



# E U M O F A

European Market Observatory for  
fisheries and aquaculture products

Case study

## Price structure in the supply chain for fresh carp in Central Europe

## Contents

<b>SUMMARY</b> .....	<b>II</b>
<b>0 TASK REMINDER – SCOPE AND CONTENT</b> .....	<b>1</b>
0.1 CASE STUDY SCOPE .....	1
0.2 CONTENT OF THE DOCUMENT.....	2
<b>1 DESCRIPTION OF THE PRODUCT</b> .....	<b>3</b>
1.1 CHARACTERISTICS OF THE PRODUCT.....	3
1.2 PRODUCTION AND AVAILABILITY OF COMMON CARP AT WORLD AND EU LEVEL .....	4
1.2.1 <i>Common carp production in the world</i> .....	4
1.2.2 <i>Common carp production in the EU</i> .....	6
<b>2 THE EU MARKETS FOR COMMON CARP</b> .....	<b>9</b>
2.1 STRUCTURE OF THE EU MARKETS.....	9
2.1.1 <i>Apparent market by Member State</i> .....	9
2.1.2 <i>Supply of the main EU markets</i> .....	9
2.1.3 <i>Main intra-EU importing and exporting countries</i> .....	10
2.2 THE HUNGARIAN MARKET.....	12
2.2.1 <i>Structure of the freshwater production</i> .....	12
2.2.2 <i>Aquaculture</i> .....	13
2.2.3 <i>Hungarian fish and carp production</i> .....	14
2.2.4 <i>Imports-exports</i> .....	15
2.2.5 <i>Structure of the supply chain</i> .....	16
2.2.6 <i>Consumption</i> .....	16
2.3 KEY DRIVERS OF THE MARKET .....	17
2.3.1 <i>Competition with other freshwater fish species</i> .....	17
2.3.2 <i>Input costs</i> .....	17
2.3.3 <i>Hungarian challenges for the production of common carp in ponds</i> .....	18
<b>3 PRICES ALONG THE SUPPLY CHAIN</b> .....	<b>20</b>
3.1 PRODUCER PRICES .....	20
3.1.1 <i>Production costs</i> .....	20
3.1.2 <i>Ex-farm prices</i> .....	20
3.2 INTRA-EU IMPORT PRICES.....	22
3.3 EXPORT PRICES .....	22
3.4 WHOLESALE PRICES .....	23
3.5 RETAIL PRICES.....	23
<b>4 PRICE TRANSMISSION IN THE SUPPLY CHAIN IN HUNGARY</b> .....	<b>25</b>
<b>5 ANNEXES</b> .....	<b>26</b>
5.1 CONTACTS .....	26

## Summary

- The world production of common carp, mainly coming from aquaculture, increased by 51% between 2006 and 2013 to reach around 4 million tonnes in 2013, out of which 72% are supplied by China.
- During the same period, the EU production remained stable, around 78.000 tonnes. The largest EU carp producers are Poland and the Czech Republic, which provide half of EU production.
- Most EU markets for common carp rely on domestic production, not on imports, with the exception of Germany which imports 30% of its consumption and recently recorded a sharp drop in production.
- Carp exchanges are limited to intra-EU trade, due to the specific feature of the product (live fish) which narrows the flows to neighbouring countries. The main intra-EU importers are Poland, Germany and Romania. And the main intra-EU exporter is the Czech Republic.
- Carp represents 97% of the total national freshwater fish production in the Czech Republic (out of which 93% for common carp) and 85% in Hungary (out of which 67% for common carp).
- Poland is the main European market for live carp, with apparent consumption exceeding 21.000 tonnes in 2013. It is followed by the Czech Republic and Hungary, with approximately 12.000 tonnes each, and Germany with 8.000 tonnes.
- Hungarian fish consumption is low. It is even the lowest in Europe, with 5,3 kg live weight equivalent per inhabitant, whereas the EU average is 22,9 kg.
- But Hungary is first in individual consumption of carp, with apparent per capita consumption of 1,20 kg in 2013, followed by the Czech Republic (1,15 kg), Lithuania (0,84 kg) and Poland (0,56 kg).
- Common carp is traditionally bought live and prepared at home. The market for frozen and processed products is almost inexistent.
- Hungary can be considered as representative as carp is handled and marketed the same way in other major carp markets of Central Europe.
- As common carp is mainly sold live and whole, the supply chain is short. The production cost (before labour, administration and transportation cost) ranges from 1,12 to 1,44 EUR/kg mainly depending on the feed quantity used. The ex-farm price remained relatively stable at around 600 HUF, i.e. 1,95-1,97 EUR/kg, in the period 2012-2015. At the time of the survey (July 2015), the wholesale price was close to 2,50 EUR/kg and the retail price of live carp around 4,00 EUR/kg.
- The wholesaler margin is approximately EUR 0,30/kg and the retailer cost and margin is around EUR 0,63/kg.

## 0 TASK REMINDER – Scope and content

### 0.1 Case study scope

#### Reminder

The case studies carried out in the framework of this Price Structure analysis activity of EUMOFA aim at understanding links between prices at the different levels of the supply chain.

They are focused on one national market (the most, or one of the most important for the considered product), for which analysis is developed in the most possible detailed way and bring on some other relevant markets.

This leads to organize specific data collection as well as in-depth interviews and information exchange with key actors of those markets.

The rationale for choosing fresh common carp to analyse price transmission and distribution of value in some Central Europe supply chains (with focus on Hungary) is described in the table below.

Product	Origin	Characteristics	Market and price drivers
Common carp	Mainly Hungary	Pond fish system Traditional consumption (fish soup) Strong seasonality (Easter and Christmas) Almost no processing activity Mainly species consumed	Price of feed (wheat, corn and barley) Situation of other key whitefish species for Hungarian market (sturgeon, African catfish, silver carp) Intra-EU competition (Czech Republic, Croatia)

The study focuses on Hungary, and also provides an insight into other significant markets in Central Europe: Germany, Czech Republic, and Poland.

Species -Products	Main MS (focus)	Other MS (overview)
Common carp (fresh, whole)	Hungary	Germany, Czech Republic, Poland

## 0.2 Content of the document

In conformity with the methodology developed within EUMOFA project and published in the website (<http://www.eumofa.eu/price-structure>) the document includes:

- A description of the product;
- A description of the most relevant EU markets for common carp, with a special focus on the Hungarian market;
- An analysis of the price transmission along the supply chain.

# 1 DESCRIPTION OF THE PRODUCT

## 1.1 Characteristics of the product

The case study focuses on fresh common carp.

### Main product

**Name:** Common Carp (*Cyprinus Carpio*)

**FAO 3-alpha code:** FCP

Other most significant carp species farmed in Central Europe are:

Silver carp (*Hypophthalmichthys molitrix*) – FAO 3-alpha code: SVC

Grass carp (*Ctenopharyngodon idellus*) – FAO 3-alpha code: FCG

Bighead carp (*Hypophthalmichthys nobilis*) – FAO 3-alpha code: BIC

Common carp is traditionally bought live and prepared at home. It is thus unlikely to attract young generations of consumers, who are more and more looking for fish already processed and easy to consume.

The tradition to buy carp fresh and live only concerns the common carp. There is almost no market for frozen or processed products.

### Substitutes

Fresh common carp is competing with other species that are cheaper and easier to prepare:

- African catfish (*Clarias gariepinus*) coming from Brazil, Vietnam, Indonesia and India – FAO 3-alpha code: CLZ;
- Silver carp (*Hypophthalmichthys molitrix*) coming from China and eastern Siberia – FAO 3-alpha code: SVC;
- Other carp species.

## Related codes

Common carp is not differentiated in the COMEXT nomenclature but mixed with the other carp species.

Headings exist for live carp, fresh/chilled carp and frozen carp.

### Whole carp

#### Live carp:

- **03019300**: LIVE CARP (*CYPRINUS CARPIO*, *CARASSIUS CARASSIUS*, *CTENOPHARYNGODON IDELLUS*, *HYPOPHthalmichthys SPP.*, *CIRRHINUS SPP.*, *MYLOPHARYNGODON PICEUS*)

#### Fresh or chilled carp:

- **03026911** (until 2011): FRESH OR CHILLED CARP
- **03027300** (from 2012): FRESH OR CHILLED CARP (*CYPRINUS CARPIO*, *CARASSIUS CARASSIUS*, *CTENOPHARYNGODON IDELLUS*, *HYPOPHthalmichthys SPP.*, *CIRRHINUS SPP.*, *MYLOPHARYNGODON PICEUS*)

#### Frozen carp:

- **03037911** (until 2011): FROZEN CARP
- **03032500** (from 2012): FROZEN CARP (*CYPRINUS CARPIO*, *CARASSIUS CARASSIUS*, *CTENOPHARYNGODON IDELLUS*, *HYPOPHthalmichthys SPP.*, *CIRRHINUS SPP.*, *MYLOPHARYNGODON PICEUS*)

### Fillets

Carp fillets are not differentiated. They are included in headings which include, in addition to fillets of carps, fillets of snakeheads (*Channa spp.*). Two headings exist, one for fresh and chilled fillets (**03043900**) and one for frozen fillets (**03046900**), but only from 2012.

