The article analyzes the current state of the fishing industry of Ukraine. The legal regulation of the sector and the place of fisheries in the economy of the country have been determined. The list of fish that are most important for the fishing industry from the Black and Azov Seas and other water reservoirs has been indicated. The paper considers the volume of fish caught in 2019 in the seas and freshwater reservoirs. The main exporters and importers of fish products in Ukraine have been listed and the main reasons for small production volumes have been highlighted. It has been proved why it is important to develop aquaculture. Ways to increase the efficiency of fish production have been indicated. It has been claimed that in order to revive the activities of fishing enterprises and the development of the fish market in general, it is necessary to attract investors and make considerable efforts to support domestic aquaculture.

**Key words:** fish industry, fish processing industry, fishery, products, import, export.
products can be affected by various negative factors, including the decline of fisheries, natural disasters, oil spills, policy changes and outbreaks of aquaculture diseases, rising prices and more. The patterns and trends of these phenomena for fisheries and aquaculture are difficult to explain, which limits the ability to generalize or predict reactions to political, economic and environmental changes [12].

The effective development of the fish processing industry contributes to the provision of fish products to Ukrainians at the level of physiological norms of consumption per capita, provides a raw material base for other industries and helps to solve the problem of employment in Ukraine. As of today, the domestic fishing industry employs about 30,000 workers [5].

The human diet must include products of the fishing industry. According to the results of 2019, the average annual consumption of fish in the world per person was 20.9 kg (annual increase was approximately 0.3 kg). At the same time, the highest consumption of fish per person per year was observed in Oceania - 27.5 kg, in the second place Asia - 25.1 kg, followed by North America - 23.7 kg, Europe - 21.6 kg, South America - 10.7 kg and Africa - 9.8 kg [16].

In Ukraine, the recommended annual consumption of fish and fish products is 20 kg per person, including 5 kg of live and fresh fish. The minimum annual consumption of fish is 12 kg.

Since the late 1990s, there has been a downward trend in fish consumption by Ukrainians. As of 2019, the annual consumption of fish and fish products in Ukraine is 13.2 kg per person [17], although in 1995 this figure was 30 kg of fish per capita. The dynamics of consumption of fish and fish products by the population of Ukraine is shown in Fig. 2 (according to the State Statistics Service).
A significant reason for the low consumption of fish products was the increase by 6.4% of the average consumer prices for fish and seafood, in particular, the most frequently prices increased for crab sticks (+15.0%), canned fish in oil (+8.2%) and live or chilled fish (+7.8%). The price of herring has decreased by 2.2% [9].

Catching fish grown in inland waters is directly related to the field of agrarian regulation. Commercial fishing of wild bioresources does not belong to agricultural activities and falls under the scope of agrarian law only as a component of the agro-industrial complex in the fish processing food industry.

A significant part of the raw materials of the fisheries sector (about 80%) is extracted within the exclusive economic zones of other countries and the open part of the oceans. Based on this, there is a problem of restoration of the fishing fleet and the infrastructure that serves it. However, it is necessary to remember the development of aquaculture, which has a number of advantages over other livestock industries. Such advantages are the growth rate of fish, relatively low feed costs per unit of weight gain, high fertility and so on.

In total, 51.5 thousand tons of aquatic bioresources were caught in Ukraine in 2019, which is 2.2% more than in 2018, including:
- 16.1 thousand tons were caught in the Sea of Azov, which is less than last year's data by 24.8% (21.3 thousand tons);
- 14.1 thousand tons were caught in the Black Sea, which showed an increase by 64% compared to 2018 (8.6 thousand tons);
- 21.3 thousand tons were caught in inland waters, which also indicates a slight increase of 4.3% (20.4 thousand tons) [4].

In the Azov-Black Sea basin, more than 90% of all catches are fished for sculpins, sardelles, sprats, anchovies and rapans. In recent years, the catch of rapans, shrimps, herring, horse mackerel, etc. has increased. At the same time, the catch of sardelles, sculpins, anchovies, mussels, sprats and pelengas has decreased.

Catch of freshwater fish such as pikeperch, crucian carp, sculpins from top water, bream, roach, rudd, pike, perch, flatfish, tench has increased in inland waters. The catch of sea roach, asp, chekhon fish, carp, and blue bream has decreased [4].

