Aquaculture biomass.
Part III: FISHING AND BY-PRODUCTS FROM FISH. Fun facts and what we have learned

Activity 1. What types of industrial fisheries do you know?
Look at the definitions below and fill in the gaps with words from the box. Be careful! You don't need to use all the words.

fish farming	traditional fishing	pelagic fishing
fish hatcheries	marine fishing	aquaculture

1. _____ is catching wild fish that live in the water column of oceans, seas and lakes (neither near the bottom, nor near the shore).

_____ is fishing in the sea/the ocean.

3. Fish farming and fish hatchery are forms of _____.

4. _____ means growing fish commercially in tanks, fish ponds or ocean enclosures, usually for food.

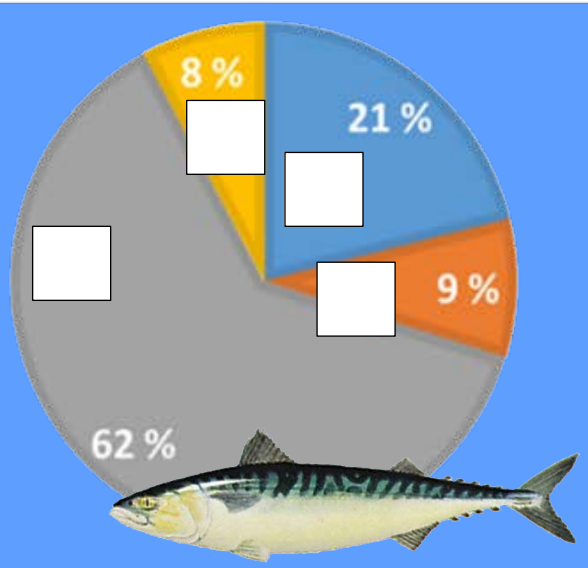
5. _____ grow and release young fish into the wild.

Activity 2. Can you guess?

These pie charts show the fillet fraction and side-stream fractions in mackerel and herring from the Norwegian fisheries. Number the fractions:

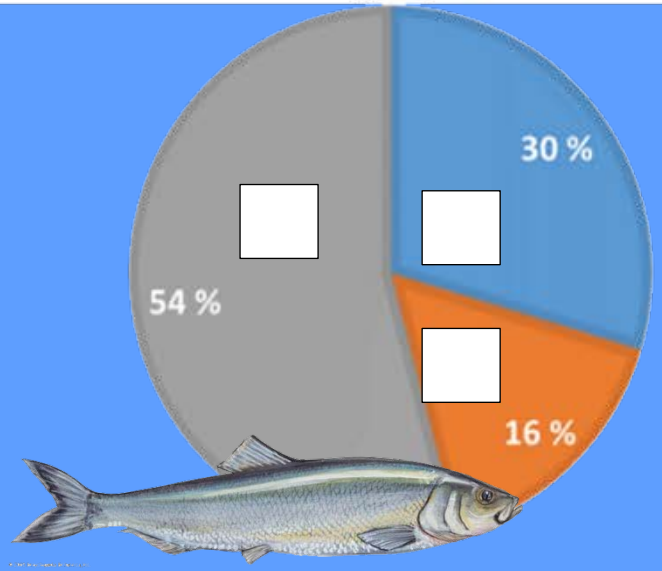
MACKEREL FRACTION RELATIVE WEIGHT %

1 Heads 2 Backbone+tail 3 Fillet with skin 4 Intestines with liver



HERRING FRACTION RELATIVE WEIGHTS (%)

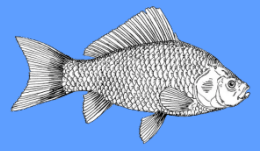
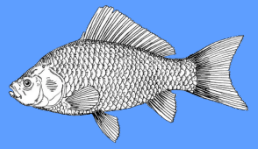
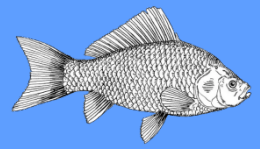
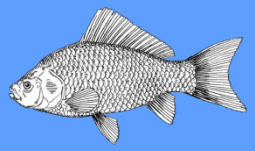
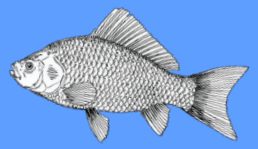
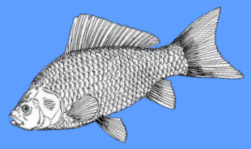
1 Head/Back bones 2 Intestines 3 Fillet with skin



Activity 3. Connect the side-stream biomass (1–8) to the corresponding by-products (a–h).

1. Muscle
2. Backbone
3. Head
4. Liver
5. Viscera
6. Scales
7. Skin
8. Fins

a. Animal feed, energy
b. Protein hydrolysate, PUFA
c. Collagen, gelatin
d. Fish oil, food supplements
e. Fish products
f. Proteins, peptides
g. Minerals
h. Chitin, coatings, pharmaceuticals

Activity 4. What are 6 ways in which omega-3 fatty acids are good for us? Write down 6 health benefits. The emojis will help you.

1. Good for your _____

2. Good for your _____

3. Good for your _____

4. Good for your _____, _____ and _____

5. Can potentially help prevent some types of _____

6. Can help you _____ better

Activity 5. Processed fish proteins have many health benefits. They have a high nutritional value and can act as antioxidants and antimicrobials, can control blood pressure and modulate the immune system. Match the three main types of processed fish protein to their definitions.
Be careful! There is one extra definition that you don't need to use.

1. Fish hydrolysates
2. Bioactive fish peptides
3. Fish protein concentrates (FPC)

a Powder preparations where the protein is more concentrated than in the original fish source.

b Proteins that are enzymatically broken down into smaller peptides.

c An important component of connective tissue

d Specific protein fragments that have a positive effect on body functions and are good for your health.