



# Key figures from Norwegian Aquaculture Industry 2018

Livet i havet - vårt felles ansvar

# Rapport

Tittel (norsk/engelsk)-

Key figures from Norwegian Aquaculture Industry 2018

**Årstall**  
2018

**Ansvarlig avdeling:**  
Statistikkavdelingen

**Emneord:**  
Akvakultur, havbruk,  
oppdrett, statistikk

**Arkivsaksnummer:**

**Dato utgitt:**  
11.07.2019

**Totalt antall sider:**  
26

**Saksansvarlig:**  
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**ISSN/ISSB:**  
1893-6946

Key figures from Norwegian Aquaculture Industry 2018

**Summary:**

This report presents key figures from the Norwegian Aquaculture Industry. The report contains information about all species farmed in Norway. The information is in four groups. One group contains information about Atlantic salmon and Rainbow trout. Another group contains information about other marine fish species, a third group contains information about molluscs, crustaceans and echinoderms and finally the fourth group contains information about algae.

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# 1. Licences

Source: The Directorate of Fisheries

Figure 1. The number of licences 2008-2018

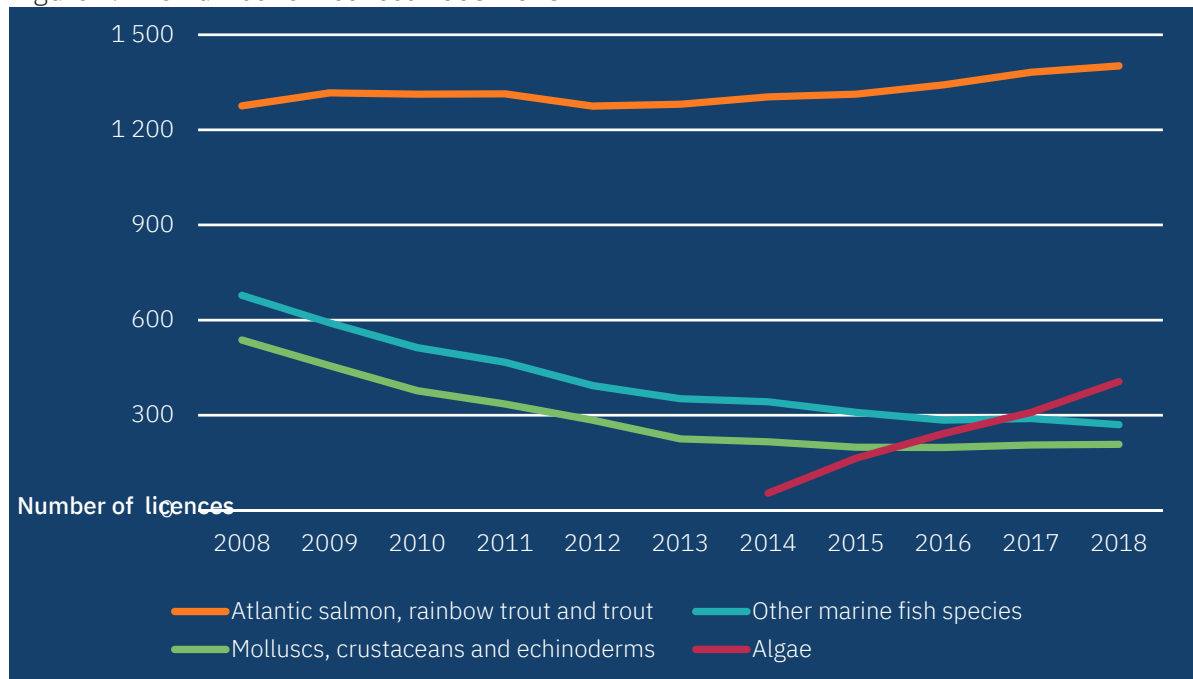
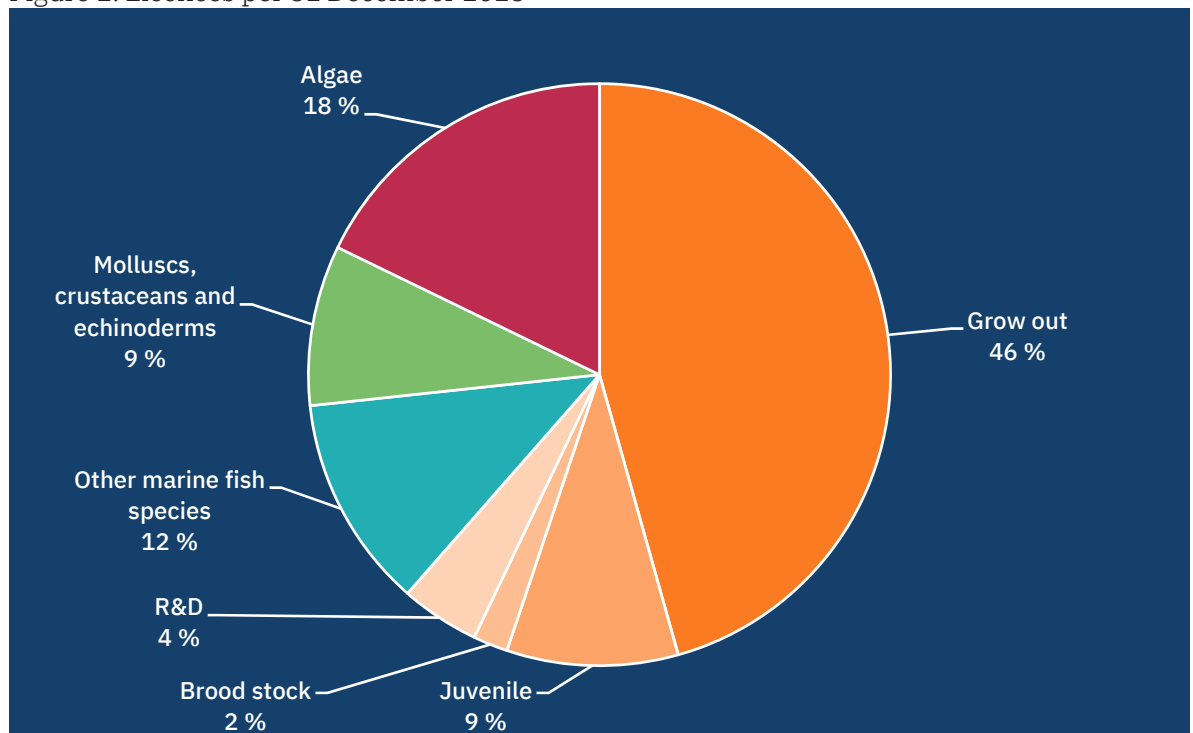


Figure 2. Licences per 31 December 2018



Be aware that grow out production, juvenile, brood stock and research (R&D) are licenses for production of Atlantic salmon, rainbow trout and trout.

Table 1. The number of licenses per 31 December 2018, Atlantic salmon, rainbow trout and trout.

|                  | Juvenile           | Grow out           | Brood stock        | R & D <sup>1)</sup> | Total              |
|------------------|--------------------|--------------------|--------------------|---------------------|--------------------|
| County           | Number of licenses | Number of licenses | Number of licenses | Number of licenses  | Number of licenses |
| Finnmark         | 6                  | 99                 | 0                  | 5                   | 110                |
| Troms            | 12                 | 109                | 2                  | 8                   | 131                |
| Nordland         | 32                 | 185                | 9                  | 21                  | 247                |
| Trøndelag        | 34                 | 170                | 9                  | 21                  | 234                |
| Møre og Romsdal  | 33                 | 116                | 6                  | 6                   | 161                |
| Sogn og Fjordane | 20                 | 90                 | 4                  | 6                   | 120                |
| Hordaland        | 55                 | 165                | 6                  | 13                  | 239                |
| Rogaland         | 17                 | 59                 | 5                  | 17                  | 98                 |
| Vest-Agder       | 2                  | 18                 | 0                  | 0                   | 20                 |
| Aust-Agder       | 1                  | 3                  | 1                  | 0                   | 5                  |
| Øvrige Fylker    | 5                  | 27                 | 2                  | 3                   | 37                 |
| <b>Total</b>     | <b>217</b>         | <b>1 041</b>       | <b>44</b>          | <b>100</b>          | <b>1 402</b>       |

1) Research (R&D)

Table 2. The number of licenses per 31 December 2018, other marine fish species, molluscs, crustaceans, echinoderms, sea ranching and algae.

|                  | Fish               | Molluscs, crustaceans and echinoderms | Sea Ranching       | Algae              |
|------------------|--------------------|---------------------------------------|--------------------|--------------------|
| County           | Number of licenses | Number of licenses                    | Number of licenses | Number of licenses |
| Finnmark         | 12                 | 5                                     | 0                  | 0                  |
| Troms            | 16                 | 7                                     | 0                  | 2                  |
| Nordland         | 44                 | 37                                    | 0                  | 124                |
| Trøndelag        | 35                 | 43                                    | 2                  | 27                 |
| Møre og Romsdal  | 27                 | 7                                     | 1                  | 7                  |
| Sogn og Fjordane | 18                 | 10                                    | 0                  | 76                 |
| Hordaland        | 64                 | 49                                    | 0                  | 159                |
| Rogaland         | 24                 | 17                                    | 4                  | 2                  |
| Vest-Agder       | 7                  | 5                                     | 2                  | 9                  |
| Aust-Agder       | 3                  | 19                                    | 0                  | 0                  |
| Øvrige Fylker    | 20                 | 9                                     | 0                  | 0                  |
| <b>Total</b>     | <b>270</b>         | <b>208</b>                            | <b>9</b>           | <b>406</b>         |

Table 3. The number of licenses per 31 December 2018 for other marine fish species, molluscs, crustaceans, echinoderms and algae distributed by species

| Other marine fish species |     | Molluscs, crustaceans and echinoderms |     | Algae         |     |
|---------------------------|-----|---------------------------------------|-----|---------------|-----|
| Species                   | No. | Species                               | No. | Species       | No. |
| Atlantic haddock          | 20  | Blue mussel                           | 134 | Sea belts     | 78  |
| Atlantic halibut          | 70  | European lobster                      | 24  | Tangle        | 70  |
| Turbot                    | 31  | Great Atlantic scallop                | 40  | Dabber locks  | 75  |
| Wrasse                    | 164 | Sea urchin                            | 31  | Dulse         | 60  |
| Lumpfish                  | 72  | Flat and cupped oyster                | 49  | Other species | 223 |
| Arctic char               | 54  | Other species                         | 247 |               |     |
| Wolf fish                 | 55  |                                       |     |               |     |
| Atlantic cod              | 81  |                                       |     |               |     |
| Other species             | 371 |                                       |     |               |     |

The licenses for marine fish species, molluscs, crustaceans and echinoderms are comprised of several species. In “Table 3” licenses are counted several times. The total number of licenses in “Table 3” is therefore higher than the total number of licenses presented in “Table 2”.