As the commercial catch of fish products increases, it is necessary to do everything necessary to promote the stocking of water and the self-reproduction of fish.

This issue is especially acute now, in conditions of increased anthropogenic pressure, which significantly affects the migration routes of fish and the deterioration of their natural spawning conditions.

According to the State Agency of Fisheries of Ukraine, in 2019, more than 15.6 million specimens of aquatic bioresources were released into reservoirs of national importance by state fish-breeding complexes, which is 11% more than in 2018 [4].

Increasing reliance on aquaculture production means that the price of reproduced fish may have a greater impact on the overall price of fish products, which may lead to greater variability in the price of this essential food source [11].

According to the State Statistics of Ukraine, production of marketable fish products in 2019 amounted to 67.8 thousand tons, which corresponds to 2018. A significant percentage of production of marketable fish products is production of canned fish - 49% (33.3 thousand tons).

The growth of fish production was observed for the following marketable products:
- fish fillets and other fish flesh, fresh or chilled - 3,452 tons (+34.8% compared to 2018);
- frozen fish fillet - 293 tons (+6.9%);
- dried fish fillet, salted or in brine (except smoked) - 1,594 tons (+51.8%);
- salted herring - 3,512 tons (+1.9%);
- smoked Pacific, Atlantic and Danube salmon - 627 tons (+23.9%);
- ready-made products and canned herring, whole or sliced, in vinegar, oil, marinade, tomato - 3,272 tons (+13.4%).

Production of finished products and canned fish and others increased by 14.8% and amounts to 14,250 tons [9].

Most commercial fish products are made from imported fish (or its fillets): herring, mackerel, sardines, anchovies or sprats. Dried and smoked fish is made from Ukrainian fish. There is a pattern that among Ukrainians mostly domestic fish in fresh and fresh-frozen form are in demand.

Today, 80% of fish and fish products in the food basket are imported. Only 20% - domestic production [15, p. 51].

The State Agency of Fisheries of Ukraine notes that as of 2019, imports of fishery products amounted to 399.1 thousand tons, which is 5.2% more than in 2018. The amount of imported products increased by almost 117 million dollars, and is 753.2 million dollars, which is 18.5% more than in 2018 [4].

There are many countries from which Ukraine imports fish and seafood. The leaders in exports to Ukraine in terms of volume are Iceland and Norway, which bring us mackerel and herring [14]. Also, large volumes of imported fish products are imported from Canada, the United States, Latvia, Great Britain, Spain and China.

Almost 90% of all imported fish products are fish species that are harvested exclusively in the maritime economic zones of other countries. About 80% of fish products are imported in the form of frozen fish or its fillets, which, in most cases, are processed at fish farms in Ukraine. Volumes of imports of fishery products are listed in table 1.

Ukraine exports mostly ready-made or canned fish (sardines, sardinella, anchovies and sprats), fresh chilled or frozen fish fillets (salmon, cod, pike perch) and crab sticks.

According to State Statistics, the value of exported fish and fish products in 2019 increased by $ 9.2 million. USA, which is 24.9% higher than in 2018. In total, fish and seafood worth $ 46.4 million USA were exported in 2019 [10].
About 37% of fishery exports are brought to European countries (Denmark, Germany, France, Lithuania and others), 29% are exported to Asian countries (Turkey, Korea, Georgia, etc.), 30% - CIS countries (Moldova, Azerbaijan, Belarus, etc.) [4].

Due to the increase in catches of aquatic biore-sources and the supply of imported fish products to Ukraine, the consumption of fish and seafood by Ukrainians has increased and amounts to 12.9 per capita (11.8 kg in 2018) [9].

Average consumer prices for fish and seafood also increased by 6.4%, in particular, prices for crab sticks (+ 15.0%), canned fish in oil (+ 8.2%) and live or chilled fish increased the most (+7, 8%). The price of herring decreased by 2.2%. [9].

