

**STUDY ON STORAGE CAPACITIES AND LOGISTICAL INFRASTRUCTURE FOR EU
AGRICULTURAL COMMODITIES TRADE**
(with a special focus on Cereals, the Oilseed Complex and Protein Crops (COP))

Final Report
Annex 6 – Methodology

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1 Methodology for the mapping of storage capacities and logistical infrastructure

1.1 Methodology for the mapping of storage capacities

The *mapping of storage capacity* illustrated at § 2.1 of the study report is the result of a sequence of coordinated activities.

The process started with an in-depth investigation on the storage system for COP in each Member State. The existing literature on the topic, previous studies and public/private surveys and enquiries were reviewed; public institutions, business organisations, researchers and consultants were also contacted to request access to the most complete and updated available data.

As expectable, the available information greatly varied in quantity and quality among the different Member States. Complete, well-organised and more or less updated databases were available in some Member States; by contrast, in the remaining Member States only very general information had already been recorded or, in some other cases, no research had ever been made on the topic.

More specifically, the following situations were tackled:

1. Member States where rather complete databases were already available, either publicly or through an *ad hoc* authorisation (Bulgaria, France, Hungary and Romania).
2. Member States where previous studies on the country's storage capacity had been carried out, whose results provided a useful starting point for the mapping activity (Finland, Italy, Poland and Portugal).
3. Member States where only very general information on storage capacity was available at national level.
4. Member States where no enquiry of any kind had ever been carried out and for which the mapping activity had to be performed without any reference data or supporting estimates (e.g. Germany, Ireland).

The methodology for the mapping of storage capacity aimed at identifying storage facilities at all stages of the supply chain, at classifying them by typology and at quantifying their individual storage capacity. As for the geographical detail of the mapping, NUTS 2 regions were considered for Belgium, Germany, the Netherlands, Luxembourg and the United Kingdom; NUTS 3 regions for the remaining Member States. A special effort was made to achieve the widest possible coverage in terms of *observed capacity data for individual facilities* (or at least, groups of individual facilities located in the same NUTS 2 or 3 region). This implied collecting such data directly from secondary or primary sources, through extraction from datasets, consultation of company websites, interviews with knowledgeable subjects and a very high number of direct enquiries to operators managing storage facilities. Wherever this proved unfeasible, a second-best approach was applied, aimed at indirect quantification of capacity data for individual facilities / groups of facilities. This was made through calculation, estimation or experts' judgment on the basis of i) available relevant data and information (e.g. processing capacity, frequency of stock turnover, etc.) or ii) visual observation of images of the concerned storage facilities. Quantification of *aggregate storage capacity figures at NUTS 2 or 3 level*¹ was applied for on-farm storage capacity in most Member States, because of the very low average dimension of the facilities and of the extremely great number of operators involved at this stage of the food supply chain. The estimation of *aggregate storage capacity* was only applied as a last resort option for the other stages of the supply chain. These different "components" were systematically combined, for each NUTS 2 or 3 region, into

¹ Through calculation, estimation or experts' judgment on the basis of available relevant data and information.

a single figure expressing the volume of existing storage capacity. Special attention was devoted to prevent the issue of double-counting of facilities. Interviews with national experts were mainly aimed at collecting useful elements for validation of total figures at Member State level.

For the classification of storage facilities among the different stages of the supply chain, indications about the criteria to classify individual facilities under the relevant categories were given to national experts in charge of mapping at Member State level. Even though a certain degree of “expert judgement” is always necessary in this kind of classification, the following criteria were applied:

