

**March 2026**

## **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 28 February 2026. During that period, there are 430,262kg of octopus recorded with a total value of IDR17,635,938,943 and the average percent mature catch of 79%. The average Catch per Unit of Effort (CPUE) is 6kg per trip and the fisher's average Income per Unit of Effort (IPUE) is IDR145,469 per 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 early 2022 with early 2026.

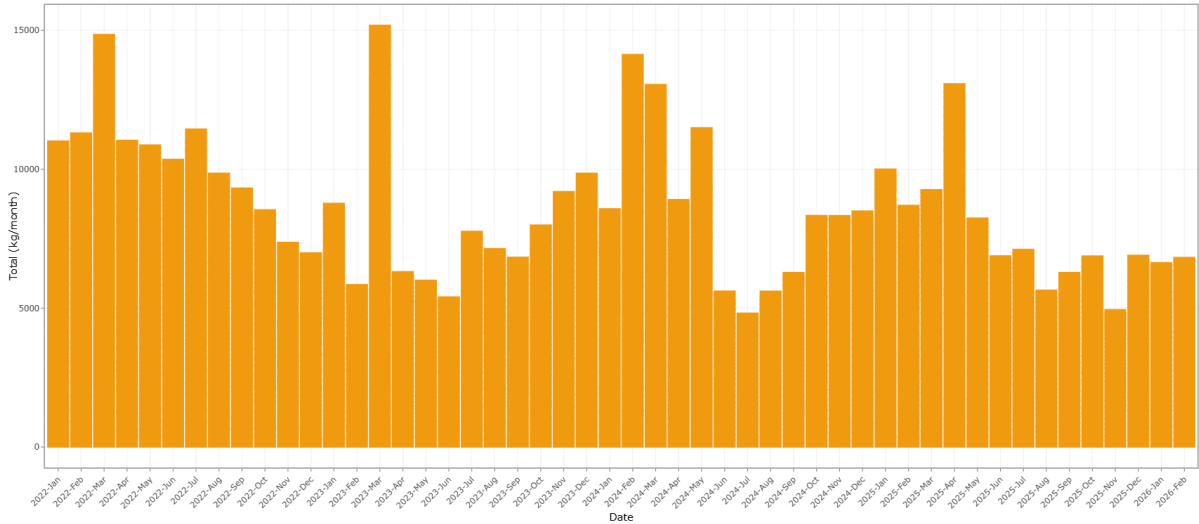


Figure 1 Total landings of octopus across 20 communities in Sulawesi from January 2022 to February 2026

The average CPUE in Figure 2 shows that the octopus fisheries in Sulawesi were increasing until early 2025 but steadily decreasing throughout 2025, however, a slight increase was detected in early 2026. The average mature octopus catch in Figure 3 also shows a decreasing trend when comparing the average from early 2022 to early 2026.

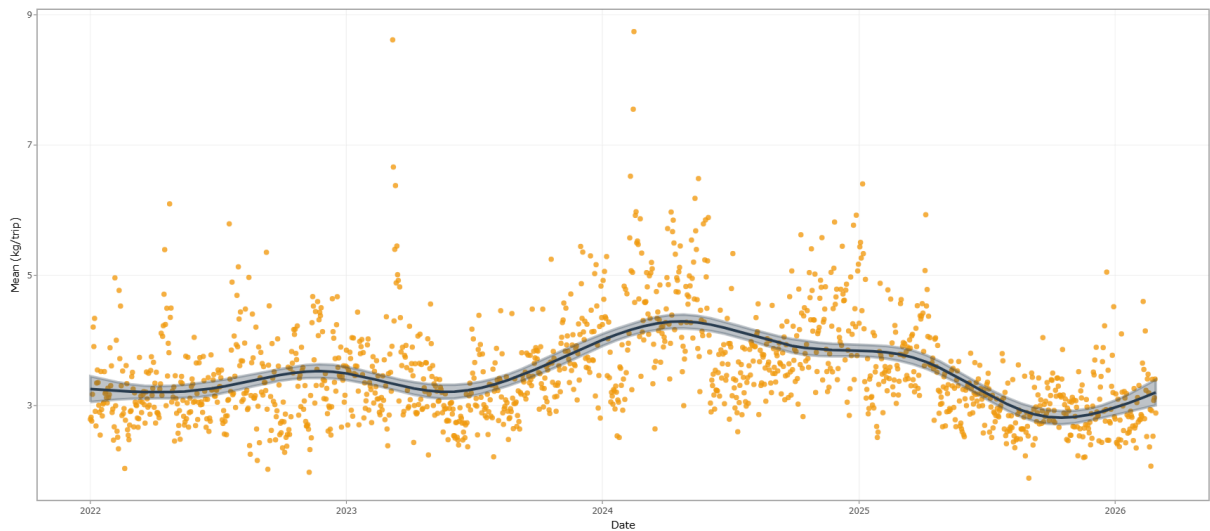


Figure 2 Mean catch per unit of effort (CPUE) of octopus across 20 communities in Sulawesi from January 2022 to February 2026

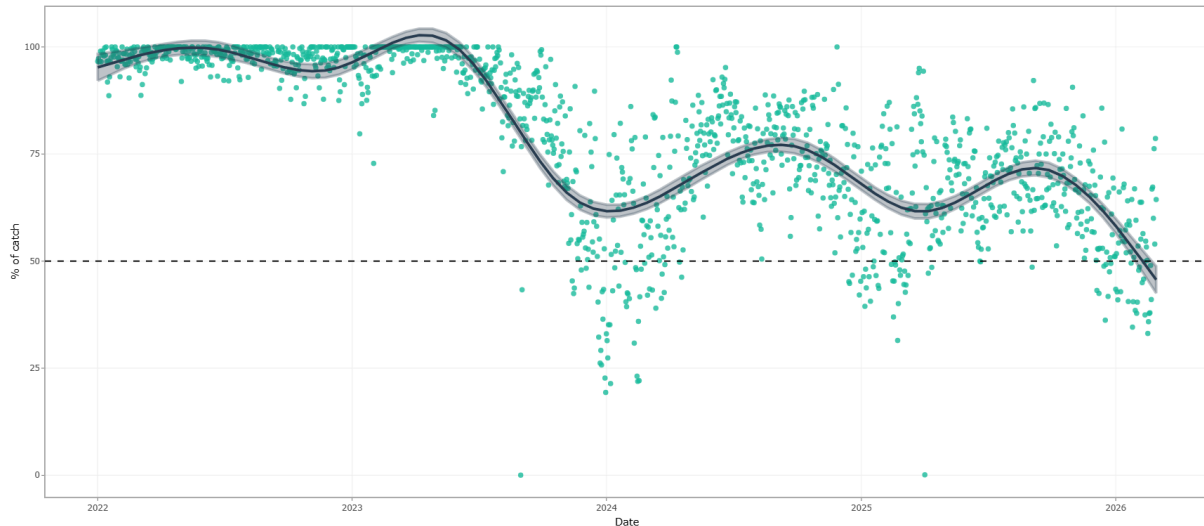


Figure 3 Mean percentage of mature octopus caught across 20 communities in Sulawesi from January 2022 to February 2026. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

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

The octopus fisheries data collected in Minahasa Utara range from 01 January 2022 to 28 February 2026. Data is collected from three communities, namely Gangga Satu, Bulutui, and Likupang Dua. The fisher's total landings recorded are 79,252kg, and the fisher's total income recorded is IDR2,518,993,017, with the average percentage of mature octopus caught being 96%. Fisher's average CPUE is 4kg per trip, and the average IPUE is IDR178,02 per 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 a decrease until February 2026.