## 2. Sites

Source: The Directorate of Fisheries

Table 4. The number of sites in seawater per 31 December 2018

|                  | Atlantic salmon and rainbow trout | Other marine fish species | Molluscs, crustaceans and echinoderms | Algae     |
|------------------|-----------------------------------|---------------------------|---------------------------------------|-----------|
| County           | Number                            | Number                    | Number                                | Number    |
| Finnmark         | 64                                | 0                         | 0                                     | 0         |
| Troms            | 116                               | 6                         | 3                                     | 2         |
| Nordland         | 219                               | 13                        | 35                                    | 10        |
| Trøndelag        | 165                               | 5                         | 38                                    | 11        |
| Møre og Romsdal  | 89                                | 4                         | 2                                     | 7         |
| Sogn og Fjordane | 93                                | 3                         | 9                                     | 16        |
| Hordaland        | 188                               | 9                         | 36                                    | 25        |
| Rogaland         | 72                                | 2                         | 6                                     | 11        |
| Vest-Agder       | 7                                 | 0                         | 2                                     | 1         |
| Aust-Agder       | 2                                 | 0                         | 18                                    | 0         |
| Øvrige fylker    | 0                                 | 0                         | 1                                     | 0         |
| <b>Total</b>     | <b>1 015</b>                      | <b>42</b>                 | <b>150</b>                            | <b>83</b> |

Table 5. The number of sites at land per 31. December 2018, production for Atlantic salmon and rainbow trout.

| County           | Licenses for grow out |            | Licenses for juveniles |            |
|------------------|-----------------------|------------|------------------------|------------|
|                  | Freshwater            | Salt water | Freshwater             | Salt water |
| County           | Number                | Number     | Number                 | Number     |
| Finnmark         | 0                     | 0          | 6                      | 0          |
| Troms            | 0                     | 0          | 9                      | 0          |
| Nordland         | 1                     | 3          | 30                     | 0          |
| Trøndelag        | 2                     | 0          | 28                     | 0          |
| Møre og Romsdal  | 2                     | 4          | 23                     | 2          |
| Sogn og Fjordane | 14                    | 2          | 18                     | 1          |
| Hordaland        | 4                     | 2          | 36                     | 2          |
| Rogaland         | 2                     | 1          | 11                     | 2          |
| Vest-Agder       | 0                     | 0          | 2                      | 0          |
| Aust-Agder       | 1                     | 0          | 0                      | 0          |
| Øvrige fylker    | 12                    | 1          | 5                      | 0          |
| <b>Total</b>     | <b>27</b>             | <b>13</b>  | <b>168</b>             | <b>7</b>   |



### 3. Licenses and companies with production

Source: The Directorate of Fisheries

Preliminary figures for 2018 (per May 2019)

Table 6. The number of companies with production of fish in 2018

| County           | Atlantic salmon, rainbow trout and trout |            | Other marine fish species |           |
|------------------|--|------------|---------------------------|-----------|
|                  | Grow out                                 | Juvenile   | Grow out                  | Juvenile  |
| Finnmark         | 5  | 4          | 2                         | 0         |
| Troms            | 21                                       | 8          | 2                         | 3         |
| Nordland         | 37                                       | 15         | 12                        | 12        |
| Trøndelag        | 21                                       | 16         | 6                         | 6         |
| Møre og Romsdal  | 12                                       | 18         | 5                         | 6         |
| Sogn og Fjordane | 17                                       | 11         | 4                         | 3         |
| Hordaland        | 31                                       | 27         | 5                         | 5         |
| Rogaland         | 15                                       | 11         | 2                         | 2         |
| Øvrige fylker    | 15                                       | 3          | 8                         | 4         |
| <b>Total</b>     | <b>174</b>                               | <b>113</b> | <b>46</b>                 | <b>41</b> |

Table 7. The number of companies with production of molluscs, crustaceans, echinoderms and algae in 2018

| County           | Molluscs, crustaceans and echinoderms | Algae     |
|------------------|---------------------------------------|-----------|
| Finnmark         | 0                                     | 0         |
| Troms            | 1                                     | 1         |
| Nordland         | 4                                     | 5         |
| Trøndelag        | 8                                     | 3         |
| Møre og Romsdal  | 4                                     | 2         |
| Sogn og Fjordane | 3                                     | 1         |
| Hordaland        | 13                                    | 7         |
| Rogaland         | 5                                     | 0         |
| Øvrige fylker    | 6                                     | 1         |
| <b>Total</b>     | <b>44</b>                             | <b>20</b> |

## 4. Employment

Source: The Directorate of Fisheries

Preliminary figures for 2018 (per May 2019)

Figure 3. Number of employees working with production of fish, molluscs, crustaceans and echinoderms 2008-2018

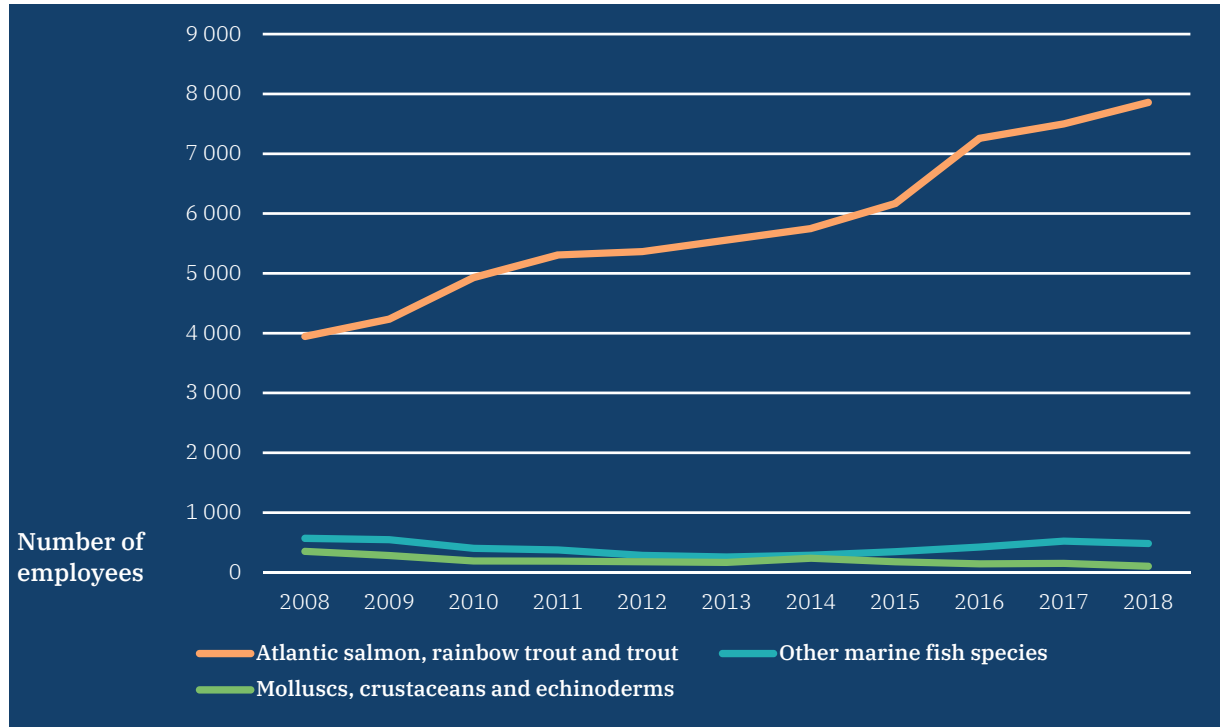
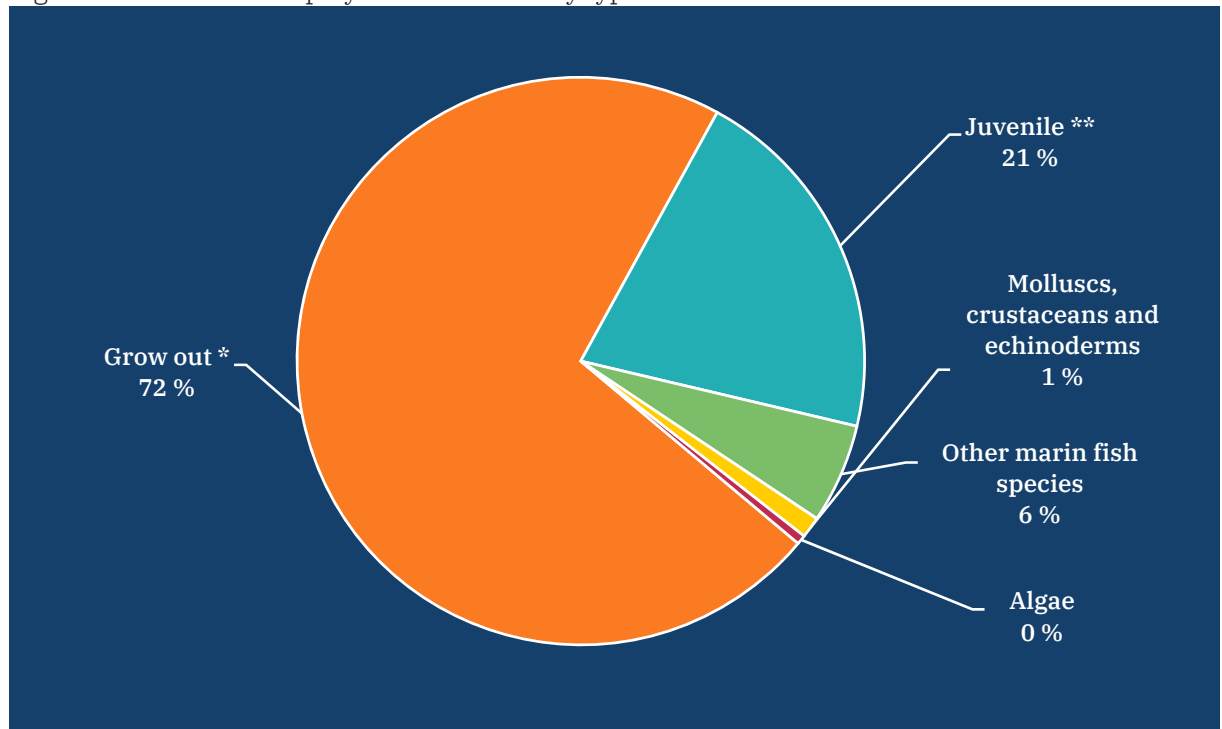