- *Individual farm*: the category includes agricultural holdings, farming companies and groups whose prevalent activity is focused on the production of COP; companies with limited operations in the downstream stages of the supply chain were also included in this category.
- *Cooperative*: the category includes cooperatives and similar organisations whose predominant activity is focused on the production of COP or on storage and handling of COP production of farmers which are members of the cooperative. In cases where activities in the downstream stages of the supply chain prevailed or where storage and handling of non-member's COP production dominated the activities, such companies were included either in the *processing industry*, the *transport hub* or the *wholesale trade* category².
- *Processing industry*: the category includes companies and cooperatives mainly involved in COP processing; this category includes – among others – mills, pasta makers, food and beverage producers (bakeries, breweries, etc.), compound feed producers whose activities require storage capacity for COP.
- *Transportation hub (including ports)*: companies operating storage capacity at transportation hubs (e.g. seaports, inland waterway ports, other inland hubs) are included in this category. It should be noted, however, that most of the companies operating near transportation hubs are involved in the wholesale/trade of COP and, in some cases, in the processing stage of the supply chain. Therefore, the classification criteria was whether the storage facility had dockside or rail-side handling capacity. However, facilities with processing capacity were classified under the “processing industry” category.
- *Wholesale/trade*: this is a residual group including companies and cooperatives not falling in the above categories; in this case an “exclusion approach” was followed (facilities with no processing capacity, facilities outside the area of logistical hubs, or facilities inside the area of logistical hubs but without dockside/rail-side handling capacity).

The output of the above investigations was a *dataset* featuring all the relevant quantitative and qualitative information on the storage system for COP in all the NUTS 2 and 3 regions. This dataset formed the basis for the creation of a *set of GIS maps for storage capacity*, illustrating the situation of the storage system for COP in the EU-28 Member States in 2005 and at present, as well as the related evolution.

1.2 Methodology for the mapping of logistical infrastructure

The following three activities were carried out in order to provide an *overview and mapping of the logistical infrastructure for COP crops*:

1. An analysis of transport modes for COP.
2. An assessment of the role, function and cost of transport.

² This is for instance the case of some Member States such as France or Poland where – despite the presence of cooperatives involved in the farming stage – the large share of their activities in the processing/wholesale stages of the supply chain and the size of COP volumes stored and handled on behalf of non-members resulted in the classification of their storage facilities under one of the other categories.

3. The identification and illustration of the main EU transport corridors for COP and of the regional infrastructure for COP transportation.

The analysis of *transport modes for COP* was aimed at collecting a set of quantitative and qualitative information items illustrating **how** COP are currently transported in the EU. These included i) the distribution of COP transportation among the different modes (road, rail, inland waterways), ii) the geographical distribution of the transport modes at the appropriate NUTS level and iii) additional characteristics of transport modes (e.g. shipping distances, vehicle types, etc.), related to the role that each mode plays in COP transportation. Wherever possible, the significant data gaps emerged from the analysis were closed by interpolation or by reasonable estimates provided by interviewed experts.

The *assessment of the role, function and cost of transport* aimed at analysing **why** COP are transported in the aforementioned ways. To this end, a techno-economic analysis of transport processes and logistical concepts within the COP crop supply chain was performed, aimed at:

- describing *representative COP transportation processes* in terms of technical characteristics (e.g. truck, wagon and vessel capacities) and economic aspects (e.g. transport costs, contracts with transport service providers, etc.);
- analysing the role and function of COP transportation, focusing on the *key elements defining the relevant logistical concepts* (cost, lead time, flexibility), and on the *required infrastructure*.

Finally, the *identification and illustration of the main EU transport corridors for COP transportation* by road, rail and inland waterways, was aimed at analysing **where** COP are transported from origin to destination. The identification of the main EU transport corridors for COP was made on the basis of quantitative and qualitative elements sourced from i) official reports about the key EU transport corridors and ii) transportation statistics describing COP traffic flows between EU Member States/regions. The identified corridors were then illustrated in a set of GIS maps, together with the related transport infrastructure: road, rail, and inland waterways network, and the related interconnections and transshipment points (road-to-rail terminals; inland waterway ports; seaports). The analysis was carried out in a way that facilitated the *identification of bottlenecks* directly resulting from the structure of the transport corridors (e.g. missing or not yet built connections; tunnels; crossings), or arising from the interaction between long-haul and short-haul transportation and limited infrastructural and/or storage capacity.