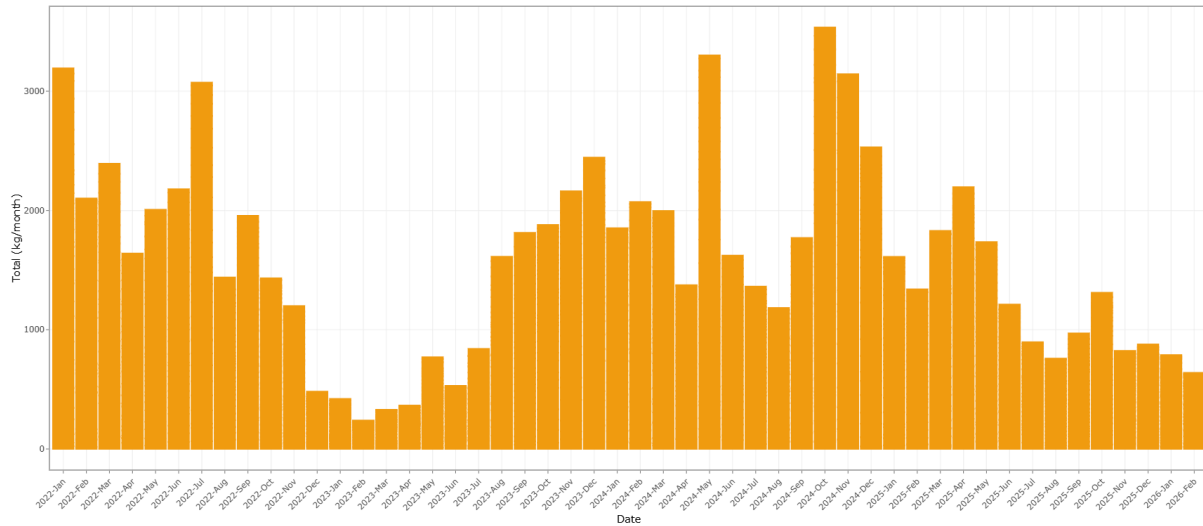


Figure 4 Total landings of octopus in Likupang Dua, Bulutui, and Gangga Satu from January 2022 to February 2026

The trends of CPUE in three communities in Minahasa Utara are relatively stable from January 2022 to February 2026 (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.

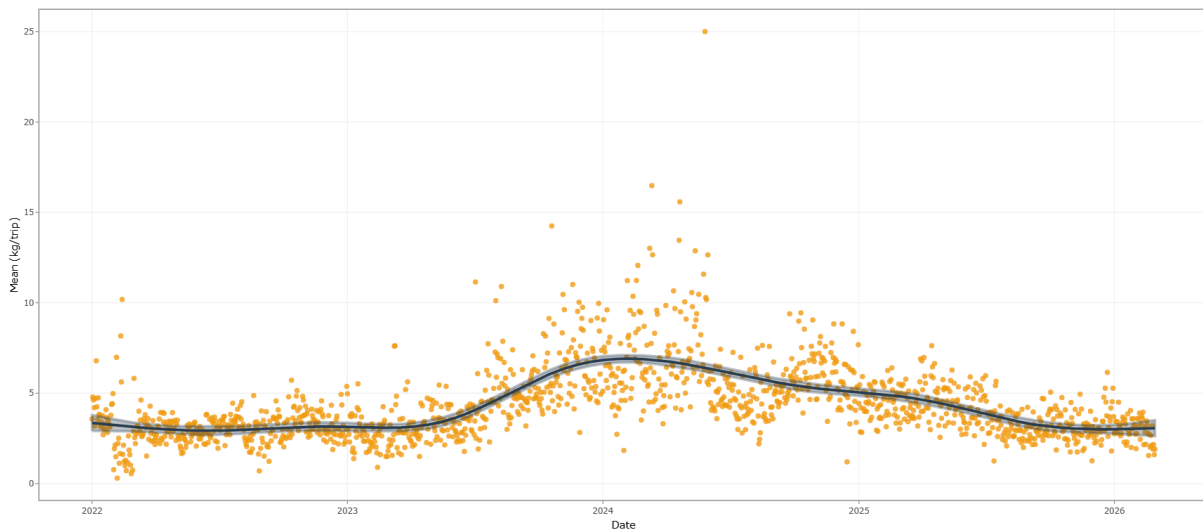


Figure 5 Mean catch per unit of effort (CPUE) of octopus in Likupang Dua, Bulutui, and Gangga Satu from January 2022 to February 2026

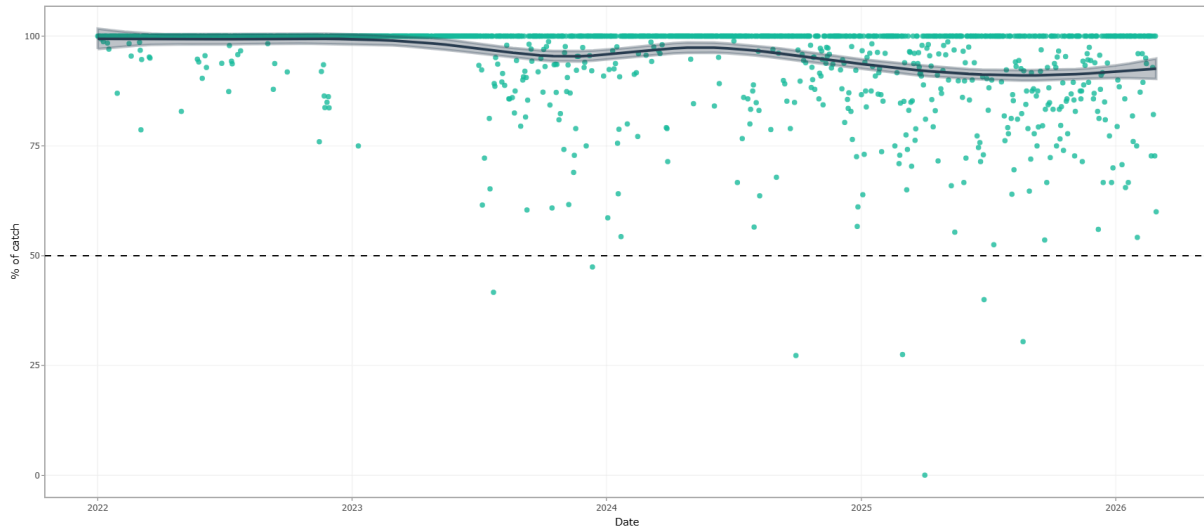


Figure 6 Mean percentage of mature octopus caught in Likupang Dua, Bulutui, and Gangga Satu from January 2022 to February 2026. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

### Octopus Fisheries in Pohuwato

The octopus fisheries data collected in Pohuwato range from 01 January 2022 to 28 February 2026. Data is collected from Torosiaje Village. The fisher's total landings recorded is 50,092kg, and the fisher's total income recorded is IDR2,259,620,633, with the average percent mature octopus caught is 87%. Fisher's average CPUE is 5kg per trip and the average IPUE is IDR220,404 per 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 February 2026.

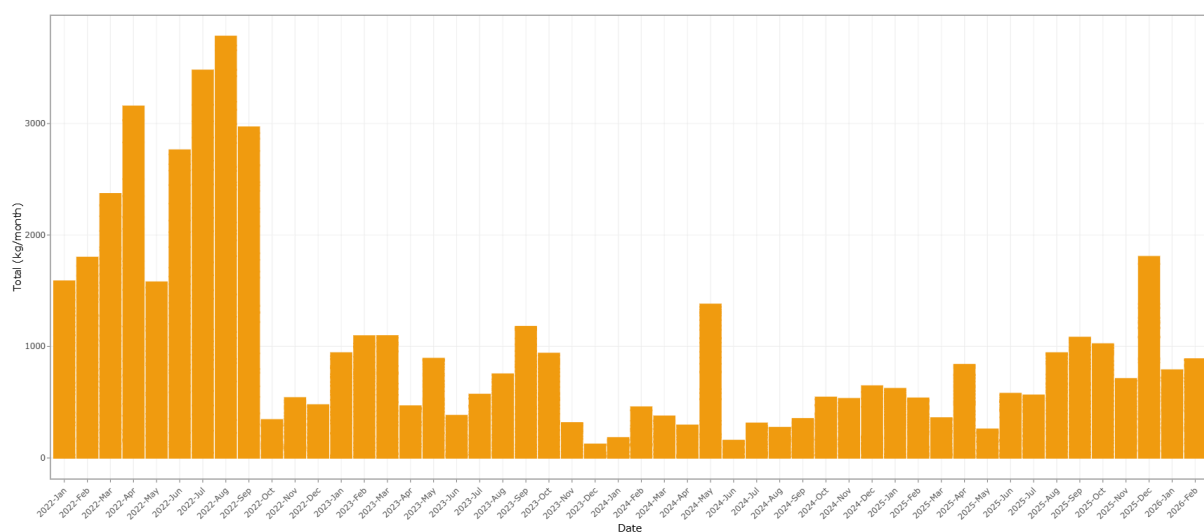


Figure 7 Total landings of octopus in Torosiaje from January 2022 to February 2026

The trend of CPUE in Torosiaje is stable from January 2022 to February 2026. The percentage of mature octopus caught is showing a declining trend with data points variation that fluctuates along the 50% limit reference point. Starting from November 2025, octopus fisheries indicates a recovering condition based on the increasing maturity trends.

