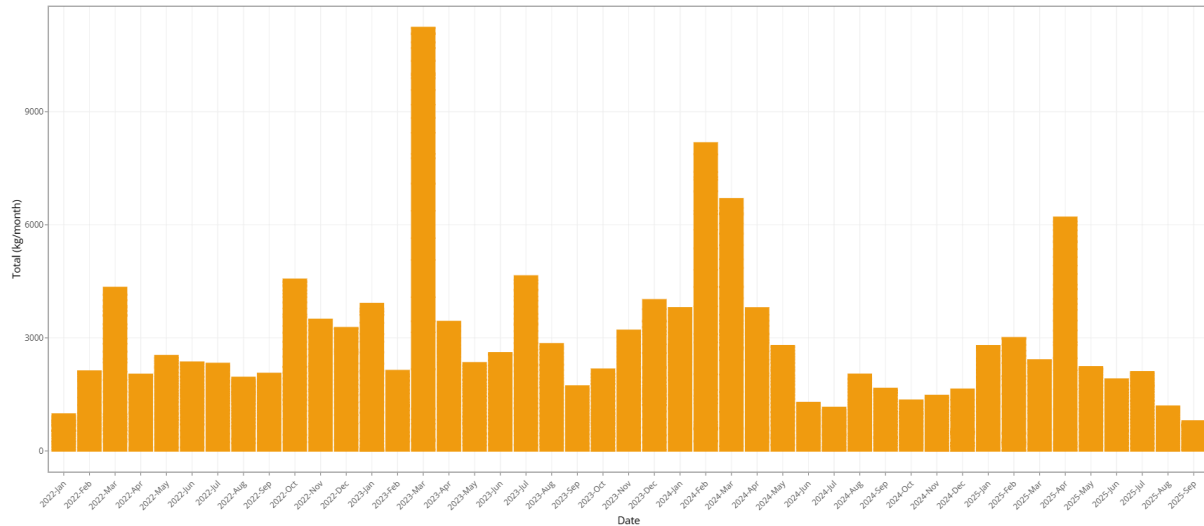


Figure 22 Total landings of octopus in Mekar Indah and Kahu-Kahu from January 2022 to September 2025

Similar to the total landings trend, the CPUE in Mekar Indah and Kahu-Kahu also showed a slight decline between January 2022 to September 2025 (Figure 23). The percent maturity is showing a decreasing trend between January 2022 and February 2025 with a notable pattern of low points every start of the year (Figure 24). However, the mature catch trend is showing an increase from early 2025 to September 2025.