Figure 4. Number of employees distributed by type of license in 2018



\* Grow out production of Atlantic salmon, rainbow trout and trout

\*\* Juvenile production of Atlantic salmon, rainbow trout and trout

## Atlantic salmon and rainbow trout

### Preliminary figures for 2018 (per May 2019)

Table 8. Employment in the production of Atlantic salmon, rainbow trout and trout in 2018

| County           | Grow out fish, brood stock and R&D |            |              | Juvenile fish |            |              |
|------------------|------------------------------------|------------|--------------|---------------|------------|--------------|
|                  | Men                                | Women      | Total        | Men           | Women      | Total        |
| Finnmark         | 450                                | 73         | 523          | 51            | 23         | 74           |
| Troms            | 767                                | 120        | 887          | 84            | 20         | 104          |
| Nordland         | 958                                | 144        | 1 102        | 221           | 91         | 312          |
| Trøndelag        | 1 043                              | 166        | 1 209        | 228           | 104        | 332          |
| Møre og Romsdal  | 454                                | 51         | 505          | 149           | 76         | 225          |
| Sogn og Fjordane | 335                                | 62         | 397          | 90            | 31         | 121          |
| Hordaland        | 948                                | 169        | 1 117        | 279           | 135        | 414          |
| Rogaland         | 247                                | 47         | 294          | 110           | 54         | 164          |
| Øvrige fylker    | 62                                 | 6          | 68           | 8             | 3          | 11           |
| <b>Total</b>     | <b>5 263</b>                       | <b>838</b> | <b>6 101</b> | <b>1 220</b>  | <b>537</b> | <b>1 757</b> |

Table 9. Man-Hours<sup>1)</sup> in the production of Atlantic salmon, rainbow trout and trout in 2018

| County           | Grow out fish, brood stock and R&D |                |                  | Juvenile fish    |                |                  |
|------------------|------------------------------------|----------------|------------------|------------------|----------------|------------------|
|                  | Men                                | Women          | Total            | Men              | Women          | Total            |
| Finnmark         | 649 782                            | 86 670         | 736 452          | 79 331           | 32 410         | 111 741          |
| Troms            | 909 868                            | 121 856        | 1 031 724        | 131 731          | 23 096         | 154 827          |
| Nordland         | 1 429 020                          | 159 737        | 1 588 757        | 342 778          | 119 733        | 462 511          |
| Trøndelag        | 1 562 042                          | 196 960        | 1 759 002        | 314 698          | 108 243        | 422 941          |
| Møre og Romsdal  | 690 748                            | 64 486         | 755 234          | 210 624          | 71 561         | 282 185          |
| Sogn og Fjordane | 459 676                            | 86 241         | 545 917          | 107 189          | 31 906         | 139 095          |
| Hordaland        | 1 290 178                          | 175 724        | 1 465 902        | 353 065          | 126 811        | 479 876          |
| Rogaland         | 322 628                            | 35 082         | 357 710          | 133 208          | 58 679         | 191 887          |
| Øvrige fylker    | 75 136                             | 4 845          | 79 981           | 11 150           | 4 500          | 15 650           |
| <b>Total</b>     | <b>7 389 078</b>                   | <b>931 601</b> | <b>8 320 679</b> | <b>1 683 774</b> | <b>576 939</b> | <b>2 260 713</b> |

1) The Directorate of Fisheries define the number of man-hour per year as 1845 hours

## Other marine fish species

### Preliminary figures for 2018 (per May 2019)

Table 10. Employment in the production of other marine fish species in 2018

| County                     | Grow out production |           |            | Juvenile   |            |            |
|----------------------------|---------------------|-----------|------------|------------|------------|------------|
|                            | Men                 | Women     | Total      | Men        | Women      | Total      |
| Finnmark and Troms         | 7                   | 0         | 7          | 13         | 14         | 27         |
| Nordland                   | 14                  | 7         | 21         | 50         | 24         | 74         |
| Trøndelag                  | 16                  | 4         | 20         | 34         | 22         | 56         |
| Møre og Romsdal            | 9                   | 3         | 12         | 24         | 12         | 36         |
| Sogn og Fjordane           | 16                  | 2         | 18         | 21         | 6          | 27         |
| Hordaland                  | 12                  | 5         | 17         | 54         | 29         | 83         |
| Rogaland and øvrige fylker | 35                  | 10        | 45         | 22         | 17         | 39         |
| <b>Total</b>               | <b>109</b>          | <b>31</b> | <b>140</b> | <b>218</b> | <b>124</b> | <b>342</b> |

Table 11. Man-Hours<sup>1)</sup> in the production of other marine fish species in 2018

| County                     | Grow out production |               |                | Juvenile       |                |                |
|----------------------------|---------------------|---------------|----------------|----------------|----------------|----------------|
|                            | Men                 | Women         | Total          | Men            | Women          | Total          |
| Finnmark and Troms         | 7 410               | 0             | 7 410          | 18 118         | 17 010         | 35 128         |
| Nordland                   | 20 575              | 7 350         | 27 925         | 68 783         | 28 471         | 97 254         |
| Trøndelag                  | 10 668              | 3 000         | 13 668         | 43 749         | 29 658         | 73 407         |
| Møre og Romsdal            | 15 083              | 5 090         | 20 173         | 39 274         | 19 999         | 59 273         |
| Sogn og Fjordane           | 22 500              | 2 000         | 24 500         | 30 214         | 5 087          | 35 301         |
| Hordaland                  | 12 045              | 2 900         | 14 945         | 68 029         | 33 246         | 101 275        |
| Rogaland and øvrige fylker | 49 095              | 8 063         | 57 158         | 26 433         | 17 438         | 43 871         |
| <b>Total</b>               | <b>137 376</b>      | <b>28 403</b> | <b>165 779</b> | <b>294 600</b> | <b>150 909</b> | <b>445 509</b> |

1) The Directorate of Fisheries defines the number of man-hour per year as 1845 hours

## Molluscs, crustaceans and echinoderms

### Preliminary figures for 2018 (per May 2019)

Table 12. Employment in the production of molluscs, crustaceans and echinoderms in 2018

| County                     | Employees |           |            | Man-Hours <sup>1)</sup> |               |               |
|----------------------------|-----------|-----------|------------|-------------------------|---------------|---------------|
|                            | Men       | Women     | Total      | Men                     | Women         | Total         |
| Finnmark and Troms         | :         | :         | :          | :                       | :             | :             |
| Nordland                   | 12        | 2         | 14         | 11 954                  | 400           | 12 354        |
| Trøndelag                  | 29        | 9         | 38         | 24 304                  | 13 760        | 38 064        |
| Møre og Romsdal            | 5         | 3         | 8          | 1 000                   | 200           | 1 200         |
| Sogn og Fjordane           | :         | :         | :          | :                       | :             | :             |
| Hordaland                  | 17        | 3         | 20         | 5 649                   | 270           | 5 919         |
| Rogaland and øvrige fylker | 16        | 2         | 18         | 4 695                   | 225           | 4 920         |
| <b>Total</b>               | <b>83</b> | <b>20</b> | <b>103</b> | <b>47 962</b>           | <b>15 005</b> | <b>62 967</b> |

1) The Directorate of Fisheries defines the number of man-hour per year as 1845 hours

## Algae

### Preliminary figures for 2018 (per May 2019)

Tabell 13. Employment in the production of algae in 2018

| County | Employees |       |       | Man-Hours <sup>1)</sup> |       |        |
|--------|-----------|-------|-------|-------------------------|-------|--------|
|        | Men       | Women | Total | Men                     | Women | Total  |
| Total  | 36        | 9     | 45    | 20 639                  | 8 810 | 29 449 |

1) The Directorate of Fisheries defines the number of man-hour per year as 1845 hours

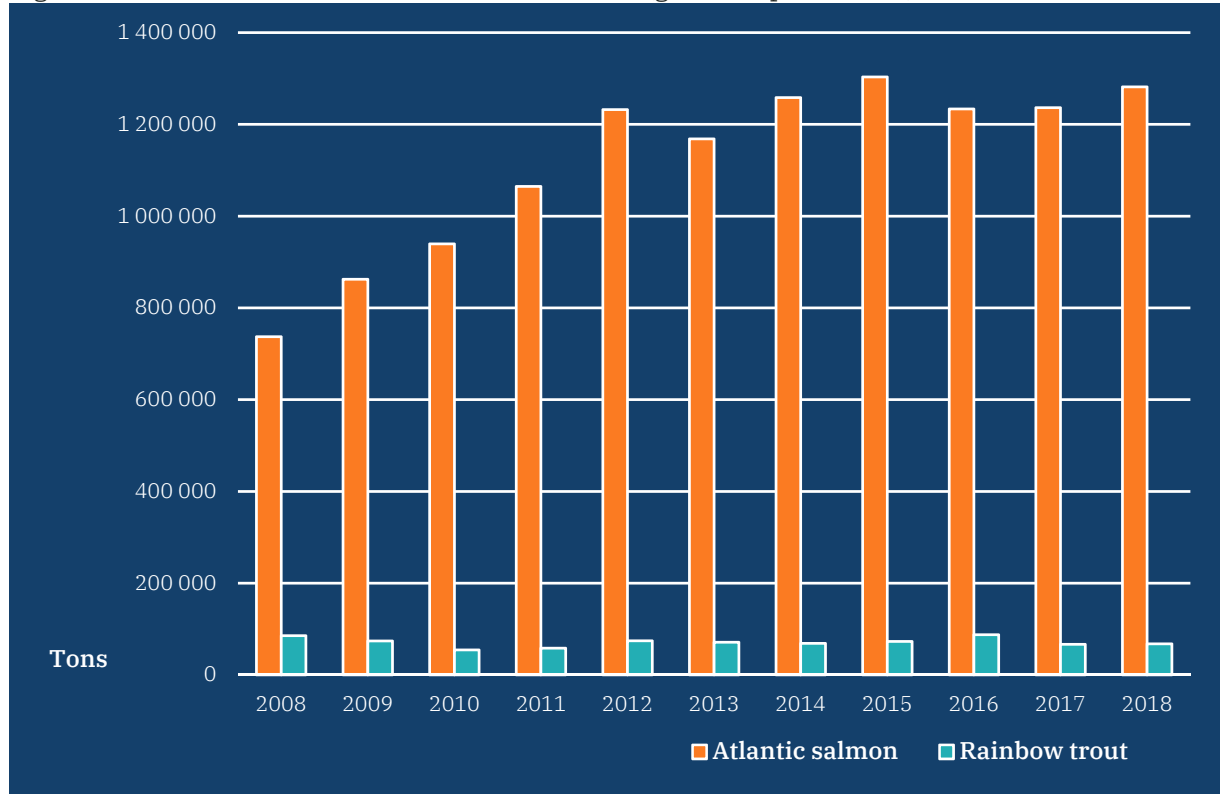
## 5. Sale

Source: The Directorate of Fisheries

### Atlantic salmon and rainbow trout

Preliminary figures for 2018 (per May 2019)

Figure 5. Sale of Atlantic salmon and rainbow trout (grow out production) 2008-2018