Before 2012, fillets of carp were included in the “fresh fillets” and “frozen fillets” groups:

#### Fresh or chilled fillets of freshwater fish:

- 2005-2006: **03041019**
- 2007-2008-2009: **03041919**
- 2010-2011: **03041918**

#### Frozen fillets of freshwater fish:

- 2005-2006: **03042019**
- 2007-2008-2009: **03042919**
- 2010-2011: **03042918**

## 1.2 Production and availability of common carp at world and EU level

### 1.2.1 Common carp production in the world

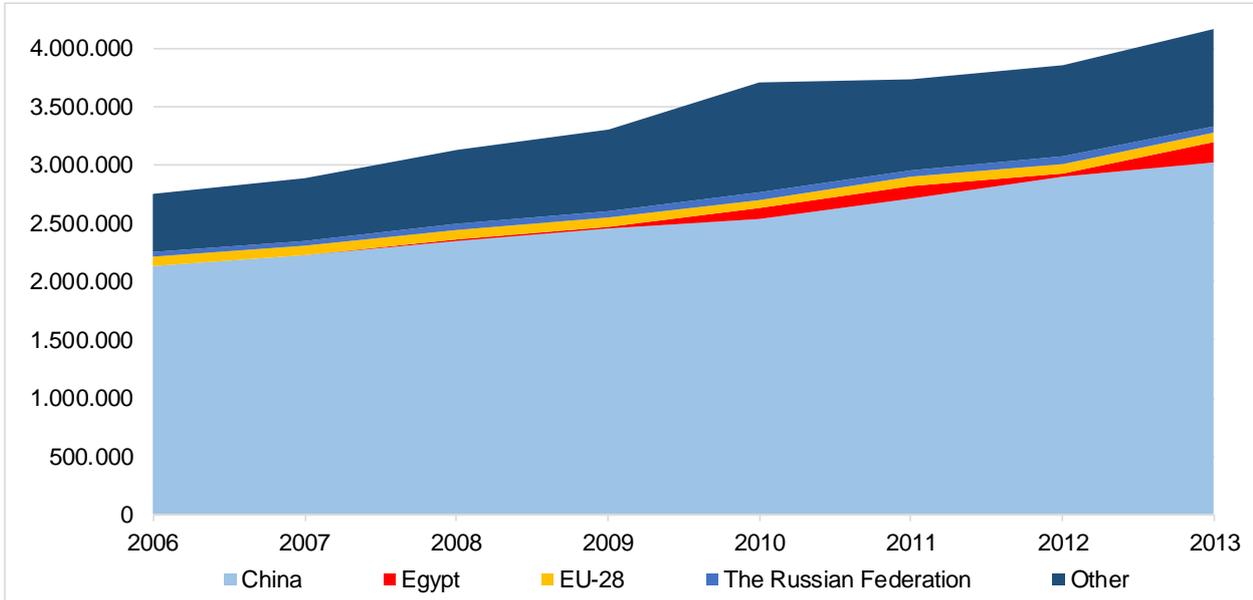
Since 2006 the world catch of common carp is continuously increasing (+51% between 2006 and 2013). In 2013 it reached 4.2 million tonnes. Aquaculture provides 98% of this production, fisheries only 2%.

Main suppliers are China (72% of world production in 2013), Indonesia (10%) and Egypt (4%).

EU production remained relatively stable around 78.000 tonnes during the period 2006-2013, but its share of the world supply fell from 2,8% in 2006 to 1,9% in 2013.

Common carp does not play any role on the processed and frozen market. Only limited volumes are involved in intra-EU trade (see below).

**Figure 1 – World production of Common Carp (tonnes)**



**Table 1 - World production (capture fisheries + aquaculture) of common carp (tonnes)**

	2006	2007	2008	2009	2010	2011	2012	2013
<b>World - total</b>	2.759.592	2.887.601	3.126.635	3.304.615	3.714.765	3.732.823	3.858.570	4.169.760
China	134.276	2.228.585	2.350.691	2.462.346	2.538.453	2.718.228	2.896.957	3.022.494
Indonesia	256.646	273.445	250.505	255.640	291.636	344.166	378.351	425.165
Egypt	-	-	11.400	11.688	91.721	103.662	33.500	176.400
Vietnam	-	-	75.000	109.800	110.000	150.000	100.000	78.559
<b>EU-28</b>	78.283	77.438	81.200	81.399	76.569	74.007	77.111	78.016
Russia	46.708	47.482	51.580	54.017	60.229	58.563	64.168	61.065
Others	243.679	260.651	306.259	329.725	546.157	284.197	308.483	328.061

**Source:** FAO - Fisheries and Aquaculture Information and Statistics Service

The common carp mainly comes from aquaculture. Catches only represented 2,2% of the world global production of common carp in 2013.

The share of fisheries in the production is much higher in the EU (10,8%) than in the rest of the world (2,0%).

Table 2 – World capture fisheries of common carp (tonnes)

	2006	2007	2008	2009	2010	2011	2012	2013
<b>World - total</b>	<b>64 274</b>	<b>70 115</b>	<b>83 054</b>	<b>76 366</b>	<b>84 179</b>	<b>91 640</b>	<b>82 837</b>	<b>89 715</b>
Mexico	16 288	19 205	20 930	24 450	29 793	22 881	22 186	29 456
Iran	6 296	9 769	8 091	7 700	8 775	10 665	11 862	12 754
Indonesia	9 013	9 096	8 183	6 361	8 941	11 960	12 985	12 462
<b>EU-28</b>	<b>10 011</b>	<b>9 574</b>	<b>9 673</b>	<b>9 292</b>	<b>8 773</b>	<b>9 623</b>	<b>9 628</b>	<b>8 455</b>
Tukey	12 116	12 286	11 625	10 964	12 058	9 998	9 973	8 277
Russia	2 304	3 566	2 647	2 436	3 432	2 383	3 288	5 160
Thailand	3 300	1 400	15 600	7 054	4 896	4 697	4 572	5 100
Other	4 946	5 219	6 305	8 109	7 511	19 433	8 343	8 051

Source: FAO

### 1.2.2 Common carp production in the EU

In the EU, the main producers of common carp are Poland and Czech Republic. With respectively 19.726 t and 18.790 t (capture fisheries + aquaculture), they represent half of EU production in 2013. Hungary is the third producer with 13.022 t (17% of EU production in 2013).

Carp are the main fish species in Hungary, in both capture fisheries (54%) and pond aquaculture (82%) while African catfish is the dominant fish in intensive fish farming.

#### 1.2.2.1 Aquaculture production

The production of the common carp farming sector has been stable around 70.000 t in the last years.

Some countries of Central and Eastern Europe follow an increasing trend, especially Poland, Lithuania, Bulgaria and Austria. At the opposite there is a clear downward trend for some major countries such as the Czech Republic, Germany and France. Hungary is in an intermediate position, with a production relatively stable in the period 2006-2013.

Table 3 – Aquaculture production of common carp in the EU (tonnes)

Member State	2006	2007	2008	2009	2010	2011	2012	2013
Poland	15 575	15 698	17 150	18 133	15 400	14 430	17 700	18 760
Czech Republic	18 006	17 947	17 507	17 258	17 746	18 198	17 972	16 809
<b>Hungary</b>	<b>9 663</b>	<b>9 570</b>	<b>10 485</b>	<b>9 931</b>	<b>9 927</b>	<b>10 807</b>	<b>9 985</b>	<b>9 632</b>
Germany	10 584	9 244	10 855	9 887	9 634	5 082	5 521	5 699
France	4 230	4 200	4 200	4 200	4 200	4 200	4 000	4 000
Lithuania	2 095	3 231	2 823	3 222	2 936	3 061	3 257	3 751
Bulgaria	842	1 180	1 469	1 927	1 906	1 390	1 288	3 601
Romania	3 136	3 544	3 977	4 142	2 888	2 652	3 400	3 400
Croatia	2 309	1 503	1 546	2 058	1 816	2 891	2 484	2 100
Austria	346	377	362	345	348	596	590	619
Latvia	485	538	476	437	439	450	475	524
Slovakia	414	273	252	154	117	188	355	217
Italy	164	85	73	72	104	151	150	150
Slovenia	204	195	166	177	160	188	137	123
Greece	136	93	113	114	123	52	120	120
Other	83	186	72	51	49	47	48	56
<b>EU-28</b>	<b>68 272</b>	<b>67 864</b>	<b>71 526</b>	<b>72 108</b>	<b>67 793</b>	<b>64 383</b>	<b>67 482</b>	<b>69 561</b>

Source: Eurostat

The aquaculture production of other carp species significantly decreased in recent years in the EU, but Hungary could increase its production of silver carp and maintain the production level of grass carp.