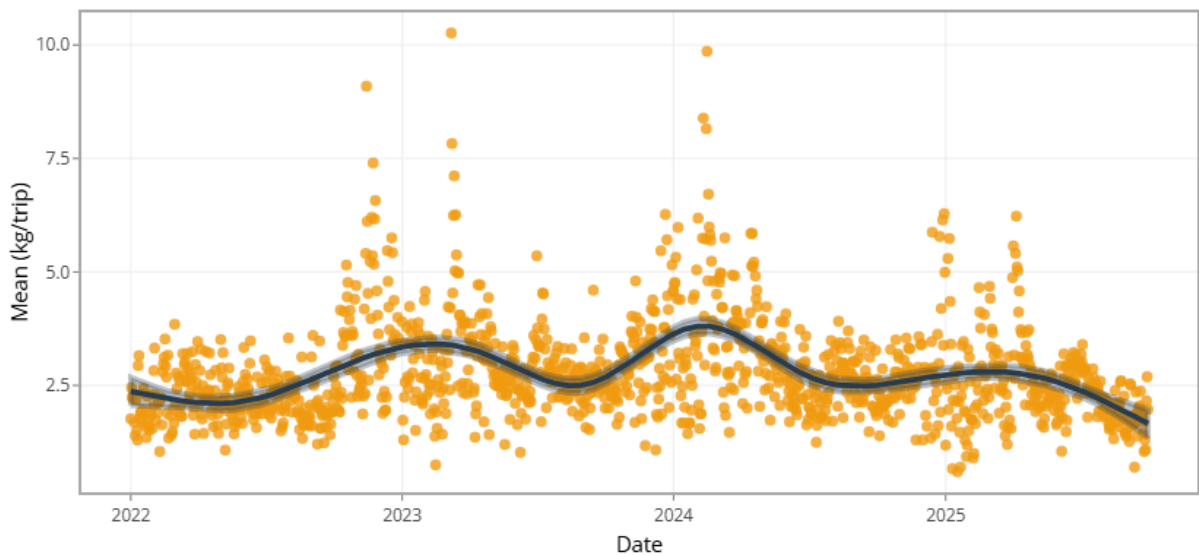


Figure 23 Mean catch per unit of effort (CPUE) of octopus in Mekar Indah and Kahu-Kahu from January 2022 to September 2025

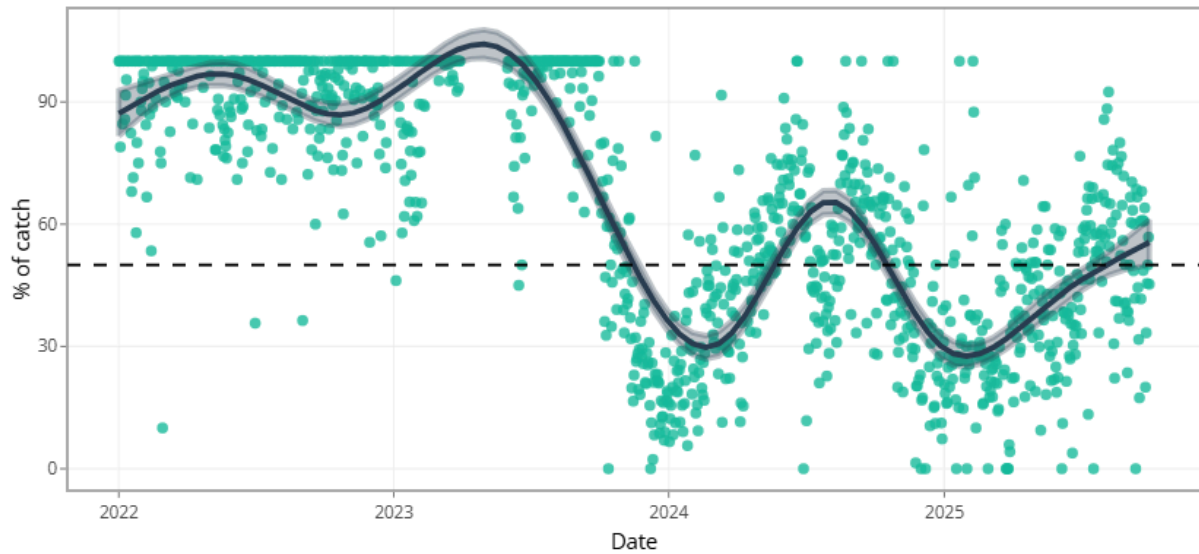


Figure 24 Mean percentage of mature octopus caught in Mekar Indah and Kahu-Kahu from January 2022 to September 2025. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

### **Octopus Fisheries in Wakatobi**

The octopus fisheries data collected in Wakatobi is ranging from 01 January 2022 to 30 September 2025. Data is collected from nine communities in Wakatobi. The fisher's total landings recorded is 37,580kg and the fisher's total income recorded is IDR1,338,761,363 with the average percent of mature octopus caught is 82%. Fisher's average CPUE is 4kg/trip and the average IPUE is IDR138,816/trip.

Total landings of octopus fisheries in Wakatobi showed a decreasing trend from January–October 2022. There was a sudden increase in December 2023, then it fluctuated along the months of early 2024. From May 2024 towards January 2025, the total landings increased and then stabilised until September 2025 (Figure 25).