Tabell 14. Sale of Atlantic salmon and rainbow trout in 2018. Weight in metric tons round weight and value in 1000 NOK

| County           | Grow out production |                   |              |               |                  |              |
|------------------|---------------------|-------------------|--------------|---------------|------------------|--------------|
|                  | Atlantic salmon     |                   |              | Rainbow trout |                  |              |
|                  | Weight              | Value             | Price per kg | Weight        | Value            | Price per kg |
| Finnmark         | 113 476             | 5 740 770         | 50.59        | 0             | 0                | -            |
| Troms            | 188 499             | 9 826 886         | 52.13        | 0             | 0                | -            |
| Nordland         | 249 771             | 12 693 960        | 50.82        | 4 102         | 216 216          | 52.71        |
| Trøndelag        | 320 846             | 15 956 319        | 49.73        | 3 077         | 131 193          | 42.64        |
| Møre og Romsdal  | 78 306              | 4 171 467         | 53.27        | 11 460        | 516 071          | 45.03        |
| Sogn og Fjordane | 81 688              | 3 847 037         | 47.09        | 14 272        | 616 801          | 43.22        |
| Hordaland        | 171 856             | 8 509 680         | 49.52        | 34 839        | 1 527 734        | 43.85        |
| Rogaland         | 64 019              | 3 185 060         | 49.75        | 0             | 0                | -            |
| Øvrige fylker    | 13 411              | 651 422           | 48.57        | 136           | 6 225            | 45.67        |
| <b>Total</b>     | <b>1 281 872</b>    | <b>64 582 599</b> | <b>50.38</b> | <b>67 886</b> | <b>3 014 240</b> | <b>44.40</b> |

Figure 6. Sale of juvenile fish of Atlantic salmon and rainbow trout 2008-2018

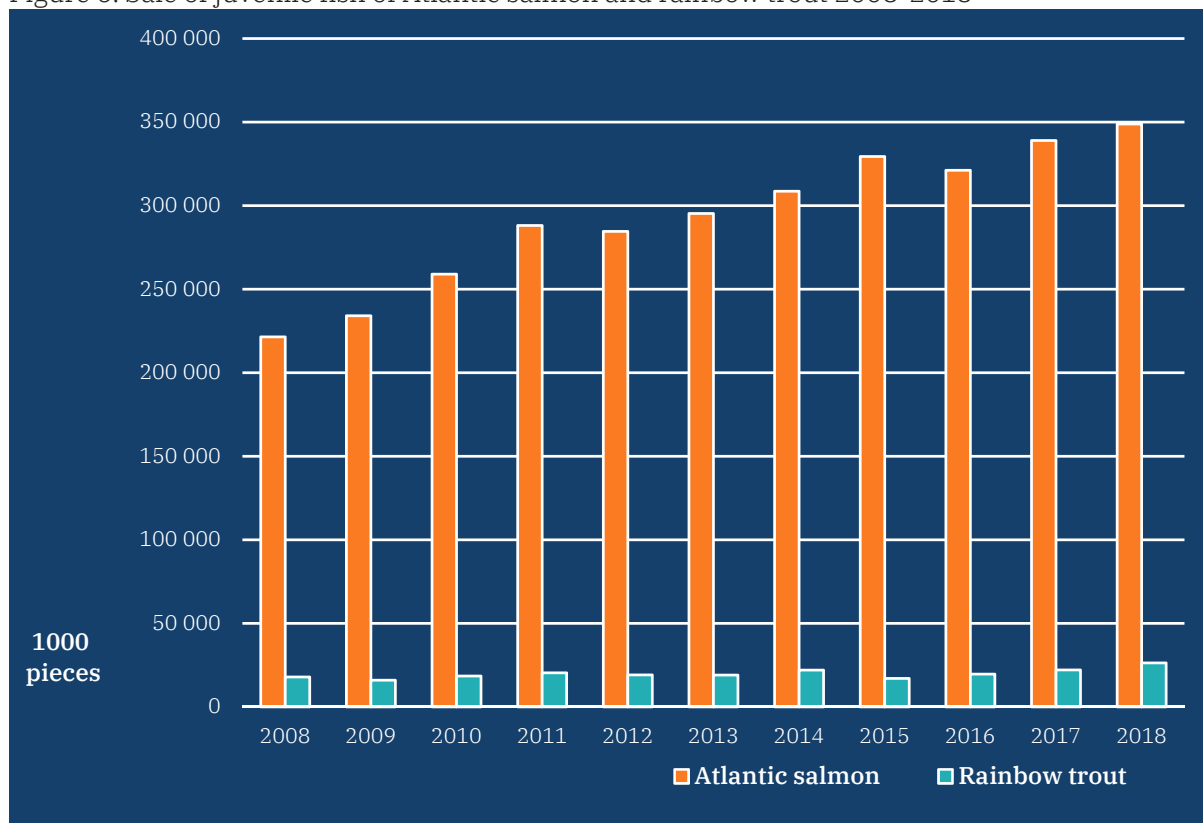


Table 15. Sale of juvenile fish of Atlantic salmon and rainbow trout in 2018. Quantity in 1000 pieces and value in 1000 NOK

| County             | Juvenile fish   |                  |                |               |                |                |
|--------------------|-----------------|------------------|----------------|---------------|----------------|----------------|
|                    | Atlantic salmon |                  |                | Rainbow trout |                |                |
|                    | Number          | Value            | Price per fish | Number        | Value          | Price per fish |
| Finnmark and Troms | 38 168          | 508 058          | 13.31          | 0             | 0              | -              |
| Nordland           | 96 418          | 1 213 430        | 12.59          | 927           | 11 333         | 12.23          |
| Trøndelag          | 76 820          | 861 059          | 11.21          | 2 268         | 23 460         | 10.34          |
| Møre og Romsdal    | 48 430          | 602 001          | 12.43          | 1 560         | 26 380         | 16.91          |
| Sogn og Fjordane   | 14 897          | 209 643          | 14.07          | 5 813         | 69 044         | 11.88          |
| Hordaland          | 57 085          | 893 194          | 15.65          | 12 386        | 137 689        | 11.12          |
| Rogaland           | 14 680          | 209 777          | 14.29          | 3 068         | 43 282         | 14.11          |
| Øvrige fylker      | 2 366           | 27 000           | 11.41          | 328           | 3 140          | 9.57           |
| <b>Total</b>       | <b>348 864</b>  | <b>4 524 162</b> | <b>12.97</b>   | <b>26 350</b> | <b>314 328</b> | <b>11.93</b>   |

Figure 7. Percentage of sale (Atlantic salmon and rainbow trout) for the 10 largest companies 2008-2018

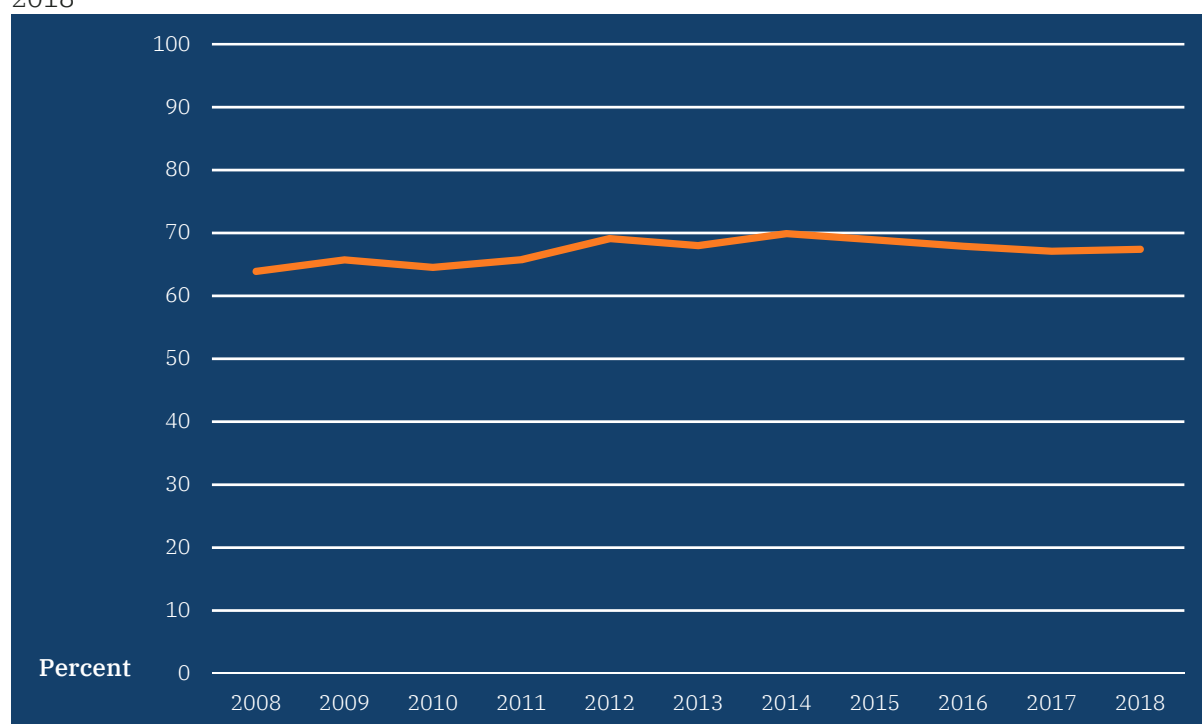


Table 16. Percentage of sale (Atlantic salmon and rainbow trout) for the 10 largest companies in Norway. Weight in tons.

| Year | Total sale | 10 largest | Percentage |
|------|------------|------------|------------|
| 2008 | 822 960    | 525 830    | 63.9       |
| 2009 | 936 980    | 615 803    | 65.7       |
| 2010 | 994 113    | 641 551    | 64.5       |
| 2011 | 1 123 340  | 739 357    | 65.8       |
| 2012 | 1 306 678  | 871 660    | 69.1       |
| 2013 | 1 239 762  | 843 165    | 68.0       |
| 2014 | 1 327 266  | 927 983    | 69.9       |
| 2015 | 1 376 267  | 948 319    | 68.9       |
| 2016 | 1 321 471  | 897 262    | 67.9       |
| 2017 | 1 303 352  | 874 016    | 67.1       |
| 2018 | 1 349 887  | 909 165    | 67.4       |