2 Methodology for replying to study questions

2.1 Study questions under Theme 1 – Storage capacity

2.1.1 Question 1.1: Current need of storage capacity

The approach for replying to this study question was based on:

1. An analysis of the **evolution of COP supply balance** at EU and Member State level, with a special focus on the **range of variation** of relevant supply balance items - production, domestic use, imports and exports, stocks - in the 2005-2015 period. Such analysis was aimed at **quantifying the needs of storage capacity** on the basis of assumptions defining **the extent of the security buffer** with respect to the evolution of COP supply balance over the relevant period.
2. An analysis of the **timing of COP production and use**, in order to define intra-annual patterns and to identify the month in which the storage need peaks.

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3. An analysis of the **timing of peaks in COP exports and peaks in the storage needs**, in order to detect situations where lack of storage capacity in critical periods of the year may have put pressure on operators to “free up” storage space through increased/anticipated export sales.

Different approaches and sets of assumptions were applied to quantify the storage needs with different levels of security buffer.

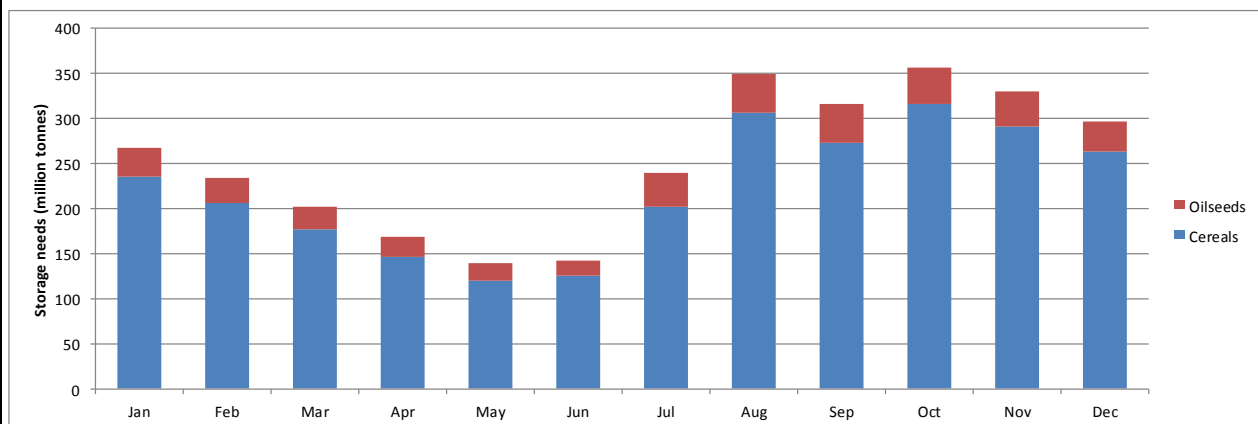
To quantify storage needs, three **scenarios** were elaborated: a **base scenario** and **two alternative scenarios**. A minimum and a maximum storage need was estimated in each scenario. The **minimum need** was estimated on the basis of production only, whereas the **maximum need** was estimated by considering production, trade flows, beginning/ending stocks and consumption.

A more detailed explanation of the methodology and of the assumptions for each scenario is provided in Boxes 1, 2 and 3.

Box 1 – Method for the quantification of the current need of storage capacity (base scenario)

A **base scenario** was developed considering peaks in production for each crop and Member State over the 2005-2015 period.

The approach followed is based on the simulation of intra-annual patterns of production, consumption, trade (imports and exports), and accumulation of stocks for COP crops (which are distinguished into cereals and oilseeds). In these patterns, ending stocks are summed to production in the starting month of the marketing year. Supply balance data are used to simulate the aggregated storage profiles for both cereals and oilseeds, and to determine the storage peak for the EU as a whole, and for each Member State (see figure).