**Table 4 – Aquaculture production of other carp species in the EU (tonnes)**

Species	Country	2006	2007	2008	2009	2010	2011	2012	2013
Silver carp	<b>Hungary</b>	<b>1.499</b>	<b>2.484</b>	<b>1.493</b>	<b>1.567</b>	<b>1.081</b>	<b>1.545</b>	<b>1.681</b>	<b>1.681</b>
	Croatia*	250	250	100	100	100	95	384	350
	Poland	570	600	600	600	600	260	280	280
	Czech Republic	700	405	586	601	601	546	162	150
<b>Silver carp total</b>		<b>3.019</b>	<b>3.739</b>	<b>2.779</b>	<b>2.868</b>	<b>2.382</b>	<b>2.446</b>	<b>2.507</b>	<b>2.461</b>
Grass carp	<b>Hungary</b>	<b>559</b>	<b>591</b>	<b>578</b>	<b>480</b>	<b>437</b>	<b>719</b>	<b>502</b>	<b>576</b>
	Czech Republic	300	342	394	409	409	412	456	384
	Poland	500	550	550	550	550	225	240	240
	Croatia*	387	257	156	196	196	158	202	200
<b>Grass carp total</b>		<b>1.746</b>	<b>1.740</b>	<b>1.678</b>	<b>1.635</b>	<b>1.592</b>	<b>1.514</b>	<b>1.400</b>	<b>1.400</b>
Bighead carp	Czech Republic	240	252	394	461	461	460	379	358
	<b>Hungary</b>	<b>104</b>	<b>158</b>	<b>201</b>	<b>52</b>	<b>15</b>	<b>68</b>	<b>81</b>	<b>49</b>
	Croatia*	71	84	510	526	312	522	0	0
<b>Bighead carp total</b>		<b>415</b>	<b>494</b>	<b>1.105</b>	<b>1.039</b>	<b>788</b>	<b>1.050</b>	<b>460</b>	<b>407</b>
<b>Total other carp species</b>		<b>5.180</b>	<b>5.973</b>	<b>5.562</b>	<b>5.542</b>	<b>4.762</b>	<b>5.010</b>	<b>4.367</b>	<b>4.268</b>

**Source:**

FEAP (Federation of European Aquaculture Producers)

AKI (Research Institute for Agricultural Economics)

\*Croatia's bighead carp data are included in the silver carp data as of 2012

### 1.2.2.2 Capture fisheries

Capture fisheries of common carp follow a downward trend.

Hungary and the Czech Republic provide 75% of the total catch.

Table 5 - Capture fisheries of common carp in the EU (tonnes)

<i>Member State</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>
<b>Hungary</b>	<b>3 737</b>	<b>3 554</b>	<b>3 913</b>	<b>3 238</b>	<b>3 247</b>	<b>3 855</b>	<b>3 688</b>	<b>3 390</b>
Czech republic	3 656	3 341	3 257	3 214	3 161	2 997	3 207	2 917
Slovakia	1 184	1 430	1 178	1 241	1 159	1 433	1 419	1 463
Greece	260	265	259	202	202	202	202	202
Croatia	3	3	2	168	185	185	179	164
Romania	187	175	321	192	106	117	115	115
Germany	108	108	114	84	76	61	70	71
Slovenia	80	74	89	72	69	68	66	64
Poland	41	51	43	44	33	47	47	30
Other	755	573	497	837	535	658	635	39
<b>EU-28</b>	<b>10 011</b>	<b>9 574</b>	<b>9 673</b>	<b>9 292</b>	<b>8 773</b>	<b>9 623</b>	<b>9 628</b>	<b>8 455</b>

Source: FAO

## 2 THE EU MARKETS FOR COMMON CARP

### 2.1 Structure of the EU markets

#### 2.1.1 Apparent market by Member State

The EU market for live common carp is estimated at 76.000 tonnes in 2013. The Czech Republic is the biggest producer but Poland is the biggest apparent market as the Czech Republic exports 39% of its production.

These two main markets are followed by Hungary and Germany.

These four main Member states account for 71% in the global EU market of live common carp (in volume).

**Table 6 – Apparent market for common carp in the EU in 2013 (tonnes)**

	Production	Import fresh or chilled carp	Import live carp	Export fresh or chilled carp	Export live carp	Apparent market
Czech Republic	19.726	0	294	201	7.679	12.140
Poland	18.791	0	2.527	102	64	21.152
<b>Hungary</b>	<b>13.030</b>	<b>0</b>	<b>239</b>	<b>0</b>	<b>1.393</b>	<b>11.876</b>
Germany	5.770	97	2.394	10	41	8.210
Lithuania	3.757	6	8	0	1.263	2.508
Romania	3.515	465	0	0	0	3.980
Others	13.427	290	2.123	190	1.066	14.584
<b>EU-28</b>	<b>78.016</b>	<b>858</b>	<b>8.665</b>	<b>503</b>	<b>11.506</b>	<b>75.530</b>

**Sources:**

FAO - Fisheries and Aquaculture Information and Statistics Service – Production of common carp

COMEXT – Intra-EU and Extra-EU import and export of live common carp (CN code 03 01 93 00) and fresh or chilled common carp (CN code 03 02 73 00)

Apparent domestic market for each Member State is calculated in live weight as follows: production – export + import.

Foreign exchanges of common carp mostly concern live carp. Intra and extra-EU trade of fresh and chilled common carp is very low.

#### 2.1.2 Supply of the main EU markets

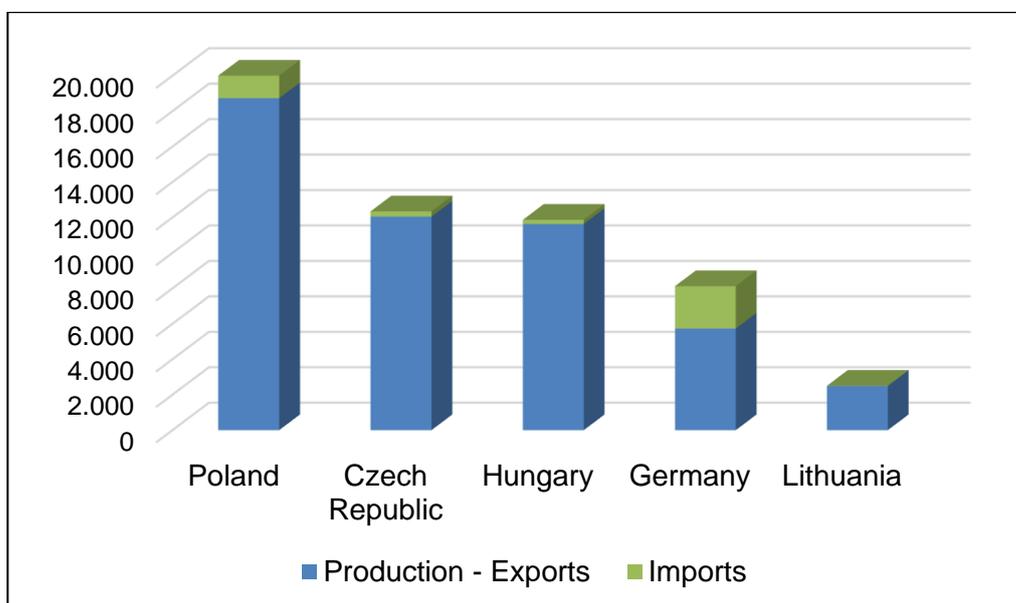
Most European markets for live common carp rely on domestic production and do not depend on imports, except Germany which imports 30% of its consumption.

The four biggest EU national markets for common carp are covering more than half of their fresh market needs with their own production.

Poland is the main European market for live common carp with an apparent consumption exceeding 21.000 tonnes in 2013.

The Polish production is the second one in the EU after the Czech one, but Poland does not export a lot whereas Czech Republic exports 39% of its production.