### Table 1

**Volumes of fish imports for 2018 – 2019***

<table>
<thead>
<tr>
<th>Code and name of the item according to UKTZED</th>
<th>Import 2018</th>
<th>Import 2019</th>
<th>Changes in %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cost, UAH million</td>
<td>Weight, t</td>
<td>Cost, UAH million</td>
</tr>
<tr>
<td>301 Live fish</td>
<td>265</td>
<td>5</td>
<td>267</td>
</tr>
<tr>
<td>302 Fresh or chilled fish</td>
<td>107 350</td>
<td>15 414</td>
<td>140 531</td>
</tr>
<tr>
<td>303 Frozen fish</td>
<td>351 589</td>
<td>290 601</td>
<td>386 626</td>
</tr>
<tr>
<td>304 Fish fillets and other fish flesh</td>
<td>44 248</td>
<td>24 637</td>
<td>75 195</td>
</tr>
<tr>
<td>305 Fish dried, salted, smoked</td>
<td>7 708</td>
<td>5 749</td>
<td>10 313</td>
</tr>
<tr>
<td>306 Shellfish</td>
<td>27 039</td>
<td>4 847</td>
<td>38 565</td>
</tr>
<tr>
<td>307 Clams</td>
<td>39 105</td>
<td>3 175</td>
<td>13 023</td>
</tr>
<tr>
<td>308 Aquatic invertebrates</td>
<td>39 1 715</td>
<td>38 1</td>
<td>27 039</td>
</tr>
<tr>
<td>1604 Prepared or canned fish, caviar</td>
<td>53 832</td>
<td>23 777</td>
<td>71 747</td>
</tr>
<tr>
<td>1605 Prepared or canned shellfish, clams</td>
<td>25 863</td>
<td>7 198</td>
<td>29 149</td>
</tr>
<tr>
<td>In total</td>
<td>629 238</td>
<td>37 072</td>
<td>745 454</td>
</tr>
</tbody>
</table>

*Developed by the author for [4]

### Table 2

**Volumes of fish exports for 2018 – 2019***

<table>
<thead>
<tr>
<th>Code and name of the item according to UKTZED</th>
<th>Export 2018</th>
<th>Export 2019</th>
<th>Changes in %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cost, UAH million</td>
<td>Weight, t</td>
<td>Cost, UAH million</td>
</tr>
<tr>
<td>301 Live fish</td>
<td>468</td>
<td>383</td>
<td>422</td>
</tr>
<tr>
<td>302 Fresh or chilled fish</td>
<td>282</td>
<td>65</td>
<td>398</td>
</tr>
<tr>
<td>303 Frozen fish</td>
<td>1 523</td>
<td>668</td>
<td>1 078</td>
</tr>
<tr>
<td>304 Fish fillets and other fish flesh</td>
<td>17 333</td>
<td>2 722</td>
<td>23 148</td>
</tr>
<tr>
<td>305 Fish dried, salted, smoked</td>
<td>3 678</td>
<td>467</td>
<td>4 234</td>
</tr>
<tr>
<td>306 Shellfish</td>
<td>103</td>
<td>14</td>
<td>840</td>
</tr>
<tr>
<td>307 Clams</td>
<td>1 593</td>
<td>568</td>
<td>3 518</td>
</tr>
<tr>
<td>308 Aquatic invertebrates</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1604 Prepared or canned fish, caviar</td>
<td>9 086</td>
<td>4 929</td>
<td>7 506</td>
</tr>
<tr>
<td>1605 Prepared or canned shellfish, clams</td>
<td>3 004</td>
<td>698</td>
<td>5 028</td>
</tr>
<tr>
<td>In total</td>
<td>629 238</td>
<td>37 072</td>
<td>10 515</td>
</tr>
</tbody>
</table>

*Developed by the author for [4]
Despite the fact that the situation of the fish processing industry of Ukraine has been slightly improving in recent years, a significant problem for the domestic fishing industry is the aging of the fishing fleet and the lack of adequate funding for the industry. According to the research [7, p. 24], the average age of Ukrainian vessels exceeds 20 years, and technical wear is more than 80%.

In Ukraine and around the world, the modernization of the fish processing industry is quite slow. Processing methods, to a large extent, remain based on traditional approaches and often cannot supply the products required by the modern consumer. The need for innovative solutions is becoming more tangible for entrepreneurs, as the volume of fish catch and production of fish products, demand for it and the amount of profit depend on it[13, p. 305].