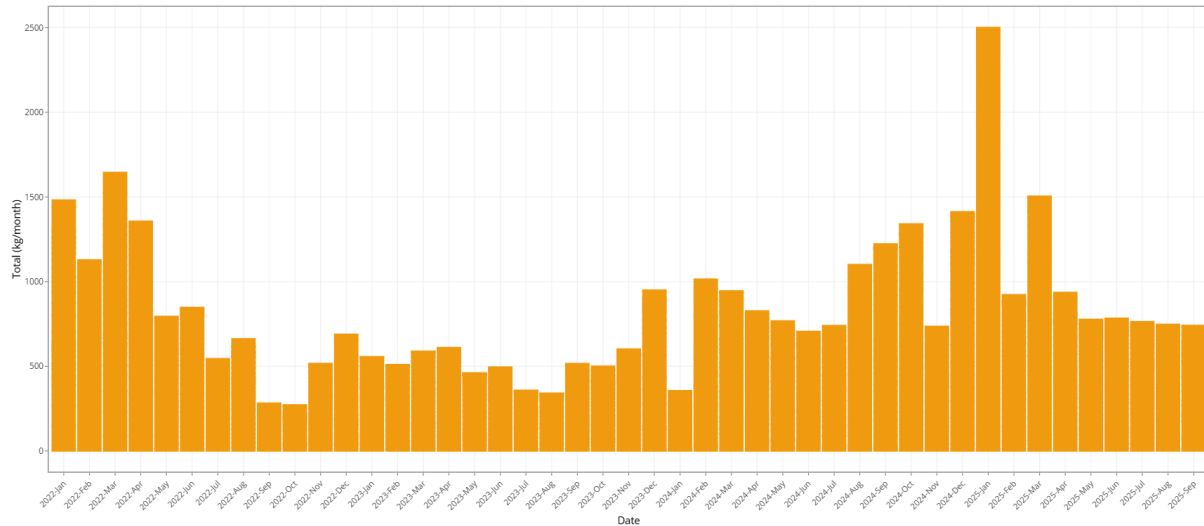


Figure 25 Total landings of octopus across 9 communities in Wakatobi from January 2022 to September 2025

The CPUE in Wakatobi showed an increasing trend between January 2022 to September 2024 then stabilised along the months until September 2025 (Figure 26). Compared to the CPUE trend, the percent mature trend showed a more observable fluctuation between January 2022 and September 2025 (Figure 27). The mature catch trend showed a declining trend around November 2023, and gradually increasing over time until September 2025.