## Other marine fish species

### Preliminary figures for 2018 (per May 2019)

Figure 8. Sale of other marine fish species 2008-2018

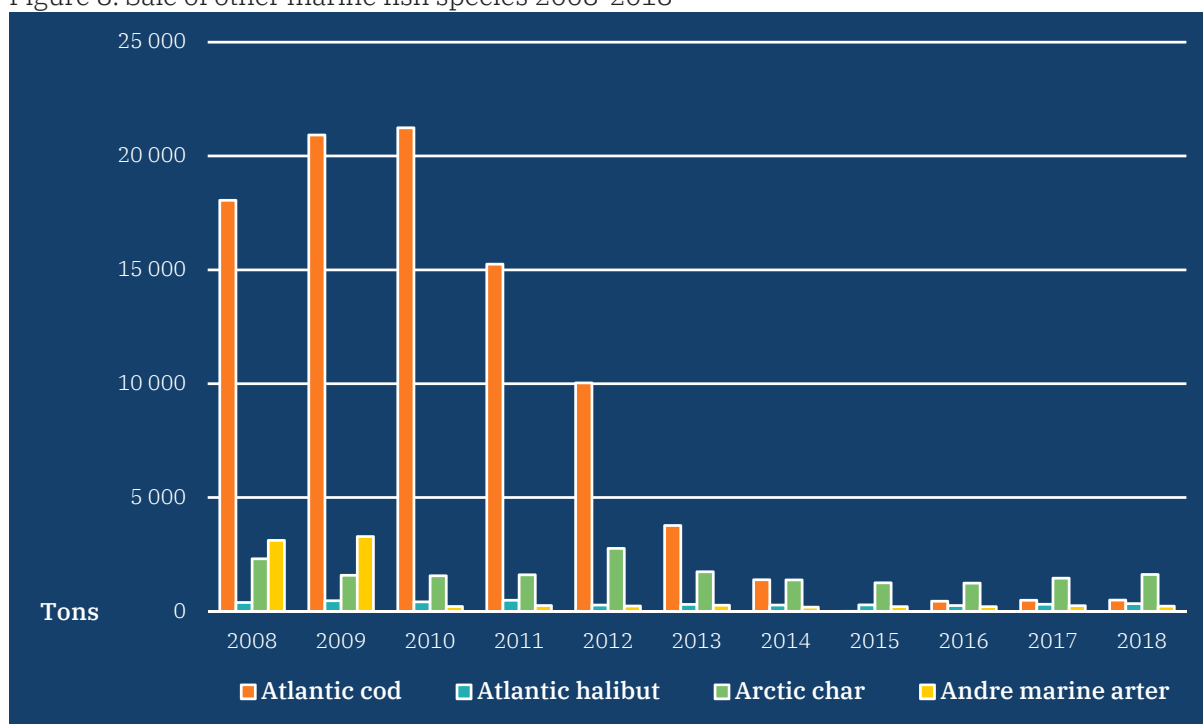


Table 17. Sale of other marine fish species in 2018. Weight in metric tons round weight and value in 1000 NOK

| County                     | Weight       | Value          | Species          | Weight       | Value          |
|----------------------------|--------------|----------------|------------------|--------------|----------------|
| Finnmark and Troms         | 51           | 2 582          | Atlantic cod     | 495          | 13 107         |
| Nordland                   | 419          | 22 424         | Arctic char      | 288          | 20 148         |
| Trøndelag                  | 137          | 3 750          | Atlantic halibut | 1 843        | 181 540        |
| Møre og Romsdal            | 597          | 64 642         | Other species    | 246          | 24 402         |
| Sogn og Fjordane           | 230          | 9 695          | <b>Total</b>     | <b>2 872</b> | <b>239 198</b> |
| Hordaland                  | 1            | 103            |                  |              |                |
| Rogaland and øvrige fylker | 1 437        | 136 002        |                  |              |                |
| <b>Total</b>               | <b>2 872</b> | <b>239 198</b> |                  |              |                |

Table 18. Sale of juvenile of other marine fish species in 2018. Quantity in 1000 pieces and value in 1000 NOK

| Species          | Number       | Value         |
|------------------|--------------|---------------|
| Atlantic cod     | 0            | 0             |
| Arctic char      | 1 183        | 5 910         |
| Atlantic halibut | 909          | 41 122        |
| Other species    | 195          | 1 232         |
| <b>Total</b>     | <b>2 287</b> | <b>48 264</b> |

## Molluscs, crustaceans and echinoderms

### Preliminary figures for 2018 (per May 2019)

Figure 9. Gross sale of molluscs, crustaceans and echinoderms 2008-2018

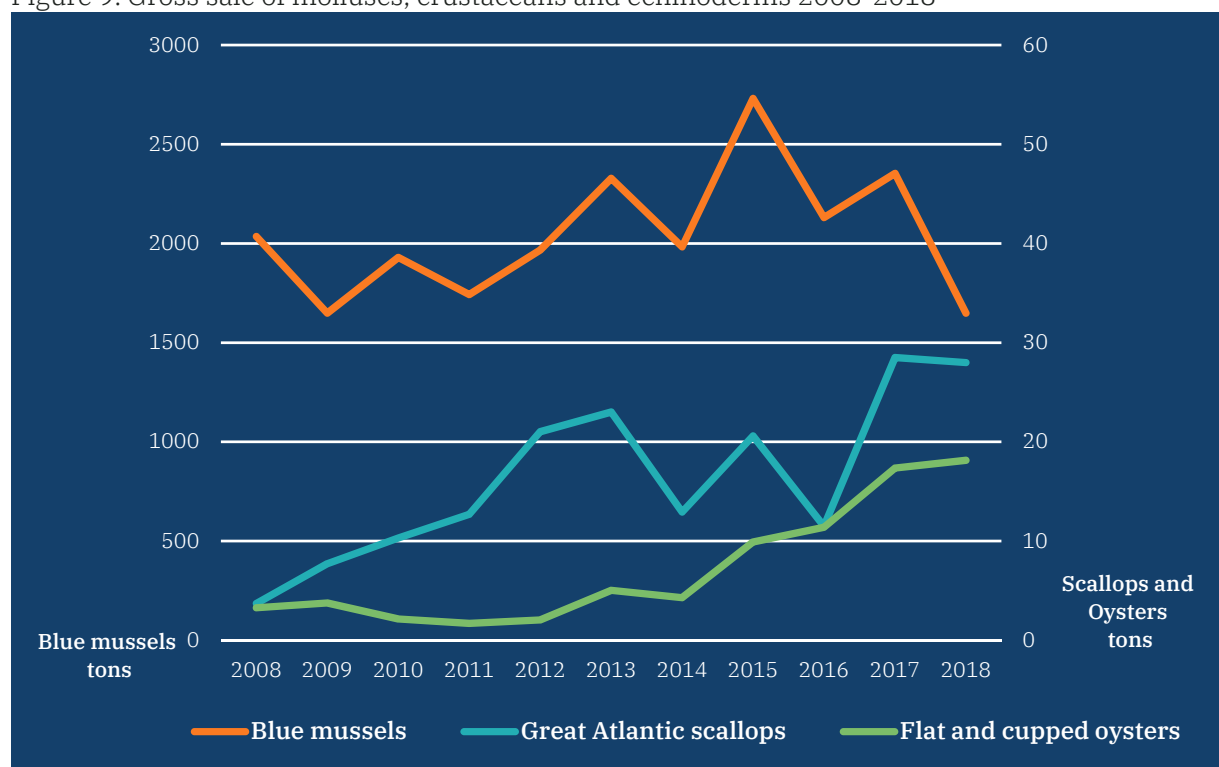


Table 19. Gross sale of molluscs, crustaceans and echinoderms in 2018. Weight in metric tons and value in 1000 NOK

| County                     | Weight       | Value         | Species                 | Weight       | Value         |
|----------------------------|--------------|---------------|-------------------------|--------------|---------------|
| Finnmark and Troms         | :            | :             | Blue mussels            | 1 649        | 28 522        |
| Nordland                   | 555          | 8 472         | Great Atlantic scallops | 28           | 1 850         |
| Trøndelag                  | 1 083        | 20 366        | Oysters                 | 18           | 3 038         |
| Møre og Romsdal            | 7            | 2 263         | Others species          | 27           | 4 321         |
| Sogn og Fjordane           | :            | :             | <b>Total</b>            | <b>1 721</b> | <b>37 731</b> |
| Hordaland                  | 47           | 5 689         |                         |              |               |
| Rogaland and øvrige fylker | 30           | 937           |                         |              |               |
| <b>Total</b>               | <b>1 721</b> | <b>37 731</b> |                         |              |               |

## 6. Losses in the production

Source: The Directorate of Fisheries

### Definitions:

- Dead fish: Number fish physically taken out of the bag-net. Cause of this type of death could be illness, wounds etc. without clearly specifying the cause.
- Turn out from slaughterhouse: Number of fish discarded at slaughterhouse due to maturity, defects, blemishes etc.
- Escapes: Number of fish that have escaped in conjunction with an accident.
- Other losses: Number of fish lost due to predation, theft, counting mistakes and other causes.

### Atlantic salmon and rainbow trout

Preliminary figures for 2018 (per May 2019)

Table 20. Losses in the production of Atlantic salmon in 2018. Quantity in 1000 pieces

| County           | Dead          | Rejected     | Escapes    | Others       | Total         |
|------------------|---------------|--------------|------------|--------------|---------------|
| Finnmark         | 3 414         | 202          | 7          | 575          | 4 198         |
| Troms            | 5 973         | 129          | 0          | 210          | 6 312         |
| Nordland         | 6 996         | 117          | 0          | 172          | 7 285         |
| Trøndelag        | 7 204         | 163          | 124        | 450          | 7 941         |
| Møre og Romsdal  | 5 135         | 195          | 0          | 232          | 5 562         |
| Sogn og Fjordane | 5 544         | 409          | 0          | 388          | 6 342         |
| Hordaland        | 9 989         | 808          | 7          | 184          | 10 988        |
| Rogaland         | 4 221         | 378          | 0          | 104          | 4 704         |
| Øvrige fylker    | 606           | 23           | 0          | -56          | 572           |
| <b>Total</b>     | <b>49 082</b> | <b>2 424</b> | <b>138</b> | <b>2 259</b> | <b>53 903</b> |

Table 21. Losses in the production of rainbow trout in 2018. Quantity in 1000 pieces

| County           | Dead         | Rejected  | Escapes  | Others      | Total        |
|------------------|--------------|-----------|----------|-------------|--------------|
| Finnmark         | 0            | 0         | 0        | 0           | 0            |
| Troms            | 0            | 0         | 0        | 0           | 0            |
| Nordland         | 0            | 0         | 0        | -267        | -267         |
| Trøndelag        | 72           | 0         | 0        | 38          | 111          |
| Møre og Romsdal  | 466          | 9         | 0        | 35          | 511          |
| Sogn og Fjordane | 771          | 5         | 0        | 129         | 905          |
| Hordaland        | 2 299        | 77        | 2        | -79         | 2 300        |
| Rogaland         | 3            | 0         | 0        | 0           | 3            |
| Øvrige fylker    | 8            | 2         | 0        | 0           | 9            |
| <b>Total</b>     | <b>3 619</b> | <b>93</b> | <b>3</b> | <b>-143</b> | <b>3 571</b> |

**Other marine fish species**  
**Preliminary figures for 2018 (per May 2019)**

Table 22. Losses in the production of other marine fish species in 2018. Quantity in 1000 pieces

| County                    | Dead       | Rejected  | Escapes  | Others     | Total      |
|---------------------------|------------|-----------|----------|------------|------------|
| Finnmark and Troms        | 18         | 0         | 0        | 0          | 18         |
| Nordland                  | 27         | 12        | 0        | 1          | 40         |
| Trøndelag                 | 13         | 1         | 0        | 0          | 14         |
| Møre og Romsdal           | 8          | 11        | 0        | 44         | 63         |
| Sogn og Fjordane          | 72         | 0         | 0        | 69         | 141        |
| Hordaland                 | 57         | 0         | 0        | 0          | 57         |
| Rogaland og øvrige fylker | 144        | 2         | 0        | 1          | 148        |
| <b>Totat</b>              | <b>339</b> | <b>26</b> | <b>0</b> | <b>115</b> | <b>462</b> |

## 7. Cleaner fish

Source: The Directorate of Fisheries

Preliminary figures for 2018 (per May 2019)