The **maximum need of storage capacity** over the considered period (2005-2015) was quantified through the following approach:

- a. The maximum production for cereals and oilseeds over the 2005-2015 period was considered to identify the peak in production determining the upper limit of the estimate of storage needs.
- b. Actual (i.e. variable) monthly imports and exports of COP crops were used to build the storage patterns for the year in which the maximum production was recorded.
- c. For all the combinations of COP products and Member States without domestic production, trade data in the year when the peak in imports was recorded were used to build the storage patterns.
- d. Within the limits of data availability for individual COP crops, the actual timing of production for individual COP crops was considered to determine the storage peak.

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e. Beginning/ending stocks for individual COP crops were calculated as 20% of yearly consumption³.

The formula used for the calculation of the maximum need of storage capacity is:

$$SN_{C/MS} = \text{Max}(P_x + I_x - E_x + S_x - AC_x)$$

Where:

$SN_{C/MS}$ = Storage need for each crop/Member State (which corresponds to the maximum monthly ending stock)

P_x = Monthly production for each crop/Member State. Monthly production is equal to total annual production for the main month of harvest; it is equal to zero in the other eleven months.

I_x = Monthly imports (actual imports in the month x in the peak year)

E_x = Monthly exports (actual exports in the month x in the peak year)

S_x = Beginning stock. In the main month of harvest, beginning stock = annual total (i.e. 20% of yearly consumption); in the following months, beginning stock = ending stock of the previous month

AC_x = Apparent monthly consumption = [(annual production) + (annual imports) – (annual exports)] / 12

The **minimum need of storage capacity** was instead quantified as the maximum observed production of cereals and oilseeds over the 2005-2015 period.

The products considered for the quantification of the current need of storage capacity were the following:

- Cereals: soft wheat; durum wheat; barley; rye; oats; triticale; maize.
- Oilseed complex: rapeseed, sunflower seed, soybeans, soybean meal.

Under the *base scenario*, the maximum and the minimum storage needs are quantified with respect to the peaks in production recorded for each Member State and each individual COP crop over the 2005-2015 period. **This approach is likely to overestimate the presence and extent of storage capacity shortages.** The base scenario is in fact more suitable for detecting **potential contingent shortages**, which might emerge in case of simultaneous production peaks of different COP crops, i.e. in rather exceptional conditions. By contrast, a **potential structural shortage** would emerge only in case a Member State faces storage capacity shortages in most of the years, i.e. in ordinary conditions. For this reason, **two alternative scenarios** were developed to allow a better appraisal of structural (rather than contingent) storage capacity shortages. The two scenarios are detailed in Boxes 2 and 3.

Box 2 – Storage need scenario using average production and trade flows (first alternative scenario)

The first alternative scenario envisages the same methodology already described for the base scenario, with the difference that the **average production** over the 2005-2015 period (rather than the peak in production over the same period) was considered for each crop and each Member State. Imports and export flows have been consistently estimated on the basis of the monthly average over the same period. For each Member State/crop, the import/export volumes considered in the yearly pattern in the month of January are equal to the average of import/export volumes recorded in the January of each year between 2005 and 2015; the same approach was applied for the remaining months of the yearly pattern.

The other assumptions regarding beginning/ending stocks and consumption are the same described in Box 1.

³ Such assumption can be deemed as conservative. Actual stock-to-use ratios for all cereals have been closer to 15% in the EU in recent years, even though the ratio was above 20% at the beginning of the considered period. Furthermore, stock-to-use ratios for oilseeds tend to be much smaller than 20% of yearly consumption.

The minimum storage need is calculated on the basis of production only, while the maximum need takes into account also trade flows, expected beginning/ending stocks and consumption.

Box 3 – Shortage scenario considering the net importer or net exporter status of Member States (second alternative scenario)

The second alternative scenario considers the same storage needs emerged under the base scenario, but takes into account the net COP import/export position of each Member State⁴.

The analysis focuses on the shortage situations identified through the approach described at Box 1. Only the most serious storage capacity shortages in both absolute and relative terms are considered. The assessment hence focused on:

1. Member States with a storage capacity shortage of at least 500 000 tonnes (absolute value threshold).
2. Member States whose storage capacity is less than 75% of their average⁵ storage need (relative threshold).