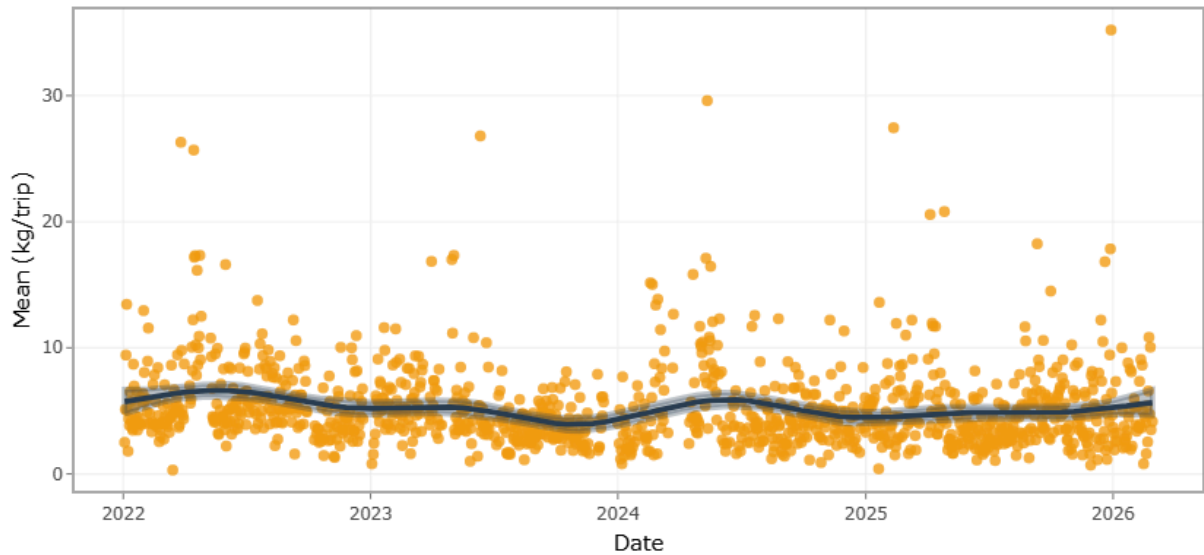


Figure 8 Mean catch per unit of effort (CPUE) of octopus in Torosiaje from January 2022 to February 2026

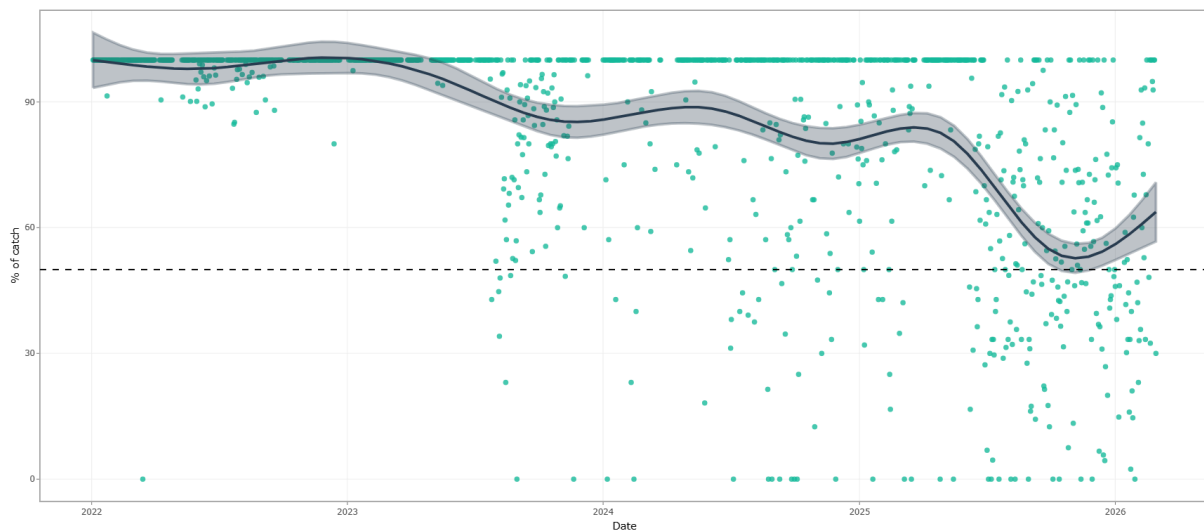


Figure 9 Mean percentage of mature octopus caught in Torosiaje from January 2022 to February 2026. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

## Octopus Fisheries in Tojo Una-Una

The octopus fisheries data collected in Tojo Una-Una range from 01 January 2022 to 15 February 2026. Data is collected from Kadoda Village. The fisher's total landings recorded is 19,064kg and the fisher's total income recorded is IDR816,894,702 with the average percent mature octopus caught is 72%. Fisher's average CPUE is 2kg per trip and the average IPUE is IDR98,820 per 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 early 2026 (Figure 10).

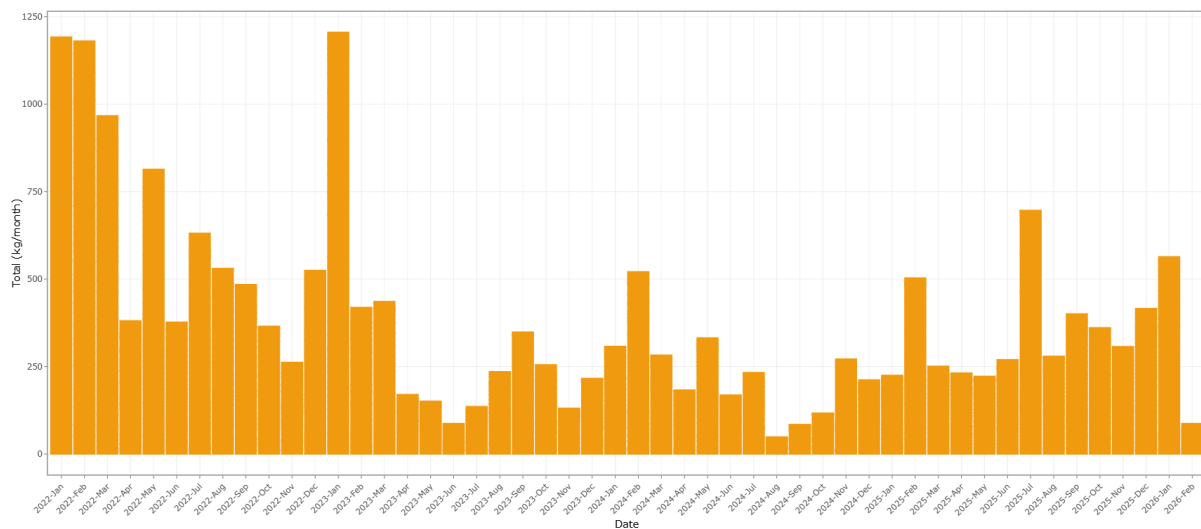


Figure 10 Total landings of octopus in Kadoda from January 2022 to February 2026

The CPUE in Kadoda was in decline during mid-year 2023, then it showed a slight increase in early 2024, then stabilised until early 2026 (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 then increasing in early 2026 (Figure 12).