Figure 10. Number of cleaner fish in the cages with Atlantic salmon and rainbow trout 2008-2018

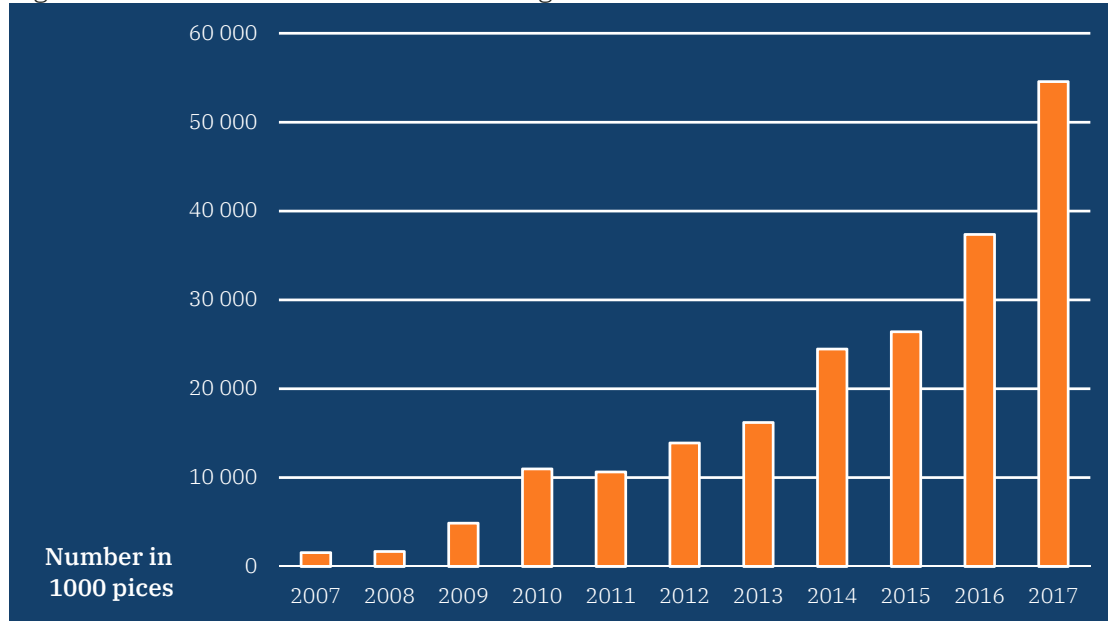


Table 23. Number of cleaner fish (farmed and wild catch) in the cages with Atlantic salmon and rainbow trout in 2018. Numbers in 1000 pieces and value in 1000 NOK

| County             | Number        | Value            |
|--------------------|---------------|------------------|
| Finnmark and Troms | 1 569         | 33 023           |
| Nordland           | 3 556         | 92 335           |
| Trøndelag          | 10 050        | 236 862          |
| Møre og Romsdal    | 8 952         | 202 228          |
| Sogn og Fjordane   | 3 029         | 67 227           |
| Hordaland          | 16 381        | 327 242          |
| Rogaland           | 3 372         | 68 517           |
| Øvrige fylker      | 1 865         | 21 600           |
| <b>Total</b>       | <b>48 775</b> | <b>1 049 034</b> |

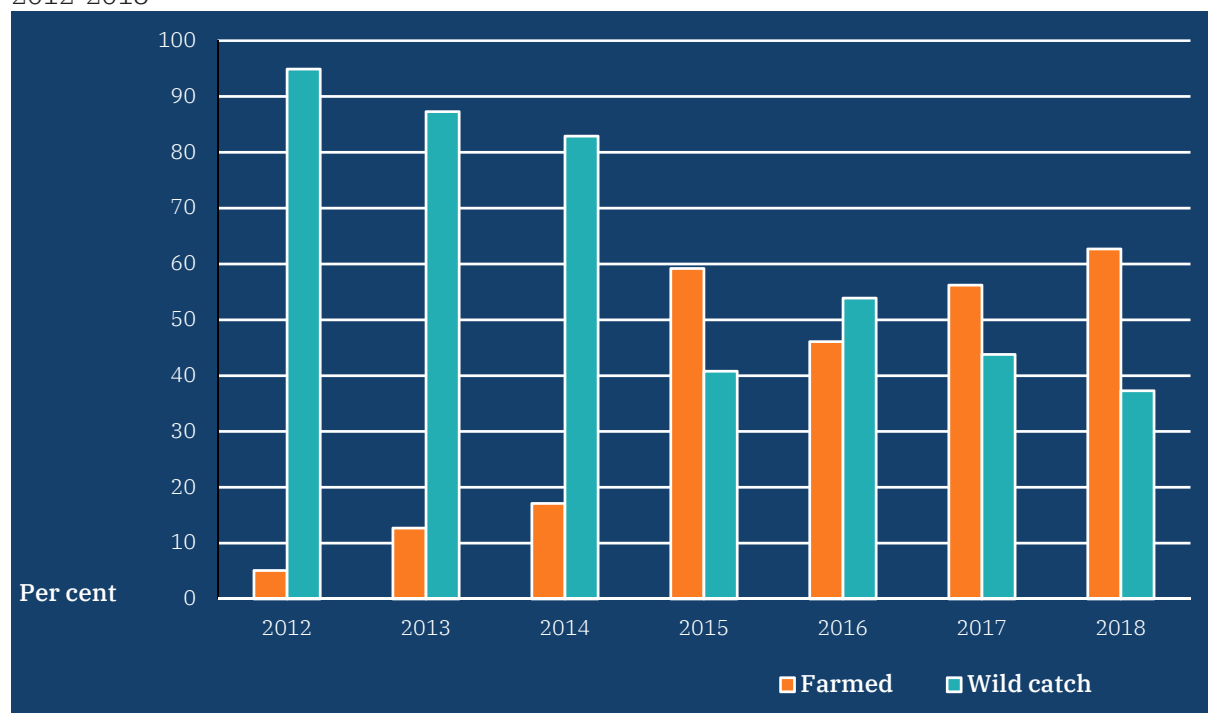
Table 24. Total number of cleaner fish (farmed and wild catch) in the cages with Atlantic salmon and rainbow trout by species in 2018. Number in 1000 pieces and value in 1000 NOK

| Species           | Number        | Value            |
|-------------------|---------------|------------------|
| Lumpfish          | 30 945        | 694 893          |
| Ballan wrasse     | 3 558         | 96 449           |
| Gold-Sinny wrasse | 7 929         | 147 858          |
| Corkwing wrasse   | 5 942         | 103 165          |
| Rock cook         | 400           | 6 669            |
| Non specified     | 0             | 0                |
| <b>Total</b>      | <b>48 775</b> | <b>1 049 034</b> |

Table 25. Sale of farmed cleaner fish to producers of Atlantic salmon and rainbow trout. Numbers in 1000 pieces and value in 1000 NOK

| County        | Number        | Value          |
|---------------|---------------|----------------|
| Lumpfish      | 1 692         | 95 218         |
| Ballan wrasse | 21 486        | 454 513        |
| Other species | 0             | 0              |
| <b>Total</b>  | <b>23 179</b> | <b>549 731</b> |

Figure 11. Percentage of farmed and wild catch cleaner fish with Atlantic salmon and rainbow trout 2012-2018



## 8. Export

Source: Norwegian Seafood Council

Figure 12. Main markets for Atlantic salmon in 2018

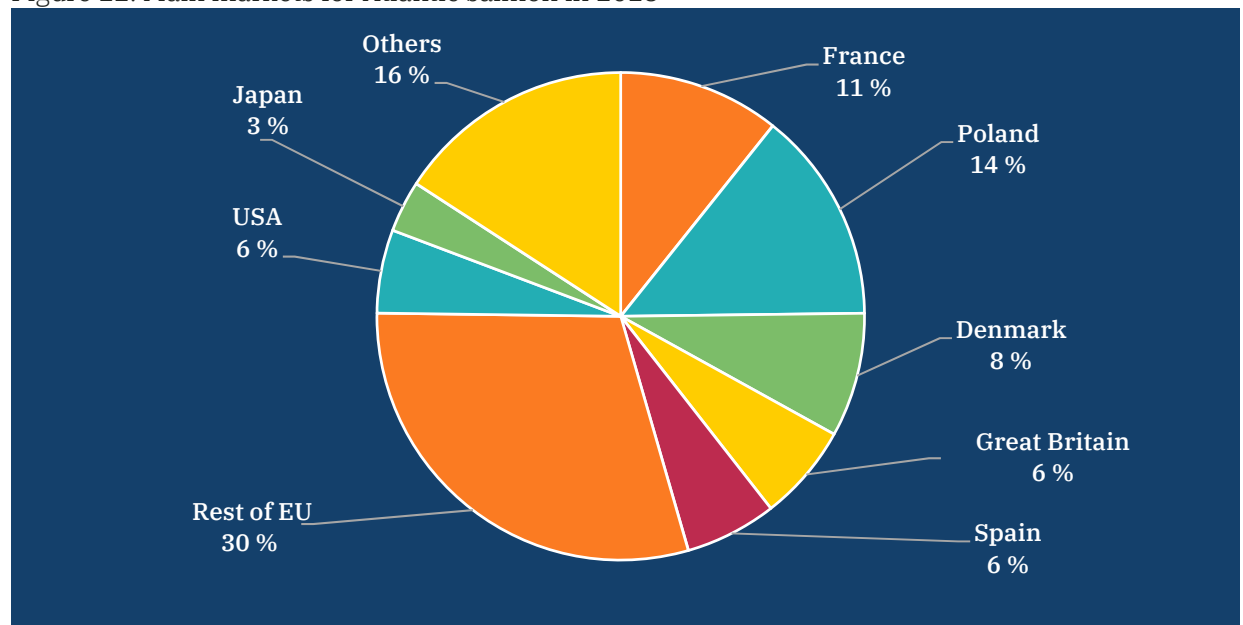


Table 26. Export of Atlantic salmon specified by country. Weight in metric tons (round weight) and value in mill. NOK

| Salmon, round    | 2017             |               |              | 2018             |               |              | %changes   |            |
|------------------|------------------|---------------|--------------|------------------|---------------|--------------|------------|------------|
|                  | Weight           | Value         | NOK/kg       | Weight           | Value         | NOK/kg       | Weight     | Value      |
| France           | 120 005          | 6 455         | 53.79        | 129 500          | 7 123         | 55.01        | 8 %        | 10 %       |
| Poland           | 148 554          | 7 653         | 51.52        | 170 063          | 8 774         | 51.59        | 14 %       | 15 %       |
| Denmark          | 96 196           | 5 018         | 52.16        | 99 462           | 5 210         | 52.38        | 3 %        | 4 %        |
| Great Britain    | 63 615           | 3 546         | 55.74        | 77 426           | 4 290         | 55.40        | 22 %       | 21 %       |
| Spain            | 70 229           | 3 905         | 55.61        | 73 479           | 4 045         | 55.05        | 5 %        | 4 %        |
| Rest of EU       | 341 320          | 19 098        | 55.95        | 358 589          | 20 009        | 55.80        | 5 %        | 5 %        |
| <b>EU</b>        | <b>839 919</b>   | <b>45 676</b> | <b>54.38</b> | <b>908 519</b>   | <b>49 451</b> | <b>54.43</b> | <b>8 %</b> | <b>8 %</b> |
| USA              | 68 168           | 4 426         | 64.93        | 66 841           | 4 508         | 67.45        | -2 %       | 2 %        |
| Japan            | 42 456           | 2 516         | 59.26        | 41 251           | 2 454         | 59.48        | -3 %       | -2 %       |
| South-Korea      | 24 305           | 1 553         | 63.88        | 29 750           | 1 927         | 64.79        | 22 %       | 24 %       |
| Others countries | 179 049          | 10 409        | 58.14        | 161 571          | 9 442         | 58.44        | -10 %      | -9 %       |
| <b>Total</b>     | <b>1 153 897</b> | <b>64 580</b> | <b>55.97</b> | <b>1 207 933</b> | <b>67 782</b> | <b>56.11</b> | <b>5 %</b> | <b>5 %</b> |