**Figure 2 – Supply of the main EU markets for live common carp in 2013 (volume in tonnes)**



**Sources:**

FAO - Fisheries and Aquaculture Information and Statistics Service – Production of Common Carp

COMEXT – Import and export of live common carp (CN code 03 01 93 00) and fresh or chilled common carp (CN code 03 02 73 00)

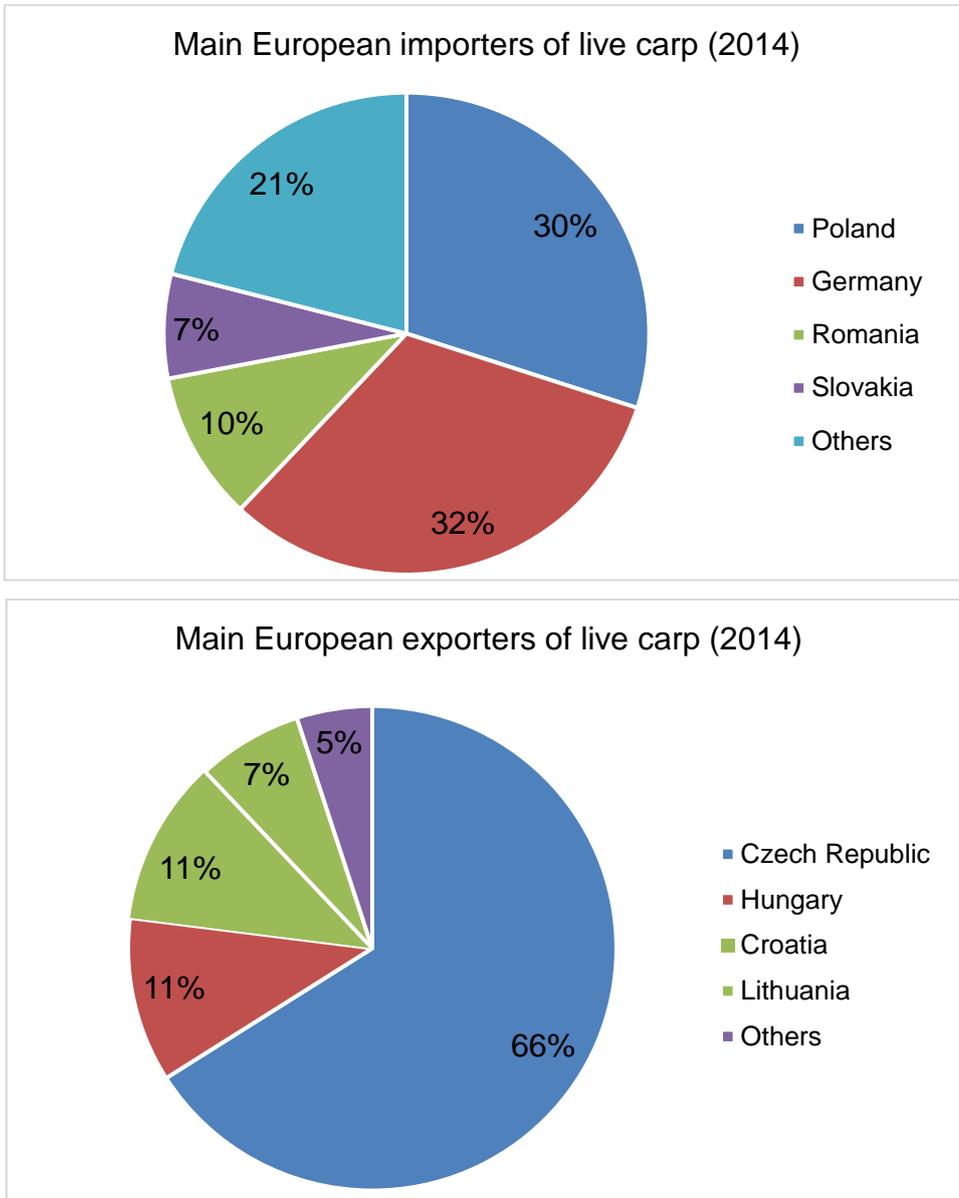
Supply for each Member State is calculated in live weight as follows: production – export + import.

### 2.1.3 Main intra-EU importing and exporting countries

The main European importers of live common carp are Poland, Germany and Romania. Those 3 Member States import 72% of the European imports in 2014.

The Czech Republic is the largest supplier of live common carp on the European market (66% of European exports in 2014). Hungary and Croatia share second place with 11%. Hungary exports mainly to Romania, Germany and Poland.

Figure 3 – Main intra-EU importers and exporters for live common carp (2014)



**Sources:**

Elaboration from COMEXT – Live common carp (03019300) - Volume – 2014

## 2.2 The Hungarian market

### 2.2.1 Structure of the freshwater production

The common carp production in Hungary has been 13.600 tonnes on average in the period 2006-2013, varying between a minimum of 13.100 tonnes in 2007 and a maximum of 14.700 tonnes in 2011. One quarter is provided by capture fisheries and three quarters by pond aquaculture.

**Table 7. Production of common carp in Hungary (tonnes)**

Production mode	2006	2007	2008	2009	2010	2011	2012	2013
Pond aquaculture	9 663	9 570	10 485	9 931	9 927	10 807	9 985	9 632
Capture fisheries	3 737	3 554	3 913	3 238	3 247	3 855	3 688	3 390
<b>Total production</b>	<b>13 400</b>	<b>13 124</b>	<b>14 398</b>	<b>13 169</b>	<b>13 174</b>	<b>14 662</b>	<b>13 673</b>	<b>13 022</b>

Source: FAO

Capture fishing takes place in natural waters of Hungary. The area of inland waters has not changed significantly in the last decade. In 2011, the total area reached 140.989 ha, including 3.366 ha where no fishing activity was reported.

The three most significant areas are the Lake Balaton, the Danube and the Tisza rivers. These waters give near half of total inland water catches.

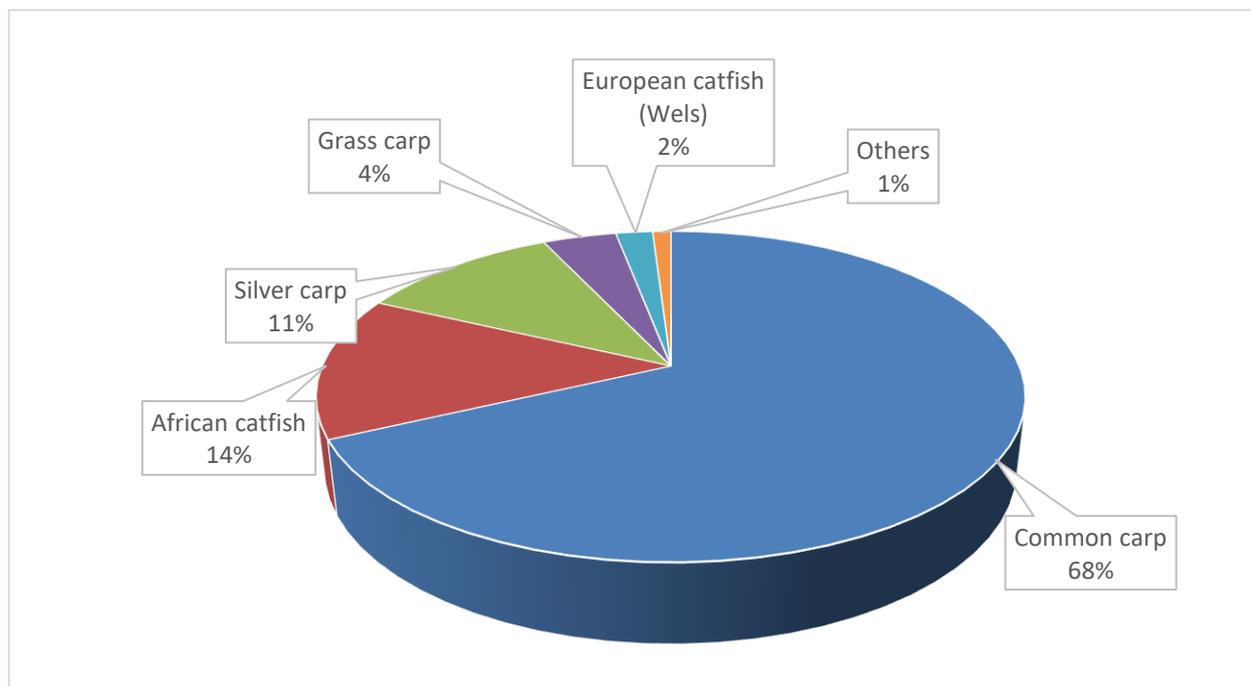
The most popular species is common carp covering more than 50% of the total catch in natural waters. The share of carp is even higher if other carp species (grass, silver and bighead carps) are also taken into account.

Hungary is the second European country after the Czech Republic regarding the weight of carp in the freshwater fish production. Carp represents 97% of the total national freshwater fish production in the Czech Republic (out of which 93% for common carp) and 85% in Hungary (out of which 67% for common carp).