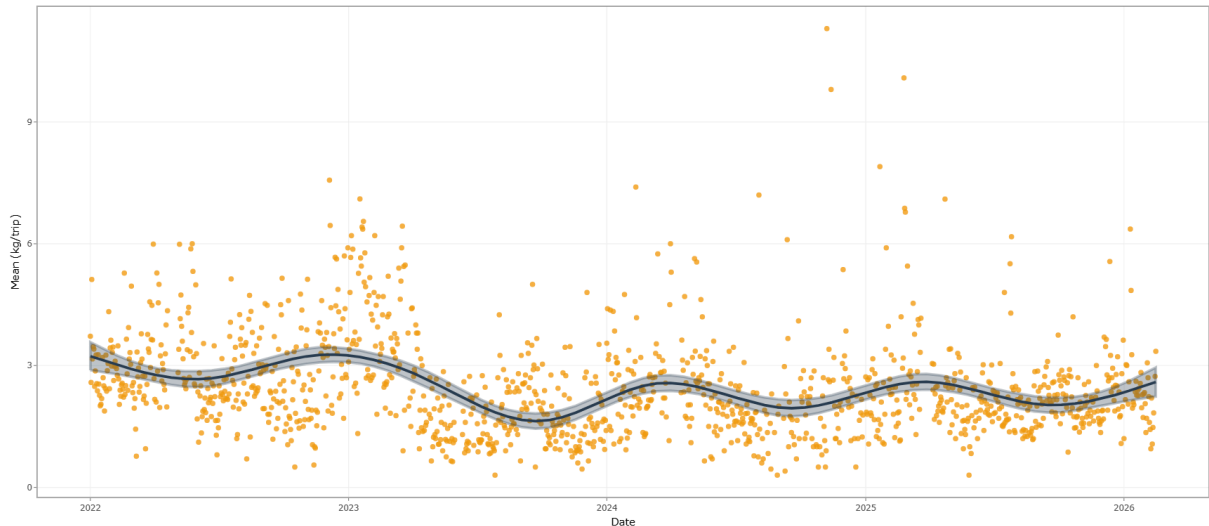


Figure 11 Mean catch per unit of effort (CPUE) of octopus in Kadoda from January 2022 to February 2026

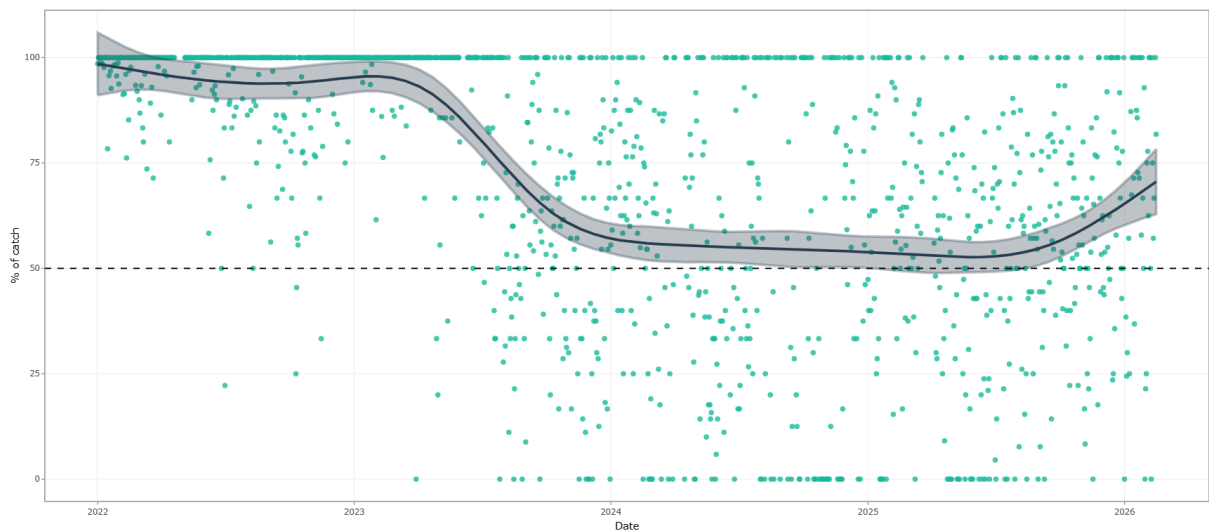


Figure 12 Mean percentage of mature octopus caught in Kadoda from January 2022 to February 2026. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

### Octopus Fisheries in Banggai

The octopus fisheries data collected in Banggai range from 01 January 2022 to 28 February 2026. Data is collected from Uwedikan Village. The fisher's total landings recorded is 11,428kg and the fisher's total income recorded is IDR543,644,443 with an average per cent mature octopus caught is 94%. Fisher's average CPUE is 3kg per trip and the average IPUE is IDR148,785 per 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, July 2025, and January 2026 (Figure 13).

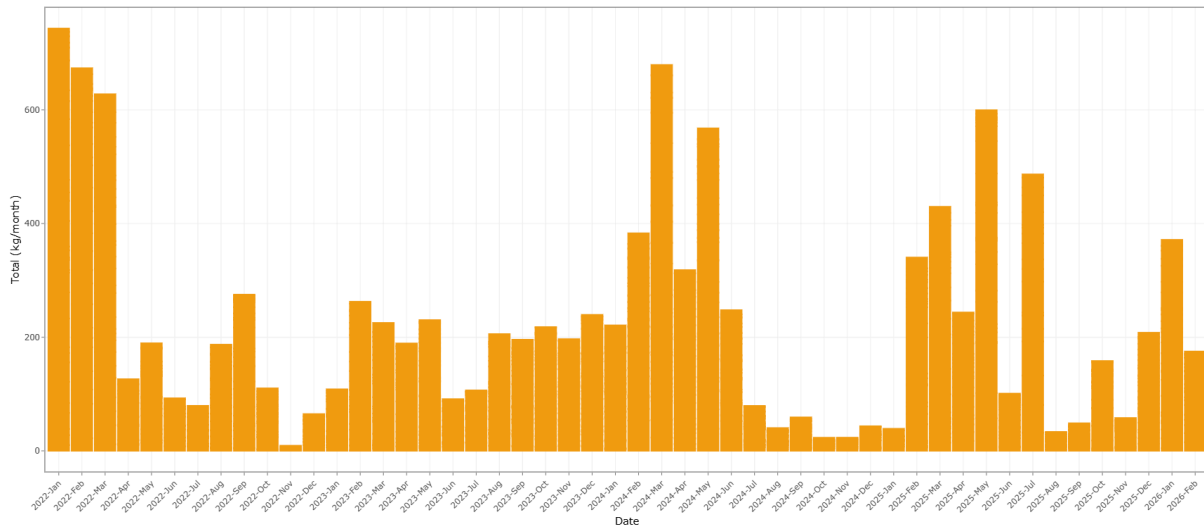


Figure 13 Total landings of octopus in Uwedikan from January 2022 to February 2026

The CPUE in Uwedikan showed no change in trend between January 2022 to February 2026 (Figure 14). The average percentage of mature octopus caught also shows a stable trend from January 2022 to mid 2025, then decline until early 2026 (Figure 15).

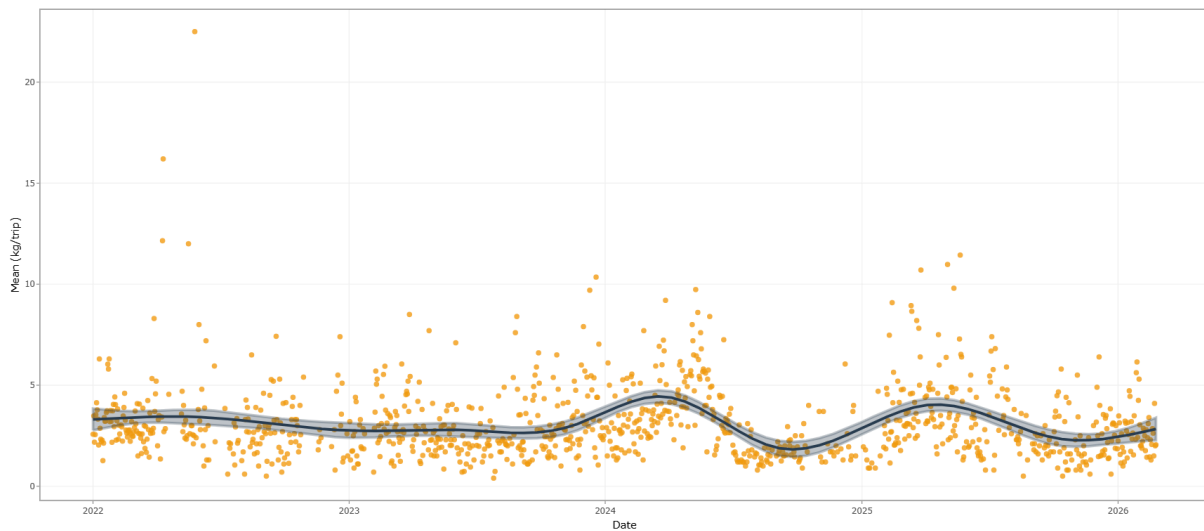


Figure 14 Mean catch per unit of effort (CPUE) of octopus in Uwedikan from January 2022 to February 2026