Table 27. Export of Atlantic salmon specified by product. Weight in metric tons and value in mill. NOK

| Product        | 2017             |               |              | 2018             |               |              | %vis endring |            |
|----------------|------------------|---------------|--------------|------------------|---------------|--------------|--------------|------------|
|                | Weight           | Value         | NOK/kg       | Weight           | Value         | NOK/kg       | Weight       | Value      |
| Fersh fish     | 932 325          | 50 623        | 54.30        | 990 873          | 54 156        | 54.65        | 6 %          | 7 %        |
| Fersh filet    | 115 537          | 7 049         | 61.01        | 119 815          | 7 477         | 62.41        | 4 %          | 6 %        |
| Frozen fish    | 24 755           | 1 403         | 56.68        | 19 852           | 1 056         | 53.21        | -20 %        | -25 %      |
| Frozen filet   | 69 464           | 4 772         | 68.70        | 65 001           | 4 275         | 65.76        | -6 %         | -10 %      |
| Other products | 11 816           | 733           | 62.05        | 12 393           | 818           | 66.04        | 5 %          | 12 %       |
| <b>Totalt</b>  | <b>1 153 897</b> | <b>64 580</b> | <b>55.97</b> | <b>1 207 933</b> | <b>67 782</b> | <b>56.11</b> | <b>5 %</b>   | <b>5 %</b> |



Figure 13. Main markets for rainbow trout in 2018

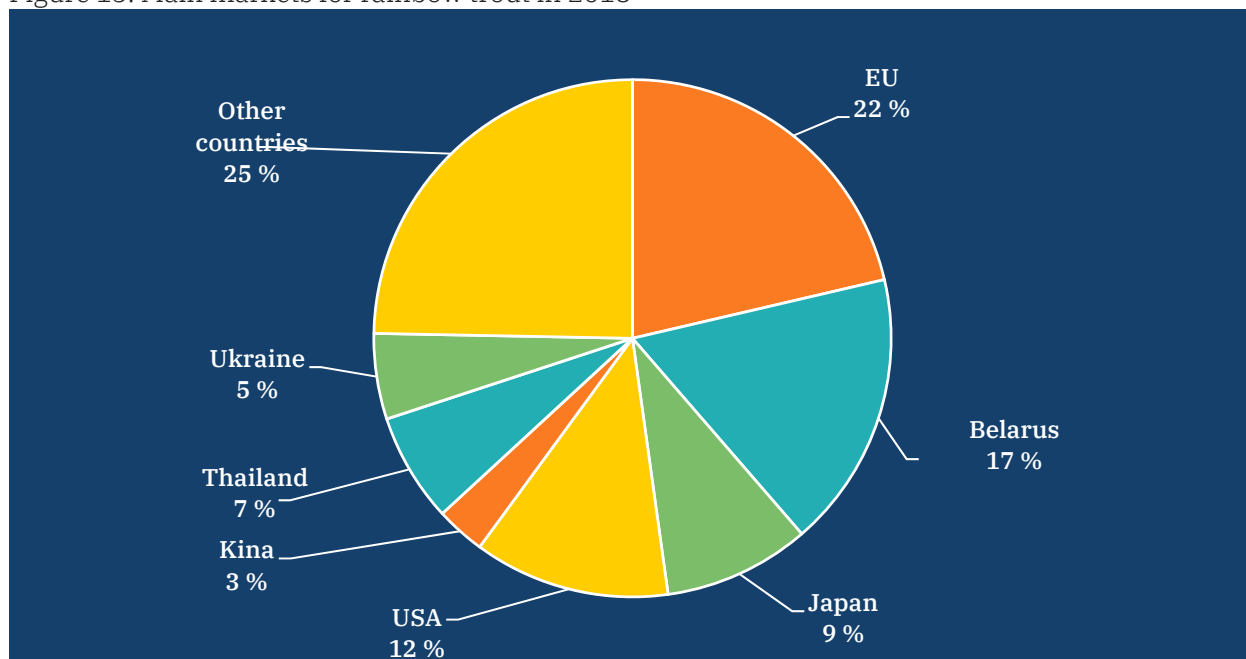


Table 28. Export of rainbow trout specified by country. Weight in metric tons and value in mill. NOK

| Rainbow trout, round | 2017          |              |              | 2018          |              |              | %changes    |            |
|----------------------|---------------|--------------|--------------|---------------|--------------|--------------|-------------|------------|
|                      | Weight        | Value        | NOK/kg       | Weight        | Value        | NOK/kg       | Weight      | Value      |
| EU                   | 10 697        | 570          | 53.31        | 12 052        | 552          | 45.79        | 13 %        | -3 %       |
| Belarus              | 6 963         | 381          | 54.68        | 9 759         | 502          | 51.49        | 40 %        | 32 %       |
| Japan                | 8 127         | 480          | 59.04        | 5 166         | 265          | 51.35        | -36 %       | -45 %      |
| USA                  | 5 090         | 317          | 62.32        | 6 916         | 422          | 61.01        | 36 %        | 33 %       |
| Kina                 | 1 737         | 97           | 55.60        | 1 744         | 84           | 48.05        | 0 %         | -13 %      |
| Thailand             | 3 584         | 219          | 61.03        | 3 840         | 201          | 52.38        | 7 %         | -8 %       |
| Ukraine              | 1 693         | 88           | 51.95        | 3 022         | 147          | 48.55        | 78 %        | 67 %       |
| Other countries      | 10 953        | 705          | 64.35        | 13 936        | 808          | 58.01        | 27 %        | 15 %       |
| <b>Total</b>         | <b>48 845</b> | <b>2 856</b> | <b>58.47</b> | <b>56 435</b> | <b>2 982</b> | <b>52.83</b> | <b>16 %</b> | <b>4 %</b> |

Table 29. Export of rainbow trout specified by product. Weight in metric tons and value in mill. NOK

| Product        | 2017          |              |              | 2018          |              |              | %vis endring |            |
|----------------|---------------|--------------|--------------|---------------|--------------|--------------|--------------|------------|
|                | Weight        | Value        | NOK/kg       | Weight        | Value        | NOK/kg       | Weight       | Value      |
| Fersh fish     | 25 477        | 1 441        | 56.54        | 34 594        | 1 778        | 51.39        | 36 %         | 23 %       |
| Fersh filet    | 4 145         | 261          | 62.93        | 5 162         | 319          | 61.74        | 25 %         | 22 %       |
| Frozen fish    | 13 942        | 788          | 56.55        | 11 477        | 534          | 46.51        | -18 %        | -32 %      |
| Frozen filet   | 2 463         | 113          | 45.92        | 2 501         | 112          | 44.76        | 2 %          | -1 %       |
| Other products | 2 817         | 253          | 89.84        | 2 702         | 239          | 88.60        | -4 %         | -5 %       |
| <b>Total</b>   | <b>48 845</b> | <b>2 856</b> | <b>58.47</b> | <b>56 435</b> | <b>2 982</b> | <b>52.83</b> | <b>16 %</b>  | <b>4 %</b> |