It is also important to influence the development of infrastructure and logistics delivery of fish products to the buyer. It is necessary to implement the latest technologies and equipment for the fishing industry, improve and modernize existing facilities, which will increase their economic efficiency. In addition, it is necessary to encourage investment of both domestic and foreign capital in the construction of new refrigerators, which store fish products, as the general condition of the current ones is unsatisfactory [8].

There are the following ways to increase the efficiency of fish production:
- revision of the basic principles of the state policy aimed at the development of the fishing industry in Ukraine;
- renewal and replacement of equipment of fishery enterprises, introduction of new technologies, etc.;
- aquaculture development;
- reproduction and protection of fish and other aquatic living resources;
- improvement of technologies and improvement of product quality;
- increasing employment, replenishing the state budget, ensuring food security of the country by promoting the development of the fish processing industry [6, p. 218-219].

Conclusions and prospects of the further investigations. Ukraine is an import-dependent country in terms of fish and seafood, which has many obstacles to the development of the fisheries sector, but, nevertheless, it has great potential because it has the necessary natural resources, including water, which are the most important condition for the fishing industry.

In recent years, there has been a slight increase in the consumption of fish and seafood by Ukrainians. Breeding and fishing on the territory of Ukraine is increasing. There is also a slight increase in exports and imports of fishery products.

The main reason for Ukraine’s lag in the development of the fishing industry from other countries is the lack of investment, which, in turn, does not provide an opportunity to solve a number of other problems. An important problem is the unsatisfactory condition of the fishing fleet, which needs to be renewed and replaced due to its age and wear. Also, water bodies in Ukraine are quite polluted, which reduces the quality of raw materials. The Ukrainian fishing industry lacks staff and equipment upgrades, and so on.

The transition to an innovative path of development in the fishing industry should take place through the integration of enterprises in the industry, the creation of fish clusters, increasing the range and improving product quality, the creation of scientific and educational complexes.

References

СОВРЕМЕННОЕ СОСТОЯНИЕ РЫБНОЙ ПРОМЫШЛЕННОСТИ УКРАИНЫ

В статье проанализировано современное состояние рыбной промышленности Украины. Сказано, что объемы вылова рыбы в мире стремительно увеличиваются, предваряя темпам роста населения планеты. Утверждается, что рыбное хозяйство Украины подчиняется Министерству аграрной политики и продовольствия Украины. В работе отмечается, что рыбное хозяйство имеет стратегическое значение в обеспечении продовольственной безопасности государства, поскольку развитие этой сферы способствует обеспечению рыбной продукцией населения Украины, обеспечению сырьевой базой для других отраслей промышленности и решению проблем занятости населения. Показано, какими были объемы вылова рыбы в 2019 году и насколько они изменились по сравнению с предыдущим годом. Перечислены виды рыб, которые имеют весомое значение для рыбной промышленности.

Ключевые слова: рыбная промышленность, рыбоперерабатывающая отрасль, рыбное хозяйство, продукция, экспорт, импорт.
СУЧАСНИЙ СТАН РИБНОЇ ПРОМИСЛОВОСТІ УКРАЇНИ

У статті проаналізовано сучасний стан рибної промисловості України. Сказано, що обсяги вилову риби у світі стрімко збільшуються, передуючи темпам зростання кількості населення планети. Зазначено, що рибні господарства підпорядковують Міністерству аграрної політики та продовольства України. У роботі зазначається, що рибне господарство має стратегічне значення у забезпеченні продовольчої безпеки держави, оскільки відбивається на стабільність ринку та національній економіці. У дослідженні вивчено обсяги вилову риби у 2019 році та її зміни порівняно з попереднім. Показано, які види риб мають найбільше значення для рибної промисловості з Чорного та Азовського морів, інших водних об’єктів. Зазначено, що на сьогоднішній день у продуктовому кошці українців 80% рибної продукції є імпортною. Розглянуто головних експортерів та імпортерів рибної продукції.

Ключові слова: рибна промисловість, рибопереробна галузь, рибне господарство, продукція, імпорт, експорт.

Література

2. Шкапура О. В., Пличко В. Ф., Кожушко А. В. Современное состояние рыбной отрасли в Украине // Рибогосподарська наука України. 2010. Вип. 4. С. 30.


15. Fisheries and aquaculture sector study of Ukraine // Державне агенство рибного господарства. 2016. С. 51.


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