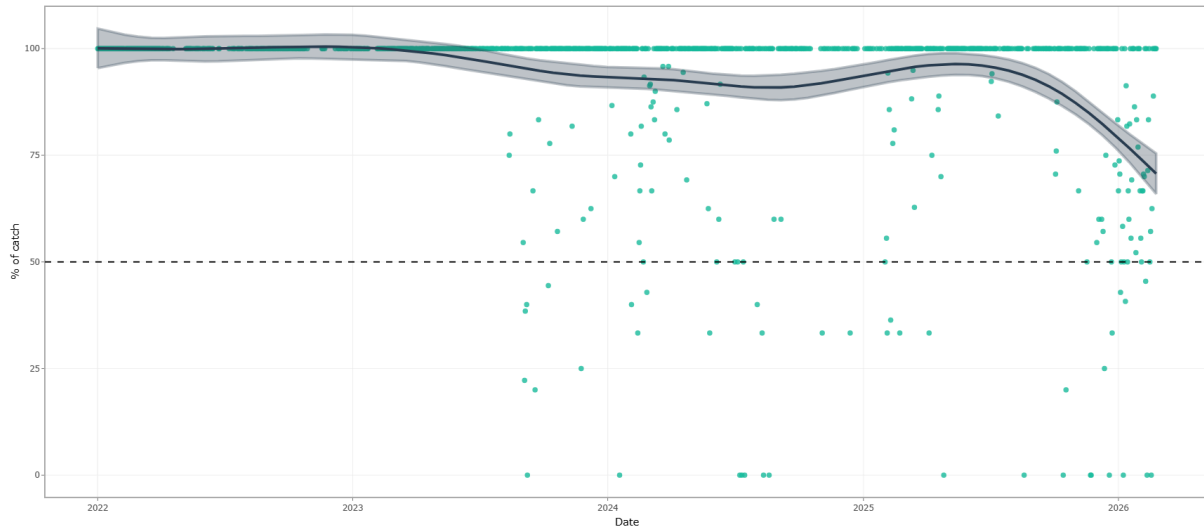


Figure 15 Mean percentage of mature octopus caught in Uwedikan from January 2022 to February 2026. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

### Octopus Fisheries in Banggai Kepulauan

The octopus fisheries data collected in the Banggai Kepulauan range from 01 January 2022 to 28 February 2026. Data is collected from two communities, namely Kalumbatan and Lobuton. The fisher's total landings recorded is 62,758kg and the fisher's total income recorded is IDR2,915,787,120 with the average percent mature octopus caught is 96%. Fisher's average CPUE is 4kg per trip and the average IPUE is IDR163,143 per trip.

Total landings of octopus fisheries in Kalumbatan and Lobuton showed a fairly stable trend over the months. From January 2022 to February 2026, there are occasional spikes of monthly total landings, in May 2022, November 2023, May 2024, November 2024, and May 2025 (Figure 16).

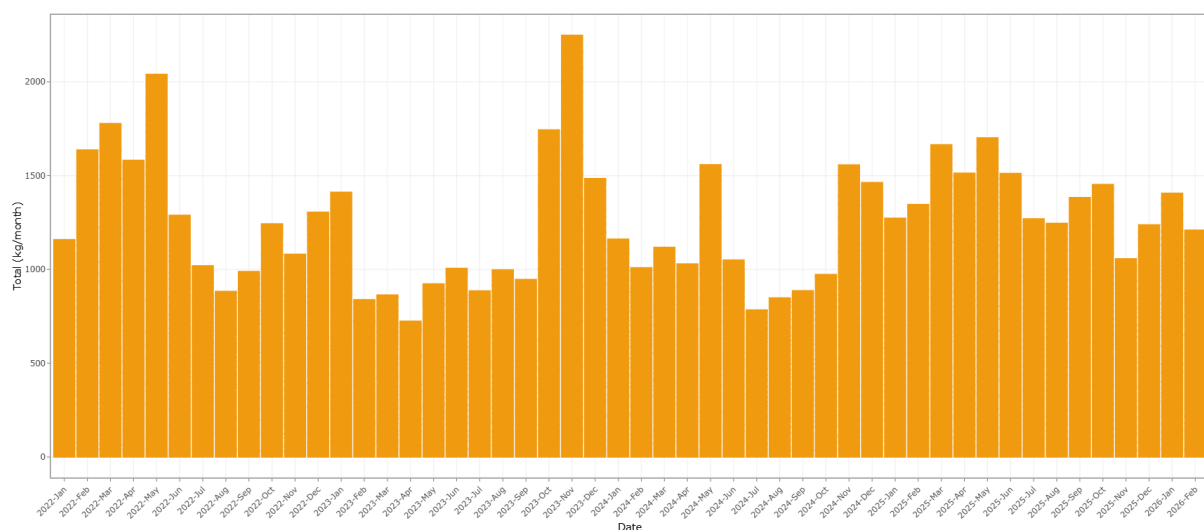


Figure 16 Total landings of octopus in Kalumbatan and Lobuton from January 2022 to February 2026

The CPUE in Kalumbatan and Lobuton showed a stable trend from January 2022 to early 2026 (Figure 17). A decline was observed in the trend of average percentage of mature catch, specifically between mid 2024 to early 2026 (Figure 18).

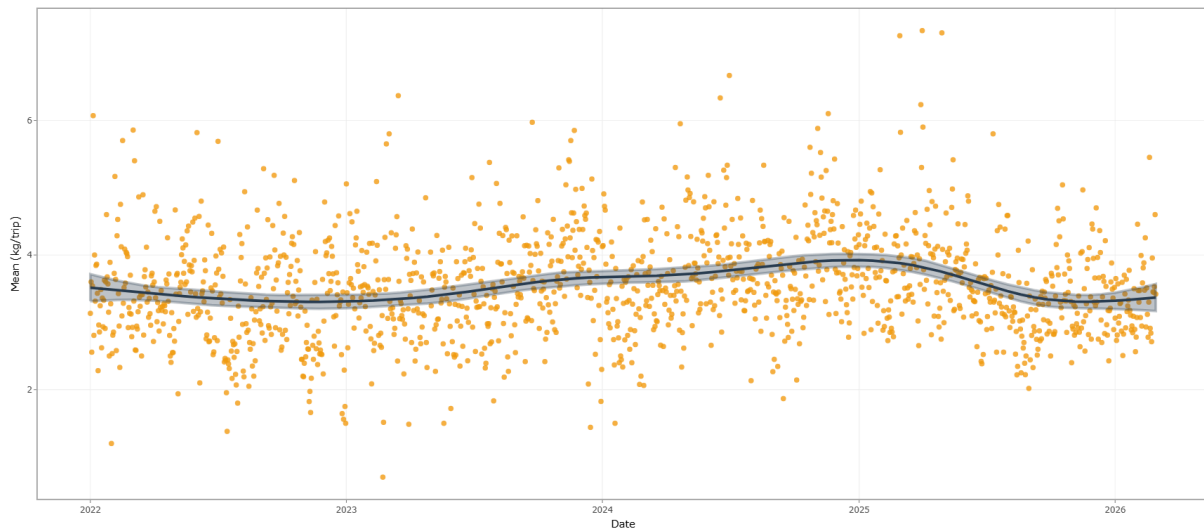


Figure 17 Mean catch per unit of effort (CPUE) of octopus in Kalumbatan and Lobuton from January 2022 to February 2026