2.1.2 Question 1.2: Evolution of storage capacity since 2005

The evolution of storage capacity was assessed through *comparison* between the current situation and the 2005 situation at Member State and individual NUTS 2 and 3 region level (data in absolute value), and analysed both in absolute value and as percentage variation.

2.1.3 Question 1.3: Factors influencing evolution of storage capacity

To answer this study question, a *quanti-qualitative assessment of relevant factors* was performed, in order to understand the influence on the evolution of storage capacity of *three main groups of factors*:

1. Factors *specific to the functioning of COP supply chains*, such as: the evolution of COP supply balance (and especially of production and trade); the seasonal patterns of COP production, use and trade; the dynamics of COP prices; the cooperation and coordination forms between different actors in the COP supply chain; other factors specific to individual COP crops and/or geographical areas; etc.
2. Factors related to the *functioning of the agribusiness system as a whole*, such as the evolution of non-crop specific support policies, or the presence of multi-commodity operators operating on a global/multi-country scale.
3. *Other factors*, such as competition for available space and storage facilities at transportation hubs, and the availability of logistical infrastructure extending the catchment area of large-scale storage facilities and hubs.

⁴ This scenario considered the different stock management models which can be applied in the two situations. Whereas the export of COP requires the availability of storage capacity in the period between harvest and actual export (whatever the length of such period), import flows usually can be managed in a more flexible way and be more tailored to the timing of consumption needs: with an accurate management of the timing of imports, a country can significantly reduce its storage needs in most years.

⁵ The average storage need is calculated for each Member State as the simple average between the minimum and the maximum storage need in the base scenario.

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2.1.4 Question 1.4: Investments in storage capacity

The analysis of investments in storage capacity covered two main topics: *prominent investors in storage capacity* and *available funding solutions*. The operators which made the most significant investments in additional storage capacity over the relevant period were identified, classified and described under different “investor profiles”. The investigation on the available funding solutions covered internal resources, venture capital, EAFRD funding via specific Rural Development measures, and non-agricultural funding options at EU level (such as those offered through ESIF and EFSI).

2.2 Study questions under Theme 2 – Logistical infrastructure

2.2.1 Question 2.1: Evolution of intra and extra-EU trade flows in COP crops by commodity since 2005

In general, the analysis of the evolution of trade in COP crops was performed through the elaboration of time series of annual data on COP trade covering the 2005-2015 period. These series were broken down by:

1. Origin (Member State) and destination: EU on aggregate and individual Member States for intra-EU flows; extra-EU on aggregate, individual macro-areas and individual main origin / destination countries for extra-EU flows.
2. Type of commodity: cereals / oilseed complex / feed protein crops.

A set of descriptive statistics was used for such purpose; these included:

- a. Period average 2005-2015.
- b. % variation and variation in absolute value: three-year averages (initial situation vs. final situation) were considered for such purpose.
- c. % shares of individual origins / destinations on totals at EU and Member State level (calculated on the period average).

2.2.2 Question 2.2: Evolution of logistical infrastructure for COP crops since 2005

The analysis of the evolution of logistical infrastructure for COP was differentiated according to the transport distance and the level of detail:

- a. The *main European transport corridors* were analysed through:
 1. Review of implementation reports and corridor studies at EU level.
 2. Identification of major implementation steps and corresponding projects.
- b. *National and regional transport infrastructure* was analysed through a set of statistical indicators (e.g. Logistics Performance Index⁶; modal split of freight transport; etc.).

The evidence base for the analysis of the evolution of logistical infrastructure for COP crops since 2005 was completed by (mainly qualitative) elements sourced through in-depth structured interviews with knowledgeable subjects.

⁶ The *Logistics Performance Index (LPI)* allows country comparisons on the basis of six indicators: 1) efficiency of the clearance process (i.e. speed, simplicity and predictability of formalities) by border control agencies, including customs; 2) quality of trade and transport related infrastructure (e.g. ports, railroads, roads, information technology); 3) ease of arranging competitively priced shipments; 4) competence and quality of logistics services (e.g. transport operators, customs brokers); 5) ability to track and trace consignments; 6) timeliness of shipments in reaching the destination within the scheduled or expected delivery time.