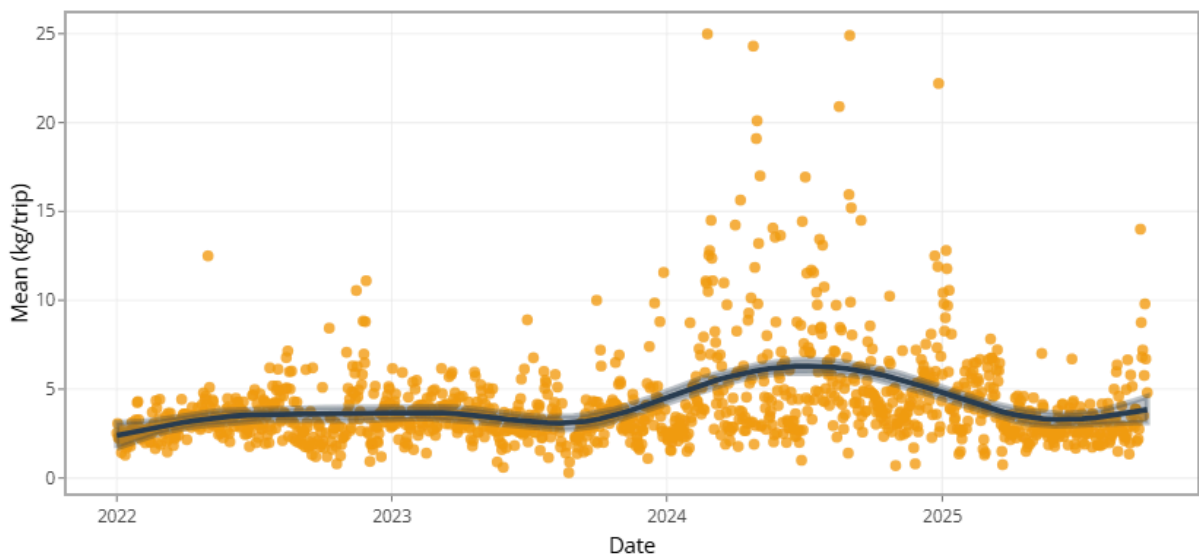


Figure 26 Mean catch per unit of effort (CPUE) of octopus across 9 communities in Wakatobi from January 2022 to September 2025

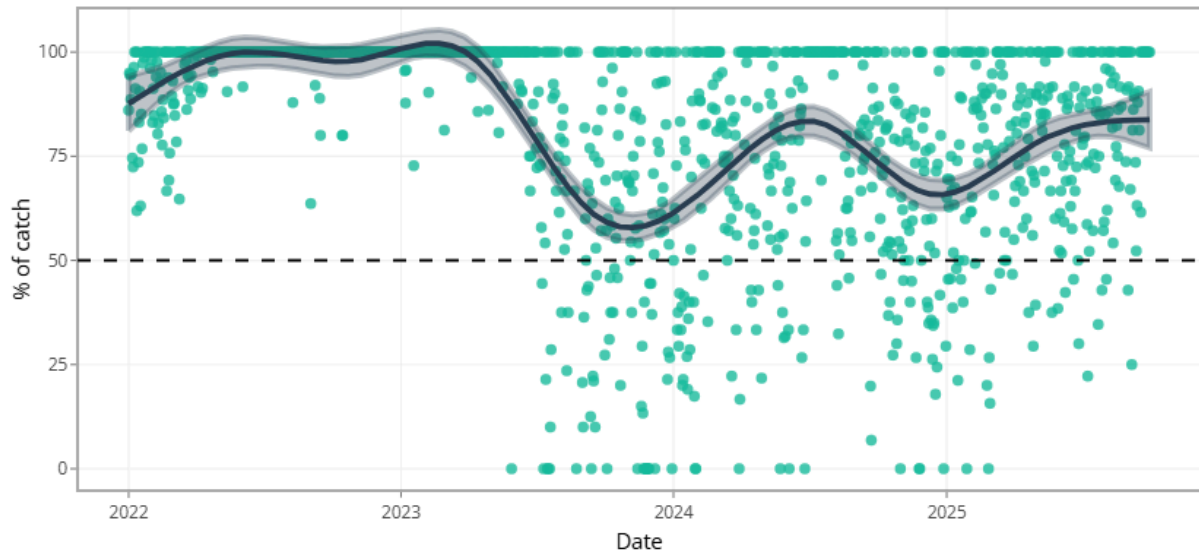


Figure 27 Mean percentage of mature octopus caught across 9 communities in Wakatobi from January 2022 to September 2025. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

The result of the data collection is discussed with the community through regular Data Feedback Sessions (DFS). The DFS is the fundamental activity to decide fisheries management responses and action. One of its management actions is implementing Temporary Closure (TC) in the UoC of the FIP. As the biological and live history status of the day octopus (*Octopus cyanea*) as they are short-life species, temporary closure is considered to be an appropriate management response to recover the local octopus biomass. Additionally, communities also agreed on minimum octopus size catch and the management of fishing gear allowed in their respective management area boundaries.

## Appendix



Appendix 1 JAPESDA technical staff was leading a data feedback session in Torosiaje, Pohuwato



Appendix 2 Discussing octopus fisheries condition in Kadoda, Tojo Una-Una



Appendix 3 FORKANI technical staff was leading the data feedback session in Darawa, Wakatobi



Appendix 4 FONEB technical staff was leading a data feedback session in Lagongga, Wakatobi