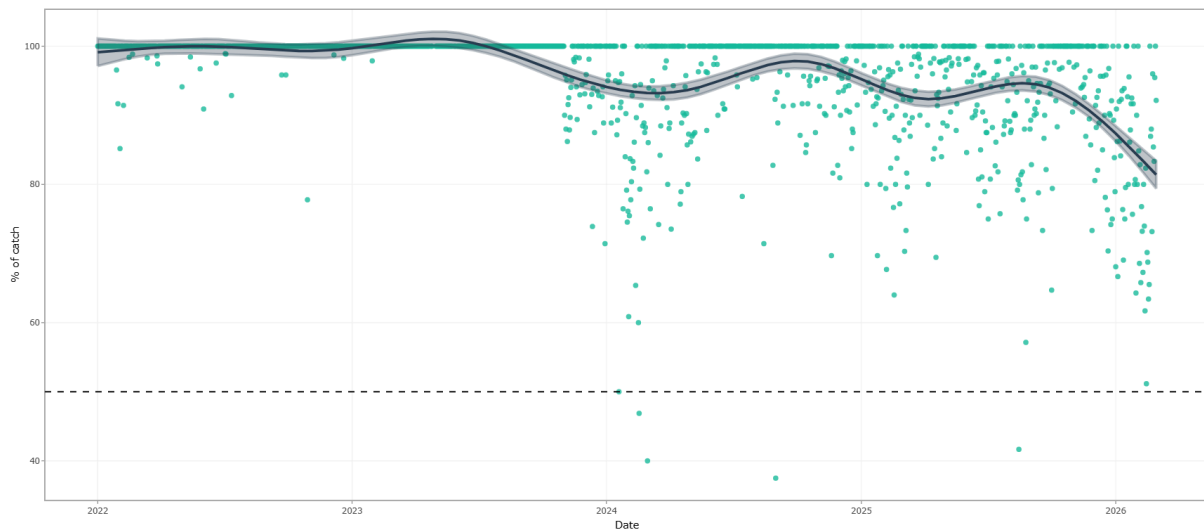


Figure 18 Mean percentage of mature octopus caught in Kalumbatan and Lobuton from January 2022 to February 2026. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

## Octopus Fisheries in Banggai Laut

The octopus fisheries data collected in Banggai Laut range from 01 January 2022 to 28 February 2026. Data is collected from Popisi Village. The fisher's total landings recorded is 22,824kg and the fisher's total income recorded is IDR1,026,733,410 with an average percentage of mature octopus caught is 83%. Fisher's average CPUE is 3kg per trip and the average IPUE is IDR122,395 per 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. In February 2026, data shows the highest total landings recorded in Popisi since 2022 (Figure 19).

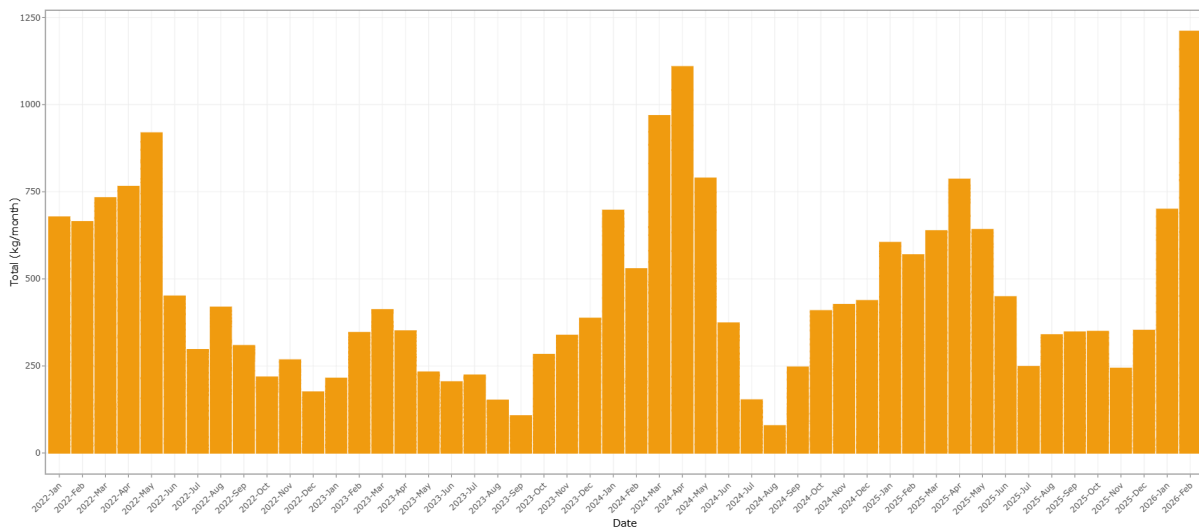


Figure 19 Total landings of octopus in Popisi from January 2022 to February 2026

Contrary to the fluctuation shown by the total landings trend, the CPUE in Popisi showed a stable trend between January 2022 to February 2026 (Figure 20). The mean percentage of mature octopus is showing a notable decline from early 2024 to early 2026 (Figure 21).

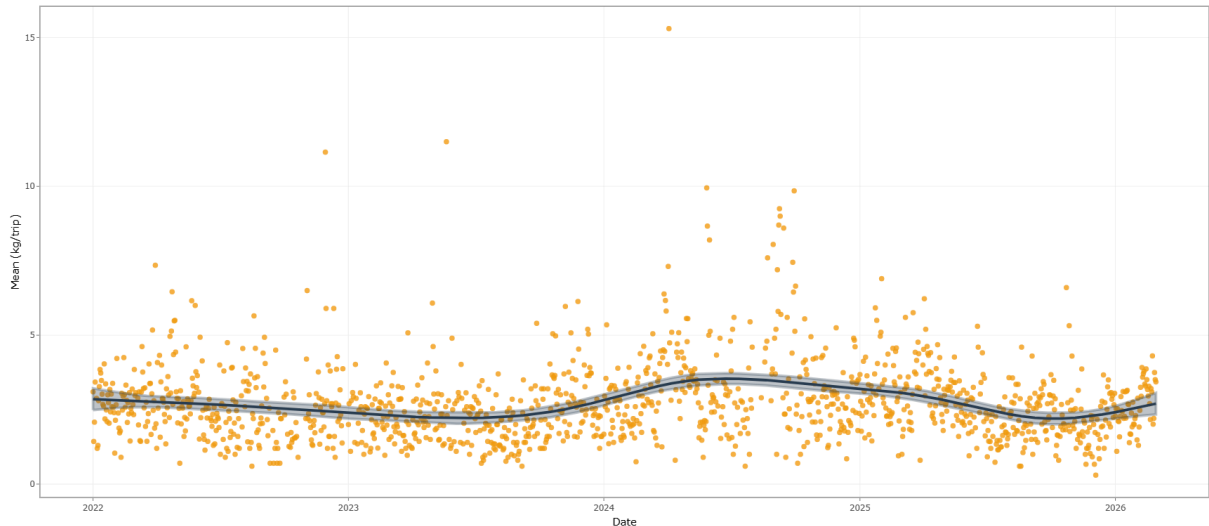


Figure 20 Mean catch per unit of effort (CPUE) of octopus in Popisi from January 2022 to February 2026

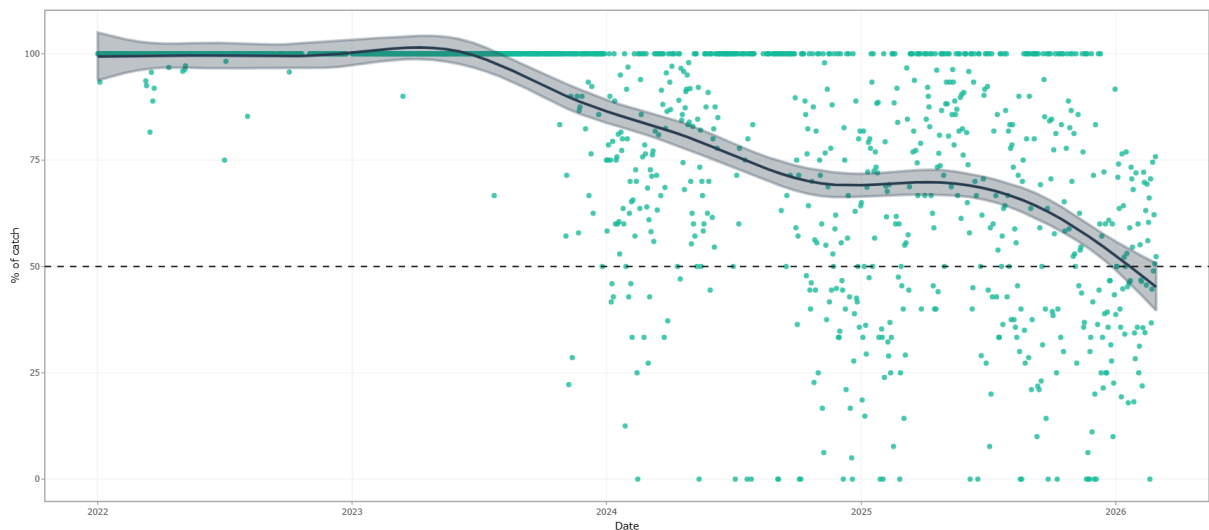


Figure 21 Mean percentage of mature octopus caught in Popisi from January 2022 to February 2026. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

### Octopus Fisheries in Kepulauan Selayar

The octopus fisheries data collected in Kepulauan Selayar range from 01 January 2022 to 28 February 2026. Data is collected from two communities, Mekar Indah and Kahu-Kahu. The fisher's total landings recorded is 139,541kg and the fisher's total income recorded is IDR5,878,036,278 with the average percent mature octopus caught is 65%. Fisher's average CPUE is 3kg per trip and the average IPUE is IDR119,416 per 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 early 2026 with a spike in April 2025 (Figure 22).