**Table 8 – Weight of common carp in freshwater production in Central Europe in 2014 (tonnes)**

	% common carp in the total national production
Czech Republic	93%
<b>Hungary</b>	<b>68%</b>
Poland	49%
Germany	32%
Croatia	21%
Austria	20%

Source: FEAP

**Figure 4 – Distribution of the Hungarian market size fish production by species (2014)****Sources:**

FEAP (Federation of European Aquaculture Producers) / Hungarian Fish Farmers' Association

Most of the natural waters are both dedicated to commercial and recreational fishing at the same time; however recreational fishing (i.e. without commercial purpose) has significantly increased in the last decade and Hungary counts around 300.000 anglers in 2014.

According to the Research Institute of Agriculture Economics (AKI) there are 14 companies having their main activity in inland commercial fisheries. Fishermen are generally not doing this activity as their primary job and the number of fishermen varies from season to season; in 2011 there were 1.921 professional fishermen.

### 2.2.2 Aquaculture

Aquaculture activity takes place in two main forms:

- Extensive freshwater aquaculture, in ponds (approximately 25.000 ha);
- Intensive freshwater aquaculture, in flow-through and recirculation systems (approximately 12.000 m<sup>3</sup>).

#### ➤ Extensive aquaculture

In the extensive system, ponds are maintained in order to facilitate the development of fish population at a higher yield than in natural ecosystems. This is achieved with special density management, increased water productivity and feeding methods (fish feed naturally, but farmers usually provide additional feed such as wheat, corn, pea and lupine).

Common carp is the key species in pond aquaculture but herbivorous species (grass, silver and bighead carps) also have an important role in this system.

The pond system also plays an important role in the landscape, water management and biodiversity.

➤ Intensive aquaculture

In the intensive fish farm production system, fish are reared in tanks until they reach a market size. They are kept in controlled conditions and only pelleted feed is provided.

Two technologies are used: water cross-flow and recirculation. Recirculation systems are more costly but offer better control of breeding conditions (temperature, oxygen ...) and water quality.

African catfish is the key species in this system. Other significant species are sturgeon and rainbow trout.

### 2.2.3 Hungarian fish and carp production

Hungary is covered by approximately 25.000 ha of ponds in which 20.000 tonnes of fish (all freshwater species included) are produced annually. 65% of this volume (approximately 14.000 tonnes) is destined for the consumption market and the remaining volume for reproduction (approximately 8.000 tonnes).

The pond production is distributed as follow:

- 70% common carps;
- 25% other carp species (bighead carps, silver carps and grass carps);
- 2.5% predators (European catfish, pike and pike perch);
- 2.5% are other fish species (mainly crucian carps).

With an average production of 10.000 tonnes annually, common carp is the main fish species in Hungary. Other leading species are African catfish and silver carp.

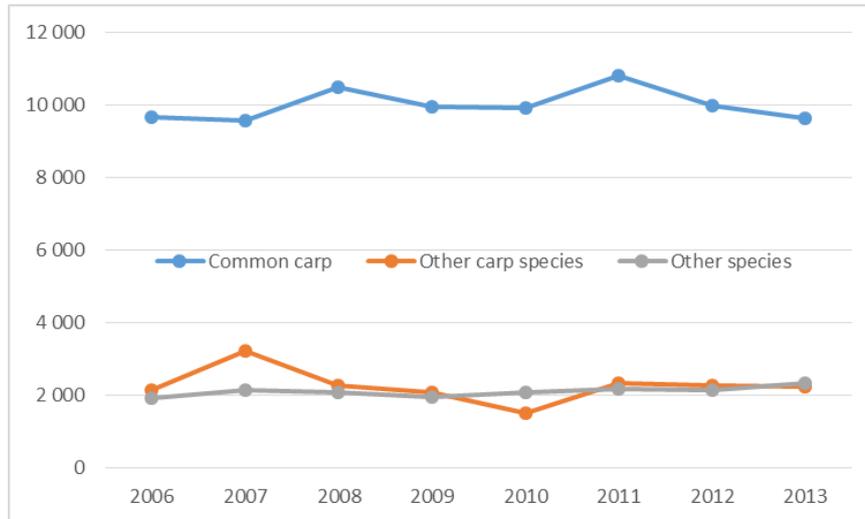
**Table 8 – Hungarian aquaculture production by species (tonnes)**

HUNGARY	2006	2007	2008	2009	2010	2011	2012	2013
Common carp	9 663	9 570	10 485	9 931	9 927	10 807	9 985	9 632
Silver carp	1 499	2 484	1 493	1 567	1 081	1 545	1 681	1 624
Grass carp	559	591	578	480	437	719	502	576
Bighead carp	104	158	201	52	15	68	81	49
<b>Total carp species</b>	<b>11 825</b>	<b>12 803</b>	<b>12 757</b>	<b>12 030</b>	<b>11 460</b>	<b>13 139</b>	<b>12 249</b>	<b>11 881</b>
African catfish	1 724	1 911	1 839	1 716	1 810	1 913	1 852	2 050
Wels catfish	147	167	153	175	156	175	225	212
Sturgeons	21	21	24	24	81	51	38	32
Rainbow trout	42	42	62	58	48	44	45	52
<b>Total</b>	<b>13 759</b>	<b>14 944</b>	<b>14 835</b>	<b>14 003</b>	<b>13 555</b>	<b>15 322</b>	<b>14 409</b>	<b>14 227</b>

**Sources:**

FEAP (Federation of European Aquaculture Producers) - FAO

All three categories of species (common carp, other carp species, other freshwater fish) exhibit a flat trend in the period 2006-2013.

**Figure 5 - Evolution of aquaculture production by species families (tonnes)**

Source: FEAP-FAO

The production cycle of common carp is spread over 3 years:

- Ponds with one-year-old carps cover 4% of the total pond area;
- Ponds with young carps (two years old) cover 25% of the total pond area;
- Three year-old-carps are raised in ponds covering 70% of the total pond area;
- 1% of the pond area is used for storage.

As common carp production is seasonal, Hungary faces a lack of common carp from April to September. In 2014, 300 tonnes of common carps have been imported during this period of low production.

#### 2.2.4 Imports-exports

Hungary introduces low but increasing volumes of carp (around 250 t/year), mainly from the Czech Republic.

Intra-EU imports represent between 2 and 3% of the domestic production.

**Table 9 – Hungarian live common carp imports by origin (volume in tonnes)**

IMPORTS	VOLUME (TONNES)				
	2010	2011	2012	2013	2014
CZECH REPUBLIC	59	66	130	173	261
CROATIA		162	45	66	0
OTHER EU	0	0	20	0	1
EXTRA EU	0	0	0	0	0
Total	59	228	195	239	262

**Sources:**

Elaboration from COMEXT: Live carp (CN Code: 03019300)

Processed products are gaining ground but Hungary's main export carp product is still, and by far, live carp. Exports have strongly increased in the last decade, from around 200 t/year in the years 2005-2008 to more than 1.000 t/year in the last years.

Romania, Germany and Poland are the main buyers of Hungarian live carps. Exports outside of the EU are close to zero, except in 2013 when significant exports to Serbia (161 t) have been recorded. The specific feature of the product (live fish) imposes specific transportation conditions (oxygenated tanks) which narrow trade flows to neighbouring countries.

**Table 10 – Hungarian live carp exports by destination (volume in tonnes)**

EXPORTS	VOLUME (TONNES)									
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
GERMANY	51,6	94,0	73,0	90,6	39,8	142,5	317,0	204,3	170,2	314,0
CROATIA	-	-	8,0	40,5	7,7	1,0	5,5	-	109,0	39,4
ITALY	40,8	27,1	28,2	24,9	121,6	107,4	64,8	43,7	94,3	109,2
POLAND	-	-	37,4	-	-	220,6	559,9	286,3	385,7	239,9
ROMANIA	0,1	191,8	-	77,1	110,3	222,6	180,5	256,6	296,3	336,3
OTHER EU	62,9	71,1	30,1	23,3	55,6	87,9	122,1	99,2	177,8	156,6
EXTRA EU	3,9	13,1	7,0	6,8	6,4	0,1	-	-	160,1	0,5
TOTAL	159,3	397,1	183,7	263,2	341,4	782,1	1 249,8	890,1	1 393,4	1 195,9

**Sources:**

Elaboration from COMEXT: Live carp (CN Code: 03019300)

### 2.2.5 Structure of the supply chain

According to their size, common carps are going either to human consumption, either to leisure ponds. Carps sold for the domestic consumption usually weigh from 1,5 to 2,0 kg (live weight). Carps smaller than 1,5 kg or bigger than 2 kg are usually kept for angling in leisure ponds.

The main volumes of carps are sold as live fish. It makes the supply chain very short with only three levels: the producer, the wholesaler and the retailer. When carps are sold locally, the producer often sells directly to the supermarket or consumers.