## 9. Economic results

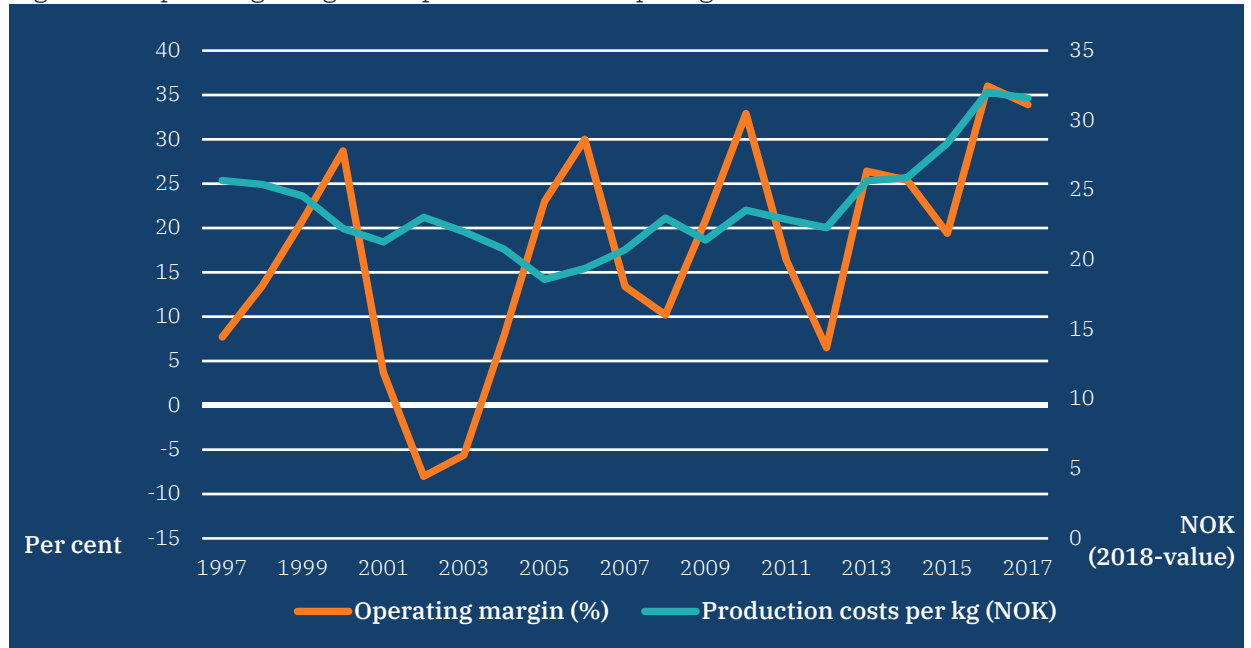
Source: The Directorate of Fisheries

### Definitions:

Operating Margin = (Operating Profit / Operating Revenues) \* 100

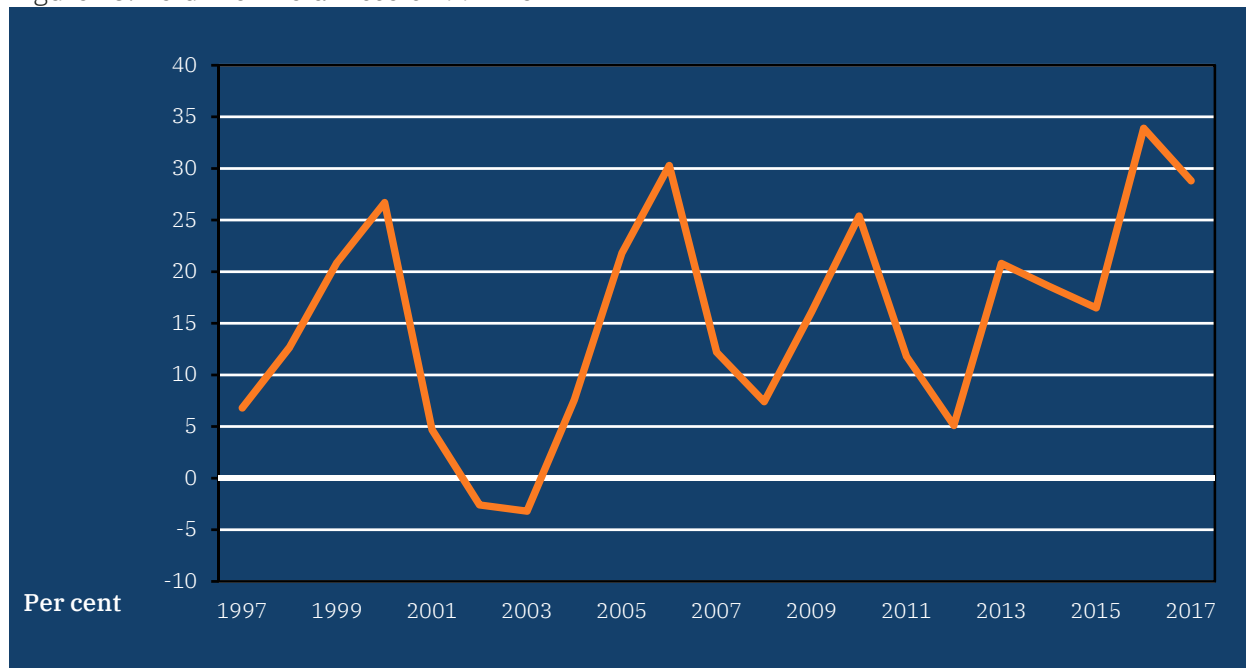
Return on Total Assets = ((Operating Profit + Financial Revenues) / Total Assets) \* 100

Figure 14. Operating margin and production costs per kg 1997-2017<sup>1)</sup>



1) Average figures for companies with grow out production of Atlantic salmon and rainbow trout

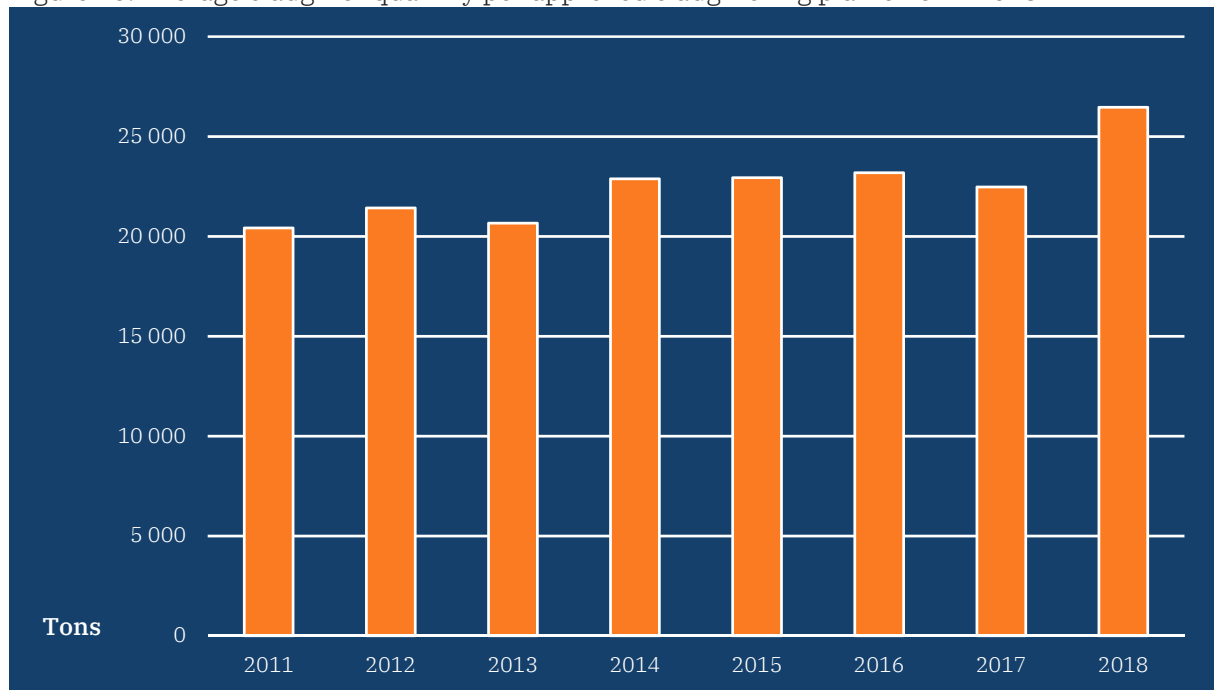
Figure 15. Return on Total Assets 1997-2017



## 10. Approved slaughtering plants for salmonids

Source: The Norwegian Food Safety Authority

Figure 16. Average slaughter quantity per approved slaughtering plants 2011-2018



Average slaughtered quantity per approved slaughtering plant is defined as total slaughtered quantity divided by the number of slaughtering plants for salmonids. The number of slaughtering plants in operation is unknown.

Table 30. The number of approved slaughtering plants for farmed salmonids

| County           | 2014      | 2015      | 2016      | 2017      | 2018      |
|------------------|-----------|-----------|-----------|-----------|-----------|
| Finnmark         | 4         | 4         | 4         | 4         | 4         |
| Troms            | 9         | 9         | 8         | 8         | 8         |
| Nordland         | 15        | 15        | 14        | 14        | 13        |
| Trøndelag        | 8         | 9         | 9         | 9         | 10        |
| Møre og Romsdal  | 5         | 5         | 5         | 5         | 5         |
| Sogn og Fjordane | 3         | 3         | 3         | 4         | 4         |
| Hordaland        | 10        | 10        | 9         | 9         | 13        |
| Rogaland         | 4         | 4         | 4         | 4         | 3         |
| Øvrige fylker    | 0         | 1         | 1         | 1         | 1         |
| <b>Total</b>     | <b>58</b> | <b>60</b> | <b>57</b> | <b>58</b> | <b>61</b> |

## 11. Related activities

### Insurance

Source: Finance Norway (FNO)

Table 31. Insurance of farmed fish in Norway. Amount in mill NOK

|                       | 2014         | 2015         | 2016        | 2017        | 2018        |
|-----------------------|--------------|--------------|-------------|-------------|-------------|
| Premium               | 202.6        | 196.9        | 203.6       | 220.7       | 222.2       |
| Compensation          | 238.1        | 239.9        | 144.3       | 211.0       | 178.4       |
| <b>Accident index</b> | <b>118 %</b> | <b>122 %</b> | <b>71 %</b> | <b>96 %</b> | <b>80 %</b> |

### Use of veterinary drugs

Source: Norwegian Institute of Public Health

Table 32. Use of veterinary drugs<sup>1)</sup> in the Norwegian fish farming industry. Quantity in kg

|                                   | 2014       | 2015       | 2016       | 2017      | 2018      |
|-----------------------------------|------------|------------|------------|-----------|-----------|
| Antibacterial agents              | 511        | 301        | 212        | 626       | 933       |
| Anaesthetic agents                | 10 614     | 22 082     | 17 057     | 15 422    | 13 670    |
| Agents against intestinal worms   | 625        | 942        | 518        | 380       | 171       |
| Agents against surface infections | 1 320      | 1 733      | 41 472     | 48 040    | 42 714    |
| Agents against lice               | 12 812     | 12 768     | 10 625     | 2 450     | 779       |
| Hydrogen peroxide                 | 31 577 000 | 43 246 000 | 26 597 000 | 9 277 000 | 6 735 000 |

### Well boats

Source: Coastal Shipowners

Table 33. The number of well boats<sup>1)</sup>

| County           | 2014      | 2015      | 2016      | 2017      | 2018      |
|------------------|-----------|-----------|-----------|-----------|-----------|
| Finnmark         | 2         | 1         | 0         | 0         | 3         |
| Troms            | 2         | 2         | 3         | 5         | 1         |
| Nordland         | 13        | 13        | 12        | 11        | 7         |
| Trøndelag        | 6         | 7         | 0         | 6         | 0         |
| Møre og Romsdal  | 26        | 25        | 31        | 36        | 51        |
| Sogn og Fjordane | 0         | 0         | 1         | 0         | 0         |
| Hordaland        | 9         | 10        | 13        | 8         | 7         |
| Rogaland         | 0         | 0         | 0         | 0         | 0         |
| Øvrige fylker    | 0         | 0         | 0         | 0         | 0         |
| <b>Total</b>     | <b>58</b> | <b>58</b> | <b>60</b> | <b>66</b> | <b>69</b> |

1) Based on members in the Association of Coastal Shipowners

## Use of feed

Source: Norwegian Seafood Federation

Table 34. Use of feed in the Norwegian fish farming industry. Quantity in metric tons

| Month        | 2014             | 2015             | 2016             | 2017             | 2018             |
|--------------|------------------|------------------|------------------|------------------|------------------|
| January      | 109 885          | 115 335          | 107 609          | 117 177          | 111 245          |
| February     | 90 542           | 88 250           | 86 263           | 89 099           | 91 459           |
| March        | 85 068           | 99 155           | 87 864           | 91 738           | 85 777           |
| April        | 89 763           | 96 633           | 88 279           | 93 215           | 84 004           |
| May          | 110 168          | 102 581          | 111 960          | 111 428          | 127 722          |
| June         | 146 910          | 135 984          | 137 601          | 146 339          | 150 674          |
| July         | 193 382          | 180 168          | 178 012          | 185 712          | 186 799          |
| August       | 204 455          | 212 812          | 221 308          | 235 135          | 225 058          |
| September    | 208 674          | 211 163          | 210 611          | 215 768          | 209 187          |
| October      | 195 899          | 195 379          | 177 491          | 223 144          | 221 382          |
| November     | 165 074          | 169 670          | 164 829          | 175 905          | 195 630          |
| December     | 142 597          | 139 321          | 137 085          | 144 577          | 152 454          |
| <b>Total</b> | <b>1 742 417</b> | <b>1 746 451</b> | <b>1 708 912</b> | <b>1 829 236</b> | <b>1 841 391</b> |



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