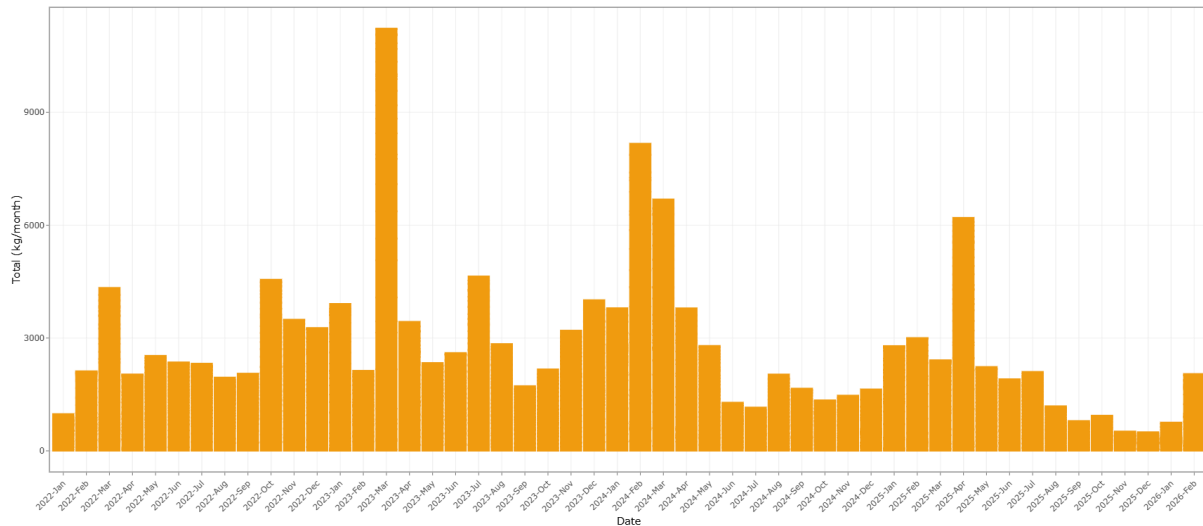


Figure 22 Total landings of octopus in Mekar Indah and Kahu-Kahu from January 2022 to February 2026

Similar to the total landings trend, the CPUE in Mekar Indah and Kahu-Kahu also showed a slight decline between January 2022 to early 2026 (Figure 23). The percent maturity is showing a decreasing trend between January 2022 and February 2026 with a notable pattern of low points every start of the year (Figure 24).

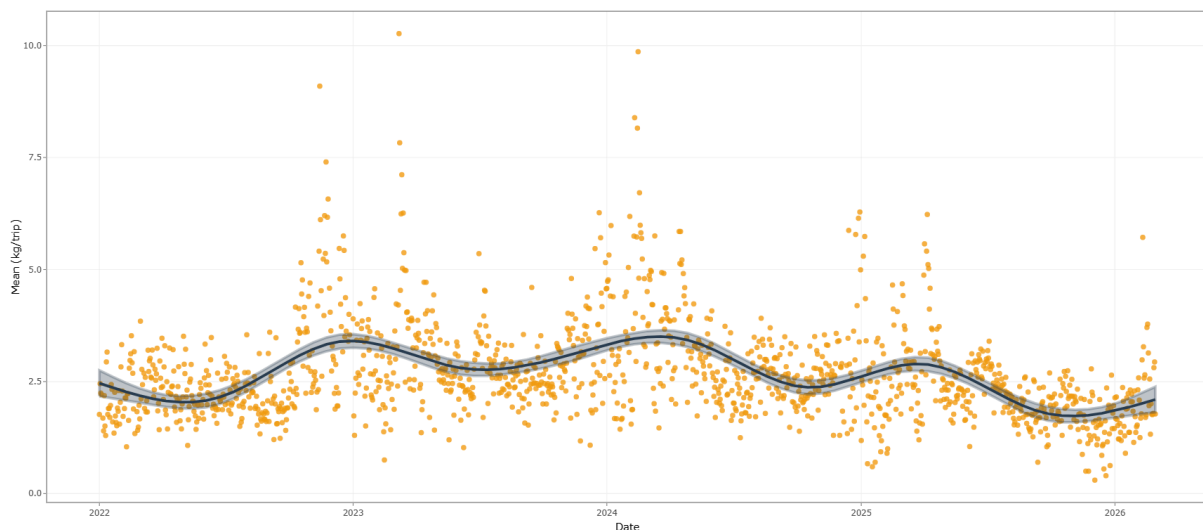


Figure 23 Mean catch per unit of effort (CPUE) of octopus in Mekar Indah and Kahu-Kahu from January 2022 to February 2026

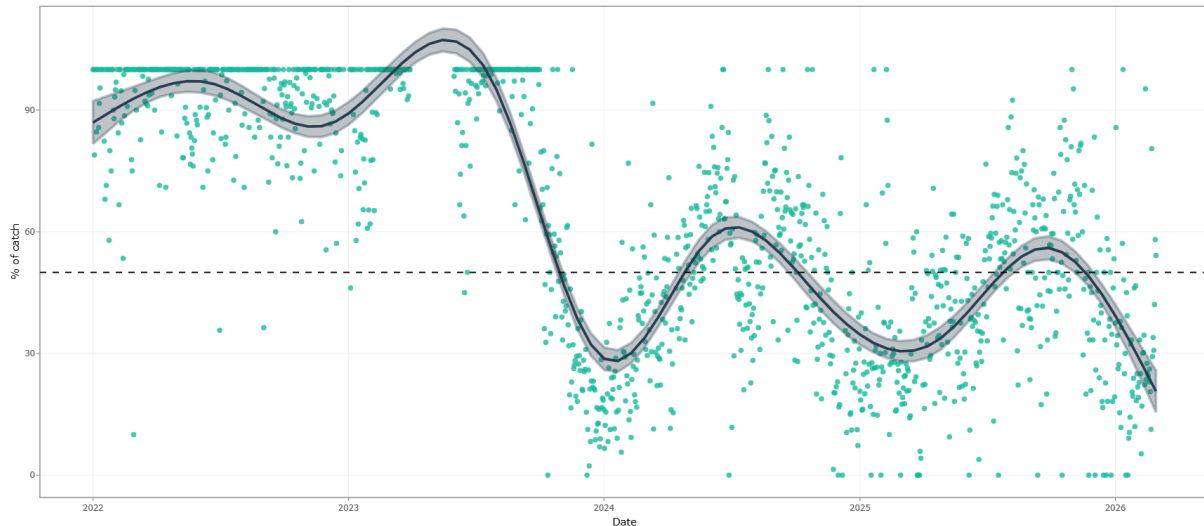


Figure 24 Mean percentage of mature octopus caught in Mekar Indah and Kahu-Kahu from January 2022 to February 2026. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

### Octopus Fisheries in Wakatobi

The octopus fisheries data collected in Wakatobi range from 01 January 2022 to 28 February 2026. Data is collected from nine communities in Wakatobi. The fisher's total landings recorded is 45,301kg and the fisher's total income recorded is IDR1,676,229,339 with the average percent of mature octopus caught is 78%. Fisher's average CPUE is 4kg per trip and the average IPUE is IDR135,819 per trip.