2.2.3 Question 2.3: Factors influencing evolution of logistical infrastructure

The analysis of the factors influencing the evolution of logistical infrastructure for COP (including collaborative structures and seasonality) was differentiated into:

- a. An analysis of the factors influencing the evolution of the *main European transport corridors* in terms of implementation plans and development policies at EU level:
 1. objectives for infrastructure development at EU and Member State level;
 2. obstacles preventing completion as planned, or further development;
 3. links between the identified influencing factors (including factors which are related to specific techno-economic features of the COP supply chains) and the evolution of the logistical infrastructure.
- b. An investigation on factors influencing the evolution of the *national and regional transport infrastructure*, based on a quanti-qualitative assessment of:
 1. EU and national policies for infrastructural development.
 2. Socio-economic statistics relevant to transportation (GDP, export/import, demographics).
 3. Factors specifically related to the techno-economic features of the COP supply chains.

The evidence base for the analysis of factors influencing the evolution of logistical infrastructure was completed by (mainly qualitative) elements sourced through in-depth structured interviews with knowledgeable subjects.

2.2.4 Question 2.4: Investments in logistical infrastructure

For the purposes of the analysis of the investments in logistical infrastructure at EU and Member State level, the *leading investors in logistical infrastructure and the related investments* were analysed and described in terms of:

1. Identification and description of investors in logistical infrastructure (EU funds, Member States, private investors).
2. Review of reports on the funding of logistical infrastructure and collection of statistics on the contribution of the identified investors.
3. Identification of notable investment projects for the development of logistical infrastructure financed by EU funds.

The investigation on the *available funding solutions for investments* in logistical infrastructure for COP was performed through:

1. the analysis of the importance of regional, national and EU level funding in the development of logistical infrastructure;
2. the identification of Infrastructure Development measures which are relevant for funding through relevant EU funds;
3. the identification of notable examples of Infrastructure Development programmes (national or regional ones) providing support to investments in logistical infrastructure;
4. the description and analysis of the selection of notable examples of funding via relevant EU funds.

Also in this case, the evidence base for the analysis of investments in logistical infrastructure for COP was completed by (mainly qualitative) elements sourced through in-depth structured interviews with knowledgeable subjects.

2.3 Study questions under Theme 3 – Bottlenecks

The approach to the assessment under Theme 3 moved from a comprehensive critical review of the outcomes of the analyses carried out for Themes 1 and 2. Additional qualitative and quantitative elements were also considered for answering the study questions.

Bottlenecks for storage capacity and logistical infrastructure for COP were identified, located and analysed, in order to provide an overview and mapping of bottlenecks at different stages of the COP supply chains. More specifically:

1. Bottlenecks were *identified* by comparing the demand for storage and infrastructure with the available capacity and quality.
2. Bottlenecks were *located* on the basis of the geographical information contained in the dataset which was built for the mapping of storage capacities (Theme 1) and of logistical infrastructure (Theme 2).
3. A quanti-qualitative assessment was performed in order to *analyse* the bottlenecks.

Once the evolution of the identified bottlenecks and the reasons behind such evolution had been analysed, a *quanti-qualitative assessment of the influence of such bottlenecks on EU internal and external trade in COP crops* was performed.

The *identification of solutions aimed at addressing and overcoming the bottlenecks* focused on the *reasons behind their evolution*, which were identified and analysed with a view to removing / mitigating their influence. *Future investments in storage capacity and logistical infrastructure* play a role in this respect: the related opportunities - as defined by the existing funding solutions at EU, national and regional level - were hence investigated.