The fish processing industry is poorly developed in Hungary, which does not have any company specializing in the processing of carp.

### 2.2.6 Consumption

Hungarians are low consumers of fish. According to European statistics ("The EU Fish Market", edition 2015, EUMOFA) they are even the lowest fish consumers in the EU with 5,3 kg live weight equivalent per inhabitant per year when the EU average is 22,9 kg.

According to the Ministry of Agriculture, the fish consumption (all species included) can be broken down by preservation state (on net weight basis) as follows:

1,83 kg for live, fresh and chilled

0,93 kg for frozen fish,

1,02 kg for canned, smoked and otherwise prepared fish.

Hungarian consumers eat one third of their total yearly fish consumption around Christmas, with carp accounting for 65% of the fish eaten during the holiday season.

According to professionals and experts of the sector, carp consumption is 1,04 kg per year and per capita, i.e. about one quarter of the total fish consumption (the apparent consumption per capita as calculated from Table 6 data, is 1,20 kg live fish equivalent).

Imported fish (both intra-EU and extra-EU) constitutes 40% of Hungarian fish consumption, compared to an average of 60% in the European Union.

A general objective of the sector is to increase fish consumption: the European Maritime and Fisheries Fund (EMFF) targets an increase of domestic fish consumption of 1 kg per capita by 2020. Buying live fish has a long tradition in Hungary and the proportion of live fish in consumers' purchases is almost as important as purchases of processed (frozen and canned) fish. Only in the middle of the last decade, the ratio of processed fish started to increase exceeding live fish consumption. This trend is correlated to the increase of imported fish products that are mainly processed. More and more traditional Hungarian food products are available ready-to-eat in the retail chains, just like fish soup that were originally made at home with live carps. Yet, the development of fish processing is still at a low level in Hungary.

## 2.3 Key drivers of the market

### 2.3.1 Competition with other freshwater fish species

The main species produced by Hungary's aquaculture, outside of common carp, is the African catfish, which is farmed intensively. Its production reaches around 2.000 t yearly.

Common carp and African catfish have very similar prices, with catfish below carp in the last month (Sept. 2015).

**Table 11 – Ex-farm prices for carp and African catfish, fresh, whole, gutted, head-off**

Species	Unit	Oct. 2013	Oct. 2014	Sept. 2015
Carp	HUF/kg	911	1 037	1 121
	EUR/kg	3,08	3,38	3,59
African catfish	HUF/kg	981	1 100	1 050
	EUR/kg	3,32	3,59	3,36

**Source:**

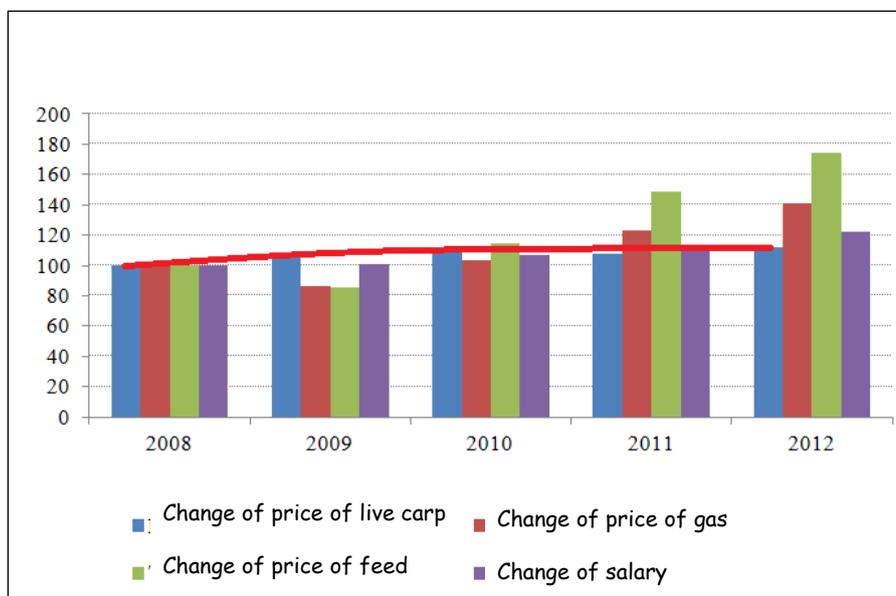
Globefish – European Price Report

### 2.3.2 Input costs

Hungarian main fish species are omnivorous and herbivorous species. Carps are mostly fed by natural food production of the ponds and complementary feed. The complementary feed of carps is mainly grain-based and artificial feed fishmeal content is lower than 5%. Because of this very limited fishmeal use, carp production in ponds is considered as a sustainable way of fish production that maintains biodiversity.

Due to the rising grain prices, the traditional semi-intensive and extensive pond production technology is expected to change. Instead of cereals, farmers tend to use pellet fish feed as a complementary feed beside of the natural pond production.

**Figure 6 – Evolution of carp price and input costs (index 100 in 2008)**



**Source:**

Szabo Cs by KSH (2013) / AKI (Research Institute of Agricultural Economics) (2014)

### 2.3.3 Hungarian challenges for the production of common carp in ponds

Today and in the years to come, efforts and funds dedicated to the fish industry will focus on:

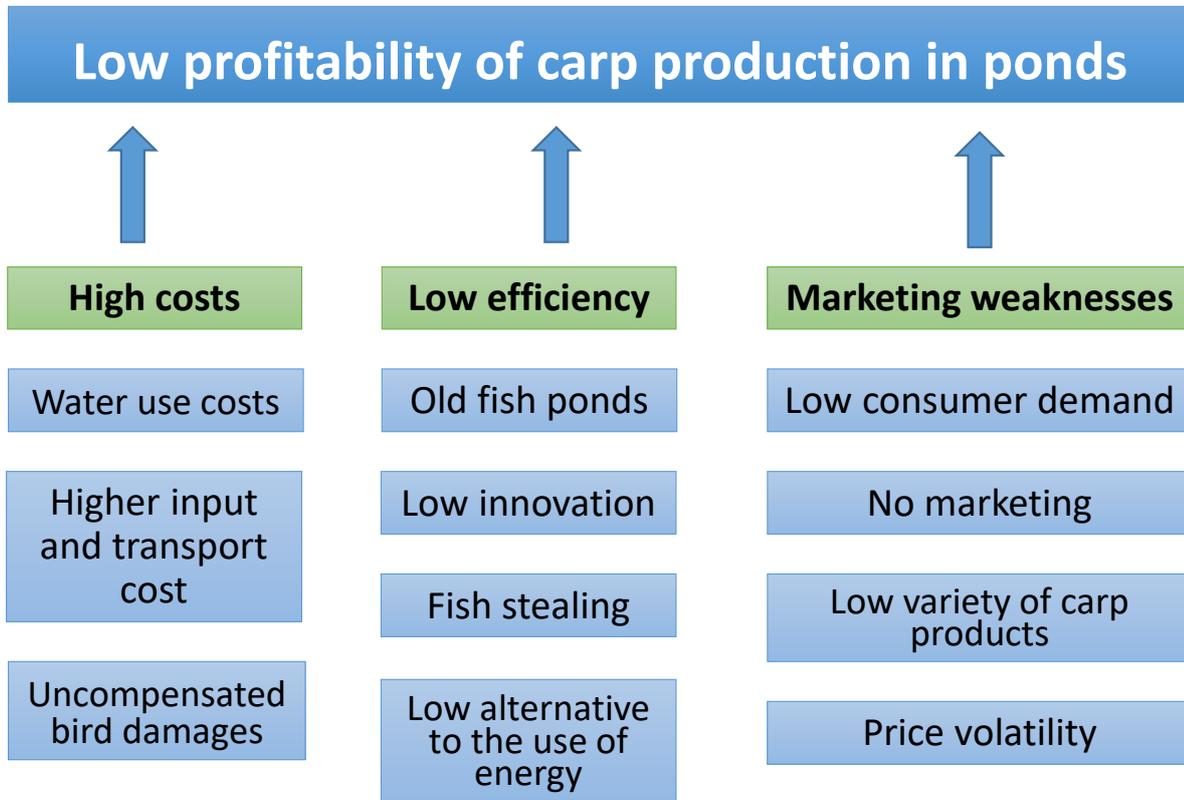
- Processed products: young generations are keen for ready-to-eat products;
- Various fish products: more fillets, frozen products, fish soups, etc.
- Marketing: more advertisement and promotion of fish and fish products.
- Development of the “Platform for Fish Farming Technology Development in Hungary” (research and innovation).

The Agriculture Ministry established a new program for the 2014-2020 period. It includes a specific support to the fish sector which can benefit the common carp industry:

- Marketing measures;
- Renovation and creation of ponds;
- Restructuring measures;
- Development of the common carp processing industry.