Total landings of octopus fisheries in Wakatobi showed a decreasing trend from January–October 2022 then there was a sudden increase in December 2023. From May 2024 towards January 2025, the total landings increased and then stabilised until early 2026 (Figure 25).

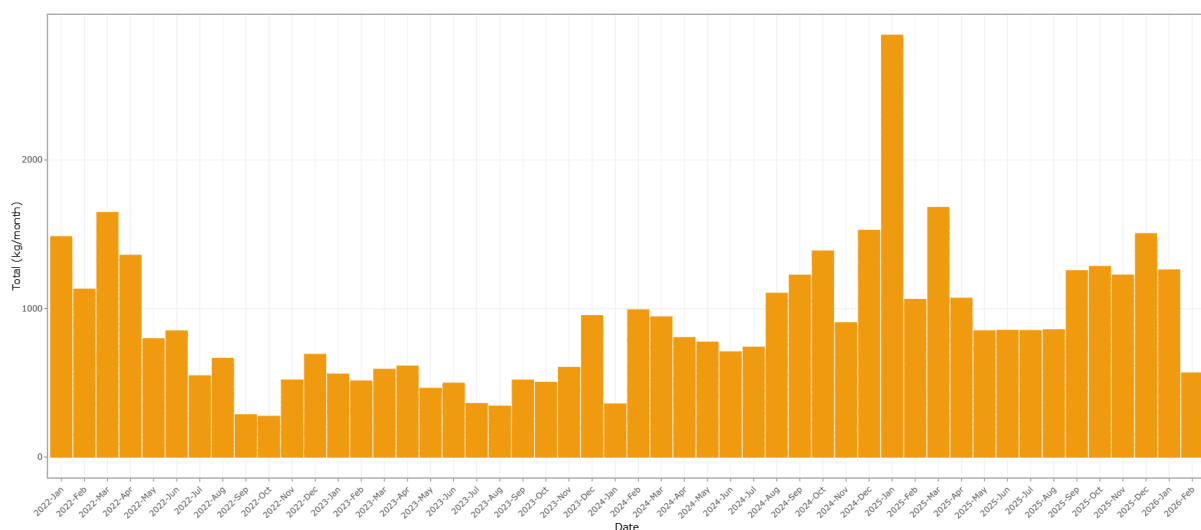


Figure 25 Total landings of octopus across 9 communities in Wakatobi from January 2022 to February 2026

The CPUE in Wakatobi showed an increasing trend between January 2022 to September 2024 then stabilised along the months until February 2026 (Figure 26). Compared to the CPUE trend, the percent mature trend showed a more observable fluctuation between January 2022 and February 2026 (Figure 27). The mature catch trend showed a declining trend around November 2023, and gradually increasing over time until early 2026.

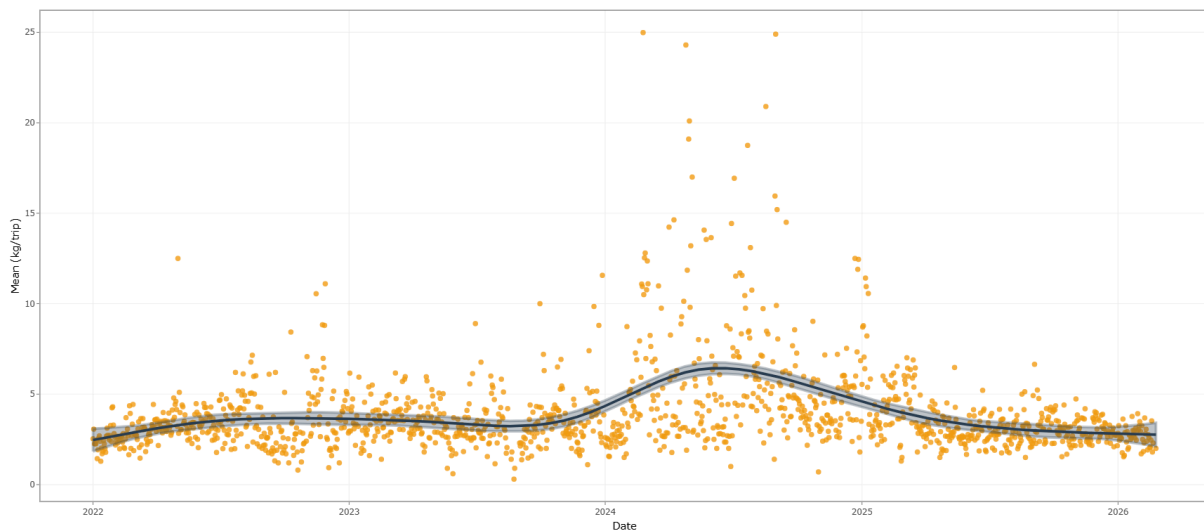


Figure 26 Mean catch per unit of effort (CPUE) of octopus across 9 communities in Wakatobi from January 2022 to February 2026

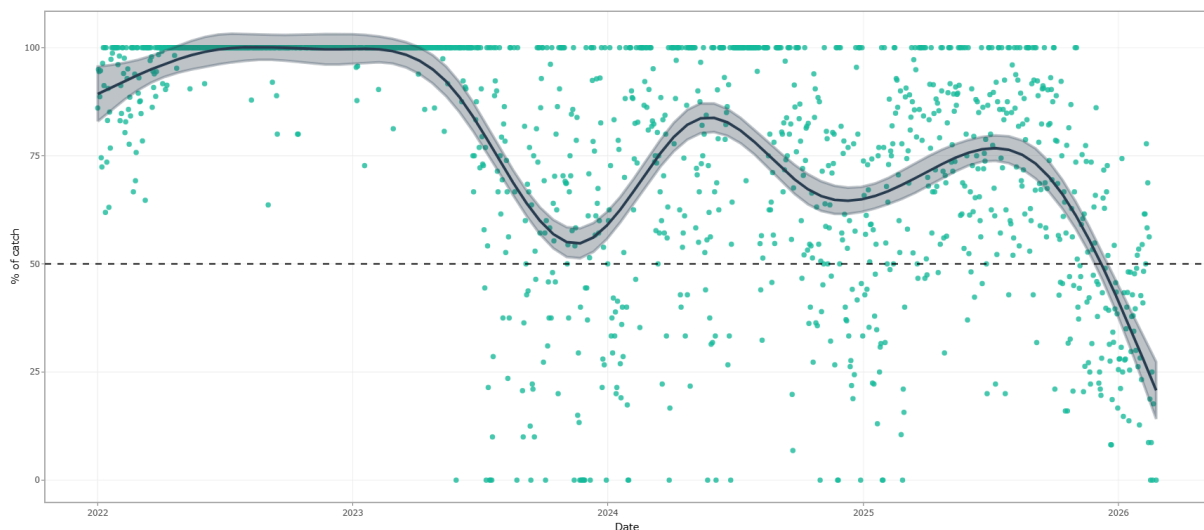


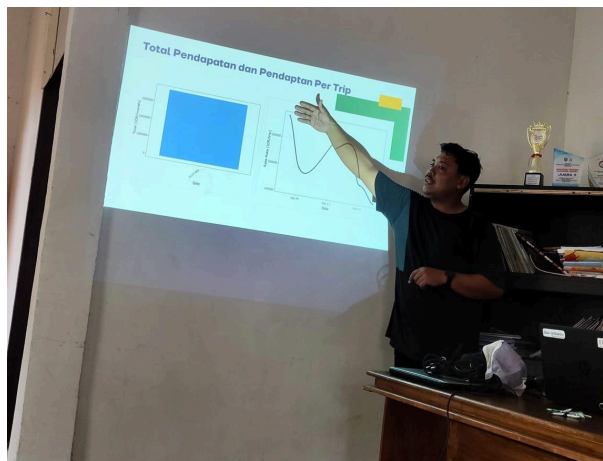
Figure 27 Mean percentage of mature octopus caught across 9 communities in Wakatobi from January 2022 to February 2026. The horizontal dashed line at 50% is a Limit Reference Point (LRP) for the percentage of the mature catch.

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 the minimum octopus size catch and the management of fishing gear allowed in their respective management area boundaries.

## Appendix



Appendix 1 KOMANANGI technical staff is leading the data feedback session



Appendix 2 FORKANI technical staff is leading the data feedback session



Appendix 3 FONEB technical staff is leading the data feedback session