

Seaweed Farming



Benchmarks can serve as guidance for seaweed producers in business planning and risk management as well as for lenders in the evaluation of loan applications.

Maine's farmed seaweed harvest has grown exponentially since 2017.

As the sector expands, growers, processors, and distributors will require accurate financial and production information to make informed decisions.

PRODUCERS CAN USE BENCHMARKS FOR:

- Comparing the performance of their farm to that of similar farms to find areas for improvement
- Assessing risk management strategies
- Improving and expanding their businesses

LENDERS CAN USE BENCHMARKS FOR:

- Better understanding seaweed businesses
- Comparing loan applications to industry standard performance

SINCE 2017...

MEDIAN SEAWEED YIELDS INCREASED BY 28% and **AVERAGE SEAWEED YIELDS INCREASED BY 57%**

LABOR EFFICIENCY IMPROVED BY 1,275%

MEDIAN BREAK-EVEN PRICES ABOVE TOTAL COSTS DECREASED BY 90%

83% of farms that harvested $\geq 75,000$ lbs. **WERE PROFITABLE.** For those harvesting $< 75,000$, **40% WERE PROFITABLE**

> 80% of respondents made their **PRIMARY INCOME ON THE WATER, AND THE MAJORITY WERE FISHERMEN**

NET MARGINS increase with farm size, while **BREAK-EVEN PRICES** decrease, **INDICATING ECONOMIES OF SCALE**

RECOMMENDATIONS FOR USE OF BENCHMARKS

- The benchmarks developed in this analysis should be **used with caution**
- There is **great variability at the farm level** due to disparate business models, management practices, lease sites, and labor dynamics
- When consulting the benchmark values, attention should be paid to the **coefficient of variation: the higher, the greater the variability, and the less reliable**

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Benchmarks

FARM YIELD, EFFICIENCY, AND PROFITABILITY*

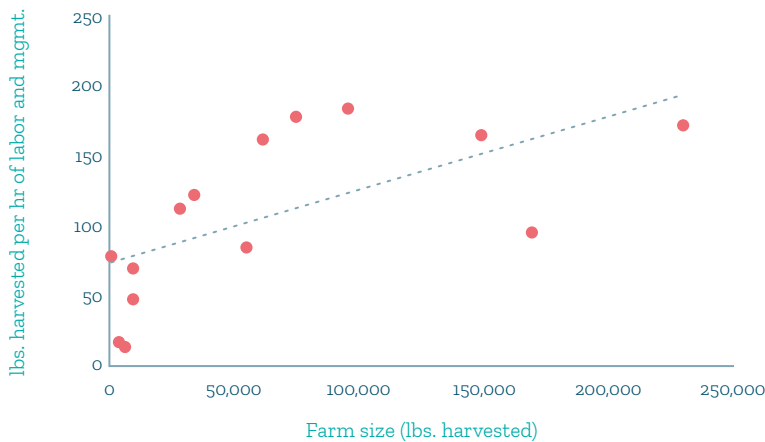
Between 2017 and 2022, **the performance of kelp farms increased** likely due to enhanced farmer knowledge, "learning by doing", extension support, and improved seed production and handling practices.

Metric	2017	2022
Yield (lbs./ft of grow-line)	3.7	4.24
Labor cost contribution (\$/lb.)	\$3.35	\$0.11
Labor efficiency (lbs. harvested per hr of labor + management)	7.55	103.76
Breakeven price above variable cost (\$/lb.)	\$4.97	\$0.29
Breakeven price above total cost (\$/lb.)	\$6.89	\$0.66
Breakeven yield (lbs./total costs per foot of line)	12.64	2.69
Net margin (\$/lb.)	-\$6.41	\$0.16
Operating expense/revenue ratio	13.8	0.41
Depreciation expense ratio	0.6	0.18
Net farm income from operations ratio	-13.4	0.20

*All values are median values.

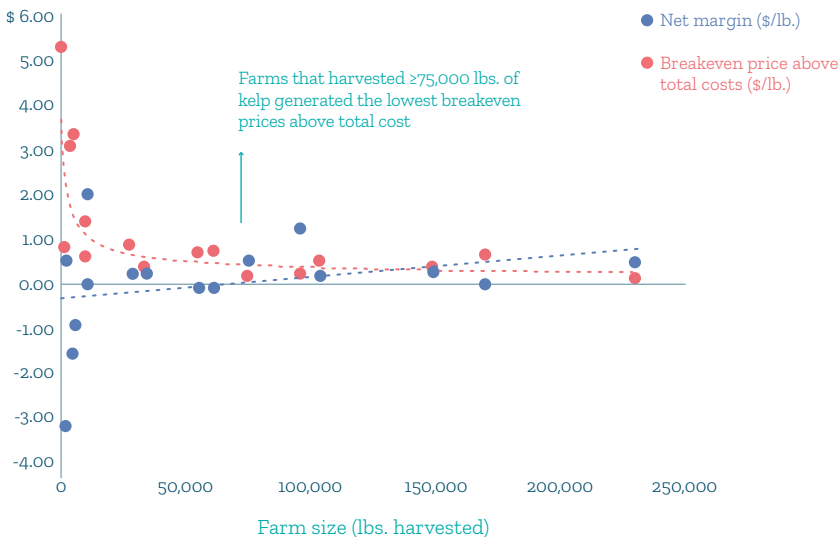
LABOR EFFICIENCY

Farms benefitted from many hours of **non-paid labor**, primarily from family or volunteers. Owner-operators worked a median of 174 hours, and **only 50% took any pay**. As farm size increased, so did the efficiency of labor.



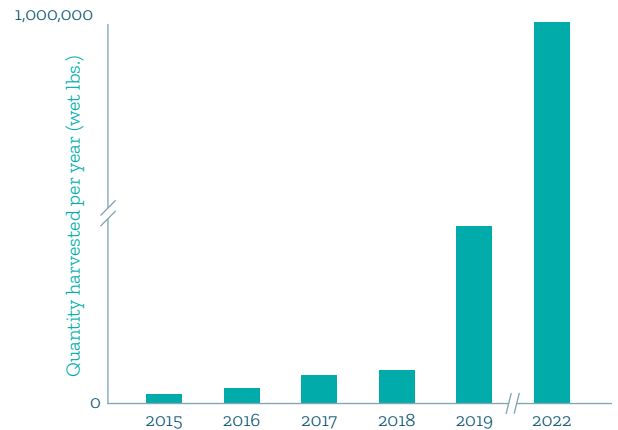
FINANCIAL EFFICIENCY

Breakeven price **decreased with farm size and net margins increased**, illustrating economies of scale.



PRODUCTION

In the spring of 2022, the 16 farmers interviewed in this study harvested **~22 times more** than the harvest volume from the 2017 season.



COSTS*

Since **labor comprises the greatest cost** during seaweed production, optimizing its efficiency is key.

*All values are median values.