Current research focuses on the nutrition of common carp, in order to improve the pond’s yield and on the reduction of the production cycle in order to improve the linearity of the offer over the year.

Figure 7 – Challenges of the Hungarian common carp sector



**Source:**  
University of Gödöllő (Szent István University)

## 3 PRICES ALONG THE SUPPLY CHAIN

This chapter analyses available price data and price trends at different levels of the common carp supply chain in Hungary, with the objective to set the framework for price transmission analysis (chapter 4).

### 3.1 Producer prices

#### 3.1.1 Production costs

At the first level of production, cost depends on the region:

- In the Centre of Hungary, common carp is produced in artificial ponds,
- In the West of Hungary, the production takes place in natural ponds.

The production cost is estimated between 840 and 1.300 EUR/ha.

This cost is composed by:

- Grain feed cost (300 to 350 EUR/ha);
- Supply of manure and small fish to maintain a good balance of the aquatic biodiversity (zooplankton);
- Pond's maintenance and treatments;
- Pumps and fuel.

The average yield is estimated between 0,7 tonne/ha and 1,5 tonne/ha (until 2 tonnes/ha for the most efficient farms).

The main driver impacting common carp yield is feed (mix of wheat, triticale and corn). The volume necessary is estimated at 2,2 tonnes/ha/year.

#### 3.1.2 Ex-farm prices

The ex-farm price of live carp, which remained quite stable around the 600 HUF mark (at the exception of Christmas peaks), i.e. approximately 1,95-1,97 EUR/kg, along the years 2012-2015, rose to 701 HUF/kg (2,25 EUR/kg) in June 2015.

Table 12 shows that the prices of prepared products (whole fresh gutted headless, slices, fillets) increased more than raw products (live carp, whole fresh head-on). Between October 2013 and September 2015 the first rose by 23%, 33% and 44% respectively, while the latter increased only 11% (live carp) and 14% (whole fresh gutted head-on).

Table 12 – Ex-farm prices of common carps

HUF/kg	Oct. 2010	Oct. 2011	Oct. 2012	Oct. 2013	Oct. 2014	Sept. 2015
Live	560	701	533	630	665	701
Fresh, gutted, head-on	701	764	771	785	820	896
Fresh, gutted, headless	841	-	981	911	1 037	1 121
Fresh on ice - slices	841	981	1 121	981	1 227	1 304
Fresh on ice - fillets	911	1 121	1 262	1 051	1 339	1 514

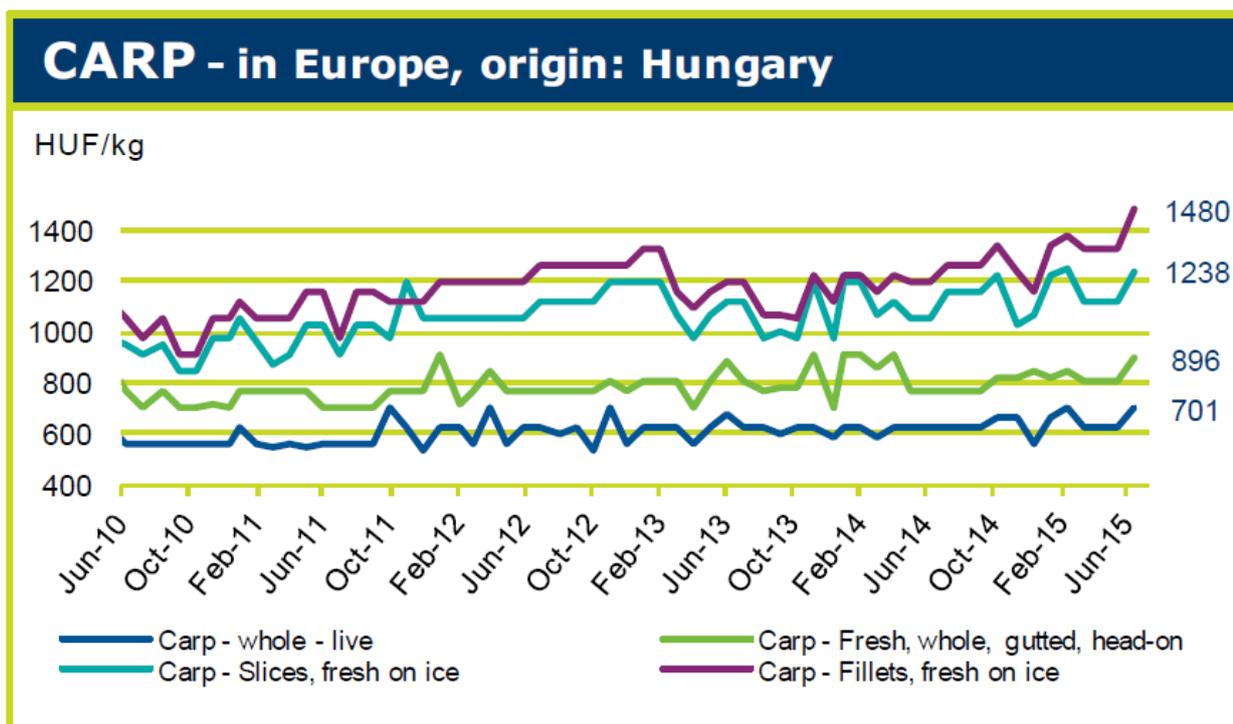
  

EUR/kg	Oct. 2010	Oct. 2011	Oct. 2012	Oct. 2013	Oct. 2014	Sept. 2015
Live	2,05	2,38	1,91	2,13	2,17	2,25
Fresh, gutted, head-on	2,56	2,59	2,77	2,66	2,67	2,87
Fresh, gutted, headless	3,08	-	3,52	3,08	3,38	3,59
Fresh on ice - slices	3,08	3,32	4,02	3,32	4,00	4,18
Fresh on ice - fillets	3,33	3,80	4,53	3,55	4,37	4,85

**Source:**

Globefish – European Price Report

Figure 8. Evolution of ex-farm prices of common carps (HUF/kg)



**Source:** GLOBEFISH – European Price Report 06/2015

### 3.2 Intra-EU import prices

The average price of imported live carp was 1,52 EUR/kg in 2013 and 1,78 EUR/kg in 2014. The strong price increase in 2014 (+17%) was the result of the discontinuing of low-priced imports from Croatia.

**Table 13 – Price evolution of live carp imported by Hungary (EUR/kg)**

Origin	2010	2011	2012	2013	2014
CZECH REPUBLIC	1,66	1,94	1,71	1,69	1,78
CROATIA	-	1,52	1,45	1,07	-
Total	1,66	1,64	1,69	1,52	1,78

**Source:**

Elaboration from COMEXT

### 3.3 Export prices

Export prices of Hungarian live carps have regularly decreased since 2008. They are now very close to import prices (see figure 10).

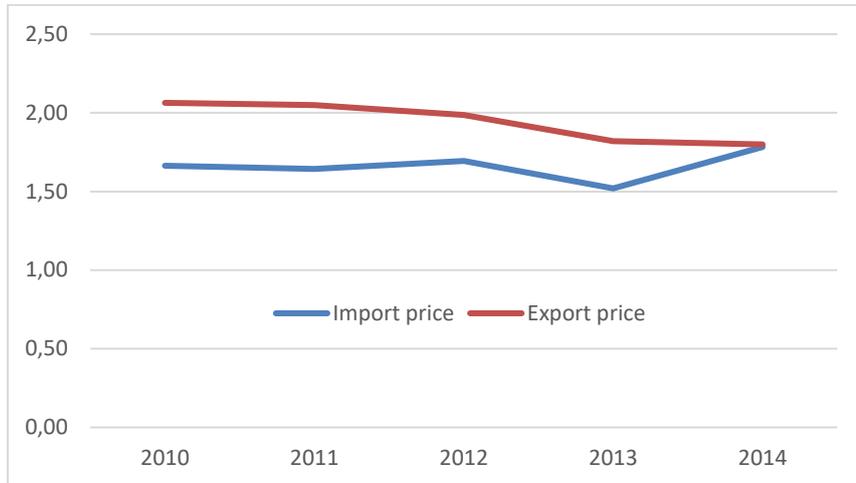
Prices to Germany and Italy remain above 2,00 EUR/kg while prices to Central and Eastern Europe destinations dropped below this mark.