2.3.1 Question 3.1: Identification, location and analysis of bottlenecks for storage capacities and logistical infrastructure for COP crops

The key steps in the process of identification, location and analysis of bottlenecks were the following:

1. *Identification of bottlenecks*:
 - a. gaps (if any) between available storage capacity and the estimated storage needs (according to the methodology explained at § 1.2.1.1) were quantified at Member State and NUTS 2 region level;
 - b. bottlenecks (tunnels, crossings, missing links, etc.) within the logistical infrastructure of the main European transport corridors, as well as in Member States/regions with low quality of the overall logistical infrastructure, were then identified.
2. *Location of bottlenecks* through GIS mapping.
3. *Analysis of bottlenecks* through a quanti-qualitative assessment.

Qualitative elements for the assessment of the identified bottlenecks were drawn from a combination of desk research and interviews with EU and national experts.

2.3.2 Question 3.2: Evolution of bottlenecks since 2005

Analysis of the evolution of bottlenecks in storage capacity. The gaps (if any) between available storage capacity and the estimated storage needs (according to the methodology explained at § 1.2.1.1) were quantified at Member State and individual NUTS 2 region level for 2005 and 2015: a comparison between these gaps was then performed in order to assess their evolution over time.

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Analysis of the evolution of bottlenecks in logistical infrastructure. The analysis was carried out through the identification and description of major implementation steps in the development of the main transport corridors which allowed to remove bottlenecks which were relevant for COP transportation. The elaboration and representation of time series of annual data for indicators on the overall quality of the logistical infrastructure, highlighting critical situations which could have negative implications for COP transportation, completed the analysis.

2.3.3 Question 3.3: Factors influencing evolution of bottlenecks

The identification and assessment of factors influencing the evolution of bottlenecks was based on a critical review of the findings of the analyses under Themes 1 and 2, with a special focus on:

1. *Factors specific to the structure and functioning of COP crops supply chains*, such as: evolution of production vis-à-vis domestic use in terms of volume and/or geographical distribution; evolution of internal trade in terms of volume and/or geographical distribution; evolution of external trade in terms of volume and/or geographical distribution; changes (if any) in the technical requirements of COP storage and/or transportation; changes (if any) in the role played by collaborative structures in COP storage and/or logistics.
2. *Factors related to the structure and functioning of the EU logistical network in general*, such as implementation plans for the main transport corridors, and policies on transport infrastructure at EU and Member State level.

The evidence base for the analysis of factors influencing the evolution of bottlenecks was collected through both desk research and interviews with EU and national experts.

2.3.4 Question 3.4: Influence of bottlenecks on EU internal and external trade in COP crops

To answer this study question, a *quanti-qualitative assessment* of the influence of bottlenecks on EU trade in COP crops was performed. The relevant elements for the assessment were provided:

- By the findings of the analyses carried out for Themes 1 (storage capacity) and 2 (logistical infrastructure).
- By the replies to study questions 3.1, 3.2 and 3.3.

The influence of bottlenecks for storage capacity and/or logistical infrastructure on the EU internal and external trade in COP crops was assessed in the light of:

1. the *features of bottlenecks*, as emerging from the replies to study questions 3.1 and 3.2;
2. the *nature of the factors influencing the evolution of bottlenecks*, as emerging from the reply to question 3.3;
3. the *more general conditions applying in the EU agribusiness system and/or in the EU socio-economic context*.

2.3.5 Question 3.5: Identification of solutions to overcome existing bottlenecks

Potential solutions to overcome existing bottlenecks were identified through a *critical review* of:

- The results of the assessments made under Themes 1, 2 and 3.
- The findings of previous research carried out in this field.
- Insights from interviews with independent experts.

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Once identified, these solutions were classified according to their *potential influence on trade* (as assessed under study questions 3.1 and 3.4) and the *time horizon of implementation* (short/medium/long-term).

2.3.6 Question 3.6: Opportunities for future investments in storage capacity and logistical infrastructure

In order to reply to this study question, relevant funding options for the solutions to overcome existing bottlenecks identified at question 3.5 were selected among the funding options identified for storage capacity (question 1.4) and for logistical infrastructure (question 2.4).

The identification of funding options especially focused on solutions to overcome *bottlenecks with high impact and strong influence on COP trade*, in order to highlight the *most important opportunities for future investments in storage capacity and logistical infrastructure*.