**Table 14 – Price evolution of live carp exported by Hungary (EUR/kg)**

Destination	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
GERMANY	2,33	2,10	2,09	2,43	1,94	2,10	2,19	2,33	2,16	2,11
CROATIA	-	-	2,94	2,17	1,93	2,03	3,22	-	1,83	1,86
ITALY	1,91	1,97	1,94	2,15	2,39	2,07	2,17	2,09	2,04	2,11
POLAND	-	-	1,94	-	-	1,92	1,92	1,55	1,21	1,07
ROMANIA	3,04	1,59	-	2,27	2,15	1,95	1,88	1,95	1,99	1,70
OTHER EU	1,88	1,84	2,13	2,07	2,15	2,56	2,40	2,57	2,23	2,27
EXTRA EU	4,19	2,88	3,26	5,07	6,42	-	-	-	2,00	3,60
TOTAL	2,09	1,82	2,13	2,35	2,29	2,06	2,05	1,99	1,82	1,80

**Source:**

Elaboration from COMEXT

**Figure 9. Evolution of import and export prices of live carp (EUR/kg)**

### 3.4 Wholesale prices

Only a small volume of common carp produced in Hungary is sold directly to the consumer. Most common carps are bought by wholesalers. The margin of the wholesaler is estimated at 12-15%.

At the time of the survey (July 2015), the wholesaler price of live carp was close to 2,50 EUR/kg.

### 3.5 Retail prices

70% of the production of common carp is sold by retailers. The remaining volumes are sold on the export market or directly to the consumer.

At the time of the survey (July 2015), the retail price was around 4,00 EUR/kg.

The Research Institute of Agricultural Economics (AKI) carries out a weekly observatory on consumer prices.

**Table 15 – Retail prices of common carp (EUR / kg – July 2015)**

On-the-spot-checks in several retailers	
Whole carp (not live)	6,00
Half carp, boneless	8,00
<b>Whole live carp (1.5 to 2.0 kg live weight)</b>	<b>4,00</b>
Fillet of carp	4,30 to 6,00
Slice of carp	4,30
Tail of carp	3,00
Offals of carp for fish soup (head / tail)	1,00
Fish soup (EUR/liter)	4,00 to 4,70
African catfish (fillet)	6,30
Silver carp (fillet)	2,30

**Source:**

EUMOFA - On-the-spot checks - July 2015

## Price structure in the supply chain for fresh carp in Central Europe

Table 16 shows the price survey carried out in supermarkets on a weekly basis, in 2014 and 2015. It shows the evolution of retail prices at the beginning of the year, during the Easter season and during Christmas time.

On average, retail prices rose between 2014 and 2015, especially during Easter for live common carps (+17%) and both Easter and Christmas season for the fillets of common carps (+15% and +18% respectively).

The production seasonality impacts on prices: volumes are bigger in winter than in summer; and fish storage is expensive.

**Table 16 – Price reporting of live common carp and fillets of common carp at retail level**

Retail prices (EUR/kg)			
Live carp	2014	week 04	2,88 to 3,71
		week 15	3,33 to 3,84
		week 16	2,75 to 3,36
		week 25	3,24 to 3,84
		week 50	2,44 to 2,78
		week 51	2,44 to 2,78
	2015	week 04	3,08 to 3,84
		week 14	2,88 to 3,84
week 17		3,25 to 3,84	
week 25		3,25 to 3,84	
Fillets of carp	2014	week 04	5,12 to 5,44
		week 15	3,20 to 5,28
		week 16	4,96 to 5,80
		week 25	3,04 to 6,08
		week 50	4,87 to 5,76
		week 51	4,87 to 5,76
	2015	week 04	4,80 to 6,08
		week 14	4,80 to 6,01
week 17		4,87 to 6,08	
week 25		5,76 to 6,08	

**Sources:**

AKI (Research Institute for Agricultural Economics) – Prices collected in supermarkets (Auchan, Tesco, Metro) and in the main market hall of Budapest

## 4 Price transmission in the supply chain in Hungary

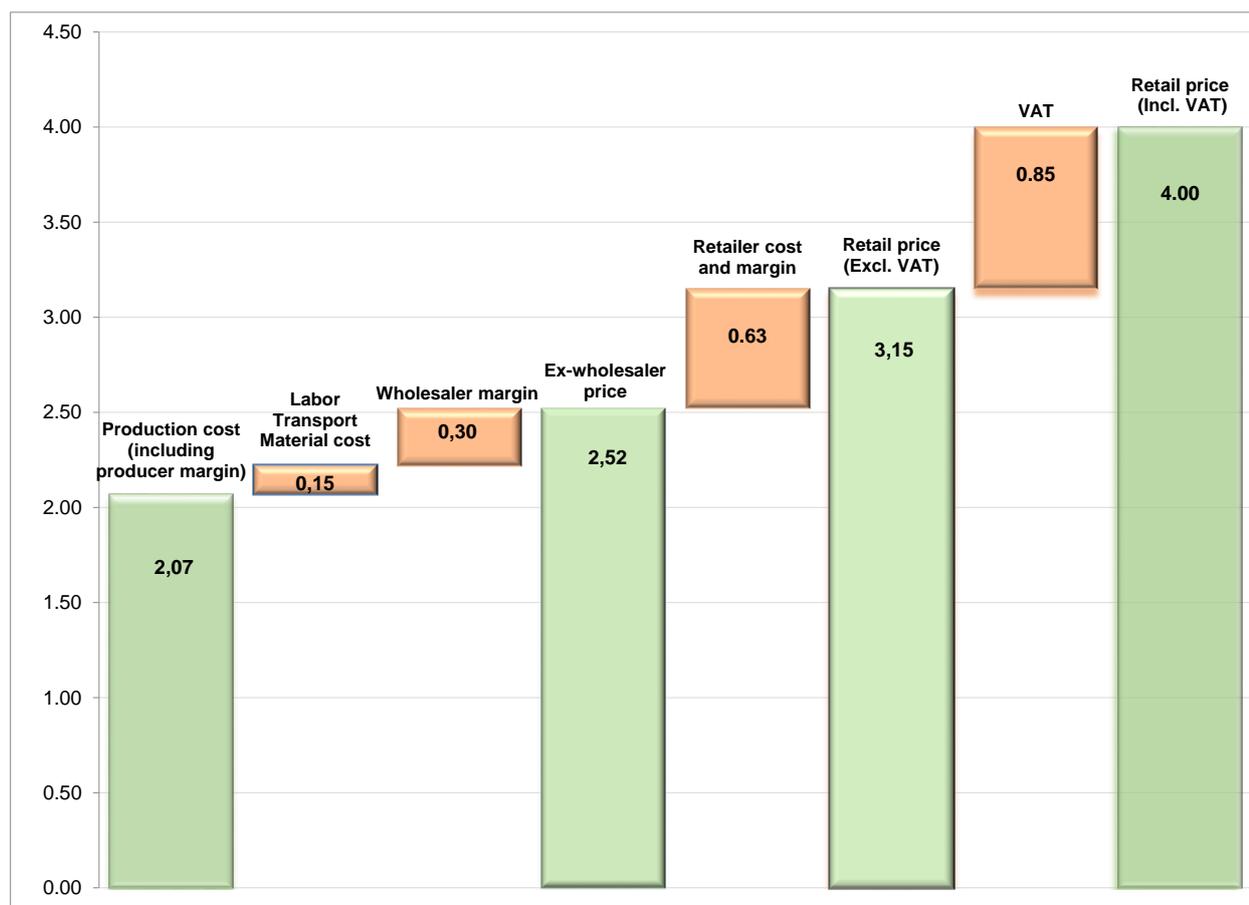
The price transmission for common carp, sold whole and live, refers to the market situation and the price conditions at the time of the field mission (July 2015).

The production cost of common carp highly depends on the professional expertise of producers: some of them can produce 1kg of carp from 2kg of feed while others need 4kg of feed to get 1kg of carp. That is why production cost can differ significantly. It is estimated that production cost (before labour, administration and transportation cost) can range from 1,12 to 1,44 EUR/kg only because of the feed quantity used.

Transportation cost ranges from 0,35 EUR/kilometre to 1,00 EUR/kilometre depending on type of truck and distance.

For these reasons, it is important to note that the figure below is based on average figures. Hungary can also be considered as representative as carp is handled and marketed the same way in other major carp markets of Central Europe.

**Figure 10 - Price structure for common carp in Hungary (whole and live carp, EUR/kg)**



**Source:** Elaboration EUMOFA from stakeholder and expert interviews: AKI (Research Institute for Agriculture and Economics); MAHAL (Hungarian Fish Farmers' Association); University of Gödöllő (Szent István University).

## 5 ANNEXES

### 5.1 Contacts

- AKI (Research Institute of Agricultural Economics) - Directorate of Agriculture and Rural Development Policy
- Ministry of Agriculture - Department of Angling and Fisheries Management, Aquaculture Development Unit
- MAHAL (Hungarian Fish Farmers' Association)
- University of Debrecen - Faculty of Economics and Business - Institute of Applied Economic Sciences - Department of Farm Business,
- Institute of Aquaculture and Environmental Safety (Gödöllő)

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